1776 I Street NW
Suite 725
Washington, DC 20006

T +1 202 466 9090
F +1 202 466 9191

erm.com

Douglas W. O'Donnell
Deputy Commissioner for Services and Enforcement
Internal Revenue Service
P.O. Box 7604, Ben Franklin Station
Washington, DC
20044

DATE
26 February 2024

SUBJECT
Comment Submission on the Notice of Proposed Rulemaking "Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property."

REFERENCE
0715021

RE: Comment Submission on the Notice of Proposed Rulemaking "Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property."

Dear Mr. O'Donnell,

On behalf of the Downstream Natural Gas Initiative (DSI), we appreciate the opportunity to comment on the proposed guidance regarding the establishment of a tax credit for clean hydrogen production, Section 45V. Specifically, we are writing to provide comments on the questions presented in the guidance regarding renewable natural gas (RNG).

DSI is a group of leading North American natural gas utilities collaborating to address the role of natural gas local distribution companies (LDCs) in the transition to a low-carbon future.[1] DSI is focused on opportunities to leverage the existing natural gas distribution infrastructure to support near- and long-term environmental and economic goals. To achieve its goals, DSI promotes opportunities to decarbonize natural gas through increasing supply of RNG, hydrogen, and power-to-gas, in collaboration with other market participants, as well as reducing methane emissions. Our research finds that decarbonization pathways that leverage existing pipeline systems and incorporate the use of decarbonized fuels and energy efficiency in addition to targeting building electrification, are more achievable and cost effective.[2]

[1] Downstream Natural Gas Initiative: https://www.erm.com/coalitions/downstream-natural-gas-initiative/
[2] ERM Long-Term Vision Analysis: https://www.erm.com/contentassets/65dcaedb758f44358d835eeb4152ada4/dsi-long-term-vision-new-england-report.pdf

Overall Comments

As utility companies, we are invested in the growth of the RNG market and recognize the opportunities for this renewable and low-carbon energy source to displace more conventional fossil natural gas. We view both RNG and clean hydrogen as critical elements of economy-wide decarbonization and see our nation's pipeline infrastructure as a key enabler to growing market demand. However, as with any emerging technology or energy source, it is critical to ensure that the rules of the market are clearly defined, established, and consistently deployed.

Our comments reflect the need for a consistent approach to evaluating the environmental impacts, benefits, and credits associated with RNG, regardless of market structure or end-use. The R&D GREET model includes numerous RNG production pathways, which capture the lifecycle greenhouse gas (GHG) emissions impact of different feedstocks (e.g., RNG from food waste, sludge, and swine manure). GREET models are recognized and trusted as a scientifically based authority, which is why many regulatory and voluntary compliance markets (e.g., California's low carbon fuel standard) rely on GREET to determine carbon intensities associated with different fuel sources and uses.

As the 45VH2-GREET 2023 model only includes RNG from landfill gas for steam methane reforming (SMR) and autothermal reforming (ATR) pathway, we strongly encourage Treasury to incorporate the full range of RNG production pathways into the updated version of 45VH2-GREET model and maintain consistency with other GREET models by employing a lifecycle emissions approach to determine the carbon intensity of different RNG to hydrogen production pathways. [3] Any deviation from a lifecycle emissions approach would cause a ripple effect into other markets and create uncertainty and doubt in the actual emissions benefit and value of RNG.

Moreover, we urge Treasury to amend the upstream methane loss rate and transmission distance from background data to foreground data. The measurement and calculation of emission intensities is a rapidly evolving space. New sensors and monitoring technologies are enabling a higher degree of accuracy in identifying and measuring real emissions. As progress continues, calculating emissions across natural gas and renewable natural gas value chains will be done with a higher degree of confidence. The 45VH2-GREET model should be flexible enough to enable more accurate and unique emission factors for hydrogen production pathways, which will be possible by moving these inputs to foreground data.

[3] Lifecycle emissions includes emissions associated with feedstock growth, gathering, extraction, processing and delivery to facility/point of use.

Responses to RNG Related Questions:

We appreciate Treasury's consideration of above-mentioned comments and have included below our responses to many of the RNG-specific related questions posed in the guidance.

1. What data sources and peer reviewed studies provide information on RNG production systems (including biogas production and reforming systems), markets, monitoring, reporting, and verification processes, and GHG emissions associated with these production systems and markets?

DSI recommends the following resources which provide information on RNG production, emissions, and markets:

RNG Production

- Renewable Natural Gas | US EPA
- Renewable Natural Gas as a Climate Strategy: Guidance for State Policymakers | World Resources Institute (wri.org)
- AgSTAR: Biogas Recovery in the Agriculture Sector | US EPA
- Landfill Methane Outreach Program (LMOP) | US EPA
- Argonne National Laboratory, Renewable Natural Gas Database, available at https://www.anl.gov/esia/reference/renewable-natural-gas-database

RNG Markets Monitoring Reporting and Verification

- CA LCFS -Low Carbon Fuel Standard | California Air Resources Board
- EPA RFS - Overview for Renewable Fuel Standard | US EPA
- Voluntary – Green-e® Renewable Fuels | Green-e
    - Documents | Green-e
    - M-RETS | M-RETS Renewable Thermal Tracking (mrets.org)

2. What conditions for the use of biogas and RNG would ensure that emissions accounting for purposes of the section 45V credit reflects and reduces the risk of indirect emissions effects from hydrogen production using biogas and RNG? How can taxpayers verify that they have met these requirements?

Any indirect emissions generated through either the production of RNG or the use of RNG for hydrogen production would be accounted for using a lifecycle emission analysis. DSI strongly urges Treasury to amend the 45VH2-GREET model to incorporate additional RNG-to-hydrogen production pathways, including RNG produced through anerobic digestion from various feedstocks. This expansion of GREET and inclusion of various RNG production pathways would ensure that taxpayers can appropriately verify and account for direct and indirect emissions related to RNG based hydrogen production.

3. How broadly available and reliable are existing electronic tracking systems for RNG certificates in book and claim systems? What developments may be required, if

any, before such systems are appropriate for use with RNG certificates used to claim the section 45V credit?

DSI strongly supports Treasury's inclination to allow for a book-and-claim system to track the environmental attributes associated with RNG and fugitive methane. We urge Treasury to incorporate rules governing the use of electronic book-and-claim tracking systems into the final regulatory guidance.

M-RETS is a non-profit organization that operates an environmental attribute tracking platform to facilitate economy-wide decarbonization. It provides a tracking platform to both the renewable electricity and renewable thermal markets and was the first to launch a platform for renewable thermal certificates (RTCs) in 2020. M-RETS is capable of tracking volumetric and carbon intensity data and can be tailored to meet the unique needs of voluntary and compliance driven regulatory programs. Furthermore, M-RETS has indicated its willingness and ability to adapt its platform to meet the verification and documentation requirements included in the final regulations.

M-RETS is currently tracking RTCs for RNG markets in Oregon and California and announced its first green hydrogen RTC through a Minnesota program. We refer Treasury to comments submitted by M-RETS for additional details on the functionality of their tracking platform and how it can be adapted to suit Treasury's requirements under 45V.

DSI does not endorse M-RETS as the only tracking platform that can or should be used to track RNG environmental attributes and support a book-and-claim system. Rather, we share this information as evidence that electronic tracking systems do indeed exist and are both broadly available and reliable, which should give Treasury more confidence in the integrity and readiness of the RNG market.

4. How should RNG or fugitive methane resulting from the first productive use of methane be defined, documented, and verified? What industry best practices or alternative methods would enable such verification to be reflected in an RNG or methane certificate or other documentation? What additional information should be included in RNG certificates to help certify compliance?

DSI recognizes Treasury's intent to encourage new and additional RNG supplies into the market. We find that the currently proposed requirements of "first productive use" are unnecessary and will create more logistical and administrative burdens for all market participants. New hydrogen and RNG projects may take years to construct, and experience both expected and unexpected delays. Aligning an RNG project to come into service at the same time as a new clean hydrogen project will be challenging at best and at worse risk delaying emissions reductions that could have otherwise been taking place from an RNG project placed in service.

Moreover, RNG-to-hydrogen production pathways should encourage new RNG project development to meet the growing demand from a new market. Concerns over shifting RNG supply from an existing market to a new hydrogen market are unjustified, given that the vast majority of RNG consumed today is a result of regulatory policies in other economic sectors. Any shift in supply contracts from an existing market to a new clean hydrogen developer will have to be backfilled by more RNG – not fossil natural gas – to comply with regulations.

Finally, should Treasury still seek to ensure that new or recent RNG supplies are used for hydrogen production, then we believe a look-back period is an appropriate measure to employ. The American Biogas Council has proposed a 36-month look-back period, and DSI supports this approach. We believe that allowing hydrogen producers to secure RNG that came online within the prior 36 months is a more workable strategy that would align with the proposed look-back period for electricity projects and would be more easily documented and verified for reporting purposes.

5. What are the emissions associated with different methods of transporting RNG or fugitive methane to hydrogen producers (for example, vehicular transport, pipeline)?

The vast majority of RNG is transported via the interstate natural gas pipeline system and the R&D GREET 2023 model enables inclusion of transportation emissions for all RNG feedstock supplies in all pathways, including the compressed natural gas (CNG) and liquified natural gas (LNG) pathways. Fugitive RNG emissions from pipeline leakage are also captured and can be modeled in the same way as natural gas. Once RNG is in the pipeline, it is indistinguishable from natural gas and any fugitive methane emissions should be treated in the same manner as the model treats natural gas pipeline emissions. R&D GREET 2023 allows users to enter the transmission losses as an input into the model. DSI strongly supports the inclusion of the full suite of RNG feedstocks into the 45VH2-GREET model and recommends that transportation related emissions be consistent with the approach used in R&D GREET 2023, by allowing users to enter losses during transport as an input into the model.

6. How can the section 45V regulations reflect and mitigate indirect emissions effects from the diversion of biogas or RNG or fugitive methane from potential future productive uses? What other new uses of biogas or RNG or fugitive methane could be affected in the future if more gas from new capture and productive use of methane from these sources is used in the hydrogen production process?

Section 45V is intended to spur development of the clean hydrogen sector and drive down the cost of producing clean hydrogen. It is intended to be technology neutral and furthermore, contribute to economy wide emission reductions. DSI discourages

Treasury from trying to predict theoretical future use cases for RNG and create policy to try and protect hypothetical future markets.

Rather, DSI encourages Treasury to recognize the current state of the RNG market supply and demand, and design 45V guidance based upon the best available science of lifecycle emissions analytical frameworks. To that end, 45VH2-GREET should be updated to incorporate all RNG feedstocks and pathways to hydrogen production, creating consistency in the treatment of RNG lifecycle carbon intensities across GREET platforms and within the markets that rely on these frameworks. By enabling unique emissions factors to be added through foreground data, the model can more easily adapt and continue to support future markets even as technology and RNG production improves.

Treasury should recognize that RNG demand is primarily driven by regulatory markets where it is used as a compliance mechanism. Any diversion of RNG-to-hydrogen markets would be backfilled by more RNG, helping build a more robust market and further incentivizing the capture of fugitive methane emissions.

7. How can the potential for the generation of additional emissions from the production of additional waste, waste diversion from lower-emitting disposal methods, and changes in waste management practices be limited through emissions accounting or rules for biogas and RNG use established for purposes of the section 45V credit?

DSI is not aware of any instances in which a market for RNG has driven the production of additional waste. Furthermore, the use of a lifecycle emissions analytical framework such as GREET, is designed to capture the direct and indirect emissions associated with the production of unique RNG feedstocks and production pathways. We encourage continuous updates to the GREET models to ensure alignment with the best available science. If a counterfactual scenario should emerge through technological or regulatory advancements, updates to the carbon intensity of RNG should be reflected in the GREET model.

We refer Treasury to the comments submitted by the American Biogas Council for additional detail on waste management practices and RNG production.

8. To limit the additional production of waste, should the final regulations limit eligibility to methane sources that existed as of a certain date or waste or waste streams that were produced before a certain date, such as the date that the IRA was enacted? If so, how can that be documented or verified? How should any changes in volumes of waste and waste capacity at existing methane sources be documented and treated for purposes of the section 45V credit? How should additional capture of existing waste or waste streams be documented and treated?

DSI does not agree with the statement or concern that existing RNG markets and potential future markets will drive the additional production of waste. The Environmental Protection Agency (EPA) validated this position in its response to comments on the Renewable Fuel Standard (RFS) Program Standard 2023-2025 saying, that the existence of the RFS and Low-Carbon Fuel Standard (LCFS) markets for RNG does *not* drive the proliferation of concentrated animal feeding operations and therefore more waste.[4] Rather, these markets create incentive to invest in the capture of existing fugitive methane emissions that would otherwise be cost prohibitive.

DSI refers Treasury back to our response to Question 4 where we recognized the desire to incentivize new and additional RNG production to support a hydrogen market. Therefore, we would welcome the opportunity to discuss the creation of an appropriate look-back period for eligible RNG production.

9. Are geographic or temporal deliverability requirements needed to reflect and reduce the risk of indirect emissions effects from biogas and RNG or fugitive methane use in the hydrogen production process? If so, what should these requirements be and are electronic tracking systems able to capture these details?

The use of an electronic tracking system such as M-RETS to enable a book-and-claim system for tracking RNG alleviates the need to establish geographic requirements. A book-and-claim system enables RNG producers to inject molecules into the gas network for use anywhere along that interconnected system, whether it is in a nearby county or across the country. By using meter data and a renewable thermal tracking system, participants can be confident that equal volumes of RNG were injected into the pipeline network as what was consumed, giving all parties confidence in the purchase and claims associated with RNG credits.

If Treasury wishes to further align RNG injections with consumption claims, an annual or monthly basis would be reasonable, and already exists in other markets. This data could be made available through meter data and tracking systems.

10. How should variation in methane leakage across the existing natural gas pipeline system be taken into account in estimating the emissions from the transportation of RNG or fugitive methane or establishing rules for RNG or fugitive methane use? How should methane leakage rates be estimated based on factors such as the location where RNG or fugitive methane is injected and withdrawn, the distance between the locations where RNG or fugitive methane is injected and withdrawn, season of year, age of pipelines, or other factors? Are data or analysis available to support this?

[4] Renewable Fuel Standard (RFS) Program: Standards for 2023-2025 and Other Changes. 88 FR 44468. https://www.govinfo.gov/content/pkg/FR-2023-07-12/pdf/2023-13462.pdf

The R&D GREET 2023 model allows for input values for methane leakage during natural gas transportation. Methane leakage rates can be estimated using a fugitive emissions factor based upon mile of pipe or as a percent of total flow of methane. As previously mentioned, advancements in monitoring and methane mitigation should be acknowledged and enabled through input values in foreground data. Treasury should adopt a consistent method for 45VH2-GREET in its 45V final guidance. Upstream emissions including transport emissions from leakage should be adjustable by facilities to reflect more accurate estimation of lifecycle carbon intensities of hydrogen projects.

11. What counterfactual assumptions and data should be used to assess the lifecycle GHG emissions of hydrogen production pathways that rely on RNG? Is venting an appropriate counterfactual assumption for some pathways? If not, what other factors should be considered?

DSI defers to the American Biogas Council's comments which offer specific detail on the counterfactual assumptions for various RNG production pathways.

Thank you for the opportunity to share this feedback.

Respectfully,

Downstream Natural Gas Initiative