February 23, 2024

U.S. Department of Treasury & The Internal Revenue Service
P.O. Box 7604
Ben Franklin Station
Washington, D.C. 20044

Re: Comments on Department of Treasury and Internal Revenue Service Notice Of Proposed Rulemaking, **IRS and REG–117631–23**, 45V Tax Credits.

SUBMITTED ELECTRONICALLY

I respectfully submit the attached comments to the Department of the Treasury ("Treasury Department") and the Internal Revenue Service' Request for Comments on the Credit for Production of Clean Hydrogen, Election to Treat Clean Hydrogen Production Facilities as Energy Property (REG–117631–23) on behalf of SunGas Renewables Inc. ("SunGas Renewables").

SunGas Renewables' leadership and technical staff are available to answer any questions or to assist with the development of final guidance at the request of Treasury staff.

Thank you for your time and your consideration.

Sincerely,

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SunGas Renewables Inc. (SunGas Renewables) appreciates the opportunity to comment on the U.S. Department of Treasury (Treasury) and Internal Revenue Service (IRS) Notice Of Proposed Rulemaking, Section 45V Credit for Production of Clean Hydrogen (NOPR) enacted under the Inflation Reduction Act (IRA). It is crucial that the IRA and associated clean energy tax incentives are implemented with proper regulatory guidance that accelerates the use of clean hydrogen into multiple sectors of the energy economy. Energy tax incentives under the IRA, with appropriate regulatory guidance, can have a dynamic and dramatic effect on the overall carbon footprint of the entire US and global economy while substantially boosting investment in the clean hydrogen sector.

SunGas Renewables (www.sungasrenewables.com) is a Houston-based energy and technology solutions company developing clean energy projects that will incorporate injection and geologic storage of biogenic CO_2 in the Gulf Coast region and potentially in other parts of North America. SunGas Renewables is licensing and deploying proven technology systems that transform sustainably-sourced pre-commercial thinnings and other logging residue into negative carbon hydrogen when combined with carbon sequestration.

SunGas Renewables enthusiastically supports Treasury's efforts to encourage the development and deployment of clean, low carbon hydrogen outlined in the 45V NOPR released in December 2023. We encourage the continued focus on science supported information, analysis, and modeling. We also urge Treasury to expeditiously finalize the rules around 45V so that planned clean hydrogen commercial projects can move forward in financial certainty and get on with the business of reducing GHG emissions and addressing climate change while producing useful products like clean hydrogen to accelerate the clean energy transition and create new jobs in economically distressed areas of the country.

The Value of SunGas Renewables' Projects

SunGas Renewables' projects will be implemented within heavily-wooded regions across the United States. A typical project will consist of the design, construction, and operation of a nominal 3,000 ton per day biomass-to-renewable fuel facility. A SunGas Renewables' gasification process will be used to convert pre-commercial thinnings and other logging residues

into a hydrogen rich syngas. CO_2 from the syngas production and processing will be captured and permanently sequestered.

SunGas Renewables' Low Carbon Renewable Energy Projects' Attributes and Benefits

- Estimated project cost of over $1.5 billion, with millions of dollars in assessed sales and property taxes to local communities and States
- Two-year construction period with over three million construction worker hours and, at peak construction, about 1,150 construction jobs
- An estimated 109 full-time jobs on site with an annual payroll of over $8.5 million
- Payments to local forest owners, loggers, and trucking companies are estimated to be over $60,000,000 per year, including payments of over $10,000,000 to forest owners for pre-commercial thinnings and other logging residues that are currently neglected or under-utilized.
- Powering with renewable or carbon neutral electricity to further reduce the negative carbon score of the renewable fuels produced
- Utilizing geologic formations for permanent CO_2 sequestration using CO_2 injection wells
- Communities are offering significant grants, job training programs, and other incentives to better support the projects to the benefit of their local and regional economies.

Projects will typically be located in heavily-wooded rural areas that are currently economically depressed, due, in part, to the decline of the forestry and wood products industry. SunGas Renewables' projects are introducing new advanced technology into these communities and extensive job training programs which will allow for the development of a diverse work force that benefits the entire community and region.

Synthesis Gas Clarification

SunGas Renewables is supportive of the definition of clean hydrogen as outlined in the NOPR. SunGas Renewables has reviewed the NOPR language, including the guidance for using the 45VH2-GREET 2023 model. Based on that review and the results from running the 45VH2 -

GREET 2023 model, we believe the hydrogen within the syngas product stream from biomass gasification would be eligible for the 45V hydrogen tax credit.

As stated in previous information provided to Treasury by SunGas Renewables, "The hydrogen is molecularly pure, not bound with other molecules but is mixed within the syngas. The hydrogen within the syngas can be definitively measured by commercially available and certified equipment and the hydrogen should be eligible for 45V tax credit." As part of the final rule, SunGas Renewables requests clarification regarding the eligibility to receive the 45V tax credit for the hydrogen produced from biomass gasification which is mixed within the synthesis gas.

Renewable Natural Gas (RNG)

RNG can be a hydrogen carrier and with technologies like Steam Methane Reforming (SMR) or Auto Thermal Reforming (ATR) or through other technologies, can be converted into hydrogen. Additionally, RNG can be used to support ancillary systems in any type of facility that may be producing green hydrogen, including supporting applications like compression and gas clean-up. Overall, RNG could play a meaningful role in accelerating the clean hydrogen economy.

SunGas Renewables is encouraged that the NOPR states that *"non-direct use would involve producing hydrogen using RNG or fugitive methane sourced from a commercial or common-carrier natural gas pipeline. In all cases, attribute certificates would need to document the RNG or fugitive methane procurement for qualified clean hydrogen production claims and that the environmental attributes of the RNG or fugitive methane being used are not sold to other parties or used for compliance with other policies or programs."* We support Treasury developing a clear process that demonstrates an understanding that supports and allows the injection of RNG into the natural gas pipeline system (measured by a meter) and then allows that same amount of RNG to be taken out and measured (by a meter) at a different location within the US natural gas pipeline system as a means of transference from production to use.

Existing programs like the Low Carbon Fuel Standard (LCFS) administered by the California Air Resource Board allow for this type of movement and contracting of RNG, as does the Renewable Fuel Standard (RFS) program administered by the United States Environmental Protection Agency. In each program, a company is allowed to contract for a specific amount of RNG which is measured going in and coming out of the natural gas pipeline system.

It is critical for Treasury to understand current programs like the LCFS and the RFS that allow for such transfer of RNG and potentially use them as models to develop an approach that works to create a robust and useful RNG market that will incentivize lowering the carbon footprint within our natural gas delivery system. Over three million miles of natural gas pipelines have been built in the US[1] and this system, and the resulting substantial investment, should be utilized effectively to create a robust market for low-carbon gases to address climate change. The methodology developed by Treasury should be reasonable to use and foster project development for RNG where appropriate feedstocks are available, understanding that once RNG is injected into the pipeline system the environmental attributes of the gas will be realized.

Green Electrons and Deliverability

Treasury and the IRS requested comments on whether there are additional ways to establish deliverability, such as circumstances indicating that electricity is actually deliverable from an electricity generating facility to a hydrogen production facility, even if the two are not located in the same region or if the clean electricity generator is located outside of the United States. SunGas Renewables respectfully recommends that the term "region" should mean (i) the existing six North American Electric Reliability Corporation (NERC) regions or (ii) a NERC region adjacent to another NERC region in which the hydrogen production facility is located.

According to the NOPR, "*an energy attribute certificate ("EAC") meets the deliverability requirements if the electricity represented by the EAC is generated by a source that is in the same region (as defined in Prop. Treas. Reg. § 1.45V–4(d)(2)(vi)) as the relevant hydrogen production facility."* Currently, the Proposed Regulations segregate the United States into 13 regions based on the U.S. Department of Energy's ("DOE") National Transmission Needs Study.[2] The purpose of the National Transmission Needs Study is to identify high-priority national electric transmission needs – specifically, to identify geographic areas where the bulk power grid would benefit from new, uprated, or graded transmission facilities. The GREET Manual clarifies in "Accounting for Electricity" in the GREET model, when specifying the

[1] https://www.eia.gov/energyexplained/natural-gas/natural-gas-pipelines.php#:~:text=The%20U.S.%20natural%20gas%20pipeline,and%20storage%20facilities%20with%20consumers.

[2] DOE, National Transmission Needs Study, Oct. 2023, available at https://www.energy.gov/sites/default/files/2023-10/National_Transmission_Needs_Study_2023.pdf.

source of electricity consumed, users may represent either (1) electricity from a specific generator or combination of generators that meets the EAC requirements or (2) the average annual grid mix in the NERC region in which the hydrogen production facility is located. Specifically, for hydrogen production facilities that do not source electricity from a specific generator or combination of generators, the GREET model assumes that the electricity has an emissions profile that reflects the annual average emissions intensity of the electricity in the NERC region in which the hydrogen producer is located.

In comparison, the DOE's National Transmission Needs Study created 13 regions based on several subjective and objective factors, none of which considered the demand placed on each region by the addition of clean hydrogen production plants. Although the study provides value in identifying geographic areas where the bulk power grid would benefit from new, uprated, or graded transmission facilities, relying on the study to define "region" for the deliverability requirement creates a disparate treatment of clean hydrogen production facilities due to the variability in geographical location of clean electricity generating sources across the United States.

By increasing the geographical area in which a clean hydrogen production facility may procure EACs, the Government will provide taxpayers with more predictable clean electricity sources. Furthermore, by redefining the term "region" to mean the existing six NERC regions, Treasury and the IRS will provide consistency with the term "region" currently used in the GREET model for determining the lifecycle GHG emissions associated with the average annual grid mix in the NERC region for hydrogen production facilities that do not source electricity from a specific generator. Therefore, SunGas Renewables recommends that Treasury and the IRS permit an EAC to meet the deliverability requirements if the electricity is delivered from an electricity generating facility to a hydrogen production facility located in either (i) the same NERC region or (ii) an adjacent NERC region.

LCA Flexibility

Under Section 45V(c)(1)(B) of the NOPR, the term "lifecycle greenhouse gas emissions" shall only include emissions through the point of production (well-to-gate), as determined under the most recent GREET model developed by Argonne National Laboratory, or a successor model (as determined by the Secretary). Prop. Treas. Reg § 1.45V–1(a)(8)(ii) clarifies that the term "most

recent GREET model" means the latest version of 45VH2–GREET developed by Argonne National Laboratory that is publicly available on the first day of the taxpayer's taxable year in which the qualified clean hydrogen for which the taxpayer is claiming the 45V Credit was produced.

By permitting annual updating of the GREET model, taxpayers will have uncertainty that a clean hydrogen production facility will qualify since the lifecycle GHG emissions rate for the full credit period may vary year-to-year. A rule that allows continuous updates to the GREET model is punitive and will likely prevent taxpayers from obtaining the level of certainty needed to reach final investment decision (FID) when evaluating whether to construct clean hydrogen facilities; effectively, the uncertainty in the GREET model may make clean hydrogen production facilities unfinanceable. To eliminate this uncertainty, SunGas Renewables recommends that taxpayers be provided the option to use the GREET model in place (i) at the time FID is made, (ii) at the time that the facility is placed in service, or (iii) on the first day of or any day within the taxable year of production that best computes the lifecycle GHG emissions rate based on the taxpayer's facts and circumstances.

Conclusion

SunGas Renewables appreciates this opportunity to comment and encourages Treasury to expeditiously develop final rules surrounding 45V. SunGas Renewables and other companies are developing projects that will provide green and low-and negative-carbon hydrogen for which final rules will help accelerate investment and other project deployment decision making.