



September 29, 2023

Via Electronic Submission (www.regulations.gov)

Office of Associate Chief Counsel (Passthroughs & Special Industries)
Internal Revenue Service
CC:PA:LPD:PR (Notice 2022-57)
Room 5203, P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

Re: Comments in Response to Notice 2022-57

To Whom It May Concern:

The CO₂ Solutions Coalition (the “Coalition”) respectfully submits this request for guidance in response to Notice 2022-57 on two matters regarding the credit for carbon oxide sequestration under section 45Q of the Internal Revenue Code, as amended by the Inflation Reduction Act of 2022 (the “IRA”). Specifically, the Coalition requests guidance that is consistent with the intent of Congress in incentivizing utilization of carbon dioxide (“CO₂”) and that (i) clarifies the application of the “80/20 Rule” (defined below) to previously placed in service carbon capture equipment and (ii) provides clear and practical procedures for taxpayers to timely obtain an approved lifecycle analysis (“LCA”) for purposes of determining the amount of qualified carbon oxide utilized under Treas. Reg. §§ 1.45Q-1(b)(ii) and (c)(2)(ii).

The Coalition is a group of CO₂ suppliers and CO₂ end-users that are seeking to ensure the continued supply of CO₂ that is critically needed to ensure food security and availability for the many food and beverage products that require CO₂, for use in life-saving medical applications requiring CO₂, and to support the development of U.S. infrastructure — including facilities that U.S. companies are seeking to construct following passage of the IRA and the Bipartisan Infrastructure Law (the “BIL”). A list of Coalition members is appended at the end of this letter. Ensuring the continued supply of commercial grade CO₂ for these purposes relies on supply from existing facilities, which requires both clarity on the 80/20 Rule and effective procedures for obtaining an approved LCA.

I. Background

a. Availability of Section 45Q for Utilization

Section 45Q was enacted in 2008. In 2018, as part of the Bipartisan Budget Act of 2018, substantial changes were made to the credit to spur investment in carbon capture facilities to reduce the amount of CO₂ (and other carbon oxides) being released into the atmosphere. Among those 2018 changes, as relevant here, was the availability of the section 45Q credit for “utilization” of captured CO₂. Recognizing that further changes were required to spur such investments, the IRA increased the amount of the available tax credit, including for utilization, and reduced certain minimum capture thresholds.

b. Utilization of CO₂

Although the legislative history of the 2018 changes made to section 45Q to include utilization is scant, it is clear that a goal was to incentivize the capture of CO₂ and the use of such CO₂ in products for which a commercial market exists.¹ It also is clear that the extension of the credit to utilization was needed to ensure that there is an available supply of CO₂ in commercial products that are needed by U.S. households and industry.

(i) CO₂ Applications

Several critical industries, including food and beverage, agriculture, infrastructure, and healthcare, depend on a reliable supply of CO₂ for use in commercial applications; accordingly, it is imperative that the United States does not have shortages of available CO₂ for these applications. To prepare CO₂ for commercial utilization, CO₂ is captured from an industrial or natural source, purified and converted to a high-pressure cylinder gas, refrigerated liquid, or dry ice. Once in suitable form, CO₂ is a raw material critical to the following applications.

In the food industry, CO₂ is used either as a gas, liquid, or solid (dry ice) to preserve and freeze foods, which in turn reduces food insecurity. Although mechanical refrigeration is also used to freeze foods, it often cannot achieve the low temperatures possible from using liquid CO₂ or dry ice. Quickly freezing foods preserves color and texture by limiting the formation of ice particles. CO₂ gas is used to preserve packaged foods and fruits by displacing oxygen in packaging. In the meat and poultry industry, CO₂ provides for humane animal processing and maintains cool temperatures for the transportation of meat products.

In the beverage industry, CO₂ is used to carbonate alcoholic beverages and soft drinks, decaffeinate coffee, and control the pH levels in juice and wine. In water and wastewater treatment, CO₂ is used to control pH levels.

In the manufacturing and construction industries, CO₂ is used in welding to prevent iron from becoming brittle from exposure to nitrogen in the atmosphere. CO₂ is also an effective cleaning solvent, used in the semiconductor and electronic manufacturing industries, to eliminate the need to use other solvents with known physiological or environmental problems. Dry ice is

¹ See section 45Q(f)(5)(A)(iii). A “commercial market means a market in which a product, process, or service that utilizes carbon oxide is sold or transacted on commercial terms.” Treas. Reg. § 1.45Q-4(d).

also used for a number of purposes including (i) for blast cleaning, replacing sand and other grit materials, (ii) for sanitization purposes, avoiding the introduction of environmental toxins commonly produced with the use of other cleaning materials, and (iii) to stop leaks and remediate industrial spills, leaving no waste product after cleanup.

In the healthcare industry, CO₂ is used with oxygen and other gases in specialty gas mixtures to help diagnose disease. For example, mixtures of oxygen with varying amounts of CO₂ are used to assess lung function for patients with respiratory diseases such as chronic obstructive pulmonary disease (COPD). Because CO₂ is essential for regulating respiration, there are no available alternatives for making these mixtures. CO₂ is also used for insufflation, which is required for adequate visualization during endoscopic procedures.² Finally, dry ice is also used in medical applications to flash freeze biological samples, remove growths, and provide refrigeration the safe transportation of vaccines and other cooled medications.

In the agricultural industry, CO₂ is also used to enhance yields of agricultural processes, including algae formation and crop cultivation in greenhouses, with the use of CO₂ with low-temperature heat in greenhouses able to increase yields by 25% to 30%.³ Because this is a biologic process uniquely dependent on CO₂, there are no known alternatives. Further, CO₂ is used to aid pest control without the use of harmful toxins.

Finally, CO₂ is commonly used in fire suppression, and is particularly effective on a wide range of flammable materials, including those found in electrical rooms, paint booths, power plants, and research facilities.

The continued supply of CO₂ for these purposes is absolutely critical. However, there are substantial concerns about whether current CO₂ sources will, in fact, remain available.

(ii) CO₂ Sources

The majority of crude CO₂ for the critical CO₂ applications described above is sourced as a byproduct of chemical manufacturing, such as ethanol, ammonia and hydrogen production.⁴ Ethanol plants are an extremely attractive source for crude CO₂, as raw gas produced by the fermentation process consists of more than 90% CO₂, and, accordingly, fermentation from ethanol plants is the largest single source of crude CO₂ for the United States.⁵ Ammonia plants which produce more than 20% of the CO₂ sold in the United States produce waste gas which consists of approximately 40% CO₂.⁶ Therefore, the availability of crude CO₂ is heavily

² Xuan Li, et al, CO₂ insufflation versus air insufflation for endoscopic submucosal dissection: A meta-analysis of randomized controlled trials (2017), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5443502/>.

³ International Energy Agency, Putting CO₂ to Use: Creating value from emissions (2019), available at https://iea.blob.core.windows.net/assets/50652405-26db-4c41-82dc-c23657893059/Putting_CO2_to_Use.pdf.

⁴ See 2023 US Merchant CO₂ Report (Apr. 3, 2023), available at <https://www.gasworld.com/feature/the-2023-us-merchant-co2-report/2121888.article/>.

⁵ EPA, Carbon Dioxide Supply Chain (2022), available at <https://www.epa.gov/system/files/documents/2023-03/Carbon%20Dioxide%20Supply%20Chain%20Profile.pdf>.

⁶ *Id.*; 2023 US Merchant CO₂ Report (Apr. 3, 2023), available at <https://www.gasworld.com/feature/the-2023-us-merchant-co2-report/2121888.article/>.

impacted by reductions in demand for ethanol and regularly scheduled shutdowns of ammonia plants for routine maintenance during the summer months.⁷

As of early 2023, the U.S. supply of CO₂ lagged approximately 2,500 metric tons per day behind market demand for CO₂, with the majority of CO₂ demand coming from the food and beverage industry.⁸ When sources of CO₂ become unavailable, CO₂ end users struggle to meet production needs as alternative sources of CO₂ are often unavailable or cost prohibitive. Further, in the warmer months, the demand for CO₂ increases, and any variation in supply is magnified.

Shortages of CO₂ for these critical purposes is a real and serious concern. For example, during the most critical periods for the delivery of COVID-19 vaccines, dry ice manufactured using commercial grade CO₂ was required for transport and storage.⁹ And as recently as the past year, the U.S. was suffering from a shortage of CO₂ that threatened the ability of industry to meet the demand for CO₂ in many critical and other commercial applications.¹⁰

A lack of CO₂ would also hinder the policy objectives of the IRA, CHIPS Act and BIL. Without CO₂, semiconductor manufacturers will be unable to produce semiconductor chips critical to the electric vehicle supply chain, or would be forced to use environmentally damaging alternatives, jeopardizing domestic manufacturing of electric vehicles and associated infrastructure. Without the necessary CO₂ for welding, sanitization and environmental remediation, domestic manufacturing of solar panels and racking, wind turbines, grid modernization equipment, turbines, fuel cells and more would be at jeopardy. These welding applications are also critical for the bridge construction supported by the BIL to repair aging infrastructure and ensure the safety of American drivers.

The ability to obtain commercial grade CO₂ in the large quantities needed for these applications requires that it is economic for producers of such CO₂ to capture and deliver such CO₂ to companies that use it for the critical, commercial uses discussed above. Section 45Q is critical to those economics, but may be unavailable for many critical use CO₂ producers absent clarity regarding certain aspects of section 45Q including the 80/20 Rule and without an LCA process that provides timely approvals and reasonably maximizes the amount of CO₂ determined to be stored through utilization.

⁷ CO2 Meter, What the CO2 Supply Shortage means for the Beverage Industry (Apr. 24, 2023), available at <https://www.co2meter.com/blogs/news/co2-supply-shortage-breweries>.

⁸ CO2 Meter, What the CO2 Supply Shortage means for the Beverage Industry (Apr. 24, 2023), available at <https://www.co2meter.com/blogs/news/co2-supply-shortage-breweries>.

⁹ NPR, Why Does Pfizer's COVID-19 Vaccine Need To Be Kept Colder Than Antarctica? (Nov. 17, 2020) available at <https://www.npr.org/sections/health-shots/2020/11/17/935563377/why-does-pfizers-covid-19-vaccine-need-to-be-kept-colder-than-antarctica>.

¹⁰ CO2 Meter, What the CO2 Supply Shortage means for the Beverage Industry (Apr. 24, 2023), available at <https://www.co2meter.com/blogs/news/co2-supply-shortage-breweries>; Wall Street Journal, There's a Carbon Dioxide Shortage, and Food and Drink Makers are Scrambling (Aug. 26, 2022), available at <https://www.wsj.com/articles/food-beverage-companies-race-to-keep-plants-running-during-wide-co2-shortage-11661527088>; NPR, Your beer needs carbon dioxide, but the price skyrocketed over the summer (Sep. 22, 2022), available at <https://www.npr.org/2022/09/22/1124491808/beer-carbon-dioxide-shortage>.

In short, without the section 45Q incentive and this requested guidance, there is a very substantial risk that commercial sources of CO₂ will be permanently lost for the critical uses and needs discussed in this letter. Because CO₂ supply lags behind CO₂ demand and alternative sources of CO₂ are often unavailable or cost prohibitive, CO₂ end users will struggle to secure necessary CO₂ supply for their products.

c. Section 45Q - Relevant Background

Section 45Q generally provides a tax credit for each metric ton of qualified carbon oxide captured and stored. This includes CO₂ captured using carbon capture equipment that was originally placed in service at a qualified facility and that is either disposed of in secure geological storage, used in enhanced oil or natural gas recovery or, as relevant here, otherwise utilized.

As applicable here, qualified carbon oxide includes carbon oxide captured from an industrial source by carbon capture equipment and which would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release, and is measured at the source of capture and verified at the point of utilization.¹¹ For entitlement to the section 45Q credit, as modified in 2018 and by the IRA, the carbon capture equipment must be originally placed in service on or after February 9, 2018.¹²

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, and generally does not include components of property used for transporting qualified carbon oxide for disposal, injection, or utilization.¹³ More specifically, carbon capture equipment is any 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.¹⁴

Treas. Reg. § 1.45Q-2(c)(2) further provides that 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, and includes a system of gathering and distribution lines that collect carbon oxide captured from a qualified facility or multiple qualified facilities that constitute a single project for the purpose of transporting that carbon oxide away from the qualified facility or single project to a pipeline used to transport carbon oxide to or from one or more taxpayers and projects. All components that make up an independently functioning process train capable of capturing, processing, and preparing carbon

¹¹ Section 45Q(c).

¹² Section 45Q(b).

¹³ Treas. Reg. § 1.45Q-2(c).

¹⁴ Treas. Reg. § 1.45Q-2(c)(1).

oxide for transport (a “single process train”) are treated as a single unit of carbon capture equipment.¹⁵

A “qualified facility” is any industrial facility the construction of which begins before January 1, 2033, and either construction of carbon capture equipment begins before such date, or the original planning and design for such facility includes installation of carbon capture equipment, and which meets certain minimum capture threshold amounts.¹⁶ A qualified facility which is placed in service before 2023, where additional carbon capture equipment is installed at such facility and such equipment is placed in service after December 31, 2022 is also eligible for the section 45Q credit, as amended by the IRA.¹⁷ An industrial facility is a facility, including an electricity generating 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, injection, or utilization, would otherwise be released into the atmosphere as industrial emission of greenhouse gas or lead to such release.¹⁸

Treas. Reg. § 1.45Q-4(a)(3) provides that utilization of qualified carbon oxide includes the use of qualified carbon oxide for any purpose for which a commercial market exists. For purposes of determining the credit under section 45Q, the amount of qualified carbon oxide utilized equals the metric tons of qualified carbon oxide which the taxpayer demonstrates, based upon an analysis of lifecycle greenhouse gas emissions, is captured and permanently isolated from the atmosphere, or displaced from being emitted into the atmosphere.¹⁹

Lifecycle greenhouse gas emissions, expressed in carbon dioxide equivalent (“CO₂e”), must be determined through a LCA. The LCA demonstrates that the proposed utilization process results in a net reduction of CO₂e when compared to a comparison system. Prior to claiming the section 45Q tax credit for utilization, the taxpayer must submit an LCA report to the IRS and the Department of Energy (“DOE”). The DOE must undertake a technical review of the LCA report. The IRS must determine whether to approve the LCA and must notify the taxpayer of its determination. The taxpayer must receive approval of its LCA prior to claiming the section 45Q credits for such taxable year on any federal income tax return.

d. **The 80/20 Rule**

As noted above, for entitlement to the section 45Q credit, as modified in 2018 and by the IRA, the carbon capture equipment must be originally placed in service on or after February 9, 2018. 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% of the qualified facility or carbon capture equipment's total fair market value (that is, the cost of the new components of property plus the

¹⁵ Treas. Reg. § 1.45Q-2(c)(3).

¹⁶ Section 45Q(d).

¹⁷ Section 45Q(b)(1)(C), (2).

¹⁸ Treas. Reg. § 1.45Q-2(d).

¹⁹ Treas. Reg. § 1.45Q-4(b)(1).

value of the used components of property) (the “80/20 Rule”).²⁰ For purposes of the 80/20 Rule, the single process train is the relevant unit of retrofitted carbon capture equipment.²¹ Therefore, previously placed in service carbon capture equipment qualifies as “new” equipment eligible for the tax credit under section 45Q if the 80/20 Rule is satisfied.

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 (the cost of equipment for a new pipeline, not equipment used to repair an existing pipeline) owned and used exclusively by that taxpayer to transport carbon oxides captured by that taxpayer’s qualified facility or carbon capture equipment that would otherwise be emitted into the atmosphere.

II. Requested Guidance

a. Clarification of the 80/20 Rule

Congress recognized the importance of reducing carbon emissions in its 2008 enactment and 2018 expansion of section 45Q which incentivizes the capture and sequestration, disposal or utilization of CO₂ that otherwise would be emitted into the atmosphere, and again in the modification and expansion of section 45Q in the IRA, which enhanced the credit rate and reduced the minimum carbon capture thresholds, including for utilization.

However, in reality, the vast majority of critical use CO₂ producers do not qualify for the credit provided by section 45Q. That is the case because under section 45Q(a), the capture of CO₂ is incentivized only for the first twelve years after the carbon capture equipment is originally placed in service. Accordingly, a critical use CO₂ producer with carbon capture equipment that was placed in service in 2010 would not currently be eligible for the credit under section 45Q since the equipment was originally placed in service 13 years ago. Further, the utilization provisions of section 45Q were not enacted until 2018. Without the incentive of section 45Q to help offset the increased costs associated with obtaining crude CO₂, critical use CO₂ producers will need alternative sources of CO₂ which will likely include substantially higher cost non-traditional CO₂ sources.

Further, as detailed above, the CO₂ supply chain is subject to supply vulnerabilities, with current demand outpacing the amount of critical use CO₂ available. Accordingly, end users of CO₂ will be unable to procure necessary supply. In 2020 and 2021, a shortage of CO₂ jeopardized the rollout of COVID-19 vaccines,²² and in 2022 supply chain shortages impacted

²⁰ See Treas. Reg. § 1.45Q-2(g)(5); see also Rev. Rul. 94-31 (“A facility would also qualify as originally placed in service even though it contains some used property, provided the fair market value of the used property is not more than 20 percent of the facility’s total value (the cost of the new property plus the value of the used property).”).

²¹ *Id.*

²² See NY Times, How to Ship a Vaccine at –80°C, and Other Obstacles in the Covid Fight (Sep. 19, 2020), available at <https://www.nytimes.com/2020/09/18/business/coronavirus-covid-vaccine-cold-frozen-logistics.html>.

the food and beverage industry.²³ Ensuring the availability of section 45Q for carbon capture equipment previously placed in service at industrial facilities is crucial to preventing and mitigating future CO₂ shortages.

Treasury understood the need for previously placed in service carbon capture equipment to be eligible for section 45Q, and incorporated long-standing guidance regarding when a facility can be considered “new” for tax purposes in the 2021 final regulations under section 45Q.²⁴ For previously placed in service carbon capture equipment to be eligible for the credit under section 45Q, the equipment must satisfy the “80/20 Rule.”

Unfortunately, application of the 80/20 Rule is less than clear. Treas. Reg. § 1.45Q-2(g)(5) provides that for purposes of the 80/20 Rule, the relevant unit of retrofitted carbon capture equipment is a single process train. The regulations further define a single process train as comprising all components that make up an independently functioning process train capable of capturing, processing, and preparing carbon oxide for transport. However, it is difficult to draw the boundaries around the single process train. This is further complicated by the fact that after the separation and capture of the CO₂, the CO₂ may be further processed prior to transport to improve the commercial viability of its distribution. For example, when considering carbon capture equipment installed at an ethanol facility, the term “independently functioning process train” could be read so as to include downstream purification and liquefaction of the CO₂, although this process is undertaken to improve the commercial viability of distribution of the CO₂ and is not required to separate and capture the CO₂. If such equipment not primarily intended to separate and capture carbon oxide were included in the single process train for purposes of the 80/20 Rule, it is very unlikely that any carbon capture equipment added to the facility would even qualify for section 45Q due to the high cost of the remaining used equipment likely exceeding 20% of the total value of the single process train post-retrofit.

Ensuring that previously placed in service carbon capture equipment can practically be eligible for section 45Q by satisfaction of the 80/20 Rule is critical to ensuring the supply of CO₂ to end users. Due to the large capital costs needed to retrofit existing carbon capture equipment, certainty regarding the 80/20 Rule, and therefore certainty regarding the availability of section 45Q, is needed.

To provide clarity regarding the application of the 80/20 rule, the Coalition requests guidance provide that for purposes of the 80/20 Rule, the single process train includes only equipment that would not have been installed “but for” the purpose of separating and capturing qualified carbon oxide (if such separation and capture then allows for the transportation and sequestration or utilization of such qualified carbon oxide). Such guidance would provide much needed boundaries regarding the components encompassing a “single process train” for purposes of the 80/20 Rule and would allow critical use CO₂ producers to make necessary investments to upgrade carbon capture equipment with certainty of section 45Q’s availability.

²³ See *supra* note 7.

²⁴ Such guidance previously applied to carbon capture equipment via IRS Notice 2020-12.

This request aligns with the final regulations which provide that carbon capture equipment is, *inter alia*, any equipment used for the purpose of separating, purifying, drying, and/or capturing carbon oxide that would otherwise be released into the atmosphere from an industrial facility.²⁵ Further, this request also aligns with a recent IRS Revenue Ruling in which the IRS held that carbon capture equipment that was installed in 2017 was not considered placed in service for purposes of section 45Q until 2021 when the taxpayer installed the final components of carbon capture equipment to complete the single process train.²⁶ In the ruling, the IRS clarified that the original placed-in-service date of a single process train of carbon capture equipment is the date that the single process train is placed “in a condition or state of readiness and availability for the capture, processing, and preparation of carbon oxide for transport for disposal, injection, or utilization.” Therefore, the ruling makes clear that for purposes of determining section 45Q eligibility, the key inquiry is whether the equipment is ready and available to capture, process and prepare carbon dioxide for transportation and sequestration or utilization. Applying this analysis to the 80/20 Rule, the boundaries of the single process train should only include equipment that would not have been installed but for ensuring the capture, processing and preparation of carbon dioxide for transportation and sequestration or utilization.

Such guidance would provide taxpayers with certainty regarding the application of the 80/20 Rule to carbon capture equipment. Greater clarity on the availability of section 45Q to retrofit carbon capture equipment is paramount to ensuring the reduction in emitted carbon oxide and the availability of the CO₂, heading off any impacts or shortages that could otherwise impact users and consumers of products for which CO₂ is essential.

b. LCA Submission and Review Procedures

As discussed above, with respect to a carbon capture facility that is storing carbon oxides through utilization, the taxpayer must obtain approval of its LCA report by the IRS. Treas. Reg. § 1.45Q-4(c)(6) requires pre-approval of an LCA report prior to claiming the credit under section 45Q. The LCA report must be submitted for review for each taxable year the section 45Q credit is to be claimed.²⁷ Treasury regulations provide that the LCA report must be prepared in conformity with and contain documentation that conforms with International Organization for Standardization (ISO) 14040:2006, Environmental management - Life cycle assessment - principles and framework, requirements and guidelines, and ISO 14044:2006, Environmental management - Life cycle assessment - requirements and guidelines.²⁸

Following the amendment of section 45Q by the Bipartisan Budget Act of 2018, the IRS has continually listed guidance on the LCA submission and review process under section 45Q as a guidance project on its priority guidance plans. However, beyond the 2021 final regulations discussed above, there has been no other IRS guidance released providing clarity on the LCA submission and review process.

²⁵ Treas. Reg. § 1.45Q-2(c)(1).

²⁶ Rev. Rul. 2021-13.

²⁷ 45Q LCA Guidance Toolkit at § 2.1.6.3, available at <https://netl.doe.gov/LCA/CO2U/45Q>.

²⁸ Treas. Reg. § 1.45Q-4(c)

The LCA report submission, review and approval process is complex. The DOE must agree with the taxpayer on the methodology required, including the use of the appropriate system boundary, identification and treatment of coproducts, identification of a comparable system for baseline emission purposes, and approval of such comparable system. However, the DOE does not have a mechanism for a pre-submission conference. There are no clear procedures for conducting an LCA that will be approved for purposes of section 45Q, nor is there detailed guidance on the DOE's expectations.

The lack of transparency in the process is particularly troublesome in the context of LCA evaluations because the ISO standards for conducting LCAs eschew bright line rules in favor of a wide range of discretion within guiding principles. Under the section 45Q regulations, the LCA must align with ISO Standards 14040 and 14044, as well as the DOE standards for the appropriate methodology, data sources, and modeling assumptions (all of which are subject to continued modification). The ISO Standards provide an overarching framework for conducting LCAs for standardization. ISO 14044, Section 4.2.3.6 provides that "data quality requirements shall be specified to enable the goal and scope of the LCA to be met." The DOE guidance acknowledges that ISO 14040 and 14044 are general and provides additional detail to support the interpretation of these standards for purposes of the section 45Q LCA.²⁹ However, this detail is not always clearly defined. For example, in the context of determining what the appropriate comparison system, the DOE states that "all technology shall represent current state-of-the-art capabilities available on the market at the time the LCA is conducted" but does not provide any additional insight on the recommended approach when multiple alternative technologies are available.³⁰ This lack of clarity has led to judgment calls made by the DOE that are disclosed to the taxpayer only after an LCA review is complete.

Accordingly, taxpayers are left to submit LCA reports to the DOE and typically wait months for a response from the IRS with the feedback from the DOE on required revisions to the LCA report. After receiving initial feedback and upon submitting a new iteration of the LCA report, taxpayers must again wait months for DOE revisions. This cycle continues until the DOE approves the LCA report. Further, the Coalition understands that DOE's interpretation of the required methodology for determining the amount of CO₂e stored is so restrictive as to make utilization effectively an economically unavailable method of storing CO₂, contrary to the intent of Congress.

To date, the Coalition is not aware of any IRS/DOE-approved section 45Q LCA report. As previously discussed in further detail, taxpayers need confidence in the amount of the section 45Q credit in order to make the investments needed to install, or make improvements to previously installed, carbon capture equipment. The only avenue to ensure confidence in the amount of section 45Q credit available for utilization is through the approval of an LCA report, which determines the amount of CO₂e "stored" (i.e., permanently isolated from the atmosphere or displaced from being emitted into the atmosphere) and, therefore, eligible for the section 45Q credit. This confidence is impossible to obtain under the current LCA report approval regime.

²⁹ 45Q LCA Guidance Toolkit at § 1.4, available at <https://netl.doe.gov/LCA/CO2U/45Q>.

³⁰ 45Q LCA Guidance Toolkit at § 2.1.6.1, available at <https://netl.doe.gov/LCA/CO2U/45Q>.

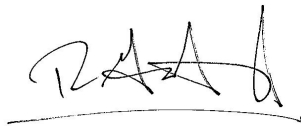
The Coalition respectfully requests Treasury and IRS issue guidance providing clear procedures for the LCA submission and review process. In the five years since the passage of the Bipartisan Budget Act of 2018, taxpayers have been left to struggle through the LCA report approval process without clear direction from the approving agencies. Having clear procedures will not only benefit taxpayers seeking approval of LCA reports, but will ensure that DOE has a uniform process and will enhance the auditability of section 45Q by the IRS. The Coalition requests that DOE adopt a clear methodology for conducting an LCA to determine the amount of carbon oxide treated as stored under section 45Q, including providing for the availability of a pre-submission conference with DOE. Finally, in order to provide much needed clarity, the Coalition also requests that guidance provide specific reference to a comprehensive database with comparison technology emission factors for products, processes, and services for taxpayers to consult in determining the LCA comparable product system.

This request for guidance aligns with the Bipartisan Budget Act of 2018, which instructs Treasury to “prescribe such regulations and other guidance as may be necessary or appropriate to carry out [the amendments to section 45Q].” Ensuring the availability of section 45Q is critical to the CO₂ supply chain and providing a clear LCA report approval process supports this goal.

* * * *

Thank you for considering the Coalition’s request for guidance on issues critical to suppliers and end users of critical use CO₂. We would be pleased to meet with Treasury and IRS to discuss our recommendations. If you have any questions or require additional information, please feel free to contact Rich Gottwald at rgottwald@cganet.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Gottwald', with a horizontal line underneath it.

Rich Gottwald

Members of the CO2 Solutions Coalition

