

Docket No. IRS-2020-0013 Credit for
Carbon Oxide Sequestration:

Comments on the proposed regulations for
§45Q of the Internal Revenue Code

Public comment to the

Internal Revenue Service

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Internal Revenue Service

1111 Constitution Avenue, N.W.
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Re: Docket No. IRS-2020-0013 Credit for Carbon Oxide Sequestration (REG-112339-19); 85 Fed. Reg. 34,050 (June 2, 2020)

Gaffney, Cline & Associates, Inc. (GaffneyCline) is pleased to submit comments to the United States Department of the Treasury and the Internal Revenue Service (IRS) on the proposed regulations regarding §45Q of the Internal Revenue Code, as amended by Section 41119 of the Bipartisan Budget Act of 2018 (BBA), Pub. L. No. 115-123 (February 9, 2018).

Background

GaffneyCline is an international petroleum and energy consultancy, which has been operating worldwide for over 50 years¹. GaffneyCline focuses solely on the petroleum and energy industry, and specializes in the provision of policy, strategy, technical and commercial assistance to governments, financial institutions, and national and international oil, gas and energy companies worldwide.

GaffneyCline employs a combination of commercial and technical professionals in main offices in the United Kingdom, United States and Singapore, with supporting offices in Argentina, Australia and Dubai. These professionals encompass all upstream technical disciplines (geology, geophysics, petrophysics, reservoir engineering, drilling and completion and development planning / facilities engineering), with midstream and downstream engineering and economics, commercial, legal and business strategy professionals to complement its technical team.

The Carbon Management practice at GaffneyCline builds on our oil and gas expertise by performing technical, commercial and strategic assessment of carbon & climate risks and opportunities. This provides trusted, confidential and independent due diligence to our clients in their evaluations, reporting requirements, permit applications, and financial transactions. GaffneyCline has considerable experience with Carbon Capture, Use and Storage (CCUS) projects, technology and market assessments, including assignments for some of the industry's key players. GaffneyCline has been involved in over 65 CCUS screening and feasibility studies for clients over the last 2 decades, and our experts have been involved in industry leading CCUS

¹ While GaffneyCline is a wholly-owned subsidiary of Baker Hughes Company, it operates as an independent consultancy. As such, these comments represent the perspective of GaffneyCline's Carbon Management consulting practice and not necessarily the perspective of Baker Hughes Company as a provider of energy technology products and services, a perspective which is represented by the parent company's separate comments submitted to the docket.

projects across the world², in addition to collaborative industry technology development and capability building efforts³.

Introduction

To validate the role of CCUS as a climate change mitigation technology, it is critical that the performance be credibly delivered. According to the IPCC (2005)⁴ “With appropriate site selection based on available subsurface information, a monitoring programme to detect problems, a regulatory system and the appropriate use of remediation methods to stop or control CO₂ releases if they arise, the local health, safety and environment risks of geological storage would be comparable to the risks of current activities such as natural gas storage, EOR and deep underground disposal of acid gas”.

There are various options available to achieve verification of secure geological storage, and clear performance based methods implemented through transparent and consistent processes, by credible and capable organizations is key.

Our comments focus on the implementation of the CSA/ANSI ISO 27916:19 (ISO 27916:19) as a relevant standard for demonstrating secure geological storage of CO₂ injection in Enhanced Oil Recovery (CO₂-EOR) operations, and the need for the IRS to provide further guidance to taxpayers on:

1. the definition of an independent engineer or geologist;
2. the timing for accreditation body implementation; and
3. the cadence for conformity assessment during key project phases

We are very grateful for the work of the IRS and other agencies to provide further clarifications for the §45Q tax credit following its amendment in the BBA. Pulling from our background and experience, and in the spirit of supporting the IRS efforts, the following comments provide suggestions for IRS guidance that would resolve these remaining questions⁵.

² Algeria, Australia, Canada, Denmark, Germany, Indonesia, Netherlands, United Arab Emirates, United Kingdom, and the United States.

³ Chair of the Society of Petroleum Engineers (SPE) Forum on CO₂ Storage, Chair of the CO₂ Capture Project (which received a Global Achievement Award from the Carbon Sequestration Leadership Forum (CSLF)), Chair of the North American CCS Association, Program Chair of the SPE CCUS Technical Section, Alternate Chair of the United States National Petroleum Council’s CCUS study Coordinating Subcommittee, United States Congressional Testimony on CO₂ Capture technologies, and International Energy Agency peer reviewer of the CCUS Energy Technology Perspective.

⁴ IPCC Special Report on Carbon Dioxide Capture and Storage, 2005.

⁵ These comments have been prepared for public use. No person, organization, or company should directly or indirectly rely upon its contents. GaffneyCline produced this analysis from various sources, but cannot attest to the accuracy of these. GaffneyCline, to the fullest extent permitted by law, disclaims all liability for actions or losses derived from any actual or purported reliance on this document by the user or by any other person or entity.

1. Definition of an independent engineer or geologist

The purpose of the ISO 27916:19 was to address the absence of an accepted standard and method for demonstrating the safe, long-term containment of CO₂ in association with CO₂-EOR and to document the quantity of associated storage of CO₂ as a barrier to the increased use of anthropogenic CO₂ in CO₂-EOR operations.

Pursuant to the International Standards Organization's directives⁶, standards such as ISO 27916:19 are written in accordance with the "neutrality principle"⁷, such that conformity can be assessed by a first party⁸, second party⁹, or third party¹⁰.

A common question is whether tax payers claiming the §45Q tax credit can use their staff engineers and geologists to perform ISO 27916:19 conformity assessment duties for a CO₂ EOR project with independence?

It is our opinion that in order to assure the independence of the engineer or geologist, implementation of the ISO 27916:19 should be performed by an appropriately qualified third-party accreditation body that ensures rigorous procedures are followed by all parties in the assessment of conformance. This will assure this is in accordance with determining adequate security measures for the geological storage of CO₂ such that it does not escape into the atmosphere, irrespective of their employer. In essence, the accreditation process ensures the rigor and objectivity needed to resolve any conflict ordinarily inherent to the employer/employee relationship

The "neutrality principle" is key for enabling access to a broad range of engineers and geologists for implementation. There are two existing precedents in the U.S. oil and gas industry that do not legally require companies to seek external validation to assure high professional standards of impartiality and competence:

- safety and performance verification in oil and gas using independent petroleum engineers; and
- resource and reserves reporting for companies listed on a U.S. stock exchange must comply with the U.S. Securities and Exchange Commission (SEC) regulations (updated in 2009)¹¹.

⁶ ISO "Foreword – Supplementary Information", available at www.iso.org/foreword-supplementary-information.html and contained as a link in the foreword to the ISO 27916:19

⁷ Pursuant to the ISO/IEC Directives, Part 2, Seventh edition, 2016, Clause 33, ISO International Standards

⁸ First party definition: a manufacturer or supplier of a product, and in the context of the §45Q tax credit, the taxpayer

⁹ Second party definition: a user or purchaser of the product, and in the context of the §45Q tax credit, a company with a direct business relationship to the taxpayer

¹⁰ Third party definition: an independent body

¹¹ Industry best practice goes beyond the mandates of the Sarbanes-Oxley Act of 2002 that prescribes the need for appropriate corporate governance, given the importance of such data is fundamental to a company's business. Best practices to ensure staff act independently in accordance with the accreditation body procedures include company staff coming from other parts of the organization to the business they are performing their certification duties for, and engaging third-party companies to provide an independent verification of the integrity of the process and the reasonableness of the internally derived results through an audit of the estimates made by the company's technical staff.

Although we are a company that provides third-party independent engineering and geological due-diligence to the oil and gas industry we believe that certifiers do not necessarily have to be from separate organizations to the taxpayer.

2. Timing for accreditation body implementation

There are three key considerations for the selection of the third-party accreditation body in order to address the potential for implementation barriers and technical barriers to trade¹²:

- credibility with all stakeholders to enhance the acceptance of CCUS;
- national coverage and links to international accreditation bodies to remove barriers to trade of the energy products to which CCUS is applied; and
- enabling access to a broad range of engineers and geologists for implementation.

Key options for a competent accreditation body for implementation of the ISO 27916:19 are the American National Standards Institute (ANSI), which currently acts as the accreditation body for greenhouse gas (GHG) reporting verifications, or other international professional organizations such as the Society of Petroleum Engineers (SPE), and/or the American Association of Petroleum Geologists (AAPG).

A common question is how long it will take for such accreditation bodies to develop the rigorous procedures needed to ensure high professional standards and competence in performing conformity assessments?

It is our opinion that development of these rigorous procedures for implementation of the ISO 27916:19 will take some time, but we anticipate the process can be achieved prior to start of construction deadline of 1/1/2024 for new projects.

However, before a third party accreditation body can invest the time and resources needed to develop such rigorous procedures, there is a need to clarify the definition of independent engineers and geologists to stakeholders, and the role that a third party accreditation body provides in order to garner broad understanding, interest and support.

¹² World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT)

3. Cadence for conformity assessment in key project phases

The purpose of performing conformity assessments of the ISO 27916:19 are to facilitate documentation of the safe, long-term containment, and the quantification of associated storage.

A common question is whether tax payers will need to have independent engineers and geologists performing an ISO 27916:19 conformity assessment more than once during the duration of the project?

It is in our opinion that implementation of the ISO 27916:19 requires following the documentation provisions already outlined to assure this is in accordance with determining adequate security measures for the geological storage of CO₂ such that it does not escape into the atmosphere.

According to the ISO 27916:19 the cadence for preparing and offering documentation to the verifier to undertake the conformity assessment will vary over key phases of the project. These are:

1. Initially, prior to the period of quantification¹³
2. Periodically, at least annually¹⁴
3. At project termination¹⁵

Prepared documentation must be provided to an accredited individual acting as an independent engineer or geologist to undertake the conformity assessment using the rigorous procedures defined by the third party accreditation body, but both the preparer and accredited individual can be employed by the taxpayer.

¹³ ISO 27916:2019, pg 5, Section 4.3 'Initial Documentation' includes: a) description of the EOR complex and engineered systems; b) the initial containment assurance; c) the monitoring program; d) the quantification method to be used; and e) the total mass of previously injected CO₂ within the EOR complex at the start of quantification period.

¹⁴ ISO 27916:2019, pg 5, Section 4.4 'Periodic Documentation' includes: a) the quantity of associated storage in specified units of CO₂ mass, or volumetric units convertible to mass, during the period covered by the documentation; b) the cumulative quantity of associated storage in specified units of CO₂ mass, or volumetric units convertible to mass, since the beginning of the quantification period; c) the formula and data used to quantify the mass of associated storage, including the mass of CO₂ delivered to the CO₂-EOR project and losses during the period covered by the documentation; d) the methods used to estimate missing data and the amounts estimated; e) the approach and method for quantification utilized by the operator, including accuracy, precision and uncertainties; f) a statement describing the nature of validation or verification of the statement including the date of review, process, findings, and responsible person or entity; and g) source of each CO₂ stream quantified as associated storage.

¹⁵ ISO 27916:2019, pg. 14, Section 10.4 'Requisites for termination' includes: a) the absence of detectable leakage (see 6.2) or open conduits to the surface out of the EOR complex, and that the injected CO₂ is, at the time of project termination, safely contained; b) compliance with all well decommissioning and plugging requirements for all CO₂-EOR project wells, that wells do not allow fluid movement out of the EOR complex, and that the CO₂-EOR project wells do not pose a leakage risk; c) the injected CO₂ is safely contained with sufficient documentation of the characteristics of the EOR complex and operational history of the CO₂-EOR project to demonstrate long-term stability and predictability of the associated storage; d) risks and uncertainties relating to the associated storage of CO₂ were managed throughout the EOR project life; and e) facilities and ancillary equipment associated with the CO₂-EOR project have been removed, except those required to be retained by lease or contractual obligations, integral to other operations, or intended for different uses which may be left in place with approval of the authority.

Summary

It is our opinion that implementation of ISO 27916:19 for determining adequate security measures for the geological storage of CO₂ associated with CO₂-EOR projects such that it does not escape into the atmosphere requires the selection of a third party accreditation body and development of rigorous procedures that will assure the independence of engineers or geologists to perform conformance assessments over the different phases of a project.

We thank you for the opportunity to provide you our comments and look forward to hearing back from you if you have any questions.

Yours sincerely,

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