San Joaquin Renewables
NATURAL GAS FROM BIOMASS

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[https://www.regulations.gov/commenton/IRS-2023-0066-0001]

Douglas W. O'Donnell
Deputy Commissioner for Services and Enforcement
CC:PA: LPD:PR (REG–117631-23)
Room 5203
Internal Revenue Service
P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

Re: Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property, Notice of Proposed Rulemaking and Notice of Public Hearing, 88 Fed. Reg. 89,220 (Dec. 26, 2023)

Dear Mr. O'Donnell:

San Joaquin Renewables LLC ("SJR") appreciates the opportunity to submit comments on the proposed rule entitled "Section 45V Credit for Production of Clean Hydrogen," published at 88 Fed. Reg. 89,220 (Dec. 26, 2023) (Proposed Rule). The Proposed Rule outlines the proposed regulations for determining eligibility and seeking a credit for the production of clean hydrogen, as established by the Inflation Reduction Act of 2022 (IRA) under 26 U.S.C. §45V.

SJR has a strong interest in the Proposed Rule because SJR is currently developing a large facility that will gasify organic waste feedstocks to produce a syngas containing clean hydrogen. This syngas is cleaned and further processed to produce a low-carbon renewable natural gas ("RNG") end-product. The RNG produced by the SJR facility is a "drop-in" product that can seamlessly replace fossil natural gas in a variety of industrial processes. For example, RNG can be used as a substitute for natural gas in the production of hydrogen through such technologies as steam methane reformation. Further, RNG can also be used as a feedstock in the production of hydrogen-carrier fuels (such as methanol and ammonia) or as a high-Btu fuel used to generate the renewable electricity used for clean hydrogen production through electrolysis. Accordingly, the U.S. Department of Energy (DOE) has recognized that RNG can support clean hydrogen production.[1]

[1] DOE, *U.S. Department of Energy Clean Hydrogen Production Standard (CHPS) Guidance*, at 3, 6 (2023), *available at* https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/clean-hydrogen-production-standard-guidance.pdf.

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In the U.S., organic waste production is highly correlated with increases in population and overall growth in economic activity. There are a wide variety of existing organic waste streams—including animal and agricultural wastes, municipal wastewater, and municipal solid waste in landfills. Despite a variety of efforts underway that attempt to mitigate overall waste production, organic wastes will continue to be generated in large volumes for the indefinite future.

When organic wastes decompose naturally in an anaerobic environment (inside a landfill or anaerobic digester, for example) those wastes produce a biogas containing methane and carbon dioxide—both of which are greenhouse gases (GHG) that contribute to climate change. Traditional RNG facilities capture this naturally occurring biogas before it escapes to the atmosphere, and then cleans and conditions this captured biogas to make RNG.

Alternatively, SJR's gasification facility uses a thermal conversion process that gasifies organic waste feedstocks (*prior to decay*) to produce a syngas that is then converted into the same RNG end-product as produced by a traditional RNG facility.

Thus, RNG facilities that produce RNG either from (i) naturally-occurring biogas sources, or (ii) gasification of organic waste feedstocks, are important tools in meeting the Biden-Harris administration's methane and GHG emission reduction goals. These RNG facilities also help manage wastes (not create them), providing economic and other environmental benefits to local communities across the United States.

SJR submits these comments to urge the U.S. Department of Treasury and the Internal Revenue Service (collectively, the IRS) to recognize that biomass gasification provides a readily available pathway for clean hydrogen production and that the final rule should facilitate the use of this clean hydrogen to make RNG (and other products) which can, in turn, provide substantial decarbonization benefits across the U.S. energy sector.

SJR views the Proposed Rule from two different, but complimentary perspectives:

- In the first instance, the Proposed Rule adopts a variety of requirements that SJR's biomass gasification facility will need to meet to obtain the clean hydrogen tax credits available under Section 45V. The Proposed Rule fails to adequately address certain key issues that are essential to confirm a gasification facility's eligibility for Section 45V tax credits.

- In the second instance, since the SJR facility will produce an RNG end-product for sale to customers, the Proposed Rule contains a variety of requirements that will affect the RNG market at large, as well as the requirements that the SJR facility will need to meet to sell and deliver its RNG to its customers. The Proposed Rule adopts a series of unnecessarily restrictive approaches to the treatment of various RNG related issues that will limit, or eliminate, the ability of many RNG facilities to qualify for Section 45V tax credits.

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With respect to the biomass gasification issues, SJR provides the following comments:

Additional Gasification Feedstocks Should be Eligible for Section 45V Tax Credits.

The Argonne National Laboratory has provided a GREET model targeted for the Section 45V tax credit—the 45VH2-GREET model. This revised model only recognizes two feedstock sources for biomass gasification--"corn stover and forest logging residue." Given the wide variety of existing organic waste streams, and the demonstrated ability of many gasification technologies to gasify these waste streams, this *two-feedstock* source rule is unnecessarily restrictive. For example, the revised GREET model does not recognize municipal solid waste (MSW) as an eligible feedstock for 45V purposes, *even though MSW represents one of the largest, if not THE largest, source of organic waste in many locations in the U.S.* From a policy perspective, it appears that clean hydrogen objectives would be better served by allowing the widest possible range of organic waste feedstocks to be eligible for Section 45V tax credits. The Proposed Rule contains no explanation why eligible gasification feedstocks are limited to only corn stover and logging residue, or why these two feedstocks were selected in preference to other available feedstock sources. .

The "No Significant Market Value" Requirement For Gasification Feedstocks Is Unworkable.

The "*two-feedstock*" source rule included in the revised GREET model contains an additional qualification—"with no significant market value," but there is no indication when the determination is made or who makes the determination or how the "significant" standard is to be applied. Many organic waste streams exist in complex environments where perceived "market" values change over time, as influenced by a variety of factors, including regulatory requirements, competing sources of supply and disposition, technology advancements, and waste collection and shipping costs. Attempting to apply this vague and ambiguous "no significant market value" test in these environments is likely to prove exceedingly vexatious from an administrative point of view, and retention of this standard will likely discourage development of clean hydrogen gasification projects because of the risk that the project's expected Section 45V tax credits could be disallowed on audit due to (i) shifts in market value with time over which the taxpayer has neither the ability to predict nor has any influence, or (ii) an auditor's overly restrictive interpretation of the provision. This "no significant market value" test should be eliminated on the grounds that it is unworkable or at least be modified to incorporate a more objective, empirically based test such as "no more than 15% of the life cycle economics of the original biomass source.".

BioChar Should Be Included As a Co-Product For Gasification Projects.

The revised GREET model currently includes only three valorized co-products—steam, oxygen and nitrogen. However, gasification projects also produce another important co-product—biochar. Gasification technologies typically have high carbon conversion rates, meaning that the gasification process converts most of the carbon contained in the feedstock input into carbon in the syngas output. However, these gasification processes are not perfect, so some of the carbon in

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the feedstock input remains unconverted, and this unconverted residue falls out of the bottom of the gasifier, along with other solid gasification residues, as "biochar." Fortuitously, the biochar serves as a carbon sink, sequestering carbon molecules on a long-term basis. This biochar has important uses as soil amendment or for other commercial applications. The Proposed Rule should allow valorized biochar to be included in the list of co-products for a gasification project.

With respect to the issues relating to RNG, SJR provides the following comments:

As a General Matter, SJR Incorporates by Reference the Comments of the Renewable Natural Gas Coalition (RNG Coalition).

SJR supports and incorporates by reference the comments submitted by Coalition for Renewable Natural Gas (RNG Coalition), but we highlight the following concerns.

Additional RNG-to-Hydrogen Pathways Must be Included.

The statute requires the use of the GREET model (or a successor) to determine emissions rates for purposes of Section 45V. The GREET model is transparent and well-respected. Importantly, it has included RNG pathways in its modeling for some time, including recognizing that RNG facilities avoid emissions in cases where the biogas may otherwise have simply been flared or released into the atmosphere. These avoided methane emission benefits are key and an important part of any lifecycle analysis for RNG.

The Argonne National Laboratory has provided a GREET model targeted for the Section 45V tax credit—the 45VH2-GREET model. However, this revised GREET model includes landfill gas as the only biogas feedstock source eligible for clean hydrogen production. This is surprising since landfill gas is only one potential feedstock source for RNG, and since the current GREET model already includes other feedstock sources (in addition to landfill gas) as sources of RNG. We urge the IRS to ensure that additional feedstock sources for RNG are added, including Biogas from Anaerobic Digestion of Animal Waste, Biogas from Anaerobic Digestion of Wastewater Sludge, Biogas from Anaerobic Digestion of MSW, and RNG-to-hydrogen via electrolysis. We appreciate that the GREET model is updated with new pathways and updated science as appropriate and support those efforts.

We support use of default assumptions to ensure these pathways are allowed, but, as further described in the RNG Coalition's comments, certain site specific factors for each pathway would better reflect the GHG emissions for the applicable RNG facilities. We also note that, to provide the needed certainty for investments while encouraging additional GHG reductions, the emissions rate should not need to be checked each year, but can be updated if material changes are made to the facility. In addition, there should be an ability to seek individualized emissions rates for those facilities that take action to further reduce their carbon footprint. This would effectuate the intent of the program to promote additional GHG emissions reductions.

Where Incentives are Expected to Result in New RNG Production at Numerous Existing Waste Sites, the IRS Must Defer on Including any "Induced Emissions" for RNG.

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For electricity, the Proposed Rule has raised concerns with what is referred to as "induced emissions," a type of indirect emission that is attributed to the production of renewable electricity in one region for which credit is used in another region that requires increased energy to meet the demand in that region. While we understand potential concerns with unintended consequences as a result of increased hydrogen production, it is important to note that the RNG/natural gas market operates very differently than the electricity grid, and the Proposed Rule provides no evidence of similar "induced" emissions for RNG. We further note that the statute imposes limits on the indirect emissions that can be included—that is, they must be significant, they must be tied to the production of RNG, and they must be included in GREET. Such is not the case for RNG.

These "induced emissions" appear to be the basis for potential incrementality, deliverability, or temporality requirements for use of RNG. While we do not believe such requirements are consistent with the statute, the anticipated requirements noted in the Proposed Rule would be unduly limiting and should not be adopted. Of particular concern is the "first productive use" requirement that would likely exclude viable RNG projects that could support clean hydrogen production today. RNG projects have a long runway from development to operation, and it would be difficult, if not impossible, to match up initial operations with the startup of a hydrogen facility. If either are delayed that could have adverse impacts on the ability of the other facility. In particular, an RNG facility cannot be left idle, severely impacting its financial viability. Thus, requiring the RNG project and the hydrogen production facility to come on-line in the same year (or for the RNG project to come on-line after) is simply unworkable and must not be adopted in the final rule. The requirement would cause a significant value discrepancy for new RNG projects creating a market distortion, greater risk of stranded RNG for existing projects, added complexity, and higher prices for end-consumers. This is counter to the goals of the IRA.

The concerns underlying the incrementality requirements for electricity are not present for RNG. It is speculative to believe that RNG in existing uses will be diverted for hydrogen production and backfilled with fossil fuels, where RNG production today largely contributes to mandated renewable fuel programs which would continue to support investments in *new production*. Indeed, there are ample potential biogas sources already existing to support RNG production to meet growing demand, provided the right incentives are available. On the other hand, removing incentives for existing sources to support hydrogen production could result in additional GHG emissions if these facilities lose available markets.

Since RNG is in the growing stages of the industry and to address potential concerns regarding unintended increases in GHG emissions, the IRS could find projects built prior to 2030 meet any such "additionality" requirements with a check on the market impacts of increased hydrogen production to determine if any such patterns can be discerned and allow for continuing policy changes to take shape.

Temporality and Deliverability Requirements are Also Not Appropriate or Necessary for RNG.

Due to the operations of the natural gas market, where fossil natural gas is displaced by RNG injected into the U.S. natural gas commercial distribution system, time-matching requirements are not necessary for RNG.

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Regarding the temporality requirements that are proposed for electricity, it is important to note that wind and solar power generation can be intermittent, and there is no substantial storage infrastructure for power. This is not the case for RNG, which has more steady flow year-round and where there is substantial storage available that can be used to address any seasonal differences in demand. Importantly, hourly time matching would simply be unworkable. The industry typically balances supply and demand on at least a monthly basis, and hydrogen production is often tracked on a quarterly basis. Moreover, state rules for credit programs regarding renewable electricity can dictate different pricing for electricity credits, resulting in a potential need to recognize regional differences. This is similarly not the case for RNG, where the federal Renewable Fuel Standard (RFS) program typically sets the market for RNG "credits," which is a national scheme.

Similarly, because of the interconnectivity of the natural gas commercial distribution system and based on the delivery tracking systems long established, there is no need to impose regional geographic restrictions for RNG. The entire North American natural gas pipeline system is the proper geographic scope for the 45V tax credit.

Because of these long-standing delivery tracking systems, there is a means already to tie the hydrogen producer to the RNG being claimed to be used for purposes of the 45V tax credit. The IRS should use existing systems, to the extent applicable and practicable, to support the use of the tax credit for RNG. This includes, but should not require, an electronic system of tracking that has been used for RNG—M-RETS Renewable Thermal Tracking System, that can be a model for other programs and should be an available option to use. This system, as well as the federal RFS and California Low Carbon Fuel Standard (LCFS) can be verified. In fact, the RFS and California LCFS offer existing infrastructure and experts to make those verifications.

For more information and additional issues of concern to the RNG industry, we again refer the IRS to the comments of the RNG Coalition submitted on this Proposed Rule.

We appreciate the efforts of the Treasury Department, the IRS, Argonne National Laboratory, DOE, and all that have contributed to ensure a successful 45V program. It is vital to create a workable program that supports the goals of the statute—increased production of clean hydrogen. RNG is a key component to decarbonize the energy sector, and SJR stands ready to support those goals.

Thank you in advance for your consideration.

Randall D. Holmes, CEO

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