

[4830-01-p]

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Part 1

[REG-112339-19]

RIN 1545-BP42

Credit for Carbon Oxide Sequestration

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** This document contains proposed regulations regarding the credit for carbon oxide sequestration under section 45Q of the Internal Revenue Code (Code). These proposed regulations will affect persons who physically or contractually ensure the capture and disposal of qualified carbon oxide, use of qualified carbon oxide as a tertiary injectant in a qualified enhanced oil or natural gas recovery project, or utilization of qualified carbon oxide in a manner that qualifies for the credit.

**DATES:** Written or electronic comments and requests for a public hearing must be received by August 3, 2020.

Requests for a public hearing must be submitted as prescribed in the “Comments and Requests for a Public Hearing” section.

**ADDRESSES:** Commenters are strongly encouraged to submit public comments electronically. Submit electronic submissions via the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov) (indicate IRS and REG-112339-19) by following the online instructions for submitting comments. Once submitted to the Federal eRulemaking

Portal, comments cannot be edited or withdrawn. The IRS expects to have limited personnel available to process public comments that are submitted on paper through mail. Until further notice, any comments submitted on paper will be considered to the extent practicable. The Department of the Treasury (Treasury Department) and the IRS will publish for public availability any comment submitted electronically, and to the extent practicable on paper, to its public docket.

Send paper submissions to: CC:PA:LPD:PR (REG-112339-19), room 5203, Internal Revenue Service, PO Box 7604, Ben Franklin Station, Washington, D.C. 20044.

**FOR FURTHER INFORMATION CONTACT:** Concerning the proposed regulations, Maggie Stehn of the Office of Associate Chief Counsel (Passthroughs & Special Industries) at (202) 317-6853; concerning submissions of comments and/or requests for a public hearing, Regina L. Johnson at (202) 317-5177 (not toll-free numbers).

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

This document contains proposed amendments to the Income Tax Regulations (26 CFR part 1) under section 45Q of the Code (proposed regulations).

Section 45Q was enacted on October 3, 2008, by section 115 of Division B of the Energy Improvement and Extension Act of 2008, Public Law 110-343, 122 Stat. 3765, 3829, to provide a credit for the sequestration of carbon oxide. On February 17, 2009, section 45Q was amended by section 1131 of Division B of the American Recovery and Reinvestment Tax Act of 2009, Public Law 111-5, 123 Stat 115, 325. Section 45Q was further amended on December 19, 2014, by section 209(j)(1) of Division A of the Tax Increase Prevention Act of 2014, Public Law 113-295, 128 Stat. 4010, 4030, and most

recently on February 9, 2018, by section 41119 of Division D of the Bipartisan Budget Act of 2018 (BBA), Public Law 115-123, 132 Stat. 64, 162, to encourage the construction and use of carbon capture and sequestration projects.

On May 20, 2019, the IRS published Notice 2019-32, 2019-21 I.R.B. 1187. The notice requested general 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, the beginning of construction, partnership arrangements, definitions of terms, and other issues related to the credit. The IRS received 116 comments from industry participants, environmental groups, and other stakeholders.

In response to comments submitted pursuant to Notice 2019-32, on March 9, 2020, the Treasury Department and the IRS published Revenue Procedure 2020-12, 2020-11 I.R.B. 511, and Notice 2020-12, 2020-11 I.R.B. 495. Revenue Procedure 2020-12 provides a safe harbor under which the IRS will treat partnerships as properly allocating the section 45Q credit in accordance with section 704(b). Notice 2020-12 provides guidance on the determination of when construction has begun on a qualified facility or on carbon capture equipment that may be eligible for the section 45Q credit. As requested by commenters, the safe harbor in Revenue Procedure 2020-12 and the rules in Notice 2020-12 are similar to those provided in prior guidance.

Pursuant to section 45Q(h), the Secretary of the Treasury or his delegate (Secretary) may prescribe such regulations and other guidance as may be necessary or appropriate to carry out section 45Q, including regulations or other guidance to (i)

ensure proper allocation under section 45Q(a) for qualified carbon oxide captured by a taxpayer during the taxable year ending after the date of the enactment of the BBA, and (ii) determine whether a facility satisfies the requirements under section 45Q(d)(1).

## **Summary of Comments and Explanation of Provisions**

### **1. General Credit Provisions**

#### **a. Credit Amount in General**

Section 45Q(a)(1) allows a credit of \$20 per metric ton of qualified carbon oxide (i) captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility before the date of the enactment of the BBA (February 9, 2018); (ii) disposed of by the taxpayer in secure geological storage; and (iii) neither used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project nor utilized in a manner described in section 45Q(f)(5).

Section 45Q(a)(2) allows a credit of \$10 per metric ton of qualified carbon oxide (i) captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility before February 9, 2018; and (ii) either (A) used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposed of by the taxpayer in secure geological storage; or (B) utilized by the taxpayer in a manner described in section 45Q(f)(5).

Section 45Q(a)(3) allows a credit of the applicable dollar amount (as determined under section 45Q(b)(1)) per metric ton of qualified carbon oxide (i) captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018, during the 12-year period beginning on the date the equipment was originally placed in service; (ii) disposed of by the taxpayer in

secure geological storage; and (iii) neither used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project nor utilized in a manner described in section 45Q(f)(5).

Section 45Q(a)(4) allows a credit of the applicable dollar amount (as determined under section 45Q(b)(1)) per metric ton of qualified carbon oxide (i) captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018, during the 12-year period beginning on the date the equipment was originally placed in service; and (ii) either (A) used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposed of by the taxpayer in secure geological storage, or (B) utilized by the taxpayer in a manner described in section 45Q(f)(5).

Section 45Q(b)(1)(A)(i)(I) and (ii)(I) provides that the applicable dollar amount for activities under section 45Q(a)(3) for any taxable year beginning in a calendar year (1) after 2016 and before 2027 is an amount equal to the dollar amount established by linear interpolation between \$22.66 and \$50 for each calendar year during such period, and (2) after 2026 is an amount equal to the product of \$50 and the inflation adjustment factor for such calendar year determined under section 43(b)(3)(B) for such calendar year, determined by substituting "2025" for "1990."

Section 45Q(b)(1)(A)(i)(II) and (ii)(II) provides that the applicable dollar amount for activities under section 45Q(d)(4) for any taxable year beginning in a calendar year (1) after 2016 and before 2027 is an amount equal to the dollar amount established by linear interpolation between \$12.83 and \$35 for each calendar year during such period, and (2) after 2026 is an amount equal to the product of \$35 and the inflation adjustment

factor for such calendar year determined under section 43(b)(3)(B) for such calendar year, determined by substituting “2025” for “1990.” Section 45Q(b)(1)(B) provides that the applicable dollar amount determined under section 45Q(b)(1)(A) is rounded to the nearest cent.

Section 45Q(b)(2) provides a method to compute the amount of qualified carbon oxide captured at a qualified facility that was placed in service before February 9, 2018, and for which additional carbon capture equipment is placed in service on or after February 9, 2018. For purposes of section 45Q(a)(1)(A) and (2)(A), the amount of qualified carbon oxide that is captured by the taxpayer is equal to the lesser of (i) the total amount of qualified carbon oxide captured at such facility for the taxable year, or (ii) the total amount of the carbon dioxide capture capacity of the carbon capture equipment in service at such facility on February 8, 2018 (the day before the date of enactment of the BBA). For purposes of section 45Q(a)(3)(A) and (4)(A), the amount of qualified carbon oxide captured by the taxpayer is an amount (not less than zero) equal to the excess of (i) the total amount of qualified carbon oxide captured at such facility for the taxable year, over (ii) the total amount of the carbon dioxide capture capacity of the carbon capture equipment in service at such facility on February 8, 2018. These proposed regulations explain the difference between a physical modification or equipment addition that results in an increase in the carbon dioxide capture capacity of existing carbon capture equipment, which will be treated as newly placed in service, and a mere increase in the amount of carbon dioxide captured by existing carbon capture equipment, which will not be treated as newly placed in service.

Pursuant to section 45Q(b)(3), a taxpayer may elect to have the dollar amounts applicable under section 45Q(a)(1) or (2) apply in lieu of the dollar amounts applicable under section 45Q(a)(3) or (4) for each metric ton of qualified carbon oxide which is captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018. These proposed regulations provide that the election will apply to all metric tons of qualified carbon oxide captured by the taxpayer at the qualified facility for the full 12-year credit period.

Section 45Q(f)(6)(A) provides that for any taxable year in which an applicable facility captures not less than 500,000 metric tons of qualified carbon oxide, the person described in section 45Q(f)(3)(A)(ii) may elect to have such applicable facility, and any carbon capture equipment placed in service at such applicable facility, deemed as having been placed in service on February 9, 2018. The term “applicable facility” means a qualified facility (i) which was placed in service before February 9, 2018, and (ii) for which no taxpayer claimed a section 45Q credit for any taxable year ending before February 9, 2018.

Section 45Q(f)(7) provides that in the case of any taxable year beginning in a calendar year after 2009, there is substituted for each dollar amount contained in section 45Q(a)(1) and (2) an amount equal to the product of (i) such dollar amount, multiplied by (ii) the inflation adjustment factor for such calendar year determined under section 43(b)(3)(B) for such calendar year, determined by substituting “2008” for “1990.”

Section 45Q(g) provides that in the case of any carbon capture equipment placed in service before February 9, 2018, the section 45Q credit applies with respect to qualified carbon oxide captured using such equipment before the end of the calendar

year in which the Secretary, in consultation with the Administrator of the Environmental Protection Agency (EPA), certifies that a total of 75,000,000 metric tons of qualified carbon oxide have been taken into account in accordance with former section 45Q(a) (as in effect before February 9, 2018) and sections 45Q(a)(1) and (2).

These proposed regulations reflect the statutory provisions relating to credit amounts.

b. Contractually Ensuring Capture and Disposal, Injection, or Utilization of Qualified Carbon Oxide

Section 45Q(f)(3)(A)(i) provides that in the case of qualified carbon oxide captured using carbon capture equipment which is originally placed in service at a qualified facility before February 9, 2018, the section 45Q credit is attributable to the person that captures and physically or contractually ensures the disposal through secure geological storage (referred to as disposal), use for tertiary injection and disposal through secure geological storage (referred to as injection) or utilization in a manner consistent with section 45Q(f)(5) (referred to as utilization).

Section 45Q(f)(3)(A)(ii) provides that in the case of qualified carbon oxide captured using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018, the section 45Q credit is attributable to the person that owns the carbon capture equipment and physically or contractually ensures the capture and disposal, injection, or utilization of such qualified carbon oxide.

Commenters requested that the Treasury Department and the IRS clarify which contract provisions are necessary to contractually ensure the capture and disposal, injection, or utilization of qualified carbon oxide. Several commenters requested broad

guidance on commercially reasonable terms rather than specifying exact language. One commenter requested guidance regarding the assurance of capture, remedies, guarantees, and the prevention of leakage.

In response, the proposed regulations provide a framework for the types of contracts, terms, and reporting requirements that will demonstrate the contractual assurance of the capture and disposal, injection, or utilization of qualified carbon oxide. The proposed regulations provide that a taxpayer may enter into multiple contracts with multiple parties for the disposal, injection, or utilization of qualified carbon oxide. For example, a taxpayer that captures qualified carbon oxide may contract with one party to dispose of a portion of its captured qualified carbon oxide in a deep saline formation, with another party to use another portion of its captured qualified carbon oxide as a tertiary injectant in multiple enhanced oil recovery (EOR) sites, and with several parties to utilize the remaining portion of its captured qualified carbon oxide. The existence of each contract and the parties involved must be reported to the IRS on an annual basis on Form 8933, Carbon Oxide Sequestration Credit (or successor forms, or pursuant to instructions and other guidance). For contracts for the disposal of carbon oxide or use as a tertiary injectant in enhanced oil or natural gas recovery, the following information must be included: identifying information (name of operator, field, unit and reservoir), the location (county and state) and the identification number assigned to the facility by the EPA's electronic Greenhouse Gas Reporting Tool (e-GGRT ID number). The e-GGRT ID number will allow the IRS to reconcile information with data reported to the EPA's Greenhouse Gas Reporting Program (GHGRP) and otherwise receive technical assistance from the EPA.

The proposed regulations require taxpayers to contractually ensure the disposal, injection, or utilization of qualified carbon oxide in a binding written contract that includes commercially reasonable terms that provides for enforcement. The proposed regulations provide that taxpayers may include information regarding how much carbon oxide the parties agree to dispose of, inject, or utilize in their contracts. Contracts may also include various other specific provisions relating to enforcement, such as long-term liability provisions, indemnity provisions, or penalties for breach of contract or liquidated damages. While the proposed regulations require that the contract include a mechanism for enforcement, no specific enforcement-related provision, or other particular kind of enforcement provision, are mandated by these proposed regulations. This is consistent with allowing contracting parties to tailor their agreements to a wide variety of business needs and circumstances.

Under the proposed regulations, a taxpayer does not elect to allow all or a portion of the section 45Q credit to any of the contracting parties merely by contracting with that party to ensure the disposal, injection, or utilization of qualified carbon oxide. Any election to allow all or a portion of the credit to another taxpayer must be made separately in the manner provided in these proposed regulations.

c. Election to Allow the Credit to Another Taxpayer

Section 45Q(f)(3)(B) provides that a person that is entitled to claim the credit under section 45Q(f)(3)(A)(i) or section 45Q(f)(3)(A)(ii) may elect to allow the person that disposes of the qualified carbon oxide, utilizes the qualified carbon oxide, or uses the qualified carbon oxide as a tertiary injectant to claim the credit (section 45Q(f)(3)(B) election).

Commenters requested guidance regarding the section 45Q(f)(3)(B) election. Commenters generally sought to maximize the ability of the taxpayer to whom the section 45Q credit is attributable (electing taxpayer) to make the section 45Q credit allowable to one or more other taxpayers (credit claimants) pursuant to the section 45Q(f)(3)(B) election. Commenters also generally requested that guidance provide that section 45Q(f)(3)(B) elections may be made on an annual basis. One commenter requested that guidance provide for a broader range of permissible credit claimants, including an owner, operator, service company, supplier, partner, or tax equity or other project finance participant.

One commenter suggested that the section 45Q(f)(3)(B) election should be made in the taxable year that the qualified carbon oxide is disposed of, utilized, or used as a tertiary injectant. The commenter recommended that the election procedures follow the procedures for making a section 338(h)(10) election. Further, commenters suggested that Forms 8933 should be filed by all parties to the section 45Q(f)(3)(B) election with their respective tax returns for the taxable year in which the qualifying activity is completed.

Other commenters suggested that a taxpayer should make a section 45Q(f)(3)(B) election for a taxable year by attaching a statement to a timely filed income tax return (including extensions) for the taxable year. Further, commenters suggested that a taxpayer should be permitted to make a section 45Q(f)(3)(B) election for a portion of the section 45Q credit. The portion allowed to a credit claimant would be specified in the electing taxpayer's annual election as a percentage of the total credit claimed.

One commenter noted that when a taxpayer makes a section 45Q(f)(3)(B) election, the electing taxpayer should no longer claim the section 45Q credit subject to the election. To ensure compliance with this rule, the commenter suggested that the guidance and the relevant tax forms (i.e., Form 8933) require coordination between the electing taxpayer and the credit claimant. For example, the credit claimant could be required to include a copy of the electing taxpayer's section 45Q(f)(3)(B) election to allow the credit.

In response to these comments, the proposed regulations provide guidance regarding who may make a section 45Q(f)(3)(B) election and the time and manner for making a section 45Q(f)(3)(B) election. The proposed regulations also provide that section 45Q(f)(3)(B) elections must be made on an annual basis no later than the time prescribed by law (including extensions) for filing the Federal income tax return or Form 1065 and may not be made on an amended Federal income tax return. However, a section 45Q(f)(3)(B) election may be made on an amended Federal income tax return, an amended Form 1065 or an administrative adjustment request under section 6227 of the Code (AAR), for any taxable year ending after February 9, 2018, but not for taxable years beginning after June 2, 2020.

The proposed regulations also set forth information to be provided as part of a section 45Q(f)(3)(B) election, requiring both an electing taxpayer and a credit claimant to include a Form 8933 (or successor forms, or pursuant to instructions and other guidance) with its timely filed Federal income tax return or Form 1065, U.S. Return of Partnership Income (including extensions) as applicable. An electing taxpayer must

provide each credit claimant with a copy of the electing taxpayer's Form 8933, and each credit claimant must attach that copy of the electing taxpayer's Form 8933 to its own Form 8933.

The proposed regulations further provide that section 45Q(f)(3)(B) elections may be made for all or a portion of the available section 45Q credit and may be made for a single or multiple credit claimants. If an electing taxpayer elects to allow multiple credit claimants to claim section 45Q credits, the proposed regulations provide that the maximum amount of section 45Q credits allowable to each credit claimant is proportional to the amount of qualified carbon oxide disposed of, utilized, or used as a tertiary injectant by the credit claimant. In addition, as provided in Revenue Procedure 2020-23, 2020-18 I.R.B.1 (April 27, 2020), the exception applies regarding the time to file an amended return by a partnership subject to the centralized partnership audit regime enacted as part of the BBA (BBA partnership) for the 2018 and 2019 taxable years. The amended Federal income tax return or the amended Form 1065 must be filed, in no event, later than the applicable period of limitations on assessment for the taxable year for which the amended Federal income tax return or Form 1065 is being filed. In the case of a BBA partnership that chooses not to file an amended Form 1065 as permitted under Revenue Procedure 2020-23, the BBA partnership may make a late election by filing an AAR on or before October 15, 2021, but in no event, later than the applicable period of limitations on making adjustments under section 6235 for the reviewed year, as defined in §301.6241-1(a)(8) of the Procedure and Administration Regulations (26 CFR part 301).

d. Amended Returns

Taxpayers may claim section 45Q credits on an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, for taxable years beginning on or after February 9, 2018, provided that the requirements described in the proposed regulations are satisfied. In addition, as provided in Revenue Procedure 2020-23, the exception applies regarding the time to file an amended return by a BBA partnership for the 2018 and 2019 taxable years. The amended Federal income tax return or the amended Form 1065 must be filed, in no event, later than the applicable period of limitations on assessment for the taxable year for which the amended Federal income tax return or Form 1065 is being filed. In the case of a BBA partnership that chooses not to file an amended Form 1065 as permitted under Revenue Procedure 2020-23, the BBA partnership may make a late election by filing an AAR on or before October 15, 2021, but in no event, later than the applicable period of limitations on making adjustments under section 6235 for the reviewed year, as defined in §301.6241-1(a)(8) of the Procedure and Administration Regulations (26 CFR part 301). However, section 45Q(f)(3)(B) elections may not be made on amended returns for taxable years beginning after the date of issuance of these proposed regulations.

## 2. Definitions

### a. Qualified Carbon Oxide

Section 45Q(c) provides that “qualified carbon oxide” means (A) any carbon dioxide which (i) is captured from an industrial source by carbon capture equipment which is originally placed in service before February 9, 2018; (ii) would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release; and (iii) is measured at the source of capture and verified at the point of

disposal, injection, or utilization; (B) any carbon dioxide or other carbon oxide which (i) is captured from an industrial source by carbon capture equipment which is originally placed in service on or after February 9, 2018; (ii) would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release; and (iii) is measured at the source of capture and verified at the point of disposal, injection, or utilization; or (C) in the case of a direct air capture facility, any carbon dioxide which (i) is captured directly from ambient air; and (ii) is measured at the source of capture and verified at the point of disposal, injection, or utilization.

While “qualified carbon oxide” includes the initial deposit of captured carbon oxide used as a tertiary injectant, section 45Q(c)(2) provides that the term does not include carbon oxide that is recaptured, recycled, and re-injected as part of the qualified enhanced oil or natural gas recovery process. Additionally, section 45Q(f)(1) provides that the section 45Q credit applies only with respect to qualified carbon oxide the capture and disposal, injection, or utilization of which is within the United States (within the meaning of section 638(1)), or a possession of the United States (within the meaning of section 638(2)).

Commenters suggested generally that the statutory definition of qualified carbon oxide is sufficient, and did not seek additional clarification. The Treasury Department and the IRS agree that the statutory definition of qualified carbon oxide is clear due to the broad acceptance and use of the term by industry participants, environmental groups, and stakeholders. Therefore, the proposed regulations generally conform to the statutory definition of qualified carbon oxide, including the provision that only qualified carbon oxide captured and disposed of, injected, or utilized within the United

States or a possession of the United States is taken into account. Therefore, the proposed regulations generally conform to the statutory definition of qualified carbon oxide, including the provision that only qualified carbon oxide captured and disposed of, injected, or utilized within the United States or a possession of the United States is taken into account.

b. Carbon Capture Equipment

Section 45Q does not define carbon capture equipment. One commenter suggested that carbon capture equipment be broadly defined as, “any system that but for its presence and application, the carbon oxides captured at a qualifying industrial facility and on which a section 45Q credit is earned would have been vented into the atmosphere.” Another commenter suggested that the definition allow for maximum flexibility to encompass a complete configuration of equipment including separate units, processing units, processing plants, pipe, buildings, pumps, compressors, meters, facilities, motors, fixtures, materials, and machinery, and all other improvements used for the purpose of: (1) separating and/or capturing carbon dioxide that would otherwise be released into the atmosphere from a qualifying facility; (2) compressing or otherwise increasing the pressure of carbon dioxide; or (3) transporting, disposing, injecting, and/or utilizing qualified carbon oxide.

Finally, some commenters suggested that the definition of carbon capture equipment should be limited to the equipment that functions to capture the carbon oxides from any industrial source. The commenters explained that once the carbon oxides are captured, equipment having a separate function such as compression,

liquefaction, transportation, or pumping, should not be included in the definition of carbon capture equipment.

The Treasury Department and the IRS agree that carbon capture equipment generally should be defined in terms of its functionality. The proposed regulations provide 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 list specific items that are included in, or excluded from the definition of carbon capture equipment. Components of property related to the function of capturing carbon oxides, such as components of property necessary to compress, treat, process, liquefy, or pump carbon oxides, are included within the definition of carbon capture equipment. Components of property related to transporting carbon oxides for disposal, injection, or utilization are not included in the general definition.

c. Qualified Facility

Section 45Q(d) provides that “qualified facility” means any industrial facility or direct air capture facility, the construction of which begins before January 1, 2024, and (i) the construction of carbon capture equipment begins before such date; or (ii) the original planning and design for such facility includes installation of carbon capture equipment. In addition, a qualified facility must capture: (i) in the case of a facility which emits not more than 500,000 metric tons of carbon oxide into the atmosphere during the taxable year, not less than 25,000 metric tons of qualified carbon oxide during the taxable year which is utilized in a manner described in section 45Q(f)(5) (Section 45Q(d)(2)(A) Facility); (ii) in the case of an electricity generating facility which is not a

Section 45Q(d)(2)(A) Facility (Section 45Q(d)(2)(B) Facility), not less than 500,000 metric tons of qualified carbon oxide during the taxable year; or (iii) in the case of a direct air capture facility or any facility which is not a Section 45Q(d)(2)(A) Facility or a Section 45Q(d)(2)(B) Facility, not less than 100,000 metric tons of qualified carbon oxide during the taxable year.

Some commenters requested that the proposed regulations incorporate the “80/20 Rule” set forth in Rev. Rul. 94-31, 1994-1 C.B. 16, which held that for section 45 purposes a facility that contains some used property would still qualify as originally placed in service, provided the fair market value of the used property is not more than 20 percent of the facility’s total value. Commenters requested the inclusion of this rule because the section 45Q credit amounts depend on whether carbon capture equipment is placed in service before February 9, 2018, or on or after that date.

The proposed regulations adopt the 80/20 Rule and provide that a qualified facility or carbon capture equipment may qualify as originally placed in service even though it contains some used components of property, provided the fair market value of the used components of property is not more than 20 percent of the qualified facility or carbon capture equipment’s total value (the cost of the new components of property plus the value of the used components of property). 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. Solely for purposes of the 80/20 Rule, properly capitalized costs of a new qualified facility or carbon capture equipment may, at the option of the taxpayer, include the cost of new equipment for a pipeline owned and used exclusively by that taxpayer to transport

carbon oxides captured from that taxpayer's qualified facility that would otherwise be emitted into the atmosphere.

d. Industrial Facility

Section 45Q does not define the term "industrial facility." Commenters suggested that an "industrial facility" should be defined as 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. They also recommended that the term not include a facility that produces carbon dioxide through carbon dioxide production wells at natural carbon dioxide-bearing formations. This definition is consistent with the definition of industrial facility provided in section 3.03 of Notice 2020-12. The proposed regulations adopt this definition.

e. Direct Air Capture Facility

Section 45Q(e)(1) provides that the term "direct air capture facility" means any facility which uses carbon capture equipment to capture carbon dioxide directly from the ambient air, except the term does not include any facility which captures carbon dioxide that is deliberately released from naturally occurring subsurface springs or using natural photosynthesis.

Generally, commenters did not request that the definition of "direct air capture facility" be clarified. One commenter suggested that "direct air capture facility" include certain algae. Although section 45Q(f)(5)(A)(i) provides that photosynthesis or chemosynthesis is a permitted type of utilization of qualified carbon oxide, the statutory definition of a "direct air capture facility" excludes any facility that captures carbon

dioxide using natural photosynthesis. Therefore, the proposed regulations do not adopt the commenter's suggestion.

### 3. Secure Geological Storage

Section 45Q(f)(2) provides that the Secretary, in consultation with the Administrator of the EPA, the Secretary of Energy, and the Secretary of the Interior, must establish regulations for determining adequate security measures for the geological storage of qualified carbon oxide under section 45Q(a) such that the qualified carbon oxide does not escape into the atmosphere. Such term includes storage at deep saline formations, oil and gas reservoirs, and unminable coal seams under such conditions as the Secretary may determine under such regulations.

Injection of carbon oxide into any underground reservoir, onshore or offshore under submerged lands within the territorial jurisdiction of States, requires the operator to comply with Underground Injection Control (UIC) program regulations and to obtain the appropriate UIC well permits. Under 40 CFR §146.5 (Classification of injection wells) Class II may be an appropriate UIC well permit for wells which inject fluids (including carbon dioxide) brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants that are an integral part of production operations, unless those fluids are classified as a hazardous waste at the time of injection, and for wells which inject fluids (including carbon oxides) for enhanced recovery of oil or natural gas. Class VI is an appropriate UIC well permit for wells that are not experimental in nature that are used for geologic sequestration of carbon dioxide beneath the lowermost formation containing an underground source of drinking water; or, for wells used for geologic sequestration of

carbon dioxide that have been granted a waiver of the injection depth requirements pursuant to requirements at 40 CFR §146.95; or, for wells used for geologic sequestration of carbon dioxide that have received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to §§146.4 and 144.7(d) of 40 CFR.

Operators that inject carbon dioxide underground are also subject to the EPA's GHGRP requirements set forth at 40 CFR part 98. Under 40 CFR part 98 subpart RR (Geologic Sequestration of Carbon Dioxide source category, referred to as subpart RR), certain facilities, including UIC Class VI wells, are required to report basic information on carbon dioxide received for injection, develop and implement an EPA-approved site-specific Monitoring, Reporting, and Verification Plan (MRV Plan), and report the amount of carbon dioxide geologically sequestered using a mass balance approach and annual monitoring activities. Under 40 CFR part 98 subpart UU (Injection of Carbon Dioxide source category, referred to as subpart UU), all other facilities that inject carbon dioxide underground such as for EOR or any other purpose, are required to report basic information on carbon dioxide received for injection. Facilities that conduct EOR are not required by 40 CFR part 98 to report under subpart RR unless (1) the owner or operator chooses to opt into subpart RR or, (2) the facility holds a UIC Class VI permit for the well or group of wells used for EOR. Annual reports that are submitted under 40 CFR part 98 to the EPA's GHGRP undergo verification by the EPA, and non-confidential data from these reports are published on the EPA's website.

Commenters noted that Form 8933 defines "secure geological storage" for purposes of section 45Q as requiring approval by the EPA of an MRV Plan. Thus,

meeting the Form 8933 conditions would be achieved currently by receiving either (i) a UIC Class VI permit plus an EPA-approved MRV Plan, which UIC Class VI permit holders are already required to have because they are subject to subpart RR; or (ii) a UIC Class II permit plus an EPA-approved MRV Plan. The Form 8933 requirement that UIC Class II permit holders receive an approved MRV Plan for purposes of the section 45Q credit creates an additional burden on such holders. Some commenters expressed concern that being required to opt into subpart RR may create a misalignment with state mineral property and natural resource conservation laws, as well as accepted industry practices and commercial arrangements. Therefore, the commenters generally requested that the Treasury Department and the IRS provide alternatives to opting into subpart RR for demonstrating secure geological storage for EOR projects.

Many commenters suggested that a standard adopted by the International Organization for Standardization (ISO) and endorsed by the American National Standards Institute (ANSI), CSA/ANSI ISO 27916:19, “Carbon Dioxide Capture, Transportation and Geological Storage – Carbon Dioxide Storage Using Enhanced Oil Recovery (CO<sub>2</sub>-EOR),” is a viable alternative to subpart RR for establishing secure geological storage for the use of qualified carbon oxide for EOR.

The CSA/ANSI ISO 27916:19 standard was developed for the purpose of quantifying and documenting the total carbon dioxide that is stored in association with EOR. In general, reporting under CSA/ANSI ISO 27916:19 uses mass balance accounting, has established reporting and documentation requirements, and includes requirements for documenting a monitoring program and a containment assurance plan.

Some of the commenters advocating for the application of the CSA/ANSI ISO 27916:19 standard emphasized the importance and need for public acceptance and input, transparent public filings, credible third-party audits and certifications, and government oversight and enforcement. For example, some commenters suggested that the proposed regulations require that all relevant documentation of the amount of qualified carbon oxide stored for purposes of the section 45Q credit be retained and made available for public review and the total quantity of qualified carbon oxide stored for long-term containment be reported annually. The Treasury Department and the IRS appreciate the importance of shared and open information in this context and encourage transparency. However, there is no statutory requirement in section 45Q for taxpayers, Federal agencies, or industry groups to publicly display this information or otherwise make it available. In addition, the IRS is itself limited in what it can disclose because of the rules prohibiting the public disclosure of taxpayer information under section 6103.

Some commenters also requested that the Treasury Department and the IRS recognize the standards for secure geological storage required by government entities with regulatory primacy, and also recommended that states be allowed to certify the secure geological storage of qualified carbon oxide. The commenters noted that the EPA has approved primary enforcement authority (primacy) for UIC Class II wells for more than half the states. Primacy permits a state, tribe, or territory to implement and oversee its own EPA approved program. One commenter requested that the IRS clarify that a valid UIC Class VI permit issued under the authority of the EPA includes permits issued by a state that has received final approval from the EPA of its primacy

application under section 1422 of the Safe Water Drinking Act to implement a Class VI UIC Program. The commenter also suggested that use of an accounting methodology consistent with the mass balance equation under subpart RR be adequate to establish secure geological storage.

The Treasury Department and the IRS, in consultation with the EPA, DOE, and the Department of Interior (Interior Department), agree that providing CSA/ANSI ISO 27916:19 as an alternative for UIC Class II wells is a viable quantification methodology that is appropriate for these purposes. 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 but would not be required to do so. Rather, they could continue to report to the EPA under subpart UU.

The Treasury Department and the IRS, in consultation with the EPA, DOE, and the Interior Department, disagree with suggestions to allow the reporting rules promulgated by states as an alternative to subpart RR or CSA/ANSI ISO 27916:19. Reporting rules among states are not uniform and states may have different reporting requirements and different governing bodies to whom carbon dioxide injection projects are required to report. Adopting such rules would not promote uniformity, and would increase the administrative burden on the IRS significantly.

Consequently, the proposed regulations allow the CSA/ANSI ISO 27916:19 standard as an alternative to subpart RR for UIC Class II wells using qualified carbon

oxide for EOR, but do not allow standards set by states as an alternative to subpart RR. In addition, the proposed regulations do not provide for an alternative to subpart RR reporting for UIC Class VI wells because all UIC Class VI wells are already subject to subpart RR reporting requirements. A taxpayer that reported volumes of carbon oxide to the EPA pursuant to subpart RR may self-certify the volume of carbon oxide claimed for purposes of section 45Q. Alternatively, if a taxpayer determined volumes pursuant to CSA/ANSI ISO 27916:19, the taxpayer may prepare documentation as outlined in CSA/ANSI 27916:2019 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.

#### 4. 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 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 a qualified enhanced oil or natural gas recovery project), as determined by the Secretary.

Section 45Q(f)(5)(B) provides a methodology to determine the amount of qualified carbon oxide utilized by the taxpayer. Such amount is equal to the metric tons of qualified carbon oxide which the taxpayer demonstrates, based upon an analysis of

lifecycle greenhouse gas emissions and subject to such requirements as the Secretary, in consultation with the Secretary of Energy and the Administrator of the EPA, determines appropriate, were (i) captured and permanently isolated from the atmosphere, or (ii) displaced from being emitted into the atmosphere, through use of a process described in section 45Q(f)(5)(A). The term “lifecycle greenhouse gas emissions” has the same meaning given such term under subparagraph (H) of section 211(o)(1) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on February 9, 2018, except that “product” is substituted for “fuel” each place it appears in such subparagraph.

Commenters generally sought guidance about the methodologies required to prepare an acceptable life cycle analysis (LCA) that demonstrates the amount of qualified carbon oxide utilized, as well as the boundaries required for the LCA.

One commenter requested that guidance establish clear guidelines for the preparation of an LCA by applicants to demonstrate the net reduction or avoidance of carbon dioxide achieved through its utilization by the taxpayer. Because LCA requires selection of comparative data, the commenter recommended that the LCA undergo a review by a third party, determined by the IRS, to assess the reasonableness of the assumptions, factors and calculations used by the applicant.

Other commenters suggested using the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model, or an adaptation of it adopted by the California Air Resources Board, to perform LCA of transportation fuels, and further suggested using both a basic method and a safe harbor method. The GREET model is a tool that examines the life-cycle impacts of vehicle technologies,

fuels, products, and energy systems. It provides a transparent platform through which energy and vehicle producers, researchers, and regulators can evaluate energy and environmental effects of vehicle technologies and energy and product systems. For any given energy and vehicle system, GREET can calculate total energy consumption (non-renewable and renewable), emissions of air pollutants, emissions of greenhouse gases, and water consumption.

One commenter suggested that the LCA, as reviewed by the relevant governmental agency, should determine whether any release of embodied qualified carbon oxide is possible for a specific utilization project. If so, the commenter recommended that recapture be addressed in the LCA. The commenter requested guidance regarding the types of LCA models that are appropriate, and recommended the GREET model.

Another commenter suggested that the IRS should not adopt a specific methodology or approach to calculating lifecycle emissions. Instead, the commenter recommended that guidance make clear that models that are acceptable to the EPA will also be acceptable for purposes of section 45Q. The commenter suggested that the LCA model for section 45Q purposes should be one that is recognized by the EPA based on its use in the Renewable Fuel Standard or other program administered by the EPA. The commenter further recommended that if the capture and utilization of carbon oxides also generates other greenhouse gas detriments, such as an increase in emissions over the base case, those greenhouse gases caused by the utilization should be adjusted to account for the relative global warming potential. Similarly, if the capture

and utilization of carbon oxides reduce greenhouse gas emissions over the base case, the commenter argued that those benefits should also be credited.

One commenter sought guidance on the boundaries for LCA to determine displacement of carbon dioxide and recommended that lifecycle emissions include the entirety of the lifecycle.

Several commenters expressed the view that an MRV Plan or any accredited LCA performed by a qualified firm as determined by the IRS could be suitable for establishing boundaries for lifecycle emissions for qualified carbon oxide utilization. Further, commenters suggested that there should be contractual proof to track the supply chain and ensure that the MRV Plan is followed according to the annual LCA.

Some commenters suggested that guidance require EOR operators to provide a full lifecycle greenhouse gas emissions analysis that, like the requirements for utilization, includes 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. The commenters requested that the IRS make public all lifecycle emissions calculations.

One commenter made the following suggestions. First, taxpayers should use an independent consulting firm or other similar independent entity to undertake the LCA. Second, taxpayers should insure that an LCA model is realistic and has been used widely by the LCA industry. Third, an LCA must be commercially available to anyone and must be able to be examined in any audit by the IRS. Fourth, taxpayers should use an LCA that compares a base case of making the product produced by utilization without carbon capture to the modeled utilization case using qualified carbon oxide to

determine what greenhouse gases were displaced from being emitted into the atmosphere. Finally, taxpayers must use an LCA which models all “greenhouse gases” as defined in the Clean Air Act in determining the net impact of such greenhouse gases generated or reduced in utilization of qualified carbon oxide.

One commenter suggested that the IRS should provide a safe harbor for taxpayers that retain a third-party firm to undertake the LCA. However, the commenter stated that while a safe harbor would be helpful, third-party verification should not be mandatory, as many taxpayers may have sufficient engineering expertise in-house and some smaller projects may not support the extra cost of third-party verification.

In response to the commenters, the proposed regulations conform the definition of utilization to the statutory definition. The Treasury Department and the IRS, in consultation with the EPA and the DOE, concluded that the LCA must be in writing and either performed or verified by a professionally-licensed third party that uses generally-accepted standard practices of quantifying the greenhouse gas emissions of a product or process and comparing that impact to a baseline. In particular, the analysis must contain documentation consistent with the International Organization for Standardization (ISO) 14044:2006, “Environmental management — Life cycle assessment — Requirements and Guidelines,” as well as a statement documenting the qualifications of the third party. Although the section 45Q credit is only available with respect to qualified carbon oxides, all greenhouse gas emissions are taken into account under this analysis. The proposed regulations require a taxpayer to submit an LCA report to the IRS and the DOE. 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 Treasury Department and the IRS request comments on how to achieve consistency in boundaries and baselines so that similarly situated taxpayers will be treated consistently. The Treasury Department and the 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. The Treasury Department and the IRS continue to study these issues and request comments.

#### 5. Credit Recapture

Section 45Q(f)(4) directs the Secretary to provide regulations for recapturing the benefit of any section 45Q credit allowable with respect to any qualified carbon oxide which ceases to be captured, disposed of, or used as a tertiary injectant in a manner consistent with the requirements of section 45Q.

Commenters sought guidance about the method for measuring the amount of leaked qualified carbon oxide subject to recapture (recapture amount), the method for calculating recapture, and the open period during which a recapture event may occur (recapture period).

All of these issues require a definition of the recapture period. The proposed regulations provide that the *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 and ends the earlier of five years after the last taxable year in which the taxpayer claimed a section 45Q credit or the date monitoring ends under subpart RR requirements or the CSA/ANSI ISO 27916:19 standard.

For clarity we will describe two sub-portions of the recapture period, the “post-credit-claiming period” and the “lookback period”. The “post-credit-claiming period” is the period after the end of the twelve year credit period during which a leak can result in recapture, whereas the “lookback period” is the portion of the recapture period during which the IRS can look back after a leakage event to recapture credits. Most commenters supported a lookback period of three to five years.

Commenters generally suggested that if a recapture event occurs with respect to storage of qualified carbon oxide, then the taxpayer must add the recapture amount to the amount of tax due in the taxable year in which the recapture event occurs, as opposed to attributing the leak to past tax years and amending those returns.

Commenters also suggested that a recapture event should occur when qualified carbon oxide, for which a section 45Q credit has been allowed, ceases to be stored in secure geological storage if the amount of leakage of qualified carbon oxide in a taxable year exceeds the amount of qualified carbon oxide stored in that same taxable year. In other words, they suggested that a leak would first offset the immediate tax year’s claimed credits and then be an addition to tax, as opposed to auditing and amending past tax returns.

One commenter stated that the standard for measuring recapture of the section 45Q credit should be the mass balance calculations that are used for determining the amount of qualified carbon oxide stored in secure geological storage. The commenter noted that these mass balance calculations effectively establish a last-in/first-out (LIFO) accounting method that assumes current year releases offset current year injections for the qualified carbon oxide that is in secure geological storage.

Several commenters requested a safe harbor for recapture, providing that recapture will not apply so long as the injection operator is operating in compliance with any standards set by the Treasury Department and the IRS for secure geological storage of the qualified carbon oxide. These commenters asserted that if the injection operator is in compliance with the secure geological storage standards at the time of a release, any release or leakage of the qualified carbon oxide would be offset by current year injections of qualified carbon oxide. If the injection operator is not operating in compliance with the standards for secure geological storage at the time of the release, the commenters recommended that any recapture be calculated on a LIFO basis against previously taken section 45Q credits when the injection operator was in compliance with the secure geological storage standards.

The proposed regulations do not provide a recapture safe harbor, but do limit the recapture period similar to the recapture provisions for investment credit property under section 50(a)(1). Specifically, the proposed regulations provide that any recapture amount will be accounted for in the taxable year that it is identified and reported. If, during the recapture period, a taxpayer, operator, or regulatory agency determines that qualified carbon oxide has leaked to the atmosphere, the taxpayer will have a recapture amount if the leaked amount of qualified carbon oxide exceeds the amount of qualified carbon dioxide disposed of in secure geological storage or used as a tertiary injectant in that taxable year. That excess amount of leaked qualified carbon oxide will be recaptured at a credit rate calculated on a LIFO basis (that is, the excess leaked qualified carbon oxide will be deemed attributable first to the first preceding year, then to

second preceding year, and then up to the fifth preceding year) to simplify the calculation of the recapture amount.

The taxpayer must add the amount of the recaptured section 45Q tax credit to the amount of tax due in the taxable year in which the recapture event occurs. Consistent with this five-year lookback period, the proposed regulations provide that the post-credit-claiming period ends the earlier of (i) five years after the last taxable year in which the taxpayer claimed a section 45Q credit or (ii) the date monitoring ends under the requirements of the subpart RR standard or the CSA/ANSI ISO 27916:19 standard.

The proposed regulations also provide that in the event of a recapture event with respect to a secure geological storage location in which the stored qualified carbon oxide had been captured from more than one unit of carbon capture equipment that was not under common ownership, the recapture amount must be allocated among the taxpayers that own the multiple units of carbon capture equipment pro rata on the basis of the amount of qualified carbon oxide captured from each of the multiple units of carbon capture equipment.

Similarly, the proposed regulations provide that in the event of a recapture event where the leaked amount of qualified carbon oxide is deemed attributable to qualified carbon oxide with respect to which multiple taxpayers claimed section 45Q credit amounts, the recapture amount is allocated on a pro rata basis among the taxpayers that claimed the section 45Q credits.

The proposed regulations provide a limited exception to recapture in the event of a leakage of qualified carbon oxide resulting from actions not related to the selection, operation, or maintenance of the storage facility, such as volcanic activity or a terrorist

attack. Finally, the proposed regulations provide that if qualified carbon oxide is deliberately removed from a secure storage site, a recapture event occurs in the year in which the qualified carbon oxide is removed from its original storage.

As noted in section 4.08 of Revenue Procedure 2020-12, a taxpayer may obtain third-party recapture insurance to protect against recapture.

The Treasury Department and the IRS request comments on how to apply the recapture provisions to section 45Q credits that are carried forward to future taxable years due to insufficient income tax liability in the current taxable year.

### **Effect on Other Documents**

Sections 1 through 5 of Notice 2009-83, 2009-2 C.B. 588, as modified by Notice 2011-25, 2011-1 C.B. 604, are obsolete. The remaining sections of Notice 2009-83 provide reporting and recordkeeping requirements associated with the limitation on credits available under former section 45Q(a) (as in effect before February 9, 2018) and sections 45Q(a)(1) and (2). After the end of the calendar year in which the Secretary, in consultation with the Administrator of the EPA, certifies that a total of 75,000,000 metric tons of qualified carbon oxide have been taken into account under former section 45Q(a) (as in effect before February 9, 2018) and sections 45Q(a)(1) and (2), the remaining sections of Notice 2009-83 will be obsolete.

### **Proposed Effective/Applicability Date**

The regulations are proposed to apply to taxable years beginning on or after the date the Treasury decision adopting these regulations as final regulations is published in the **Federal Register**. However, taxpayers may choose to apply the final regulations for taxable years beginning on or after February 9, 2018, and before the date the

Treasury decision adopting these regulations as final regulations is published in the **Federal Register**. See section 7805(b)(7). Alternatively, taxpayers may rely on these proposed regulations for taxable years beginning on or after February 9, 2018, and before the date the Treasury decision adopting these regulations as final regulations is published in the **Federal Register**, provided the taxpayers follow the proposed regulations in their entirety and in a consistent manner.

### **Statement of Availability for IRS Documents**

For copies of recently issued Revenue Procedures, Revenue Rulings, Notices, and other guidance published in the Internal Revenue Bulletin, please visit the IRS website at <http://www.irs.gov>.

### **Special Analyses**

#### **I. Regulatory Planning and Review—Economic Analysis**

Executive Orders 13563, 13771, and 12866 direct agencies to assess costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. The preliminary EO 13771 designation is deregulatory.

These regulations have been designated by the Office of Management and Budget's Office of Information and Regulatory Affairs (OIRA) as economically significant under Executive Order 12866 pursuant to the Memorandum of Agreement (April 11,

2018) between the Treasury Department and the Office of Management and Budget regarding review of tax regulations.

A. Background and Overview

Section 45Q was enacted on October 3, 2008, by section 115 of Division B of the Energy Improvement and Extension Act of 2008, Public Law 110-343, 122 Stat. 3765, 3829, to provide a credit for the sequestration of carbon dioxide. On February 17, 2009, section 45Q was amended by section 1131 of Division B of the American Recovery and Reinvestment Tax Act of 2009, Public Law 111-5, 123 Stat 115, 325. Section 45Q was further amended on December 19, 2014, by section 209(j)(1) of Division A of the Tax Increase Prevention Act of 2014, Public Law 113-295, 128 Stat. 4010, 4030, and most recently on February 9, 2018, by section 41119 of Division D of the Bipartisan Budget Act of 2018 (BBA), Public Law 115-123, 132 Stat. 64, 162.

On May 20, 2019, the IRS published Notice 2019-32, 2019-21 I.R.B. 1187. The notice requested general comments on issues arising under section 45Q, as well as specific comments concerning the secure geological storage and measurement of qualified carbon oxide, and the recapture of the benefit of the credit for carbon oxide sequestration. The IRS received 116 comments from industry members, environmental groups, and other stakeholders.

In addition, the Treasury Department and the IRS published Revenue Procedure 2020-12, 2020-11 I.R.B. 511, and Notice 2020-12, 2020-11 I.R.B. 495. Revenue Procedure 2020-12 provides a safe harbor under which the IRS will treat partnerships as properly allocating the section 45Q credit in accordance with section 704(b). Notice 2020-12 provides guidance on the determination of when construction has begun on a

qualified facility or on carbon capture equipment that may be eligible for the section 45Q credit.

Section 45Q generally allows a credit of an amount per metric ton of qualified carbon oxide captured by the taxpayer using carbon capture equipment. This qualified carbon oxide must be captured according to the statute in one of three general manners. First, it may be disposed of in secure geological storage. This would occur if it were injected into a geologic formation, such as a deep saline formation, an oil and gas reservoir, or an unminable coal seam.

Second, the qualified carbon oxide may be used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposed of in secure geological storage. A “tertiary injectant” is qualified carbon oxide that is injected into and stored in a qualified enhanced oil or natural gas recovery project and contributes to the extraction of crude oil or natural gas.

Third, the qualified carbon oxide may be “utilized” by fixing it through photosynthesis or chemosynthesis, converting it to a material or chemical compound in which it is securely stored, or using it for any other purpose for which a commercial market exists. “Utilization” generally means the qualified carbon oxide was captured and permanently isolated from the atmosphere, or displaced from being emitted into the atmosphere. Calculation of the amount utilized is based on an analysis of lifecycle greenhouse gas emissions.

The amount of the credit depends on the date the carbon capture equipment is placed in service and whether the qualified carbon oxide is disposed of in secure storage, injected, or utilized. Different rules and credit amounts apply to qualified

carbon oxide capture projects placed in service before and after the date the enactment of the BBA on February 9, 2018. Based on annual reports filed with the IRS as of May, 2019, the aggregate amount of qualified carbon oxide taken into account for purposes of section 45Q was 62,740,171 metric tons. This is an increase of 2,972,247 metric tons from the preceding year.<sup>1</sup> According to data reported to the EPA's Greenhouse Gas Reporting Program (GHGRP), there were 65 enhanced oil recovery (EOR) projects operating in the U.S. in 2018. As of 2019, the National Petroleum Council, an oil and natural gas advisory committee to the Secretary of Energy, reports that there were 10 carbon capture, utilization, and storage projects in the United States. DOE models project that the section 45Q credit may result in the sequestration of approximately 570 million metric tons of carbon oxides between 2018 and 2036.

#### B. Need for Regulation

The proposed regulations provide guidance regarding the application of section 45Q. Section 45Q requires regulations for determining adequate security measures for the secure geological storage of qualified carbon oxide such that it does not escape into the atmosphere, standards for recapture of section 45Q credits, and standards for carbon oxide utilization.

#### C. Economic Analysis

##### 1. Baseline

The Treasury Department and the IRS have assessed the economic impacts of the final regulations relative to a no-action baseline reflecting anticipated Federal income tax-related behavior in the absence of these regulations.

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<sup>1</sup> These data are available in Notice 2018-40, 2018-20 I.R.B. 583, and Notice 2019-31, 2019-20 I.R.B. 1181.

## 2. Economic Rationale for Issuing Guidance for the 2018 BBA

The Treasury Department and the IRS anticipate that the issuance of guidance pertaining to section 45Q will provide greater clarity in definitions than the alternative of having no further descriptions than the statute; more flexibility in methods to establish qualifications for the credit relative to prior guidance; and more transparency regarding business arrangements related to the section 45Q credit relative to the baseline. These features may lower compliance burden and increase economic investment by lowering regulatory barriers to entry, compared to a baseline of having only the statute and not the regulations.

## 3. Economic Analysis of Specific Provisions

The final regulations embody certain regulatory decisions that reflect necessary regulatory discretion. These decisions specify more fully how the section 45Q credit is to be implemented.

### i. Standard for secure geological storage

#### a. Background

Section 45Q(f)(2) provides that the Secretary, in consultation with the Administrator of the EPA, the Secretary of Energy, and the Secretary of the Interior, must establish regulations for determining adequate security measures for the secure geological storage of qualified carbon oxide under section 45Q such that qualified carbon oxide does not escape into the atmosphere. Such term includes storage at deep saline formations, oil and gas reservoirs, and unminable coal seams under such conditions as the Secretary may determine under such regulations.

Under existing law, injection of carbon oxide into any underground reservoir requires the operator to comply with EPA's Underground Injection Control (UIC) program regulations and to obtain the appropriate UIC well permits. The UIC program is designed to protect underground sources of drinking water from underground injection. Operators that inject carbon dioxide underground are also subject to the EPA's GHGRP requirements set forth at 40 CFR part 98.

Under 40 CFR part 98, facilities that inject carbon dioxide underground for long-term containment of carbon dioxide in subsurface geologic formations are specifically subject to 40 CFR part 98 subpart RR (Geologic Sequestration of Carbon Dioxide source category, referred to as subpart RR). Facilities that are subject to subpart RR, including UIC Class VI wells, are required to report basic information on carbon dioxide received for injection, develop and implement an EPA-approved site-specific Monitoring, Reporting, and Verification Plan (MRV Plans); and report the amount of carbon dioxide geologically sequestered using a mass balance approach and annual monitoring activities.

Facilities that inject carbon dioxide underground for the purposes of enhanced oil (EOR) and gas recovery or any other purpose other than geologic sequestration are required to report basic information on carbon dioxide received for injection under 40 CFR part 98 subpart UU (Injection of Carbon Dioxide source category, referred to as subpart UU). At present, the EPA does not generally require facilities that conduct EOR to report under subpart RR. However, the owner or operator may voluntarily choose to opt in to subpart RR. For both subparts RR and UU, annual reports are submitted

under 40 CFR part 98 to the EPA's GHGRP and undergo verification by the EPA. Non-confidential data from these reports are published on the EPA's website.

b. Comments received

Commenters noted that in order to qualify for section 45Q credits, IRS Form 8933 defines "secure geological storage" as requiring approval by the EPA of an MRV Plan under 40 CFR part 98 subpart RR. Thus, meeting the Form 8933 conditions would currently be achieved by receiving either (i) a UIC Class VI permit plus an EPA-approved MRV Plan, which UIC Class VI permit holders are already required to have because they are subject to subpart RR; or (ii) a UIC Class II permit plus an EPA-approved MRV Plan, which requires UIC Class II permit holders to opt in to subpart RR. In this manner, the Form 8933 requirement that UIC Class II permit holders receive an approved MRV Plan creates an additional burden on such holders because— it requires them to opt in to subpart RR to receive section 45Q credits. In addition, some commenters expressed concern that a requirement that they opt in to subpart RR, in addition to being a supplementary requirement, may create a misalignment with state mineral property and natural resource conservation laws.

Commenters supported the continued use of subpart RR, but most commenters sought an alternative method in addition to subpart RR. Many of these commenters considered the subpart RR requirements burdensome, for the reasons noted immediately above.

Many commenters suggested that a standard adopted by the International Organization for Standardization (ISO) and endorsed by the American National Standards Institute (ANSI), CSA/ANSI ISO 27916:19 standard, "Carbon dioxide capture,

transportation and geological storage – Carbon dioxide storage using enhanced oil recovery (CO<sub>2</sub>-EOR),” (CSA/ANSI ISO 27916:19) is a viable alternative to subpart RR for establishing secure geological storage for the use of qualified carbon oxide for EOR.

The CSA/ANSI ISO 27916:19 was developed for the purpose of quantifying and documenting the total carbon dioxide that is stored in association with carbon dioxide-EOR. In general, reporting under CSA/ANSI ISO 27916:19 (i) uses mass balance accounting, (ii) has established reporting and documentation requirements, and (iii) includes requirements for documenting a monitoring program and a containment assurance plan. ANSI, a not-for-profit organization dedicated to supporting the U.S. voluntary standards and conformity assessment system, adopted the CSA/ANSI ISO 27916:19 standard in 2019.

c. Regulatory alternatives and analysis

The Treasury Department and the IRS considered three options for defining standards for secure geological storage: (i) the requirements set forth in 40 CFR part 98 subpart RR; (ii) an election for the taxpayer to comply with either the subpart RR standards or the requirements set forth in CSA/ANSI ISO 27916:19 and (iii) other alternatives to subpart RR, including allowing use of state programs.

In evaluating option (ii), the Treasury Department and the IRS, in consultation with the EPA, the DOE, and the Interior Department, agree with commenters that CSA/ANSI ISO 27916:19 is a viable quantification methodology that is adequate for the intent and purpose of the statute. 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. Under option (ii), operators of UIC Class II wells that follow the CSA/ANSI ISO 27916:19 standard could elect to report under subpart RR but would not be required to do so. Rather, they could continue to report to the EPA under subpart UU.

The Treasury Department and the IRS, in consultation with the EPA, the DOE, and the Interior Department, disagree with commenter suggestions to allow the reporting rules promulgated by states as an alternative to subpart RR or CSA/ANSI ISO 27916:19. Reporting rules among states are not uniform and states may have different reporting requirements and different governing bodies to whom carbon dioxide injection projects are required to report. The adoption of such rules by the Treasury Department and the IRS would substantially increase the administrative burden on the IRS. The Treasury Department and the IRS did not attempt to determine to what extent particular states' standards would fulfill the intent and purpose of the statute.

The ability for taxpayers to elect to use the CSA/ANSI ISO 27916:19 standard instead of subpart RR could yield economic differences in three ways. First, if the two standards are different in their costs of compliance, then allowing a choice allows EOR project operators to choose the less costly standard. This would reduce costs of compliance and regulatory burden. Second, to the extent that the difference in compliance costs between the two standards is high and that difference is a significant portion of start-up costs, then allowing a less expensive standard might lead to more investment and more new projects. Third, operators can use the option that best aligns with their project goals and timeframes. The Treasury Department and the IRS project that compliance costs for some taxpayers may be lower under the CSA/ANSI ISO

27916:19 standard than under subpart RR. Some commenters stated that subpart RR may create a misalignment for UIC Class II wells with both state mineral property and natural resource conservation laws; and that such potential misalignment would be costly to taxpayers. This stated misalignment would not be implicated with the use of the ISO standards.

The Treasury Department and the IRS recognize that the two standards differ in terms of who would be responsible for reviewing and approving a sequestration plan and for identifying leakage once a project is in place. In addition, the standards differ because unless otherwise required by law, the CSA/ANSI ISO 27916:19 standard does not require public reports of the amount of qualified carbon oxide sequestered, whereas the subpart RR standard does entail the public provision of such data. The Treasury Department and the IRS did not attempt to analyze the economic consequences of these differences.

The Treasury Department and the IRS did not attempt to provide quantitative estimates of the difference in compliance costs between the CSA/ANSI ISO 27916:19 standard and a regulatory alternative of requiring only subpart RR because suitable data are not readily available at this level of detail. Further, the Treasury Department and IRS did not attempt to estimate the effects of compliance cost differences on investment or sequestration.

The Treasury Department and the IRS solicit comments on these findings and particularly solicit data, models, or other evidence that could enhance the rigor with which the final regulations are developed.

ii. Credit recapture

Section 45Q(f)(4) requires the Treasury Department and the IRS to promulgate regulations to provide for the recapture of section 45Q credits in the event of leakage. “Recapture” refers to the repayment of the tax credits claimed, and not to the capturing of CO<sub>2</sub> that may have leaked from the project after being injected.

In response to Notice 2019-32, 2019-21 I.R.B. 1187, several commenters requested clarification regarding credit recapture, including (i) when the tax would be due in relation to the year of a recapture event, (ii) how long the IRS can “look back” to recapture credits in the event of leakage (lookback period), and (iii) the length of time after ceasing to claim credits during which a leakage event would lead to recapture of credits.

All of these issues require a definition of the recapture period. The proposed regulations provide that the *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 and ends the earlier of five years after the last taxable year in which the taxpayer claimed a section 45Q credit or the date monitoring ends under subpart RR requirements or the CSA/ANSI ISO 27916:19 standard.

For clarity we will describe two sub-portions of the recapture period, the “post-credit-claiming period” and the “lookback period”. The “post-credit-claiming period” is the lesser of 5 years after the last taxable year in which the taxpayer claimed a section 45Q credit or the date monitoring ends under subpart RR requirements or the CSA/ANSI ISO 27916:19 standard. Depending on the project’s individual requirements, the post-credit-claiming period is therefore between zero and five years. Whereas the

“lookback period” is the portion of the recapture period during which the IRS can look back after a leakage event to recapture credits. Most commenters supported a lookback period of three to five years.

A leakage event that leads to recapture of credits can occur any time during the recapture period. A leakage event that occurs after the recapture period would not lead to recapture of credits.

The proposed regulations provide that any recapture amount will be accounted for in the taxable year that it is identified and reported. The amount of credits that can be recaptured in the event of leakage depends on the length of the lookback period and the amount of the leakage.

If, during the recapture period, it is determined that qualified carbon oxide has leaked to the atmosphere, the taxpayer will have a recapture amount if the leaked amount of qualified carbon oxide exceeds the amount of qualified carbon dioxide disposed of in secure geological storage or used as a tertiary injectant in that taxable year. That excess amount of leaked qualified carbon oxide will be recaptured at a credit rate calculated on a LIFO basis (that is, such excess leaked qualified carbon oxide will be deemed attributable first to the first preceding year, then to second preceding year, and so forth up to five years) for ease of administration. The taxpayer must add the amount of the recaptured section 45Q tax credit to the amount of tax due in the taxable year in which the recapture event occurs. This rule applies regardless of whether the project injected qualified carbon oxide in the taxable year.

In response to Notice 2019-32, commenters expressed concerns with how long the length of a lookback period after the project operator stops claiming section 45Q

credits (for example, if the project is finished or the period for claiming credits ends) that a leakage event can lead to recapture. Commenters were concerned that investors would deem the risk too high to invest if the end of the recapture period extended too long after the final year of claiming section 45Q credits. To address this concern the proposed regulations provide that the recapture period begins on the date of first injection of qualified carbon oxide for disposal in secure geological storage or use as a tertiary injectant and ends the earlier of three years after the last taxable year in which the taxpayer claimed a section 45Q credit or the date monitoring ends under subpart RR requirements or the CSA/ANSI ISO 27916:19 standard.

The Treasury Department and the IRS considered alternative specifications for the lookback period other than five years. Open-ended or undefined lookback periods would increase the financial risk associated with the project and dissuade investors, particularly for projects for which the section 45Q credit would constitute a sizeable share of revenue. The proposed regulations, by allowing for a specific and finite lookback period, will encourage more investment in projects relative to an unspecified or infinite period. The Treasury Department and the IRS, in consultation with the EPA, the DOE, and the Interior Department, have determined that for the period after the lookback period, existing environmental regulations and standards will ensure integrity consistent with the intent and purpose of the statute.

In examining possible lookback periods, the Treasury Department and the IRS have not developed a quantitative model to incorporate the costs of monitoring and the probability of leakage along with the tax administration burden involved in the lookback period.

The Treasury Department and the IRS welcome comments on the length of the lookback period and particularly solicit data, models, or other evidence that could enhance the rigor with which the final regulations are developed.

iii. 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 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 a qualified enhanced oil or natural gas recovery project), as determined by the Secretary.

Section 45Q(f)(5)(B) provides a methodology to determine the amount of qualified carbon oxide utilized by the taxpayer. Such amount is equal to the metric tons of qualified carbon oxide which the taxpayer demonstrates, based upon an analysis of lifecycle greenhouse gas emissions and subject to such requirements as the Secretary, in consultation with the Secretary of Energy and the Administrator of the EPA, determines appropriate, were (i) captured and permanently isolated from the atmosphere, or (ii) displaced from being emitted into the atmosphere, through use of a process described in section 45Q(f)(5)(A). The term “lifecycle greenhouse gas emissions” has the same meaning given such term under subparagraph (H) of section 211(o)(1) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on the date of

enactment of the BBA on February 9, 2018, except that “product” is substituted for “fuel” each place it appears in such subparagraph.

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, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

Commenters proposed multiple methods for the Treasury Department and the IRS to allow for calculating “utilization” of qualified carbon oxide. The proposed regulations provide clarifications regarding: (i) standards for the lifecycle analysis (LCA) of emissions that were captured or displaced for purposes of section 45Q(f)(5)(B); and (ii) the agency with responsibility to review the LCA.

The Treasury Department and the IRS, in consultation with the EPA and the DOE, have determined that the LCA must be in writing and either performed or verified by a professionally-licensed third party that uses generally-accepted standard practices of quantifying the greenhouse gas emissions of a product or process and comparing that impact to a baseline. In particular, the analysis must contain documentation consistent with the International Organization for Standardization (ISO) 14044:2006, “Environmental management — Life cycle assessment — Requirements and Guidelines,” as well as a statement documenting the qualifications of the third party.

The proposed regulations require a taxpayer submit an LCA report to the IRS and the DOE prior to the taxpayer claiming the section 45Q credit. 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 proposed regulations provide greater clarity and examples for calculating qualified carbon oxide utilization. This enhanced clarity should increase transparency and lower compliance burden. In addition, the proposed regulations allow for oversight of the LCA plans by a third party, the DOE, and the IRS (in consultation with the DOE and the EPA); evaluation and approval of the plans before the taxpayer claims the credit will potentially reduce taxpayer compliance costs and IRS administrative costs.

Following industry-specific standards will also increase clarity in qualifying for the section 45Q credit.

The proposed regulations provide an economic gain arising from enhanced clarity regarding the rules of the section 45Q credit within the context of the intent and purpose of the statute. The Treasury Department and the IRS project that this clarity will encourage additional investment in carbon oxide utilization projects relative to the no-action baseline. The Treasury Department and the IRS have not estimated this gain because we do not have readily available data or models to predict (i) the interpretations that taxpayers might have made in the absence of this guidance, and (ii) the effect of such guidance on the investment that taxpayers would make, relative to alternative regulatory approaches or the no-action baseline.

The Treasury Department and the IRS solicit comments on the economic consequences of these decisions and particularly solicit data, models, or other evidence that could enhance the rigor with which the final regulations are developed.

## **II. Paperwork Reduction Act**

The collection of information in these proposed regulations with respect to section 45Q are in proposed §1.45Q-1(e), §1.45Q-1(h)(3)(iv), §1.45Q-1(h)(2)(v), and §1.45Q-2(h)(2), §1.45Q-3(d), and §1.45Q-4(c)(1).

The collection of information in proposed §1.45Q-1(e) is an election to have the dollar amounts applicable under §1.45Q-1(b) apply in lieu of the dollar amounts applicable under §1.45Q-1(d) for each metric ton of qualified carbon oxide that a taxpayer captures using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018. A new section 45Q(f)(3)(B) election must be made for each taxable year that the taxpayer wishes to allow a credit claimant to claim section 45Q credits. The election must be made on a Form 8933 (or successor forms, or pursuant to instructions and other guidance), and applies to all metric tons of qualified carbon oxide captured by the taxpayer at the qualified facility throughout the full 12-year credit period. The IRS is contemplating making additional changes to the Form 8933 to take these proposed regulations into account.

The collection of information in proposed §1.45Q-1(h)(3)(iv) is an election that a taxpayer (electing taxpayer) eligible for the section 45Q credit may make to allow the person that disposes of the qualified carbon oxide, utilizes the qualified carbon oxide, or uses the qualified carbon oxide as a tertiary injectant to claim the credit (credit claimant). The electing taxpayer that makes the section 45Q(f)(3)(B) election must file a

statement of election containing the information described in §1.45Q-1(h)(3)(iv) with the electing taxpayer's Federal income tax return or Form 1065 for each taxable year in which the credit arises. The section 45Q(f)(3)(B) election must be made in accordance with Form 8933 (or successor forms, or pursuant to instructions and other guidance) no later than the time prescribed by law (including extensions) for filing the Federal income tax return for the year in which the credit arises. The election may not be filed with an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, after the prescribed date (including extensions) for filing the original Federal income tax return or Form 1065 for the year, with the exception of amended Federal income tax returns, amended Forms 1065, or AARs, as applicable, for any taxable year ending after February 9, 2018, and before taxable years beginning after the date of issuance of this proposed regulation. New section 45Q(f)(3)(B) elections must be made for each taxable year that the electing taxpayer wishes to allow credit claimants to claim section 45Q credits. The IRS is contemplating making additional changes to the Form 8933 to take these proposed regulations into account.

The collection of information in proposed §1.45Q-1(h)(2)(v) requires that if a taxpayer enters into a binding written contract with a third party that physically carries out the disposal, injection, or utilization of qualified carbon oxide, the existence of each contract and the parties involved must be reported to the IRS annually on a Form 8933 (or successor forms, or pursuant to instructions and other guidance) by each party to the contract, regardless of the party claiming the credit. The IRS is contemplating making additional changes to the Form 8933 to take these proposed regulations into account.

The collection of information in proposed §1.45Q-2(h)(2) requires that a taxpayer that claims a section 45Q credit for qualified carbon oxide that is captured and then used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project certify such qualified enhanced oil or natural gas recovery project as required under §1.43-3. This requires that the taxpayer obtain a petroleum engineer's certification under §1.43-3(a)(3) for each project that must be attached to a Form 8933 (or successor forms, or pursuant to instructions and other guidance) and filed not later than the last date prescribed by law (including extensions) for filing the operator's or designated owner's Federal income tax return or Form 1065 for the first taxable year in which qualified carbon oxide is injected into the reservoir. If a section 45Q credit is claimed on an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, the petroleum engineer's certification will be treated as filed timely if it is attached to a Form 8933 that is submitted with such amended federal income tax return, amended Form 1065, or AAR. With respect to a section 45Q credit that is claimed on a timely filed Federal income tax return or Form 1065 for a taxable year ending after February 9, 2018 and beginning before the date of issuance of this proposed regulation, for which the petroleum engineer's certification was not submitted, the petroleum engineer's certification will be treated as filed timely if it is attached to an amended Form 8933 for any taxable year ending after February 9, 2018, but not for taxable years beginning after June 2, 2020.

Additionally, the taxpayer is required to provide an operator's continued certification under §1.43-3(b)(3) for each project that must be attached to a Form 8933 (or successor forms, or pursuant to instructions and other guidance) and filed not later

than the last date prescribed by law (including extensions) for filing the operator's or designated owner's Federal income tax return or Form 1065 for taxable years after the taxable year for which the petroleum engineer's certification is filed but not after the taxable year in which injection activity ceases and all injection wells are plugged and abandoned. The IRS is contemplating making additional changes to the Form 8933 to take these proposed regulations into account.

The collection of information in proposed §1.45Q-3(d) requires a taxpayer that claims a section 45Q credit for qualified carbon oxide that is captured and then used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project to certify the volume of carbon oxide claimed for purposes of section 45Q. A taxpayer that reported volumes of carbon oxide to the EPA pursuant to subpart RR may self-certify the volume of carbon oxide claimed for purposes of section 45Q. Alternatively, if the taxpayer determined volumes pursuant to CSA/ANSI ISO 27916:19, a taxpayer may prepare documentation as outlined in CSA/ANSI 27916:2019 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. Taxpayers that capture carbon oxide giving rise to the section 45Q credit must file Form 8933 (or successor forms, or pursuant to instructions and other guidance) with a timely filed tax return, including extensions. Taxpayers that dispose of, inject, or utilize qualified carbon oxide must also file Form 8933 (or successor forms, or pursuant to instructions and other guidance) with a timely filed F

Federal income tax return or Form 1065, including extensions. The IRS is contemplating making additional changes to the Form 8933 to take these proposed regulations into account.

The collection of information in proposed §1.45Q-4(c)(1) requires a taxpayer that utilizes qualified carbon oxide to measure the amount of carbon oxide captured and utilized through a combination of direct measurement and life cycle analysis (LCA). The measurement and written LCA report must be performed by or verified by an independent third party. The report must contain documentation consistent with the International Organization for Standardization (ISO) 14044:2006, “Environmental management — Life cycle assessment — Requirements and Guidelines,” as well as a statement documenting the qualifications of the third party, including proof of appropriate professional license or foreign equivalent, and an affidavit from the third-party stating that it is independent from the taxpayer. The taxpayer must submit the written LCA report to the IRS and the DOE. 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.

For purposes of the Paperwork Reduction Act of 1995 (51087 U.S.C. 3507(d)) (PRA), the reporting burden associated with proposed §1.45Q-1(e), §1.45Q-1(h)(3)(iv), §1.45Q-1(h)(2)(v), §1.45Q-2(h)(2), §1.45Q-3(d), and §1.45Q-4(c)(1) will be reflected in the IRS Paperwork Reduction Act Submission for the Form 8933 (OMB control numbers 1545-0123 and 1545-2132). The IRS is anticipating making revisions to Form 8933 to take these proposed regulations into account. The Treasury Department and the IRS request comments on all aspects of information collection burdens related to the

proposed regulations. In addition, when available, drafts of IRS forms are posted for comment at [www.irs.gov/draftforms](http://www.irs.gov/draftforms).

The current status of the Paperwork Reduction Act submissions related to the section 45Q credit is provided in the following table. The section 45Q provisions are included in aggregated burden estimates for the OMB control numbers listed below which, in the case of 1545-0123, represents a total estimated burden time, including all other related forms and schedules for corporations, of 3.157 billion hours and total estimated monetized costs of \$58.148 billion (\$2017). The burden estimates provided in the OMB control numbers are aggregate amounts that relate to the entire package of forms associated with the OMB control number, and will in the future include but not isolate the estimated burden of only the section 45Q requirements. These numbers are therefore unrelated to the future calculations needed to assess the burden imposed by the proposed regulations. No burden estimates specific to the proposed regulations are currently available. The Treasury Department has not estimated the burden, including that of any new information collections, related to the requirements under the proposed regulations. Those estimates would capture both changes made to section 45Q by the BBA and those that arise out of discretionary authority exercised in the proposed regulations. The Treasury Department and the IRS request comments on all aspects of information collection burdens related to the proposed regulations.

When available, drafts of IRS forms are posted for comment at [www.irs.gov/draftforms](http://www.irs.gov/draftforms).

Form	Type of Filer	OMB Number(s)	Status
Form 8933	Business	1545-2132	Sixty-day notice published in the <b>Federal Register</b> on 10/21/19 (84 FR 56283). Public comment period closed on 12/20/19. Thirty-day notice published in the <b>Federal Register</b> on

Form	Type of Filer	OMB Number(s)	Status
			1/31/20 (85 FR 5776). Public comment period closed on 3/2/20. OIRA approval is pending.
Form 8933	Business (NEW Model)	1545-0123	Sixty-day notice published in the <b>Federal Register</b> on 9/30/19 (84 FR 51718). Public Comment period closed on 11/29/19. Thirty-day notice published in the <b>Federal Register</b> on 12/19/19 (84 FR 69825). Public Comment period closed on 1/21/20. Approved by OIRA on 1/30/20.
Link: <a href="https://hs--www--federalregister--gov.tickly.io/documents/2019/10/21/2019-22844/proposed-collection-comment-request-for-form-8933">https://hs--www--federalregister--gov.tickly.io/documents/2019/10/21/2019-22844/proposed-collection-comment-request-for-form-8933</a>			

### III. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) (RFA) imposes certain requirements with respect to Federal rules that are subject to the notice and comment requirements of section 553(b) of the Administrative Procedure Act (5 U.S.C. 551 *et seq.*) and that are likely to have a significant economic impact on a substantial number of small entities. Unless an agency determines that a proposal is not likely to have a significant economic impact on a substantial number of small entities, section 603 of the RFA requires the agency to present an initial regulatory flexibility analysis (IRFA) of the proposed rule. The Treasury Department and the IRS have not determined whether the proposed rule, when finalized, will likely have a significant economic impact on a substantial number of small entities. This determination requires further study. However, because there is a possibility of significant economic impact on a substantial number of small entities, an IRFA is provided in these proposed regulations. The Treasury Department and the IRS invite comments on both the number of entities

affected and the economic impact on small entities.

Pursuant to section 7805(f), this notice of proposed rulemaking has been submitted to the Chief Counsel of Advocacy of the Small Business Administration for comment on its impact on small business.

## **1. Need for and Objectives of the Rule**

The proposed regulations will provide greater clarity to taxpayers for purposes of claiming the section 45Q credit for the capture and disposal, injection, or utilization of qualified carbon oxide. The proposed rule is expected to encourage taxpayers to invest in carbon capture technologies. Thus, the Treasury Department and the IRS intend and expect that the proposed rule will deliver benefits across the economy that will beneficially impact various industries and reduce emissions of carbon oxides that would otherwise be released into the atmosphere as industrial emission of greenhouse gasses or lead to such release.

## **2. Affected Small Entities**

The Small Business Administration estimates in its 2018 Small Business Profile that 99.9 percent of United States businesses meet its definition of a small business. The applicability of these proposed regulations does not depend on the size of the business, as defined by the Small Business Administration. As described more fully in the preamble to this proposed regulation and in this IRFA, these rules may affect a variety of different businesses across several different industries.

The section 45Q credit incentivizes three different categories of activities related to captured carbon oxide. First, the section 45Q credit is available to taxpayers who capture carbon oxide and dispose of it in secure geological storage. This would occur if

it were injected into a geological formation, such as a deep saline formation, an oil and gas reservoir, or an unminable coal seam. The taxpayer claiming the credit for carbon oxide that is securely stored can be either the taxpayer who owns the capture equipment, or if an election is made, the taxpayer who disposes of the carbon oxide.

Second, the section 45Q credit is also available for carbon oxide captured and used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposed of in secure geological storage. The taxpayer claiming the credit for carbon oxide that is used as a tertiary injectant in enhanced oil recovery projects can be either the taxpayer who owns the capture equipment, or if an election is made, the taxpayer who uses the carbon oxide as a tertiary injectant in a qualified enhanced oil or natural gas recovery project.

And third, the section 45Q credit is available for carbon oxide “utilized” by fixing it through photosynthesis or chemosynthesis, converted to a material or chemical compound in which it is securely stored, or used for any other purpose for which a commercial market exists. The taxpayer claiming the credit for utilization of carbon oxide can be either the taxpayer who owns the carbon capture equipment, or if an election is made, the taxpayer who utilizes the carbon oxide.

Because the potential credit claimants in all three of these scenarios can vary, including potential tax equity investors from the financial services sector as credit claimants, it is difficult to estimate at this time the impact of these proposed regulations, if any, on small businesses.

The Treasury Department and the IRS expect to receive more information on the impact on small businesses through comments on this proposed rule and again when

taxpayers start to claim the section 45Q credit using the guidance and procedures provided in these proposed regulations.

### **3. Impact of the Rule**

The proposed regulations will allow taxpayers to plan investments and transactions based on the ability to claim the section 45Q credit. The increased use of the section 45Q credit may lead to increased investment in infrastructure to transport carbon dioxide, and increased development of carbon capture technologies. In addition, the increased use of the section 45Q credit will incentivize the development of technologies for utilization of carbon oxide. The recordkeeping and reporting requirements will increase for taxpayers that claim the section 45Q credit. This includes costs associated with the taxpayer filing the Form 8933, as well as required election statements and maintaining records to substantiate carbon capture of carbon oxide, disposal in secure geological storage, use as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposal in secure geological storage, or utilization. Each taxpayer will be required to file a separate Form 8933 for each year that a section 45Q credit is claimed or that an election is made with respect to a section 45Q credit. Although the Treasury Department and the IRS do not have sufficient data to determine precisely the likely extent of the increased costs of compliance, the estimated burden of complying with the recordkeeping and reporting requirements are described in the Paperwork Reduction Act section of the preamble.

### **4. Alternatives Considered**

As described in more detail in the Regulatory Impact Analysis of this preamble, the Treasury Department and the IRS considered alternatives to the proposed

regulations. For example, in providing rules related to how to demonstrate secure geological storage in the case of tertiary injection and disposal through secure geological storage, the Treasury Department and the IRS considered whether to (i) require compliance with subpart RR, (ii) allow use of subpart RR or CSA/ANSI ISO 27916:19, or (iii) other alternatives to subpart RR including use of state programs. Commenters to Notice 2019-32, 2019-21 I.R.B. 1187, consistently recommended CSA/ANSI ISO 27916:19 as a potential alternative to subpart RR. The Treasury Department and the IRS, in consultation with the DOE, the EPA and the Interior Department, agreed that, in the case of tertiary injection and disposal through secure geological storage, allowing the use of subpart RR or CSA/ANSI ISO 27916:19 would sufficiently demonstrate secure geological storage for purposes of the statutory requirement, without creating or imposing undue burdens on taxpayers.

##### **5. Duplicative, Overlapping, or Conflicting Federal Rules**

The proposed rule would not duplicate, overlap, or conflict with any relevant Federal rules. As discussed above, the proposed rule would merely provide procedures and definitions to allow taxpayers to claim the section 45Q credit. The Treasury Department and the IRS invite input from interested members of the public about identifying and avoiding overlapping, duplicative, or conflicting requirements.

##### **Comments and Requests for a Public Hearing**

Before these proposed regulations are adopted as final regulations, consideration will be given to any comments that are submitted timely to the IRS as prescribed in this preamble under the “**ADDRESSES**” heading. The Treasury Department and the IRS request comments on all aspects of the proposed regulations.

Specifically, in section 4 of the Summary of Comments and Explanation of Provisions, the Treasury Department and the IRS request specific comments on how to achieve consistency in boundaries and baselines so that similarly situated taxpayers will be treated consistently. The Treasury Department and the IRS also request specific comments regarding the definition of commercial markets and standards for Lifecycle Analysis. Additionally, in section 5 of the Summary of Comments and Explanation of Provisions, the Treasury Department and the IRS request specific comments on how to apply the recapture provisions to section 45Q credits that are carried forward to future taxable years due to insufficient income tax liability in the current taxable year.

Any electronic comments submitted, and to the extent practicable any paper comments submitted, will be made available at [www.regulations.gov](http://www.regulations.gov) or upon request. A public hearing will be scheduled if requested in writing by any person who timely submits electronic or written comments as prescribed in this preamble under the “**DATES**” heading. Requests for a public hearing are also encouraged to be made electronically. If a public hearing is scheduled, notice of the date and time for the public hearing will be published in the **Federal Register**. Announcement 2020-4, 2020-17 IRB 1, provides that until further notice, public hearings conducted by the IRS will be held telephonically. Any telephonic hearing will be made accessible to people with disabilities.

#### **IV. Unfunded Mandates Reform Act**

Section 202 of the Unfunded Mandates Reform Act of 1995 requires that agencies assess anticipated costs and benefits and take certain other actions before issuing a final rule that includes any Federal mandate that may result in expenditures in

any one year by a state, local, or tribal government, in the aggregate, or by the private sector, of \$100 million in 1995 dollars, updated annually for inflation. In 2018, that threshold is approximately \$150 million. This rule does not include any Federal mandate that may result in expenditures by state, local, or tribal governments, or by the private sector in excess of that threshold.

## **V. Executive Order 13132: Federalism**

Executive Order 13132 (entitled Federalism) prohibits an agency (to the extent practicable and permitted by law) from promulgating any regulation that has federalism implications, unless the agency meets the consultation and funding requirements of section 6 of the Executive Order, if the rule either imposes substantial, direct compliance costs on state and local governments, and is not required by statute, or preempts state law. This proposed rule does not have federalism implications and does not impose substantial direct compliance costs on state and local governments or preempt state law within the meaning of the Executive Order.

## **Drafting Information**

The principal author of the proposed regulations is Maggie Stehn of the Office of Associate Chief Counsel (Passthroughs & Special Industries). However, other personnel from the Treasury Department and the IRS participated in the development of the proposed regulations.

## **List of Subjects**

### **26 CFR Part 1**

Income taxes, Reporting and recordkeeping requirements.

## **Proposed Amendments to the Regulations**

Accordingly, 26 CFR part 1 is proposed to be amended as follows:

PART 1--INCOME TAXES

**Paragraph 1.** The authority citation for part 1 is amended by adding entries in numerical order to read in part as follows:

Authority: 26 U.S.C. 7805 \* \* \*

\* \* \* \* \*

Section 1.45Q-1 also issued under 26 U.S.C. 45Q.

Section 1.45Q-2 also issued under 26 U.S.C. 45Q(c), (d), and (e).

Section 1.45Q-3 also issued under 26 U.S.C. 45Q(f)(2).

Section 1.45Q-4 also issued under 26 U.S.C. 45Q(f)(5).

Section 1.45Q-5 also issued under 26 U.S.C. 45Q(f)(4).

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**Par. 2.** Sections 1.45Q-0, 1.45Q-1, 1.45Q-2, 1.45Q-3, 1.45Q-4, and 1.45Q-5 are added to read as follows:

§1.45Q-0 Table of Contents

This section lists the captions contained in §§1.45Q-1 through 1.45Q-5.

§1.45Q-1 Credit for Carbon Oxide Sequestration.

- (a) In general.
- (b) Credit amount for carbon capture equipment originally placed in service before February 9, 2018.
- (c) Credit amount for carbon capture equipment originally placed in service on or after February 9, 2018.
- (d) Applicable dollar amount.
  - (1) Applicable dollar amount for any taxable year beginning in a calendar year after 2016 and before 2027 for qualified carbon oxide not used as a tertiary injectant or utilized.
  - (2) Applicable dollar amount for any taxable year beginning in a calendar year after 2026 for qualified carbon oxide not used as a tertiary injectant or utilized.

- (3) Applicable dollar amount for any taxable year beginning in a calendar year after 2016 and before 2027 for qualified carbon oxide used as a tertiary injectant or utilized.
- (4) Applicable dollar amount for any taxable year beginning in a calendar year after 2026 for qualified carbon oxide used as a tertiary injectant or utilized.
- (e) Election to apply the \$10 and \$20 credit amounts in lieu of the applicable dollar amounts.
- (f) Application of section 45Q for certain carbon capture equipment placed in service before February 9, 2018.
- (g) Installation of additional carbon capture equipment.
  - (1) Allocation of section 45Q credits for facilities installing additional carbon capture equipment.
    - (2) Additional carbon capture equipment.
      - (3) New carbon capture equipment.
      - (4) Examples.
        - (i) Example 1.
        - (ii) Example 2.
        - (iii) Example 3.
    - (h) Eligibility for the section 45Q credit.
      - (1) Person to whom the section 45Q credit is attributable.
        - (i) Equipment placed in service before February 9, 2018.
        - (ii) Equipment placed in service on or after February 9, 2018.
        - (iii) Reporting.
          - (2) Contractually ensuring disposal, injection, or utilization of qualified carbon oxide.
            - (i) Binding written contract.
            - (ii) Multiple binding written contracts permitted.
            - (iii) Contract provisions.
            - (iv) Reporting of contract information.
            - (v) Relationship with election to allow section 45Q credit.
      - (3) Election to allow the section 45Q credit to another taxpayer.
        - (i) Example.
        - (ii) Time and manner of making election.
        - (iii) Annual election.
        - (iv) Required information.
        - (v) Requirements for credit claimant.
          - (i) Applicability date.

§1.45Q-2 Definitions for Purposes of §§1.45Q-1 through 1.45Q-5.

- (a) Qualified carbon oxide.
- (b) Recycled carbon oxide.
- (c) Carbon capture equipment.
  - (1) Use of carbon capture equipment.
  - (2) Carbon capture equipment components.
  - (3) Excluded components.
    - (i) In general.

- (ii) Calculation.
- (iii) Consequences.
- (d) Industrial facility.
  - (1) Exclusion.
  - (2) Industrial source.
  - (3) Manufacturing process.
  - (4) Example.
- (e) Electricity generating facility.
- (f) Direct air capture facility.
- (g) Qualified facility.
  - (1) Emissions and capture requirements.
  - (2) Examples.
    - (i) Example 1.
    - (ii) Example 2.
    - (iii) Example 3.
  - (3) Annualization of first-year qualified carbon oxide emission and capture amounts.
  - (4) Election for applicable facilities.
    - (i) Applicable facility.
    - (ii) Time and manner of making election.
    - (iii) Retroactive credit revocations.
  - (5) Retrofitted qualified facility or carbon capture equipment (80/20 Rule).
  - (h) Qualified enhanced oil or natural gas recovery project.
    - (1) Application of §§1.43-2 and 1.43-3.
    - (2) Required certification.
    - (3) Natural gas.
    - (4) Timely filing of petroleum engineer's certification.
    - (5) Carbon oxide injected in oil reservoirs.
    - (6) Tertiary injectant.
      - (i) Section 45Q credit.
      - (j) Applicability date.

#### §1.45Q-3 Secure Geological Storage.

- (a) In general.
- (b) Requirements for secure geological storage.
- (c) Documentation.
- (d) Certification.
- (e) Failure to submit complete documentation or certification.
- (f) Applicability date.

#### §1.45Q-4 Utilization of Qualified Carbon Oxide.

- (a) In general.
- (b) Measurement.
- (c) Lifecycle greenhouse gas emissions and lifecycle analysis.
- (1) In general.

- (2) Measurement.
- (3) Approval of the LCA.
- (4) [Reserved]
- (d) - (e) [Reserved]
- (f) Applicability date.

#### §1.45Q-5 Recapture of Credit.

- (a) Recapture event.
- (b) Ceases to be captured, disposed of, or used as a tertiary injectant.
- (c) Leaked amount of qualified carbon oxide.
- (d) Recaptured qualified carbon oxide.
- (e) Recapture amount.
- (f) Recapture period.
- (g) Application of recapture.
  - (1) In general.
  - (2) Calculation.
  - (3) Multiple units.
  - (4) Multiple taxpayers.
  - (5) Reporting.
  - (6) Examples.
    - (i) Example 1.
    - (ii) Example 2.
    - (iii) Example 3.
    - (iv) Example 4.
    - (v) Example 5.
    - (vi) Example 6.
  - (h) Recapture in the event of intentional removal from storage.
  - (i) Limited exceptions.
  - (j) Applicability date.

#### §1.45Q-1 Credit for Carbon Oxide Sequestration.

(a) In general. For purposes of section 38 of the Internal Revenue Code (Code), the carbon oxide sequestration credit is determined under section 45Q of the Code and this section. Generally, the amount of the section 45Q credit and the party that is eligible to claim the credit depend on whether the taxpayer captures qualified carbon oxide using carbon capture equipment originally placed in service at a qualified facility before February 9, 2018, or on or after February 9, 2018, and whether the taxpayer disposes of the qualified carbon oxide in secure geological storage without using it as a

tertiary injectant in a qualified enhanced oil or natural gas recovery project (disposal), uses it as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposes of it in secure geological storage (injection), or utilizes it in a manner described in section 45Q(f)(5) and §1.45Q-4 (utilization). The section 45Q credit applies only with respect to qualified carbon oxide the capture and disposal, injection, or utilization of which is within the United States (within the meaning of section 638(1) of the Code) or a possession of the United States (within the meaning of section 638(2)).

(b) Credit amount for carbon capture equipment originally placed in service before February 9, 2018. For carbon capture equipment originally placed in service at a qualified facility before February 9, 2018, the amount of credit determined under section 45Q(a) and this section is the sum of—

(1) \$20 per metric ton of qualified carbon oxide that is—

(i) Captured by the taxpayer at the qualified facility and disposed of by the taxpayer in secure geological storage, and

(ii) Not used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project or utilized by the taxpayer in a manner described in section 45Q(f)(5) and §1.45Q-4, and

(2) \$10 per metric ton of qualified carbon oxide that is —

(i) Captured by the taxpayer at the qualified facility and used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project, and disposed of by the taxpayer in secure geological storage, or

(ii) Captured by the taxpayer at the qualified facility and utilized by the taxpayer in a manner described in section 45Q(f)(5) and §1.45Q-4.

(3) Inflation Adjustment. In the case of any taxable year beginning in a calendar year after 2009, there is substituted for each dollar amount contained in paragraphs (b)(1) and (b)(2) of this section an amount equal to the product of —

(i) Such dollar amount, multiplied by

(ii) The inflation adjustment factor for such calendar year determined under section 43(b)(3)(B) for such calendar year, determined by substituting “2008” for “1990.”

(c) Credit amount for carbon capture equipment originally placed in service on or after February 9, 2018. For carbon capture equipment originally placed in service at a qualified facility on or after February 9, 2018, the amount of credit determined under sections 45Q(a)(3) and (4) and this section is the sum of—

(1) The applicable dollar amount (as determined under paragraphs (d)(1) and (d)(2) of this section) per metric ton of qualified carbon oxide that is captured during the 12-year period beginning on the date the equipment was originally placed in service, and is —

(i) Disposed of by the taxpayer in secure geological storage, and

(ii) Not used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project or utilized by the taxpayer in a manner described in sections 45Q(f)(5) and §1.45Q-4; and

(2) The applicable dollar amount (as determined under paragraphs (d)(3) and (d)(4) of this section) per metric ton of qualified carbon oxide that is captured during the 12-year period beginning on the date the equipment as originally placed in service and is —

(i) Used by the taxpayer as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and disposed of by the taxpayer in secure geological storage, or

(ii) Utilized by the taxpayer in a manner described in sections 45Q(f)(5) and §1.45Q-4.

(d) Applicable dollar amount. In general, the applicable dollar amount depends on whether section 45Q(a)(3) and paragraph (c)(1) of this section applies or section 45Q(a)(4) and paragraph (c)(2) of this section applies, and whether the taxable year begins in a calendar year after 2016 and before 2027.

(1) Applicable dollar amount for any taxable year beginning in a calendar year after 2016 and before 2027 for qualified carbon oxide not used as a tertiary injectant or utilized. For purposes of section 45Q(a)(3) and paragraph (c)(1) of this section, the applicable dollar amount for each taxable year beginning in a calendar year after 2016 and before 2027 is:

<u>Year</u>	<u>Applicable Dollar Amount</u>
2017	\$22.66
2018	\$25.70
2019	\$28.74
2020	\$31.77
2021	\$34.81
2022	\$37.85
2023	\$40.89
2024	\$43.92
2025	\$46.96
2026	\$50.00

(2) Applicable dollar amount for any taxable year beginning in a calendar year after 2026 for qualified carbon oxide not used as a tertiary injectant or utilized. For

purposes of section 45Q(a)(3) and paragraph (c)(1) of this section, the applicable dollar amount for any taxable year beginning in any calendar year after 2026 is an amount equal to the product of \$50 and the inflation adjustment factor for the calendar year determined under section 43(b)(3)(B) for the calendar year, determined by substituting “2025” for “1990.”

(3) Applicable dollar amount for any taxable year beginning in a calendar year after 2016 and before 2027 for qualified carbon oxide used as a tertiary injectant or utilized. For purposes of section 45Q(a)(4) and paragraph (c)(2) of this section, the applicable dollar amount for each taxable year beginning in a calendar year after 2016 and before 2027 is:

Year	<u>Applicable Dollar Amount</u>
2017	\$12.83
2018	\$15.29
2019	\$17.76
2020	\$20.22
2021	\$22.68
2022	\$25.15
2023	\$27.61
2024	\$30.07
2025	\$32.54
2026	\$35.00

(4) Applicable dollar amount for any taxable year beginning in a calendar year after 2026 for qualified carbon oxide used as a tertiary injectant or utilized. For purposes of section 45Q(a)(4) and paragraph (c)(2) of this section, the applicable dollar amount for any taxable year beginning in any calendar year after 2026, is an amount equal to the product of \$35 and the inflation adjustment factor for such calendar year

determined under section 43(b)(3)(B) for such calendar year, determined by substituting “2025” for “1990.”

(e) Election to apply the \$10 and \$20 credit amounts in lieu of the applicable dollar amounts. For purposes of determining the carbon oxide sequestration credit under this section, a taxpayer may elect to have the dollar amounts applicable under section 45Q(a)(1) or (2) and paragraph (b) of this section apply in lieu of the dollar amounts applicable under section 45Q(a)(3) or (4) and paragraph (d) of this section for each metric ton of qualified carbon oxide which is captured by the taxpayer using carbon capture equipment which is originally placed in service at a qualified facility on or after February 9, 2018. The election must be made on a Form 8933, Carbon Oxide Sequestration Credit (or successor forms, or pursuant to instructions and other guidance), and applies to all metric tons of qualified carbon oxide captured by the taxpayer at the qualified facility throughout the full 12-year credit period.

(f) Application of section 45Q for certain carbon capture equipment placed in service before February 9, 2018. In the case of any carbon capture equipment placed in service before February 9, 2018, the credits under section 45Q(a)(1) and (a)(2) and paragraphs (b)(1) and (b)(2) of this section apply with respect to qualified carbon oxide captured using such equipment before the end of the calendar year in which the Secretary, in consultation with the Administrator of the Environmental Protection Agency (EPA), certifies that, during the period beginning after October 3, 2008, a total of 75,000,000 metric tons of qualified carbon oxide have been taken into account in accordance with section 45Q(a), as in effect on February 9, 2018, and section 45Q(a)(1) and (2). In general, a taxpayer may not claim credits under section 45Q(a)(1)

and (a)(2) in taxable years after the year in which the 75,000,000 metric ton limit is reached with respect to carbon capture equipment placed in service before February 9, 2018. However, see §1.45Q-2(g)(4) regarding the election for applicable facilities to treat certain carbon capture equipment as having been placed in service on February 9, 2018.

(g) Installation of additional carbon capture equipment. In general, a facility that placed carbon capture equipment in service before February 9, 2018, is entitled to the credit amounts for property placed in service before February 9, 2018, subject to the limitations under paragraph (f) of this section. The same facility may place additional carbon capture equipment in service on or after February 9, 2018. The additional carbon capture equipment is eligible to qualify for the section 45Q credit amounts for equipment placed in service on or after February 9, 2018.

(1) Allocation of section 45Q credits for facilities installing additional carbon capture equipment. In the case of a qualified facility placed in service before February 9, 2018, for which additional carbon capture equipment is placed in service on or after February 9, 2018, the amount of qualified carbon oxide which is captured by the taxpayer is equal to—

(i) For purposes of section 45Q(a)(1)(A) and (2)(A), and paragraphs (b)(1) and (b)(2) of this section, the lesser of the total amount of qualified carbon oxide captured at such facility for the taxable year, or the total amount of the carbon dioxide capture capacity of the carbon capture equipment in service at such facility on February 8, 2018, and

(ii) For purposes of section 45Q(a)(3)(A) and (4)(A), and paragraphs (c)(1) and (c)(2) of this section, an amount (not less than zero) equal to the excess of the total amount of qualified carbon oxide captured at such facility for the taxable year, over the total amount of the carbon dioxide capture capacity of the carbon capture equipment in service at such facility on February 8, 2018.

(2) Additional carbon capture equipment. A physical modification or equipment addition that results in an increase in the carbon dioxide capture capacity of existing carbon capture equipment constitutes the installation of additional carbon capture equipment. Merely increasing the amount of carbon dioxide captured by existing carbon capture equipment, even if it operated above the carbon dioxide capture capacity, does not constitute the installation of additional carbon capture equipment.

(3) New carbon capture equipment. The cost of a physical modification or equipment addition with a cost that satisfies the 80/20 Rule in §1.45Q-2(g)(5) constitutes the installation of new carbon capture equipment rather than the installation of additional carbon capture equipment.

(4) Examples. The following examples illustrate the rules of this paragraph (g):

(i) Example 1. Taxpayer X owns qualifying facility QF. In 2017, X placed in service three units of carbon capture equipment – CC1, CC2, and CC3 – to capture carbon dioxide emitted by QF. Each of CC1, CC2, and CC3 are capable of capturing 50,000 metric tons of carbon dioxide. In 2017, X enters into a binding written contract with Y to provide 100,000 metric tons of carbon dioxide annually for Y to dispose of in secure geological storage. X operates CC1 and CC2 to capture carbon dioxide pursuant to the binding written contract with Y, leaving CC3 idle. In 2020, X enters into a binding written contract with Z to provide 50,000 metric tons of carbon dioxide annually for Z to dispose of in secure geological storage. X operates CC3 to capture carbon dioxide pursuant to the binding written contract with Z. CC3 is not additional carbon capture equipment under §1.45Q-1(g)(2). As a result, any section 45Q credits attributable to the carbon dioxide captured by CC3 and disposed of by Z are calculated under section 45Q(a)(1) and §1.45Q-1(b)(1), and are subject to the 75,000,000 metric ton limitation described in section 45Q(g) and §1.45Q-1(f).

(ii) Example 2. Assume the same facts as in Example 1, except that in 2019, X makes a physical modification to upgrade CC3 that results in the ability of CC3 to capture 100,000 metric tons of carbon dioxide. The physical modification to upgrade CC3 does not satisfy the 80/20 Rule in §1.45Q-2(g)(5). In 2020 X enters into a binding written contract with Z to provide 100,000 metric tons of carbon dioxide annually for Z to dispose of in secure geological storage. X operates CC3 to capture carbon dioxide pursuant to the binding written contract with Z. Because the carbon dioxide capture capacity of CC3 was 50,000 metric tons of carbon dioxide before the physical modification and 100,000 metric tons of carbon dioxide after the physical modification, the physical modification to upgrade CC3 is considered the installation of additional carbon capture equipment under §1.45Q-1(g)(2). As a result, any section 45Q credits attributable to the first 50,000 metric tons of carbon dioxide captured by CC3 and disposed of by Z are calculated under section 45Q(a)(1) and §1.45Q-1(b)(1), and are subject to the 75,000,000 metric ton limitation described in section 45Q(g) and §1.45Q-1(f). Any section 45Q credits attributable to additional carbon dioxide captured by CC3 and disposed of by Z in excess of those first 50,000 metric tons are calculated under section 45Q(a)(4) and §1.45Q-1(c)(2), and are not subject to the 75,000,000 metric ton limitation described in section 45Q(g) and §1.45Q-1(f).

(iii) Example 3. Assume the same facts as in Example 2, except that the physical modification to upgrade CC3 satisfies the 80/20 Rule in §1.45Q-2(g)(5). The physical modification to upgrade CC3 is considered the installation of new carbon capture equipment under §1.45Q-1(g)(2) and §1.45Q-1(g)(3). As a result, any section 45Q credits attributable to carbon dioxide captured by CC3 and disposed of by Z are calculated under section 45Q(a)(4) and §1.45Q-1(c)(2), and are not subject to the 75,000,000 metric ton limitation described in section 45Q(g) and §1.45Q-1(f).

(h) Eligibility for the section 45Q credit. The following rules determine who may claim the section 45Q credit.

(1) Person to whom the section 45Q credit is attributable. In general, the person to whom the credit is attributable is the person who may claim the credit. Except as provided in §1.45Q-1(h)(3), the section 45Q credit is attributable to the following persons —

(i) Equipment placed in service before February 9, 2018. In the case of qualified carbon oxide captured using carbon capture equipment that is originally placed in service at a qualified facility before February 9, 2018, the section 45Q credit is

attributable to the person that captures and physically or contractually ensures the disposal, injection, or utilization of such qualified carbon oxide.

(ii) Equipment placed in service on or after February 9, 2018. In the case of qualified carbon oxide captured using carbon capture equipment that is originally placed in service at a qualified facility on or after February 9, 2018, the section 45Q credit is attributable to the person that owns the carbon capture equipment and physically or contractually ensures the capture and disposal, injection, or utilization of such qualified carbon oxide.

(iii) Reporting. The taxpayer described in §1.45Q-1(h)(1) as eligible to claim the section 45Q credit must claim the credit on a Form 8933 (or successor forms, or pursuant to instructions and other guidance) with the taxpayer's Federal income tax return or Form 1065 for each taxable year for which the taxpayer is eligible. The taxpayer must provide the name and location of the qualified facilities at which the qualified carbon oxide was captured. If the taxpayer is claiming the section 45Q credit on an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, the taxpayer must state AMENDED RETURN FOR SECTION 45Q CREDIT at the top of the amended Federal income tax return, the amended Form 1065, or the AAR, as applicable. In addition, as provided in Revenue Procedure 2020-23, 2020-18 I.R.B. 749 (see §601.601(d)(2)(i)(b) and (ii) of this chapter), the exception applies regarding the time to file an amended return by a BBA partnership for the 2018 and 2019 taxable years. The amended Federal income tax return or the amended Form 1065 must be filed, in no event, later than the applicable period of limitations on assessment for the taxable year for which the amended Federal income tax return or

Form 1065 is being filed. In the case of a BBA partnership that chooses not to file an amended Form 1065 as permitted under Revenue Procedure 2020-23, the BBA partnership may make a late election by filing an AAR on or before October 15, 2021, but in no event, later than the applicable period of limitations on making adjustments under section 6235 for the reviewed year, as defined in §301.6241-1(a)(8) of the Procedure and Administration Regulations (26 CFR part 301).

(2) Contractually ensuring disposal, injection, or utilization of qualified carbon oxide. A taxpayer is not required to physically carry out the disposal, injection, or utilization of qualified carbon oxide to claim the section 45Q credit if the taxpayer contractually ensures in a binding written contract that the party that physically carries out the disposal, injection, or utilization of the qualified carbon oxide does so in the manner required under section 45Q and these regulations.

(i) Binding written contract. A written contract is binding only if it is enforceable under State law against both the taxpayer and the party that physically carries out the disposal, injection, or utilization of the qualified carbon oxide, or a predecessor or successor of either, and does not limit damages to a specified amount.

(ii) Multiple binding written contracts permitted. A taxpayer may enter into multiple binding written contracts with multiple parties for the disposal, injection, or utilization of qualified carbon oxide.

(iii) Contract provisions. Contracts ensuring the disposal, injection, or utilization of qualified carbon oxide —

(A) Must include commercially reasonable terms and provide for enforcement of the party's obligation to perform the disposal, injection, or utilization of the qualified carbon oxide;

(B) May, but are not required to, include long-term liability provisions, indemnity provisions, penalties for breach of contract, or liquidated damages provisions;

(C) May, but are not required to, include information including how many metric tons of qualified carbon oxide the parties agree to dispose of, inject, or utilize;

(D) May, but are not required to, include minimum quantities that the parties agree to dispose of, inject, or utilize;

(E) Must, in the case of qualified carbon oxide that is intended to be disposed of in secure geological storage and not used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project, obligate the disposing party to comply with §§1.45Q-3(b)(1) and 1.45Q-3(c), and, in the case of a recapture event, promptly inform the capturing party of all information that is pertinent to the recapture (i.e., location of leak, quantity of qualified carbon oxide leaked, dollar value of section 45Q credit attributable to leaked qualified carbon oxide) of section 45Q credits as listed in §1.45Q-5;

(F) Must, for qualified carbon oxide that is intended to be used as a tertiary injectant in a qualified enhanced oil or natural gas recovery, obligate the disposing party to comply with §1.45Q-3(b)(1) or (2) and §1.45Q-3(c), and in the case of a recapture event, promptly inform the capturing party of all information that is pertinent to recapture of the section 45Q credit as listed in §1.45Q-5; and

(G) Must, for qualified carbon oxide that is intended to be utilized in a manner specified in §1.45Q-4, obligate the utilizing party to comply with §1.45Q-4.

(iv) Reporting of contract information. The existence of each contract and the parties involved must be reported to the IRS annually on a Form 8933 (or successor forms, or pursuant to instructions and other guidance) by each party to the contract, regardless of the party claiming the credit. In addition to any information stated as required on Form 8933 (or successor forms, or pursuant to instructions and other guidance), the report must include the following information—

(A) The name and taxpayer identification number of the taxpayer to whom the credit is attributable;

(B) The name and taxpayer identification number of each party with whom the taxpayer has entered into a contract to ensure the disposal, injection, or utilization of qualified carbon oxide;

(C) The number of metric tons of qualified carbon oxide each contracting party disposes of, injects, or utilizes on behalf of the contracting taxpayer each taxable year for reporting to the IRS; and

(D) For contracts for the disposal of qualified carbon oxide in secure geological storage or the use of qualified carbon oxide as a tertiary injectant in enhanced oil or natural gas recovery, the name of the operator, the field, unit, and reservoir, location by county and state, and identification number assigned to the facility by the EPA's electronic Greenhouse Gas Reporting Tool (e-GGRT ID number) for submission of the facility's 40 CFR part 98 annual reports.

(v) Relationship with election to allow section 45Q credit. A taxpayer does not elect to allow all or a portion of the credit to any of the contracting parties merely by contracting with that party to ensure the disposal, injection, or utilization of qualified

carbon oxide. Any election to allow all or a portion of the credit to be claimed by another party must be made separately pursuant to §1.45Q-1(h)(3).

(3) Election to allow the section 45Q credit to another taxpayer. The taxpayer described in §1.45Q-1(h)(1) as eligible to claim section 45Q credits may elect to allow the person that disposes of the qualified carbon oxide, utilizes the qualified carbon oxide, or uses the qualified carbon oxide as a tertiary injectant to claim the credit (credit claimant). The taxpayer that makes the election (electing taxpayer) may not claim any section 45Q credits that are allowable to a credit claimant. An electing taxpayer may elect to allow a credit claimant to claim the full amount or a partial amount of section 45Q credits arising during the taxable year. An electing taxpayer may elect to allow a single credit claimant or multiple credit claimants to claim section 45Q credits in the same taxable year. If an electing taxpayer elects to allow multiple credit claimants to claim section 45Q credits, the maximum amount of section 45Q credits allowable to each credit claimant is proportional to the amount of qualified carbon oxide disposed of, utilized, or used as a tertiary injectant by the credit claimant. A credit claimant may receive allowances of section 45Q credits from multiple electing taxpayers in the same taxable year.

(i) Example. Electing Taxpayer, E, captures 100 metric tons of qualified carbon oxide with carbon capture equipment that was placed in service in 2017. E contracts with two companies, A and B, for the disposal of the qualified carbon oxide. The capture and disposal of the qualified carbon oxide makes E eligible for a section 45Q credit at a rate of \$10 per metric ton, for a total section 45Q credit of \$1,000. E contractually ensures that A will dispose of 30 metric tons of qualified carbon oxide and that B will dispose of 70 metric tons of qualified carbon oxide. E may make a section 45Q(f)(3)(B) election to allow up to \$300 of section 45Q credit to A and up to \$700 of section 45Q credit to B, equal to the value of the number of metric tons each party has contracted to ensure disposal, multiplied by the credit value of the metric tons disposed of.

(ii) Time and manner of making election. The taxpayer described §1.45Q-1(h)(1) makes a section 45Q(f)(3)(B) election by filing a statement of election containing the information described in §1.45Q-1(h)(3)(iv) with the taxpayer's Federal income tax return or Form 1065 for each taxable year in which the credit arises. The section 45Q(f)(3)(B) election must be made in accordance with Form 8933 (or successor forms, or pursuant to instructions and other guidance) no later than the time prescribed by law (including extensions) for filing the Federal income tax return or Form 1065 for the year in which the credit arises. The election may not be filed with an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, after the prescribed date (including extensions) for filing the original Federal income tax return or Form 1065 for the year, with the exception of amended Federal income tax returns, amended Forms 1065, or AARs, as applicable, for any taxable year ending after February 9, 2018, but not for taxable years beginning after the date of issuance of this proposed regulation. In addition, as provided in Revenue Procedure 2020-23, the exception applies regarding the time to file an amended return by a partnership subject to the centralized partnership audit regime enacted as part of the BBA (BBA partnership) for the 2018 and 2019 taxable years. The amended Federal income tax return or the amended Form 1065 must be filed, in no event, later than the applicable period of limitations on assessment for the taxable year for which the amended Federal income tax return or Form 1065 is being filed. In the case of a BBA partnership that chooses not to file an amended Form 1065 as permitted under Revenue Procedure 2020-23, the BBA partnership may make a late election by filing an AAR on or before October 15, 2021, but in no event, later than the applicable period of limitations on

making adjustments under section 6235 for the reviewed year, as defined in §301.6241-1(a)(8) of the Procedure and Administration Regulations (26 CFR part 301).

(iii) Annual election. A new section 45Q(f)(3)(B) election must be made annually.

(iv) Required information. For the election to be valid, the election statement of the electing taxpayer on Form 8933 (or successor forms, or pursuant to instructions and other guidance) under §1.45Q-1(h)(3)(ii) must indicate that an election is being made under section 45Q(f)(3)(B). The electing taxpayer must provide each credit claimant with a copy of the electing taxpayer's Form 8933 (or successor forms, or pursuant to instructions and other guidance). The electing taxpayer must, in addition to any information required on Form 8933 (or successor forms, or pursuant to instructions and other guidance), set forth the following information—

(A) The electing taxpayer's name, address, taxpayer identification number, location, and e-GGRT ID number(s) (if available) of each qualified facility where carbon oxide was captured;

(B) The full amount of credit attributable to the taxpayer prior to the election;

(C) The name, address, and taxpayer identification number of each credit claimant, and the location and e-GGRT ID number(s) (if available) of each secure geological storage facility where the qualified carbon oxide is disposed of or injected;

(D) The dollar amount of section 45Q credits the taxpayer is allowing each credit claimant to claim and the corresponding metric tons of qualified carbon oxide; and

(E) The dollar amount of section 45Q credits retained by the electing taxpayer and the corresponding metric tons of qualified carbon oxide.

(v) Requirements for section 45Q credit claimant. For a section 45Q(f)(3)(B) election to be valid, the section 45Q credit claimant must include the following information on Form 8933 (or successor forms, or pursuant to instructions and other guidance) with its timely filed Federal income tax return or Form 1065 (including extensions)—

(A) The name, address, taxpayer identification number of the credit claimant;

(B) The name, address, and taxpayer identification number of each taxpayer making an election under section 45Q(f)(3)(B) to allow the credit to the credit claimant;

(C) The location and e-GGRT ID number(s) (if available) of each qualified facility where carbon oxide was captured;

(D) The location and e-GGRT ID number(s) (if available) of each secure geological storage facility where the qualified carbon oxide is disposed of or injected;

(E) The full dollar amount of section 45Q credits attributable to each electing taxpayer prior to the election and the corresponding metric tons of carbon oxide;

(F) The dollar amount of section 45Q credits that each electing taxpayer is allowing the credit claimant to claim and the corresponding metric tons of carbon oxide;  
and

(G) A copy of the electing taxpayer's Form 8933 (or successor forms, or pursuant to instructions and other guidance).

(i) Applicability date. This section applies to taxable years beginning after June 2, 2020. Taxpayers may choose to apply this section for taxable years beginning on or after February 9, 2018, provided the

taxpayer applies this section and §§1.45Q-2, 1.45Q-3, 1.45Q-4, and 1.45Q-5 in their entirety and in a consistent manner.

§1.45Q-2 Definitions for Purposes of §§1.45Q-1 through 1.45Q-5.

(a) Qualified carbon oxide. The term qualified carbon oxide means—

(1) Any carbon dioxide which—

(i) Is captured from an industrial source by carbon capture equipment which is originally placed in service before February 9, 2018,

(ii) Would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release, and

(iii) Is measured at the source of capture and verified at the point of disposal, injection, or utilization; or

(2) Any carbon dioxide or other carbon oxide which—

(i) Is captured from an industrial source by carbon capture equipment which is originally placed in service on or after February 9, 2018,

(ii) Would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release, and

(iii) Is measured at the source of capture and verified at the point of disposal, injection, or utilization; or

(3) In the case of a direct air capture facility, any carbon dioxide that is captured directly from the ambient air and is measured at the source of capture and verified at the point of disposal, injection, or utilization.

(b) Recycled carbon oxide. The term qualified carbon oxide includes the initial deposit of captured carbon oxide used as a tertiary injectant. Qualified carbon oxide

does not include carbon oxide that is recaptured, recycled, and re-injected as part of the enhanced oil or natural gas recovery process.

(c) Carbon capture equipment. 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.

(1) Use of carbon capture equipment. Carbon capture equipment is equipment used for the purpose of—

(i) Separating, purifying, drying, and/or capturing carbon oxide that would otherwise be released into the atmosphere from an industrial facility;

(ii) Removing carbon oxide from the atmosphere via direct air capture; or

(iii) Compressing or otherwise increasing the pressure of carbon oxide.

(2) Carbon capture equipment components. Carbon capture equipment generally includes components of property necessary to compress, treat, process, liquefy, pump or perform some other physical action to capture qualified carbon oxide. Components of carbon capture equipment include, but are not limited to, absorbers, compressors, conditioners, cooling towers, dehydration equipment, dehydration systems, electrostatic filtration, engines, filters, fixtures, glycol contractors, heat exchangers, liquefaction equipment, lube oil systems, machinery, materials, membranes, meters, monitoring equipment, motors, mounting equipment, pipes, power generators and regenerators, pressure vessels and other vessels, processing equipment, processing plants, processing units, pumps, reboilers, recycling units, scrubbers, separation vessels, solvent pumps, sorbent vessels, specially designed flue gas ducts, support

structures, tracking equipment, treating equipment, turbines, water wash equipment, and other carbon oxide related equipment.

(3) Excluded components. Components of carbon capture equipment do not include pipelines, branch lines, or land and marine transport vessels used for transporting captured qualified 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, 2020-11 I.R.B. 495 (see §601.601(d)(2)(ii) of this chapter)) for the purpose of transporting that carbon oxide away from the qualified facility or single project to a pipeline used to transport carbon oxide from multiple taxpayers or projects is carbon capture equipment.

(d) Industrial facility. An industrial facility is a facility that produces a carbon oxide stream from a fuel combustion source or fuel cell, a manufacturing process, or a fugitive carbon oxide emission source that, absent capture and disposal, would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release.

(1) Exclusion. An industrial facility does not include a facility that produces carbon dioxide from carbon dioxide production wells at natural carbon dioxide-bearing formations or a naturally occurring subsurface spring. A deposit of natural gas that contains less than 10 percent carbon dioxide by volume is not a natural carbon dioxide-bearing formation. For other deposits, whether a well is producing from a natural carbon dioxide-bearing formation is based on all the facts and circumstances.

(2) Industrial source. An industrial source is an emission of carbon oxide from an industrial facility.

(3) Manufacturing process. A manufacturing process is a process involving the manufacture of products, other than carbon oxide, that are intended to be sold at a profit, or are used for a commercial purpose. All facts and circumstances with respect to the process and products are to be taken into account.

(4) Example. The following example illustrates the rules of paragraph (a) and (d)(3) of this section:

(i) A natural underground reservoir contains a gas that is comprised of 50 percent carbon dioxide and 50 percent methane by volume. The raw gas is not usable without the application of a separation process to create two gases that are primarily carbon dioxide and methane. Taxpayer B constructs processing equipment that separates the raw gas into qualified carbon oxide and methane. The carbon dioxide is sold to a third party for use in a qualified enhanced oil recovery project. Some of the methane is used as fuel to power the processing equipment. The remainder of the methane is injected into the reservoir. The injection will increase the ultimate recovery of carbon dioxide. The injected methane can be produced later from the reservoir. At the end of the taxable year the taxpayer has not secured a contract to sell methane and does not have any plans to use the methane for a commercial purpose. Because carbon dioxide is the only product manufactured that is intended to be sold at a profit or used for a commercial purpose, the separation process applied to the gases is not a manufacturing process within the meaning of paragraph (d)(3). The carbon dioxide captured by the process is not qualified carbon oxide.

(e) Electricity generating facility. An electricity generating facility is a facility described in section 45Q(d)(2)(A) or (B) of the Internal Revenue Code (Code) and is subject to depreciation under MACRS Asset Class 49.11(Electric Utility Hydraulic Production Plant), 49.12 (Electric Utility Nuclear Production Plant), 49.13 (Electric Utility Steam Production Plant), or 49.15 (Electric Utility Combustion Turbine Production Plant).

(f) Direct air capture facility. A direct air capture facility means any facility that uses carbon capture equipment to capture carbon oxide directly from the ambient air. It does not include any facility that captures carbon dioxide that is deliberately released from naturally occurring subsurface springs or using natural photosynthesis.

(g) Qualified facility. A qualified facility means any industrial facility, electricity generating facility, or direct air capture facility, the construction of which begins before January 1, 2024, and either at which construction of carbon capture equipment begins before that date, or the original planning and design for which includes installation of carbon capture equipment, and at which carbon capture equipment is placed in service that captures the requisite annual thresholds of carbon oxide described in paragraph (g)(1) of this section. See Notice 2020-12, 2020-11 I.R.B. 495 (see §601.601(d)(2)(ii) of this chapter), for guidance on the determination of when construction has begun on a qualified facility or on carbon capture equipment.

(1) Emissions and capture requirements. The facility must capture--

(i) In the case of a facility, other than a direct air capture facility, which emits not more than 500,000 metric tons of carbon oxide into the atmosphere during the taxable year, at least 25,000 metric tons of qualified carbon oxide during the taxable year which is utilized in a manner consistent with section 45Q(f)(5) and §1.45Q-4 (Section 45Q(d)(2)(A) Facility);

(ii) In the case of an electricity generating facility which is not a Section 45Q(d)(2)(A) Facility (Section 45Q(d)(2)(B) Facility), not less than 500,000 metric tons of qualified carbon during the taxable year; and

(iii) In the case of a direct air capture facility or other facility that is not a Section 45Q(d)(2)(A) Facility or a Section 45Q(d)(2)(B) Facility, at least 100,000 metric tons of qualified carbon oxide during the taxable year.

(2) Examples. The following examples illustrate the rules of paragraph (g) of this section:

(i) Example 1. During the taxable year, an ethanol plant emits 200,000 metric tons of carbon dioxide. Equipment located at the facility captures 35,000 metric tons of carbon dioxide, all of which are utilized in a manner consistent with section 45Q(f)(5) and §1.45Q-4. The ethanol plant is a qualified facility during the taxable year because it met the requirement to capture at least 25,000 metric tons of qualified carbon oxide during the taxable year which were utilized in a manner consistent with section 45Q(f)(5) and §1.45Q-4.

(ii) Example 2. During the taxable year an electricity generating facility emits 600,000 metric tons of carbon dioxide. Equipment located at the facility captures 50,000 metric tons of carbon dioxide, all of which are utilized in a manner consistent with section 45Q(f)(5) and §1.45Q-4, and 400,000 metric tons of carbon dioxide, all of which are properly disposed of in secure geological storage. The total amount of carbon dioxide captured during the taxable year is 450,000 metric tons. The electricity generating facility is not a qualified facility during the taxable year because it did not meet the requirement to capture not less than 500,000 metric tons of qualified carbon during the taxable year.

(iii) Example 3. During the taxable year, a cement manufacturing plant emits 110,000 metric tons of carbon dioxide. Equipment located at the plant captures 10,000 metric tons of carbon dioxide, all of which are utilized in a manner consistent with section 45Q(f)(5) and §1.45Q-4, and 90,000 metric tons of carbon dioxide, all of which are properly disposed of in secure geological storage. The total amount of carbon dioxide captured during the taxable year is 100,000 metric tons. The cement manufacturing plant is a qualified facility during the taxable year because it met the requirement to capture at least 100,000 metric tons of qualified carbon oxide during the taxable year.

(3) Annualization of first-year qualified carbon oxide emission and capture

amounts--(i) In general. For the year in which carbon capture equipment is placed in service at a qualified facility, annualization of the amount of qualified carbon oxide emitted and captured is permitted to determine if the threshold requirements under

paragraph (g)(1) of this section are satisfied. Such annualization may result in a facility being deemed to satisfy the threshold requirements under paragraph (g)(1) of this section for the year and may permit a taxpayer to claim section 45Q credits even though the amount of qualified carbon oxide emitted or captured in its first year is less than the threshold requirements under paragraph (g)(1) of this section.

(ii) Calculation. Annualization is only be available for the first year in which the carbon capture equipment is placed in service at the qualified facility. Annualized amounts must be calculated by –

(A) Determining the amount of qualified carbon oxide emitted and captured during the taxable year in which the carbon capture equipment was placed in service at the qualified facility,

(B) Dividing the amount of qualified carbon emitted or captured by the number of days in the tax year beginning with the date on which the carbon capture equipment was placed in service at the qualified facility and ending with the last day of the taxable year; and

(C) Multiplying by 365.

(iii) Consequences. If the annualized amounts of qualified carbon oxide emitted and captured as calculated under this formula meet the threshold requirements under paragraph (g)(1) of this section, the threshold requirements under paragraph (g)(1) of this section are deemed satisfied for the taxable year in which the carbon capture equipment was placed in service at the qualified facility. The taxpayer may be eligible for a section 45Q credit for that taxable year but must calculate the credit based on

actual amounts of qualified carbon oxide captured and disposed of, injected, or utilized during the taxable year.

(4) Election for applicable facilities. In the case of an applicable facility, for any taxable year during which such facility captures not less than 500,000 metric tons of qualified carbon oxide, the person described in section 45Q(f)(3)(A)(ii) and §1.45Q-1(h)(1), may elect to have such facility, and any carbon capture equipment placed in service at such facility, deemed as having been placed in service on February 9, 2018 (section 45Q(f)(6) election).

(i) Applicable facility. An applicable facility means a qualified facility described in section 45Q(f)(6) and §1.45Q-2(g)(4)(i) that was placed in service before February 9, 2018, for which no taxpayer claimed a section 45Q credit for qualified carbon oxide captured at the facility for any taxable year ending before February 9, 2018.

(ii) Time and manner of making election. The taxpayer described §1.45Q-1(h)(1) makes a section 45Q(f)(6) election by filing a statement of election with the taxpayer's income tax return for each taxable year in which the credit arises. The section 45Q(f)(6) election must be made in accordance with Form 8933 (or successor forms, or pursuant to instructions and other guidance) with the taxpayer's income tax return for the taxable year in which the taxpayer makes the section 45Q(f)(6) election. The statement of election must, in addition to any information required on Form 8933 (or successor forms, or pursuant to instructions and other guidance), set forth the electing taxpayer's name, address, taxpayer identification number, location, and e-GGRT ID number(s) (if available) of the applicable facility.

(iii) Retroactive credit revocations. A taxpayer may not file an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, for any taxable year ending before February 9, 2018, to revoke a prior claim of section 45Q credits.

(5) Retrofitted qualified facility or carbon capture equipment (80/20 Rule). A qualified facility or carbon capture equipment may qualify as originally placed in service even if it contains some used components of property, provided the fair market value of the used components of property is not more than 20 percent of the qualified facility or carbon capture equipment's total value (the cost of the new components of property plus the value of the used components of property) (80/20 Rule). 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. Solely for purposes of the 80/20 Rule, properly capitalized costs of a new qualified facility or carbon capture equipment may, at the option of the taxpayer, include the cost of new equipment for a pipeline owned and used exclusively by that taxpayer to transport carbon oxides captured from that taxpayer's qualified facility that would otherwise be emitted into the atmosphere.

(h) Qualified enhanced oil or natural gas recovery project. The term qualified enhanced oil or natural gas recovery project has the same meaning as qualified enhanced oil recovery project under section 43(c)(2) of the Code and §1.43-2, by substituting crude oil or natural gas for crude oil in section 43(c)(2)(A)(i) and §§1.43-2 and 1.43-3.

(1) Application of §§1.43-2 and 1.43-3. For purposes of applying §§1.43-2 and 1.43-3 with respect to a qualified enhanced oil or natural gas recovery project, the term

enhanced oil or natural gas recovery is substituted for enhanced oil recovery, and the term oil or natural gas is substituted for oil.

(2) Required certification. The qualified enhanced oil or natural gas recovery project must be certified under §1.43-3. For purposes of a natural gas project—

(i) The petroleum engineer's certification under §1.43-3(a)(3) and the operator's continued certification of a project under §1.43-3(b)(3) must include an additional statement that the certification is for purposes of the section 45Q carbon oxide sequestration tax credit;

(ii) The petroleum engineer's certification must be attached to a Form 8933 (or successor forms, or pursuant to instructions and other guidance) and filed not later than the last date prescribed by law (including extensions) for filing the operator's or designated owner's Federal income tax return or Form 1065 for the first taxable year in which qualified carbon oxide is injected into the reservoir; and

(iii) The operator's continued certification of a project must be attached to a Form 8933 (or successor forms, or pursuant to instructions and other guidance) and filed not later than the last date prescribed by law (including extensions) for filing the operator's or designated owner's Federal income tax return or Form 1065 for taxable years after the taxable year for which the petroleum engineer's certification is filed but not after the taxable year in which injection activity ceases and all injection wells are plugged and abandoned.

(3) Natural gas. Natural gas has the same meaning as under section 613A(e)(2) of the Code.

(4) Timely filing of petroleum engineer's certification. For purposes of this paragraph (h), if a section 45Q credit is claimed on an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, the petroleum engineer's certification will be treated as filed timely if it is attached to a Form 8933 that is submitted with such amended Federal income tax return, amended Form 1065, or AAR. With respect to a section 45Q credit that is claimed on a timely filed Federal income tax return or Form 1065 for a taxable year ending after February 9, 2018 and beginning before the date of issuance of this proposed regulation, for which the petroleum engineer's certification was not submitted the petroleum engineer's certification will be treated as filed timely if it is attached to an amended Form 8933 for any taxable year ending after February 9, 2018, but not for taxable years beginning after the date of issuance of these proposed regulations.

(5) Carbon oxide injected in oil reservoir. Carbon oxide that is injected into an oil reservoir that is not a qualified enhanced oil recovery project under section 43(c)(2) due to circumstances such as the first injection of a tertiary injectant occurring before 1991, or because a petroleum engineer's certification was not timely filed, cannot be treated as qualified carbon oxide, disposed of in secure geological storage, or utilized in a manner described in section 45Q(f)(5). This rule will not apply to an oil reservoir if—

- (i) The reservoir permanently ceased oil production;
- (ii) The operator has obtained an EPA UIC class VI permit; and
- (iii) The operator complies with 40 CFR part 98 subpart RR.

(6) Tertiary Injectant. For purposes of section 45Q, a tertiary injectant is qualified carbon oxide that is injected into and stored in a qualified enhanced oil or

natural gas recovery project and contributes to the extraction of crude oil or natural gas. The term tertiary injectant has the same meaning as used within section 193(b)(1) of the Code.

(i) Section 45Q credit. The term section 45Q credit means the carbon oxide sequestration credit determined under section 45Q of the Internal Revenue Code and §1.45Q-1.

(j) Applicability date. This section applies to taxable years beginning after June 2, 2020. Taxpayers may choose to apply this section for taxable years beginning on or after February 9, 2018, provided the taxpayer applies this section and §§1.45Q-1, 1.45Q-3, 1.45Q-4, and 1.45Q-5 in their entirety and in a consistent manner.

#### §1.45Q-3 Secure Geological Storage.

(a) In general. To qualify for the section 45Q credit, a taxpayer must either physically or contractually dispose of captured qualified carbon oxide in secure geological storage in the manner provided in §1.45Q-3(b) or utilize qualified carbon oxide in a manner conforming with section 45Q(f)(5) of the Internal Revenue Code and §1.45Q-4. Secure geological storage includes, but is not limited to, storage at deep saline formations, oil and gas reservoirs, and unminable coal seams.

(b) Requirements for secure geological storage. For purposes of the section 45Q credit, qualified carbon oxide is considered disposed of by the taxpayer in secure geological storage such that the qualified carbon oxide does not escape into the atmosphere if the qualified carbon oxide is—

(1) Stored, and not used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project, in compliance with applicable requirements under 40 CFR part 98 subpart RR; or

(2) Used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project and stored in compliance with applicable requirements under 40 CFR part 98 subpart RR, or the International Organization for 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 (CO<sub>2</sub>-EOR).

(3) Injected into a well that complies with applicable Underground Injection Control regulations onshore or offshore under submerged lands within the territorial jurisdiction of States.

(c) Documentation. Documentation must be filed in accordance with Form 8933 (or successor forms, or pursuant to instructions and other guidance).

(d) Certification. For qualified enhanced oil or natural gas recovery projects in which the taxpayer reported volumes of carbon oxide to the EPA pursuant to 40 CFR part 98 subpart RR, the taxpayer may self-certify the volume of carbon oxide claimed for purposes of section 45Q. For qualified enhanced oil or natural gas recovery projects in which the taxpayer determined volumes pursuant to CSA/ANSI ISO 27916:19, a taxpayer may prepare documentation as outlined in CSA/ANSI 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. Certifications must be made annually. For any leaked amount of qualified carbon oxide (as defined in §1.45Q-5(c)) that is determined pursuant to CSA/ANSI ISO 27916:19, the certification must also include a statement that the quantity was determined in accordance with sound engineering principles. Taxpayers that capture qualified carbon oxide giving rise to the section 45Q credit must file Form 8933 (or successor forms, or pursuant to instructions and other guidance) with a timely filed Federal income tax return or Form 1065, including extensions or for the purpose of this rule, amendments to Federal income tax returns, Forms 1065, or on AARs, as applicable. Taxpayers that dispose of, inject, or utilize qualified carbon oxide must also file Form 8933 (or successor forms, or pursuant to instructions and other guidance) with a timely filed Federal income tax return or Form 1065, including extensions or for the purpose of this rule, amendments to Federal income tax returns, Forms 1065, or on AARs, as applicable. If the volume of carbon oxide certified and reported is a negative amount, see §1.45Q-5 for rules regarding recapture.

(e) Failure to submit complete documentation or certification. No section 45Q credit is allowed for any taxable year for which the taxpayer (including credit claimants) has failed to timely submit complete documentation and certification that is required by this regulation or Form 8933 (or successor forms, or pursuant to instructions and other guidance). The credit will be allowed only for a taxable year for which complete documentation and certification has been timely submitted. Certifications for each taxable year must be submitted by the due date of the federal income tax return or Form 1065 on which the section 45Q credit is claimed, including extensions. If a section 45Q credit is claimed on an amended Federal income tax return, an amended Form 1065, or

an AAR, as applicable, certifications may also be submitted with such amended Federal income tax return, amended Form 1065, or AAR. If a section 45Q credit was claimed on a timely filed Federal income tax return or Form 1065 for a taxable year ending after February 9, 2018, and beginning before the date of issuance of this proposed regulation, for which certifications were not submitted, such certifications may be submitted with an amended Federal income tax return, an amended Form 1065, or an AAR, as applicable, for the taxable year in which the section 45Q credit was claimed.

(f) Applicability date. This section applies to taxable years beginning after June 2, 2020. Taxpayers may choose to apply this section for taxable years beginning on or after February 9, 2018, provided the taxpayer applies this section and §§1.45Q-1, 1.45Q-2, 1.45Q-4, and 1.45Q-5 in their entirety and in a consistent manner.

§1.45Q-4 Utilization of Qualified Carbon Oxide.

(a) In general. For purposes of this section, utilization of qualified carbon oxide means—

(1) The fixation of qualified carbon oxide through photosynthesis or chemosynthesis, such as through the growing of algae or bacteria,

(2) The chemical conversion of such qualified carbon oxide to a material or chemical compound in which such qualified carbon oxide is securely stored, or

(3) 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 a qualified enhanced oil or natural gas recovery project), as determined by the Secretary of the Treasury or his delegate.

(b) Measurement. For purposes of determining the amount of qualified carbon oxide utilized by the taxpayer under §1.45Q-1(b)(2)(ii) and (c)(2)(ii), such amount is equal to the metric tons of qualified carbon oxide which the taxpayer demonstrates, based upon an analysis of lifecycle greenhouse gas emissions (LCA), were—

- (1) Captured and permanently isolated from the atmosphere (isolated), or
- (2) Displaced from being emitted into the atmosphere through use of a process described in paragraph (a) of this section (displaced).

(c) Lifecycle greenhouse gas emissions and lifecycle analysis--(1) In general. For purposes of paragraph (b) of this section, 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, 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.

(2) Measurement. The taxpayer measures the amount of carbon oxide captured and utilized through a combination of direct measurement and LCA. The measurement and written LCA report must be performed by or verified by an independent third-party. The report must contain documentation consistent with the International Organization for Standardization (ISO) 14044:2006, “Environmental management — Life cycle assessment — Requirements and Guidelines,” as well as a statement documenting the qualifications of the third-party, including proof of appropriate U.S. or foreign

professional license, and an affidavit from the third-party stating that it is independent from the taxpayer.

(3) Approval of the LCA. The taxpayer must submit the written LCA report required by paragraph (c)(1) of this section to the IRS and the Department of Energy (DOE). The LCA will be subject to a technical review by the DOE, and the IRS, in consultation with the DOE and the Environmental Protection Agency, will determine whether to approve the LCA.

(4) [Reserved]

(d) - (e) [Reserved]

(f) Applicability date. This section applies to taxable years beginning after June 2, 2020. Taxpayers may choose to apply this section for taxable years beginning on or after February 9, 2018, provided the taxpayer applies this section and §§1.45Q-1, 1.45Q-2, 1.45Q-3, and 1.45Q-5 in their entirety and in a consistent manner.

#### §1.45Q-5 Recapture of Credit.

(a) Recapture event. A recapture event occurs when qualified carbon oxide for which a section 45Q credit has been claimed ceases to be captured, disposed of, or used as a tertiary injectant during the recapture period. Recapture events are determined separately for each project involving capture, disposal, or use of qualified carbon oxide as a tertiary injectant.

(b) Ceases to be captured, disposed of, or used as a tertiary injectant. Qualified carbon oxide ceases to be captured, disposed of, or used as a tertiary injectant if the leaked amount of qualified carbon oxide in the taxable year exceeds the amount of

qualified carbon oxide disposed of in secure geological storage or used as a tertiary injectant in that same taxable year.

(c) Leaked amount of qualified carbon oxide. When a taxpayer, operator, or regulatory agency determines that qualified carbon oxide has leaked to the atmosphere, the taxpayer must quantify the metric tons of qualified carbon oxide that has leaked to the atmosphere pursuant to the requirements of 40 CFR part 98 subpart RR or CSA/ANSI ISO 27916:19. The quantity determined pursuant to CSA/ANSI ISO 27916:19 must be certified by a qualified independent engineer or geologist, including a statement that the quantity was determined in accordance with sound engineering principles. The Internal Revenue Service will consider all available facts, and may consult with the relevant regulatory agency, in verifying the amount of qualified carbon oxide that has leaked to the atmosphere. That amount is the leaked amount of qualified carbon oxide.

(d) Recaptured qualified carbon oxide. The quantity of recaptured qualified carbon oxide (in metric tons) is the amount by which the leaked amount of qualified carbon oxide exceeds the amount of qualified carbon oxide disposed of in secure geological storage or used as a tertiary injectant in the taxable year.

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

(f) Recapture period. The recapture period begins on the date of first injection of qualified carbon oxide for disposal in secure geological storage or use as a tertiary injectant. The recapture period ends on the earlier of five years after the last taxable

year in which the taxpayer claimed a section 45Q credit or the date monitoring ends under the requirements of the standards described in §1.45Q-3(b)(1) or (b)(2).

(g) Application of recapture. (1) In general. Any recapture amount must be taken into account in the taxable year in which it is identified and reported. If the leaked amount of qualified carbon oxide does not exceed the amount of qualified carbon oxide disposed of in secure geological storage or used as a tertiary injectant in the taxable year reported, there is no recapture amount and no further adjustments to prior taxable years are needed. The taxpayer must add the recapture amount to the amount of tax due in the taxable year in which the recapture event occurs.

(2) Calculation. Recapture amounts are to be calculated on a last-in-first-out basis (LIFO), such that the leaked amount of qualified carbon oxide that exceeds the amount of qualified carbon oxide disposed of in secure geological storage or used as a tertiary injectant in the current taxable year will be deemed attributable first to the prior taxable year, then to taxable year before that, and then up to a maximum of the fifth preceding year.

(3) Multiple Units. In the event of a recapture event in which the leaked qualified carbon oxide had been captured from multiple units of carbon capture equipment that were not under common ownership, the recapture amount must be allocated on a pro rata basis among the multiple units of carbon capture equipment. Each taxpayer that claimed a section 45Q credit with respect to one or more of such units of carbon capture equipment is responsible for adding the recapture amount to their amount of tax due in the taxable year in which the recapture event occurs.

(4) Multiple Taxpayers. In the event of a recapture event where the leaked amount of qualified carbon oxide is deemed attributable to qualified carbon oxide with respect to which multiple taxpayers claimed section 45Q credit amounts (for example, if ownership of the carbon capture equipment was transferred, or if a taxpayer made an election under section 45Q(f)(3)(B) of the Internal Revenue Code to allow one or more credit claimants to claim a portion of the section 45Q credit), the recapture amount must be allocated on a pro rata basis among the taxpayers that claimed the section 45Q credits with respect to the qualified carbon oxide that the leaked qualified carbon oxide is deemed attributable to.

(5) Reporting. If a recapture event occurs during a project's recapture period, any taxpayer that claimed a section 45Q credit for that project must report the following information on a Form 8933 (or successor forms, or pursuant to instructions and other guidance) filed with that taxpayer's Federal income tax return or Form 1065 for the taxable year for which the recapture event occurred—

- (i) The recapture amount (as defined in §1.45Q-5(e));
- (ii) The quantity of leaked qualified carbon oxide (in metric tons) (as defined in §1.45Q-5(c));
- (iii) The statutory credit rate at which the section 45Q credits were originally calculated; and
- (iv) A statement that describes how the taxpayer became aware of the recapture event, how the leaked amount was determined, and the identity and involvement of any regulatory agencies.

(6) Examples. The following examples illustrate the principles of this paragraph

(g):

(i) Example 1. (A) A owns direct air capture Facility X. No other taxpayer has owned Facility X, and A has never allowed another taxpayer to claim any section 45Q credits with respect to qualified carbon oxide captured by Facility X. Facility X captured 100,000 metric tons of carbon dioxide in each of 2021, 2022, and 2023. All captured carbon dioxide was sold to B for use as a tertiary injectant in a qualified enhanced oil recovery project. B provided contractual assurance that the carbon dioxide would be sequestered in secure geological storage. A claimed section 45Q credit amounts of \$2,268,000 in 2021, \$2,515,000 in 2022, and \$2,761,000 in 2023 using the statutory rates in §1.45Q-1(d)(3). In 2024, A captured and sold another 100,000 metric tons of carbon dioxide to B, which B used as a tertiary injectant in a qualified enhanced oil recovery project. In late 2024, B determined that 10,000 metric tons of carbon dioxide injected during 2021 had leaked from the containment area of the reservoir and will eventually migrate to the atmosphere.

(B) Because the leakage determined in 2024 (10,000 metric tons) did not exceed the amount stored in 2024 (100,000 metric tons), a recapture event did not occur in 2024. A's section 45Q credit for 2024 is \$2,706,300 (net 90,000 metric tons of qualified carbon oxide captured and used as a tertiary injectant multiplied by the statutory credit rate for 2024 of \$30.07).

(ii) Example 2. (A) Assume same facts as in Example 1. Additionally, in 2025, B determines that 190,000 metric tons of carbon dioxide injected in 2021 and 2022 have leaked and will eventually migrate to the atmosphere. No injection of carbon dioxide takes place in 2025.

(B) Because the leakage determined in 2025 (190,000 metric tons) exceeds the amount stored in 2025 (0 metric tons), a recapture event occurred in 2025. A's credit for 2025 is \$0 because the net amount of carbon dioxide captured and used as a tertiary injectant in 2025 was 0 metric tons. The 2025 recapture amount is calculated by multiplying the 190,000 metric tons of recaptured qualified carbon oxide by the appropriate statutory credit rate using the LIFO method. The first 90,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2024, and is recaptured at the 2024 statutory rate of \$30.07 per metric ton. The remaining 100,000 metric tons of recaptured qualified carbon oxide are deemed attributable to 2023. The credits attributable to 2023 are recaptured at the 2023 statutory rate of \$27.61 per metric ton. Thus, the total recapture amount is \$5,467,300, and is added to A's tax due for 2025.

(iii) Example 3. (A) Assume the same facts as in Example 2, except that A sells Facility X to C on January 1, 2024. C sells 100,000 metric tons of carbon dioxide captured by Facility X to B for use as a tertiary injectant in a qualified enhanced oil recovery project. Thus, C claims a section 45Q credit in 2024 of \$2,706,300 (net

90,000 metric tons of qualified carbon oxide captured and used as a tertiary injectant multiplied by the statutory credit rate for 2024 of \$30.07).

(B) The total recapture amount in 2025 is the same \$5,467,300 as in Example 2, but is allocated between A and C. The first 90,000 metric tons of recaptured qualified carbon oxide are deemed attributable to 2024. The credits that are attributable to 2024 are recaptured at the 2024 statutory rate of \$30.07 per ton (for a recapture amount of \$2,706,300). Because C claimed that amount of section 45Q credit in 2024, a recapture amount of \$2,706,300 is added to C's tax due for 2025. The remaining 100,000 metric tons of recaptured qualified carbon oxide are deemed attributable to 2023. The credits that are attributable to 2023 are recaptured at the 2023 statutory rate of \$27.61 per ton (for a recapture amount of \$2,761,000). Because A claimed that amount of section 45Q credit in 2023, a recapture amount of \$2,761,000 is added to A's tax due for 2025.

(iv) Example 4. (A) Assume the same facts as in Example 2, except that in 2023 A made a section 45Q(f)(3)(B) election to allow B to claim one-half of the section 45Q credit for 2023. A and B each claimed \$1,380,500 of section 45Q credit in 2023 (50,000 metric tons each multiplied by the 2023 statutory rate of \$27.61).

(B) The total recapture amount in 2025 is the same \$5,467,300 as in Example 2, but is allocated among A and B. The first 90,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2024. The section 45Q credit amounts attributable to 2024 are recaptured at the 2024 statutory rate of \$30.07 per ton (for a recapture amount of \$2,706,300). Because A claimed that amount of section 45Q credit in 2024, \$2,706,300 is added to A's tax due for 2025. The remaining 100,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2023. The section 45Q credit amounts attributable to 2023 are recaptured at the 2023 statutory rate of \$27.61 per ton (for a recapture amount of \$2,761,000). Because A and B each claimed half of that amount (\$1,380,500) of section 45Q credit in 2023, \$1,380,500 is added to both A's and B's tax due for 2025. Thus, a recapture amount of \$4,086,800 is added to A's tax due for 2025, and a recapture amount of \$1,380,500 is added to B's tax due for 2025.

(v) Example 5. (A) Assume the same facts as in Example 2, except that the 100,000 metric tons of carbon dioxide sold to B in 2021, 2022, 2023, and 2024 for use as a tertiary injectant in a qualified enhanced oil recovery project were captured equally (50,000 metric tons per year) from qualified facilities owned by J and K. Neither J nor K made a section 45Q(f)(3)(B) election to allow B to claim the credit.

(B) Because the leakage determined in 2024 (10,000 metric tons) did not exceed the amount used as a tertiary injectant in 2024 (100,000 metric tons) a recapture event did not occur in 2024. The total amount of section 45Q credit for 2024 is \$2,706,300 (net 90,000 metric tons of qualified carbon oxide captured and used as a tertiary injectant multiplied by the statutory credit rate for 2024 of \$30.07). J and K may each claim half of this amount of section 45Q credit (\$1,353,150) in 2024.

(C) The total recapture amount in 2025 is the same \$5,467,300 as in Example 2, but is allocated between J and K. The section 45Q credit amounts relating to the first 90,000 metric tons of recaptured qualified carbon oxide are deemed attributable to 2024 and are recaptured at the 2024 statutory rate of \$30.07 per ton (for a recapture amount of \$2,706,300). Because J and K each claimed half of that amount (\$1,353,150) of section 45Q credit in 2024, \$1,353,150 is added to both J's and K's tax due for 2025. The section 45Q credit amounts relating to the remaining 100,000 metric tons of recaptured qualified carbon oxide are deemed attributable to 2023 and are recaptured at the 2023 statutory rate of \$27.61 per ton (for a recapture amount of \$2,761,000). Because J and K each claimed half of that amount (\$1,380,500) of section 45Q credit in 2023, an additional \$1,380,500 is added to both J's and K's tax due for 2025. Thus, a total recapture amount of \$2,733,650 is added to both J's and K's tax due for 2025.

(vi) Example 6. (A) M owns Industrial Facility Z. No other taxpayer has ever owned Z, and M has never allowed another taxpayer to claim any section 45Q credits with respect to qualified carbon oxide captured from Z. M captured 1,000,000 metric tons of carbon dioxide annually in each of 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, and 2025. All captured carbon dioxide was sold to N for use as a tertiary injectant in a qualified enhanced oil recovery project. N provided contractual assurance that the carbon dioxide would be sequestered in secure geological storage. M claimed section 45Q credit amounts of \$12,830,000 in 2017, \$15,209,000 in 2018, \$17,760,000 in 2019, \$20,220,000 in 2020, \$22,680,000 in 2021, \$25,150,000 in 2022, \$27,610,000 in 2023, \$30,070,000 in 2024, and \$32,540,000 in 2025 using the statutory rates in §1.45Q-1(d)(3). No injection of carbon oxides takes place in 2026. In 2026, N determined that 6,200,000 metric tons of carbon dioxide previously injected had leaked from the containment area of the reservoir and will eventually migrate to the atmosphere.

(B) Because the leakage determined in 2025 (6,200,000 metric tons) exceeded the amount stored in 2026 (0 metric tons) a recapture event occurred in 2026. A's credit for 2026 is \$0 because the net amount of carbon dioxide captured and used as a tertiary injectant in 2026 was 0 metric tons. The 2026 recapture amount is calculated by multiplying the 6,200,000 metric tons of recaptured qualified carbon oxide by the appropriate statutory credit rate using the LIFO method. The first 1,000,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2025, and is recaptured at the 2025 statutory rate of \$32.54 per metric ton. The next 1,000,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2024, and is recaptured at the 2024 statutory rate of \$30.07 per metric ton. The next 1,000,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2023, and is recaptured at the 2023 statutory rate of \$27.16 per metric ton. The next 1,000,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2022, and is recaptured at the 2022 statutory rate of \$25.15 per metric ton. The next 1,000,000 metric tons of recaptured qualified carbon oxide is deemed attributable to 2021, and is recaptured at the 2021 statutory rate of \$22.68 per metric ton. The remaining 1,200,000 metric tons are not subject to recapture because of the five-year lookback limit in §1.45Q-1(g)(2). Thus, the total recapture amount is \$138,050,000, and is added to A's tax due for 2026.

(h) Recapture in the event of intentional removal from storage. If qualified carbon oxide for which a credit has been claimed is deliberately removed from a secure geological storage site, then a recapture event would occur in the year in which the qualified carbon oxide is removed from the storage site pursuant to §1.45Q-5(a).

(i) Limited exceptions. A recapture event is not triggered in the event of a loss of containment of qualified carbon oxide resulting from actions not related to the selection, operation, or maintenance of the storage facility, such as volcanic activity or terrorist attack.

(j) Applicability date. This section applies to taxable years beginning after June 2, 2020. Taxpayers may choose to apply this section for taxable years beginning on or after February 9, 2018, provided the taxpayer applies this section and sections 1.45Q-1, 1.45Q-2, 1.45Q-3, and 1.45Q-4 in their entirety and in a consistent manner.

Sunita Lough,

Deputy Commissioner for Services and Enforcement.

[FR Doc. 2020-11907 Filed: 5/29/2020 11:15 am; Publication Date: 6/2/2020]