FREE ONLINE WEBINAR

BIOGAS TV

Monetizing Tail Gas CO_2 from Digester Biogas RNG Projects

- Section 45Q for carbon sequestration ITC
- Industry quality standards and project economics
- CO_2 Liquefaction Systems from tail gas
- CO_2 to Synthetic Natural Gas (SNG) approaches

March 25, 2024 | 1:00-2:30 pm Eastern

GREENETEC

Technical content in the spirit of education

45Q Tax Considerations for RNG Carbon Capture

Avisen Legal

About Avisen

Boutique business only law firm

Focused on renewable energy since 1998

Legal Services for:

Project Development
Project Finance, including equity, debt and tax based
Start-up, Venture capital and Private Equity
Mergers and Acquisitions and Joint Ventures
Key Contracts

Biogas/RNG/Renewable Projects in most U.S. states, Mexico, Canada, Caribbean, Germany, Poland, Ukraine, Thailand and South Korea.

Who is going to benefit?

- The threshold for **electricity-generating facilities** is **18,750 tons of CO2** in a taxable year.
- The threshold for **other industrial facilities** is **12,500 metric tons of CO2** in a taxable year. *RNG Facilities*
- The threshold for **direct air capture facilities** is **1000 metric tons of CO2** in a taxable year.
- Power generation facilities must meet a capture design capacity requirement of not less than **75% of the CO2** from an electricity-generating unit that will install the capture equipment.

45Q Basics

- **$85/ton for carbon capture and storage in saline geologic formations** from industrial and power generation facilities
- **$60/ton for carbon capture and utilization** from industrial and power generation facilities, including **enhanced oil recovery**. *RNG Facilities*
- **$180/ton for direct air capture and storage in saline geologic formations**
- **$130/ton for direct air capture and utilization**, including for **enhanced oil recovery** purposes
- Extending the commence construction window for projects to **2033**. Projects have until January 2033 to begin construction to be able to receive the credit
- The credit can be realized for **12 years** after the carbon capture equipment is placed in service and will be inflation-adjusted beginning in 2027

utilization of qualified carbon oxide means—

(1) The fixation of such 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 described in paragraph (d) of this section.

Amount utilized—the amount of qualified carbon oxide utilized by the taxpayer 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—

(i) Captured and permanently isolated from the atmosphere through use of a process described in paragraph (a) of this section, or

(ii) Displaced from being emitted into the atmosphere through use of a process described in paragraph (a) of this section.

LCA verification. The taxpayer verifies the amount of qualified carbon oxide utilized through an LCA. **The LCA must demonstrate that the proposed process results in a net reduction of carbon dioxide equivalents when compared to a comparison system.**

Standards of adequate lifecycle analysis. 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 and ISO 14044:2006, Environmental management—Life cycle assessment—Requirements and guidelines.* The LCA may consist of direct and indirect data in conformity with ISO 14040:2006 and 14044:2006.

Third-party independent review of LCA. The LCA report must be performed or verified by an independent third party.

Submission of the LCA. The taxpayer must submit the LCA report and third-party independent statement required by paragraph (c) of this section to the IRS and the Department of Energy.

LCA review. The LCA report will be subject to a technical review by the DOE. 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.

Commercial market. A commercial market means a market in which a product, process, or service that utilizes carbon oxide is sold or transacted on commercial terms.

- **do not expect a 1:1 MT Credit ratio for utilization claims**

Carbon Capture Equipment and Secure Geological Storage

- Equipment included are all equipment that are necessary to compress, treat, process or perform other physical action to capture carbon oxide
- Secure geological storage is the proper disposing of the carbon oxide in storage space. It includes
  - storage in deep saline formations,
  - oil & gas reservoirs, and
  - unmineable coal seams.
- If a facility uses carbon oxide for EOR, the existence of a "secure geological storage" requires compliance and reporting

Who can take the credit?*

- RNG Producer captures own CO2 – Yes, but cannot then take 45Z or 45V
- RNG Producer with separate CO2 capture company (common ownership) - Likely same as above
- RNG Producer with separate CO2 capture company (3rd party) – 3rd Party
- IRS rulings prior to IRA allowed 45Q credit for separate portions of CO capture train owned by separate companies

- *just addressing 45Q credit, not issues with 45Z/45V and 45Q. See later slide.

Common Financing Structures

- Direct Pay
  - For-profit, tax-paying entities can only realize the direct pay option for five years after the carbon capture equipment is in service
  - Tax-exempt entities such as states, municipalities, tribes, and cooperatives can realize the direct payment option for 12 years after the carbon capture equipment is in service

- Transfer/Sale
  - The owner of a project to sell any portion of its 45Q credits to third parties for cash or (in specific years) seeking direct payment for 45Q credits
  - Recipients of the 45Q tax credit may transfer all or any portion of the credit value credit to any third-party, tax-paying entity in exchange for cash payment during any part of the 12-year credit window
  - The cash payment received by the original recipient of 45Q will not be taxable

Partnership Flip Structure

- A "partnership flip" tax equity structure may be the best structure because most owners may not be able to claim the tax credits due to their lack of sufficient tax liability to claim the credits directly.
- IRS allows an owner to sell its credits to a tax equity investor. The owner finds a tax equity investor and forms a special purpose vehicle ("SPV"), usually a limited liability entity (“LLP” or “LLC”) to own and operate the project.
- The SPV will get a priority equity distribution.
- Most taxable income, losses, and §45Q tax credits are assigned to investors until the “flip.” After investors achieve a target rate of return, the tax and cash allocations "flip," and most of the taxable income, losses, and remaining §45Q tax credits are allocated to the owner.
- The owner is the entity that owns the equipment and physically or contractually ensures the sequestration of the captured carbon oxide.
- The owner must hold a range of 1-5% ownership in the SPV.
- 99:1% equity allocation between the investor and owner is enough to satisfy the IRS. After the Investor attains the target rate of return, the partnership ownership will inversely flip to 5:95% equity, respectively, between the investor and the owner.
- Partnership Flips are flexible structures allowing a variety of structures for projects.

Tax-Exempt Bond Financing Reduces Credit

Facilities or equipment placed in service after 2022, the credit is reduced by an amount that is the product of the credit amount otherwise determined for the tax year and the lesser of 15% or a fraction determined for the tax year

Clean Hydrogen / Clean Fuel

Clean Hydrogen – 45V:

- The clean hydrogen PTC provides a tax credit of up to $3 per kilogram (kg) based on the life-cycle greenhouse gas emissions rate of CO2 produced at a qualifying facility during the facility's first 10 years of operation. This is subject again to the wage and apprenticeship requirements.
- If a taxpayer uses electricity produced from renewable resources to power a qualified clean hydrogen production facility, that taxpayer may be able to claim the clean hydrogen PTC in addition to tax credits on the renewable energy generation; however, a clean hydrogen PTC may not be claimed in conjunction with a Section 45Q tax credit.

Clean Fuel – 45Z:

- Starting after December 31, 2024, the sustainable aviation fuel, biodiesel renewable fuels, and alternative fuels credits will transition to the clean fuel production credit, which terminates on December 31, 2027.
- The Clean Fuel Production Tax Credit will be $1.00/gallon subject to wage and apprenticeship requirements.
- Emissions Rate standards apply

45Q, 45Z and 45V

- 45Q CCUS
- 45Z Clean Fuel Tax Credit
- 45V Clean Hydrogen
- Cannot claim 45Q and either of the other two credits in same entity
- **Until rules released, safest course is to treat the credit as attached to the molecule, so two separate entities cannot claim 45Z/45V for one use (RNG for fuel in California) and 45Q for CCUS.**
- ***Many companies seeking to find ways to stack these credits***

45Q v 45V

- 45Q tax credit based on how much carbon a facility captures and sequesters.
- Projects can get up to $85 per metric ton of carbon captured and sequestered or up to $0.80 per kg H2
- 45Q is the only option for for projects with high lifecycle emissions
- 45V is better for projects with lifecycle emissions below 1.5 kg CO2e per kg H2.
- These projects get $1 per kg H2
- Projects with lifecycle emissions between 1.5 to 4 kg CO2e per kg H2 are more complicated
- Both tax credit values will range from $0.60 to $0.75 per kg H2, with 45V likely being superior
- Projects will need clean electricity and data collection to report project lifecycle emissions to qualify for 45V

45Q v 45Z

- 45Z only until 12/31/27. Unknown if it will be renewed. Considerably shorter credit period than 45Q
- Single entity can switch between credits, while 45Z lasts
- 45Q can be direct pay; more beneficial for project financing
- 45Z likely higher credit value, depending on CI score

IRS Guidance

- Unlike other IRA sections, 45Q already existed
- IRS issued regulations under previous 45Q 86 FR 4728
- IRS tax Form 8933 available and updated
- IRS expected to issue updated Rules

Thank you.

Todd Taylor:
ttaylor@avisenlegal.com
612-325-5036


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