Part III - Administrative, Procedural, and Miscellaneous

Credit for Carbon Dioxide Sequestration under Section 45Q

Notice 2009-83

SECTION 1. PURPOSE

This notice sets forth interim guidance, pending the issuance of regulations, relating to the credit for carbon dioxide (CO_2) sequestration under section 45Q of the Internal Revenue Code. Specifically, this notice provides guidance on determining eligibility for the credit and the amount of the credit, as well as rules regarding adequate security measures for secure geological storage of CO_2. This notice also sets forth a separate reporting requirement. The Internal Revenue Service (Service) and Treasury Department (Treasury) expect that the regulations will incorporate the rules set forth in this notice.

SECTION 2. BACKGROUND

.01 Section 45Q was enacted by § 115 of the Energy Improvement and Extension Act of 2008, Pub. L. No. 110-343, 122 Stat. 3829 (October 3, 2008), as amended by § 1131 of the American Recovery and Reinvestment Tax Act of 2009, Division B of Pub. L. 111-5, 123 Stat 115 (Feb. 17, 2009). Section 45Q(a) provides that a credit for CO_2 sequestration (§ 45Q credit) is generally available to a taxpayer that captures qualified CO_2 at a qualified facility and disposes of the CO_2 in secure

geological storage within the United States, effective for CO_2 captured after October 3, 2008. As originally enacted, § 45Q(a)(1) provides for a credit of $20 per metric ton of qualified CO_2 that is captured and disposed of in secure geological storage, and § 45Q(a)(2) provides for a credit of $10 per metric ton of qualified CO_2 that is captured and used as a tertiary injectant in a qualified enhanced oil or natural gas recovery project (EOR project). Section 45Q(a), as amended, provides additional requirements effective after February 17, 2009, that, for purposes of the $20 per metric ton credit under § 45Q(a)(1), the qualified CO_2 must not be used as a tertiary injectant; and, for purposes of the $10 per metric ton credit under § 45Q(a)(2), the qualified CO_2 used as a tertiary injectant must be disposed of in secure geological storage.

.02 Section 45Q(d)(2) as amended provides that the Secretary of Treasury or his or her delegate (the Secretary), in consultation with the Administrator of the Environmental Protection Agency (EPA), the Secretary of Energy (DOE), and the Secretary of the Interior (DOI), shall establish regulations for determining adequate security measures for the geological storage of CO_2 such that the CO_2 does not escape into the atmosphere.

.03 Section 45Q(d)(5) provides that the § 45Q credit is attributable to the person that captures and physically or contractually ensures the disposal of or the use as a tertiary injectant of the qualified CO_2, except to the extent provided in regulations prescribed by the Secretary.

.04 Section 45Q(d)(6) provides for a recapture of the benefit of any credit allowable under § 45Q(a) with respect to any qualified CO_2 that ceases to be captured,

disposed of, or used as a tertiary injectant in a manner consistent with the requirements of § 45Q.

.05 Section 45Q(d)(7) provides that, for taxable years beginning in a calendar year after 2009, the dollar amount contained in § 45Q(a) will be substituted for an amount equal to the product of such dollar amount multiplied by the inflation adjustment factor for such calendar year determined under § 43(b)(3)(B), determined by substituting “2008” for “1990.”

.06 Section 45Q(e) as amended provides that the § 45Q credit will apply with respect to qualified CO_2 before the end of the calendar year in which the Secretary, in consultation with EPA, certifies that 75,000,000 metric tons of qualified CO_2 have been taken into account in accordance with § 45Q(a).

SECTION 3. TERMS AND DEFINITIONS

.01 Terms. For purposes of this notice,

(a) The terms disposal, storage, and sequestration are used interchangeably,

(b) The term credit refers to a tax credit and shall not be interpreted or construed as a CO_2 allowance, permit, or any other CO_2 emissions property right, and

(c) The term leakage refers to CO_2 that ceases to be sequestered via escape or release from the subsurface to the atmosphere or ocean.

.02 Industrial Facility.

(a) Industrial facility refers to a facility that produces a CO_2 stream from a fuel combustion source, a manufacturing process, or a fugitive CO_2 emission source that, absent capture and disposal, would otherwise be released into the atmosphere as

industrial emission of greenhouse gas.

(b) An industrial facility does not include a facility that produces CO_2 from CO_2 production wells at natural CO_2-bearing formations.

.03 Qualified Carbon Dioxide. Qualified carbon dioxide means CO_2 that is:

(a) Captured from an industrial source that would otherwise be released into the atmosphere as industrial emission of greenhouse gas (GHG),

(b) Measured at the source of capture, and

(c) Verified at the point of disposal or injection.

Qualified CO_2 includes the initial deposit of captured CO_2 used as a tertiary injectant but does not include CO_2 that is re-captured, recycled, or otherwise re-injected as part of the enhanced oil and natural gas recovery process.

.04 Qualified Enhanced Oil or Natural Gas Recovery Project. Qualified enhanced oil or natural gas recovery project has the same meaning given the term "qualified enhanced oil recovery project" under § 43(c)(2) by substituting "crude oil or natural gas" for "crude oil" in § 43(c)(2)(A)(i).

.05 Qualified Facility. Qualified facility means an industrial facility that is owned by the taxpayer where carbon capture equipment is placed in service and where at least 500,000 metric tons of qualified CO_2 is captured during the taxable year.

SECTION 4. APPLICATION OF SECTION 45Q CREDIT

.01 In General. Taxpayers who capture qualified CO_2 from a qualified facility in a taxable year beginning after October 3, 2008, and meet all of the other requirements of § 45Q are eligible to claim the credit.

.02 Section 45Q Credit Amount. (a) The amount of the § 45Q credit is equal to the sum of:

(i) $20 per metric ton of qualified CO_2 if the qualified CO_2 is not used as a tertiary injectant in an EOR project; and

(ii) $10 per metric ton of qualified CO_2 if the qualified CO_2 is used as a tertiary injectant in an EOR project.

Pursuant to § 45Q(d)(5), a taxpayer that captures and physically or contractually ensures the disposal of or the use as a tertiary injectant of qualified CO2 is eligible to claim the § 45Q credit.

(b) Inflation Adjustment. The § 45Q credit amount will be adjusted for inflation for any taxable year beginning in a calendar year after 2009. The Service will announce in later guidance the applicable inflation adjustment for the amount of § 45Q credit for a given taxable year.

.03 Carbon Dioxide Measured by Weight. (a) In order to claim a § 45Q credit, the amount of CO_2 must be measured at the source of capture and verified either at the point of disposal in secure geological storage or at the point of injection as a tertiary injectant in an EOR project. The amount of qualified CO_2 for purposes of the § 45Q credit is presumed to be the lesser of the amount measured at capture and the amount verified at disposal or injection, unless the taxpayer can establish to the satisfaction of the Secretary that the greater amount is the correct amount.

(b) For the purpose of calculating the § 45Q credit, a metric ton of CO_2 includes only the contained weight of the CO_2. The weight of any other substances, such as

water or impurities, is not included in the calculation. For example, if a metric ton of a substance that is bought and sold as "CO_2" is 95 percent pure CO_2 by weight, for purposes of the § 45Q credit, 1.0526 tons (equivalent to 1 divided by 0.95) of the 95 percent pure substance is considered to be one metric ton of CO_2.

.04 Captured and Disposed of or Used within the United States. Section 45Q credit applies only to qualified CO_2 that is captured and disposed of or used as a tertiary injectant within the United States (as defined in § 638(1)) or a possession of the United States (as defined in § 638(2)).

.05 Taxpayers Eligible to Claim the § 45Q Credit. (a) To be eligible to claim the § 45Q credit, a person must (i) own an industrial facility at which carbon capture equipment is placed in service, (ii) capture not less than 500,000 metric tons of qualified CO_2 during the taxable year at such industrial facility, and (iii) physically or contractually ensure that the qualified CO_2 is securely stored in a geologic formation, including where such CO_2 is captured and transported for use in an EOR project. In the case of qualified CO_2 that is used as a tertiary injectant in an EOR project, requirement (iii) above applies only to CO_2 captured after February 17, 2009.

Each industrial facility for which the § 45Q credit is claimed must be equipped with carbon capture equipment and must capture not less than 500,000 metric tons of qualified CO_2 during the taxable year. Additionally, a person that buys the captured CO_2 at the point of transit or disposal but does not own the industrial facility at which the CO_2 is captured does not meet the qualified facility requirement of § 45Q(c) and is therefore ineligible to claim the § 45Q credit.

(b) Example. (i) X, a calendar year taxpayer, owns a manufacturing facility in the United States and releases CO_2 into the atmosphere as a by-product of the facility's operations. On November 1, 2009, X leases carbon capture equipment and places it in service at the manufacturing facility. On February 1, 2010, Y, an oil company, enters into a contract with X to purchase the CO_2 for use as a tertiary injectant in an EOR project. Pursuant to the terms of the contract, X captures the CO_2 and delivers it to Y at the manufacturing facility. Y transports the CO_2 in a pipeline to Y's oil fields located in the United States. Pursuant to its contract with X, Y uses the CO_2 as a tertiary injectant in an EOR project and thereafter disposes of the CO_2 in secure geological storage in the United States in 2010 and later years. During the taxable year beginning on January 1, 2010, 700,000 metric tons of CO_2 is captured at X's facility and injected as a tertiary injectant under the terms of the agreement. X measures the amount of CO_2 at the source of capture and Y verifies the amount of CO_2 at the point of injection during taxable year 2010.

(ii) CO_2 captured from X's facility is qualified CO_2 under § 45Q(b) because the CO_2 was captured from an industrial source from which it would otherwise have been released into the atmosphere and is measured at the source of capture and verified at the point of injection in the United States. The CO_2 was captured at a qualified facility within the meaning of section 3.05 of this notice because it is an industrial facility, within the meaning of section 3.02 of this notice, that is owned by X, at which carbon capture equipment is placed in service, and the facility captures not less than 500,000 metric tons of CO_2 during the taxable year. Therefore, X is eligible to

claim the § 45Q credit in 2010 for the qualified CO_2 captured and used as a tertiary injectant in an EOR project in 2010. The amount of qualified CO_2 for purposes of the § 45Q credit is presumed to be the lesser of the amount measured at capture and the amount verified at injection, unless X can establish to the satisfaction of the Secretary that the greater amount is the correct amount.

.06 Allocation of § 45Q Credit Among Qualified Facility Owners. Eligibility for the § 45Q credit is based on the total amount of CO_2 captured and disposed of in secure geological storage during a taxable year subject to the following:

(a) If the qualified facility is owned by a partnership that has not made a valid election under § 761(a), the partnership will be considered the taxpayer for purposes of this notice. In such cases, the § 45Q credit must be allocated in accordance with § 1.704-1(b)(4)(ii).

(b) If the qualified facility is owned by a partnership that has made a valid § 761(a) election, then each partner in the partnership will be considered the taxpayer for purposes of this notice. In such case, the taxpayer may claim the § 45Q credit in accordance with its portion of the total amount of qualified CO_2 that is commensurate with its undivided ownership of the qualified facility.

.07 Applicability of Credit for Projects under §§ 48A and 48B of the Code. Qualified CO_2 for purposes of the § 45Q credit does not include CO_2 that is captured and sequestered in a project to the extent required under an agreement executed with the Service under the qualifying advanced coal project program of § 48A or the qualifying gasification project program of § 48B.

.08 Credit Recapture. Taxpayers must physically or contractually ensure that all qualified CO_2 disposed of in secure geological storage remains stored and is not released into the atmosphere. Taxpayers must recapture the benefit of any credit allowable under § 45Q(a) with respect to any qualified CO_2 that ceases to be captured, disposed of, or used as a tertiary injectant in a manner consistent with the requirements of § 45Q. Procedures regarding § 45Q credit recapture will be provided in future guidance.

.09 Credit Termination. Pursuant to § 45Q(e), at such time as the Service certifies, in consultation with the EPA, that 75,000,000 metric tons of qualified CO_2 have been taken into account for purposes of § 45Q credit, the Service will publicly announce that the § 45Q credit will cease to be available for the calendar year following such announcement.

SECTION 5. SECURE GEOLOGICAL STORAGE

.01 In General. In order to qualify for the § 45Q credit, a taxpayer must either physically or contractually dispose of captured CO_2 in secure geological storage using adequate security measures as provided by the Secretary in regulations. The term “secure geological storage” includes storage at deep saline formations, oil and gas reservoirs, and unminable coal seams under such conditions as the Secretary may determine under regulations. There are not yet regulations setting forth the requirements for secure geological storage. This section of the notice provides interim procedures for a taxpayer to determine adequate security measures for the secure geological storage of CO_2 until such regulations are promulgated. In the event that a

taxpayer disposes of the qualified CO_2 contractually, the taxpayer must ensure that the contracting party complies with the requirements of this section of the notice at all times, and the taxpayer must be able to provide documentation of such compliance as required under section 7 of this notice. In order to demonstrate secure geological storage for purposes of the § 45Q credit, a taxpayer must meet the requirements of section 5.02 of this notice.

.02 Requirements of Secure Geological Storage.

(a) Measurement of CO_2 at the Source of Capture: Final Mandatory GHG Reporting Rule. On September 22, 2009, EPA issued the Final Mandatory GHG Reporting Rule (Reporting Rule) (to be codified at 40 C.F.R pt. 98), to require reporting of greenhouse gas emissions from all sectors of the economy. The Reporting Rule applies to fossil fuel suppliers and industrial gas suppliers, including CO_2 suppliers, as well as to direct greenhouse gas emitters. The Reporting Rule does not require control of greenhouse gases: rather, it requires only that certain sources monitor and report emissions. A taxpayer claiming the § 45Q credit must use the methodology, inputs, and equations in the Reporting Rule (or any successor rule) to calculate the amount of CO_2 measured at the source of capture. The amount reported under the Reporting Rule (or any successor rule) must be consistent with the amount of qualified CO_2 taken into account for purposes of the § 45Q credit.

(b) Sequestration Site Rules.

(i) IPCC Guidelines. In order for geological storage to be considered adequately secure for purposes of the § 45Q credit such that the injected CO_2 does not escape into

the atmosphere, a taxpayer must conduct at the frequency appropriate for the site conditions, except as otherwise provided under paragraph (c), the following procedures outlined in the 2006 Intergovernmental Panel on Climate Change Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines):

(A) Conduct a site characterization by evaluating the geology of the storage site and surrounding strata and identifying the local and regional hydrogeology and leakage pathways such as deep wells, faults, and fractures.

(B) Conduct an assessment of the risks of CO_2 leakage, or escape of CO_2 from the subsurface to the atmosphere, by evaluating the potential for leakage through a combination of site characterization and realistic models that predict movement of CO_2 over time and locations where emissions might occur. A range of modeling tools is available, including reservoir simulators that are widely used in the oil and gas industry and have proved effective in predicting movement of gases and liquids, including CO_2, through geological formations. Reservoir simulation can be used to predict the likely location, timing, and flux of emissions. Additional numerical modeling techniques may need to be used to analyze aspects of the geology, such as multi-phase reaction transport models and geomechanical models.

(C) Monitor potential leakage pathways, measure leakage at those pathways as necessary, monitor the current and future behavior of the CO_2 and of the storage system, and use the results of the monitoring plan to validate and/or update models as appropriate. Monitoring should be conducted according to a suitable plan. This should

take into account the expectations from the modeling on where leakage might occur, as well as measurements made over the entire zone in which CO_2 is likely to be present.

(ii) UIC Program: Proposed Rules for Geologic Storage. The Underground Injection Control (UIC) program was established under the authority of Part C of the Safe Drinking Water Act (42 U.S.C. 300h et seq.) (SDWA), which regulates underground injection wells. The SDWA is designed to protect the quality of drinking water sources in the United States. The SDWA gives the EPA authority to issue regulations for state programs that contain "minimum requirements for effective programs to prevent underground injection which endangers drinking water sources." Under the UIC program, the EPA promulgated a series of regulations (40 C.F.R. parts 144 through 148) to employ a multiple barrier approach that includes requirements for the proper geologic siting, construction, operation, testing, and closure of injection wells to ensure that injected fluids remain isolated from underground sources of drinking water (USDWs) and the environment.

On July 25, 2008, the EPA proposed rules relating to federal requirements under the UIC Program for CO_2 Geologic Sequestration Wells (73 Fed. Register No. 144, 40 C.F.R. parts 144-146). The EPA proposes to create a new category of injection well (Class VI) under its existing UIC Program with new federal requirements to permit the injection of CO_2 for the purpose of geologic sequestration (*i.e.,* the long-term containment of a gaseous, liquid, or supercritical CO_2 stream in subsurface geologic formations). The EPA proposes to tailor existing UIC program components to create standards appropriate for injecting large amounts of CO_2 into a variety of geologic

formations to ensure that USDWs are not endangered.

The proposed UIC program rules have not been finalized as of the date of this notice. Once the UIC program rules are finalized, any taxpayer claiming the § 45Q credit who is covered by the new program rules must follow the modeling, monitoring, well construction, and other requirements of the relevant permit as required under the rules. The requirements in the final UIC program rules (or any successor rules) will apply in lieu of the requirements of the IPCC Guidelines under paragraph (i). However, any taxpayer that is not covered by the final UIC program rules must continue to follow the procedures outlined in the IPCC Guidelines pursuant to paragraph (i).

(iii) Proposed Geologic Sequestration Rules. Subpart PP of the Final Mandatory GHG Reporting Rule announces EPA's plans to propose new rules to require reporting of the amount of CO_2 that is geologically sequestered. EPA will seek comments on monitoring, reporting, and verification methodologies that can be used to determine the amount of CO_2 emitted and geologically sequestered at active EOR facilities and geologic sequestration sites where CO_2 is injected (for long-term storage) into saline aquifers, oil and gas reservoirs, or other geologic formations. When the proposed geologic sequestration rules are finalized, such rules (or any successor rules) will apply in addition to the final UIC program rules (to the extent applicable), and the requirements of the IPCC Guidelines under paragraph (i) will no longer apply.

(c) Compliance with Additional Regulatory Requirements. EPA may impose additional or different requirements for secure geological storage, including additional methodology, inputs, and equations to calculate the amount of CO_2 measured and

verified at the source of injection and/or the amount of CO_2 emitted from secure geological storage. Furthermore, various aspects of geologic sequestration, including well construction, operation, well plugging, and post-injection site closure may be subject to other existing or future requirements from government bodies, including EPA's regional or state UIC programs. Any taxpayer claiming the § 45Q credit must follow such additional requirements together with the Reporting Rule and the IPCC Guidelines (or, in lieu of the IPCC guidelines, the UIC program rule as applicable and the geologic sequestration rule, once they are finalized) in order to demonstrate secure geological storage for purposes of the § 45Q credit.

SECTION 6. REPORTING REQUIREMENTS

.01 Annual Reports. A taxpayer that has claimed the § 45Q credit on a tax return must submit an annual report to the Service containing the following information:

(a) The name, address, and taxpayer identification number of the reporting taxpayer, and all parties with which the taxpayer contractually ensures the secure geological storage of the CO_2;

(b) The name and location of the qualified facilities at which the CO_2 was captured;

(c) The amounts (in metric tons) of qualified CO_2 for the taxable year that has been taken into account for purposes of claiming the § 45Q credit;

(d) Any changes in the information included in prior annual reports submitted under section 6.01 of this notice, including adjustments to the amount (in metric tons) of qualified CO_2 taken into account for purposes of the § 45Q credit in prior taxable years;

and

(e) A declaration, applicable to the report and any accompanying documents, signed by a person currently authorized to bind the taxpayer in these matters, in the following form:

"Under penalties of perjury, I declare that I have examined this report, including accompanying documents, and to the best of my knowledge and belief, the facts presented in support of this report are true, correct, and complete."

.02 Time for Filing Reports. The annual report described in section 6.01 of this notice must be filed with the Service at the following address not later than the last day of the second calendar month following the month during which the tax return on which the § 45Q credit is claimed was due (including extensions):

Internal Revenue Service
Attn: CC:PSI:6, Room 5116
P.O. Box 14095
Benjamin Franklin Station
Washington, D.C. 20044

SECTION 7. RECORDKEEPING REQUIREMENT

.01 In General. A taxpayer is not required to attach documentation to the return on which the credit is claimed. However, § 6001 of the Code provides that every person liable for any tax imposed by the Code, or for the collection thereof, must keep such records, render such statements, make such returns, and comply with such rules and regulations as the Secretary may from time to time prescribe. See Treas. Reg. § 1.6001-1(e).

.02 Information Must Be Available for Inspection. The taxpayer must retain in its

records documentation establishing that the taxpayer qualifies for the § 45Q credit. The taxpayer must, upon request, make such documentation available for inspection by the Service regardless of whether the taxpayer physically or contractually ensures injection or disposal in secure geological storage. Such necessary documentation includes, but is not limited to, the following:

(a) Methodology, inputs, and equations used to measure the amount of CO_2 at the source of capture and verify the amount at the point of disposal or injection. Qualified CO_2 for purposes of the § 45Q credit does not include the amount of CO_2 recycled or re-injected as part of EOR operations.

(b) Evidence of disposal of captured CO_2 in secure geological storage, as specified in section 5 of this notice. As future Federal and state regulations are promulgated, such evidence may also include any certificates issued or determinations made by a Federal or state government that the geological storage meets the necessary requirements to ensure secure storage.

(c) Methodology, inputs, and equations used to calculate the amount of CO_2 emitted from secure geological storage.

(d) All contracts entered into by the taxpayer and any contracting party that ensures the use of the CO_2 as a tertiary injectant or the disposal of the CO_2 in secure geological storage.

SECTION 8. PAPERWORK REDUCTION ACT

The collection of information contained in this notice has been reviewed and approved by the Office of Management and Budget in accordance with the Paperwork

Reduction Act (44 U.S.C. § 3507) under control number 1545-2153.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection of information displays a valid OMB control number.

The collection of information is in section 6 of this notice. This information is required to allow the Secretary to determine when 75,000,000 metric tons of qualified CO_2 have been taken into account for purposes of the § 45Q credit. The § 45Q credit will cease to be available after the end of the calendar year in which the Secretary, in consultation with the EPA, certifies that 75,000,000 metric tons of qualified CO_2 have been taken into account. This collection of information is required to obtain a benefit. The likely respondents are businesses or other for-profit institutions.

The estimated total annual reporting burden is 180 hours.

The estimated annual burden per respondent varies from 2 to 10 hours, depending on individual circumstances, with an estimated average of 6 hours. The estimated number of respondents is 30.

The estimated annual frequency of responses is annually.

Books or records relating to a collection of information must be retained as long as their contents may become material in the administration of any internal revenue law. Generally, tax returns and tax return information are confidential, as required by 26 U.S.C. § 6103.

SECTION 9. DRAFTING INFORMATION

The principal author of this notice is Jennifer C. Bernardini of the Office of Associate Chief Counsel (Passthroughs & Special Industries). For further information regarding this notice contact Jennifer C. Bernardini on (202) 622-3110 (not a toll-free call).