UNITED STATES OF AMERICA
DEPARTMENT OF TREASURY
INTERNAL REVENUE SERVICE

Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities Energy Property	**)**	**Docket No. REG–117631–23**

Comments of NRG Energy, Inc.

NRG Energy, Inc. ("NRG") respectfully submits the following comments to the Internal Revenue Service ("IRS" or "agency") in response to the agency's December 26, 2023, Notice of Proposed Rulemaking ("NOPR"). NRG is a Houston-based Fortune 500 company and one of America's leading energy companies with nearly 8 million customers nationwide and nearly 16,000 MW of generation in its portfolio. NRG is the parent company to several Retail Electric Providers ("REPs") licensed through the Public Utility Commission of Texas ("PUCT"), which are active participants in the Texas' electricity marketplace of the Electric Reliability Council of Texas ("ERCOT") and in the renewable energy credit ("REC") trading program administered by ERCOT. NRG is a major purchaser of environmental attributes. In 2023, NRG retired to the credit of our customers approximately 34 million RECs nationwide last year. About half of those were for compliance with state renewable portfolio standards. The other half were retired because our customers voluntarily purchased premium renewable products. That number of RECs matches to approximately 13,000 MW of renewable supply, assuming a 30% capacity factor for the underlying renewable facilities.

NRG generally supports or takes no position regarding aspects of the agency's NOPR implementing the Section 45V hydrogen tax credit in 26 C.F.R. Part 1 in this proceeding ("the rule" or "the proposed rule"). In these comments, we offer specific support for a tailored approach given the characteristics of power supply in ERCOT, a singularly important market because it is home to what is now and likely will remain the largest hub of hydrogen production and associated pipeline infrastructure in the United States.[1]

[1] Kenneth Medlock III and Shih Yu (Elsie) Hung, *Developing a Robust Hydrogen Market in Texas*, (February 2023), p. 9. https://www.bakerinstitute.org/research/developing-robust-hydrogen-market-texas

NRG agrees that relatively stringent requirements as a precondition for Section 45V's generous subsidies are generally appropriate. Of particular concern to NRG, these requirements constitute an important protection to electricity consumers and a safeguard to the reliability of the electric grid of the state, as we explain below.

However, NRG submits that the proposed rule's requirements on additionality and temporal matching, as they apply in ERCOT, should be modified in two modest ways to take particular account of important facts that obtain in this critical market. First, NRG agrees with the rule's suggestion that legacy renewable energy facilities' curtailed production should be treated as additional.[2] This is a reasonable provision that offers some flexibility to the requirement for additionality. However, to ensure this provision does not become a dead letter due to its potential complexity, it would be reasonable for the agency to adopt a safe harbor provision that provides for a standard percentage that a legacy wind or solar resource in ERCOT may employ to count some of its annual and, when temporality rules become applicable, hourly production as additional for the purposes of this rule's requirements. NRG proposes such a safe harbor below based on analysis that ERCOT itself has recently conducted. Second, the rule should modestly extend the timeline, through the end of the decade, for the transition to hourly matching to ensure that ERCOT, which administers the environmental-attribute tracking system pursuant to PUCT regulation, has adequate time to upgrade its system and for market participants to gain at least limited real-world experience with a trade in hourly-denominated attributes.

I. The Rule's Stringency is Appropriate Given the Potential Harms that Could Result from the Subsidization of Price-Insensitive Demand in the Tight ERCOT Marketplace

The imposition of temporality, deliverability, and additionality requirements may not be appropriate to certain use cases involving end-users' eligibility to make claims to clean energy in tandem with their consumption of electricity. For example, temporal restrictions would be inappropriate and impractical for certain end-users, or their load-serving entities, if they have little or no ability to record their real-time consumption due to technological and data-exchange limitations associated with metering, utility billing, and other associated software. Geographic restrictions could be inappropriate for voluntary adopters who are concerned only with offsetting

[2] Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property, 88 Fed. Reg. 89,230 (Dec 26, 2023) (to be codified at 26 C.F.R. pt 1).

carbon emissions of their electricity consumption. Additionality requirements could be inappropriate for a sink of consumer demand that had existed prior to the clean-energy production for which it was matched. Finally, any or all of these restrictions could cause the market for environmental attributes to become less liquid or, in places where that trade is already thin and burdened by significant transaction costs, non-existent. In such circumstances, the perfect should not be allowed to be made the enemy of the good.

However, for the purposes of this rulemaking, NRG submits that electrolytic hydrogen production represents a particular, advanced, and large-scale use case where the rulemaking's requirements are appropriate. The requirements for additionality and temporal matching attempt to ensure that each additional megawatt-hour of demand corresponds to a monotonic increase in the supply of clean-energy production. Without appropriate guardrails, NRG is concerned about the price effects for all other electricity consumers if Section 45V tax subsidies flowed to one sink of increased demand that was not closely associated with new supply. As one study of the German electricity market found, "annual matching increases electricity prices by up to 43% if electrolysers run constantly and the background electricity system cannot adapt in time to the new electrolyser demand, while hourly matching has no effect on electricity prices and incentivizes additional storage."[3]

For Texas, ERCOT is a so-called "energy-only" market—the only such market in the United States—that relies exclusively on energy-market pricing for investment in the resources needed to meet consumer demand. Unlike those other markets, ERCOT has no centralized integrated-resource planning, rate regulation, or forward capacity market that supports the recovery of supply-side resource costs in speculative investments to meet future consumer demand, such as growth in electrolysis. While this can often be a positive feature of electricity market design because it avoids the risk of socializing the cost of building large infrastructure for speculative reasons, it does mean that intervening public policies, like Section 45V, should take care not to shock the system by introducing an out-of-market subsidy to stimulate demand (or supply) growth that is less sensitive to electricity prices because it enjoys significant governmental

[3] Elisabeth Zeyen et. al., "Hourly versus annually matched renewable supply for electrolytic hydrogen" (2022), T.U. Berlin (unpublished).

revenue.[4] Because of its market design, ERCOT is a tight market in which reserves fell below 5,000 MW for 38 hours between July and September 2023.[5]

As part of these comments, NRG has completed an illustrative analysis that demonstrates the risk of an uncontrolled subsidy to new electrolytic hydrogen loads. One may modestly assume a 1,000 MW load growth in hydrogen electrolysis for the sake of demonstrating its effect on a resource-constrained market like ERCOT. If 1,000 MW of flat-running electrolysis load were present in ERCOT this next summer without offsetting supply in the relevant hours, we estimate it would cause a 30% increase in this summer's on-peak prices for the widely traded 7x16 futures product, and a 12% increase in around-the-clock ("ATC") pricing, based on NRG's market analysis conducted in January 2024. Conversely, and shown here for completeness, a 1,000 MW increase in supply, with no load growth, would cause reductions in the price of these forward-traded products as shown below.

Table 1: Price Effects of Additional Supply or Demand in ERCOT

Summer 2024 On-Peak Impact		
	Summer 7x16	**Annual ATC Price**
1 GW Increase in Supply	-25%	-10%
1 GW Increase in Load	30%	12%

Of course, consumers in Texas' competitive electricity market are free to enter and exit the market at will, and these choices always affect the clearing price for electricity and the futures products that are traded based on that market. Yet, the sudden emergence of subsidized electrolytic hydrogen loads could be a paradigm shift, and if the subsidy to demand is not well-tailored to ensure additional supplies, then the same subsidy that reduces the cost of electricity to

[4] In the past decade, various commentators have voiced concern about the effect of volumetric production subsidies directed toward clean electricity supply, which diminish the price signals available to all other resources on the electricity markets and, they contend, threaten electric reliability over the long term by leading to underinvestment in dispatchable resources. In a similar but indeed more concerning manner, a volumetric subsidy directed toward demand can induce new, inflexible demand to enter the market, threatening reliability in the short term if supply resources fail to keep pace at certain, critical times.

[5] ERCOT, *Real-Time ORDC and Reliability Deployment Price Adders and Reserves by SCED Interval*. https://www.ercot.com/mp/data-products/data-product-details?id=NP6-323-CD

produce hydrogen will ironically engender additional electricity costs for NRG's and other retailers' residential and small-business customers in Texas. The proposed rule's three requirements appear reasonably likely to prevent that harm from occurring.

II. The Rule Should Provide for a Safe Harbor that Allows a Fraction of Legacy Renewable Resources' Production to Qualify as 'Additional' Based on ERCOT Curtailment Data

Texas and ERCOT are among the strongest states and markets, respectively, for renewable development in the United States, having recently surpassed California and CAISO in the installation of utility-scale solar in 2023.[6] As of the last report showing installed renewable capacity in its market that ERCOT conducted for 2023, ERCOT had commercially operational 37,802 MWs of rated wind capacity from 355 generating units and 18,375 MWs of rated solar capacity from 181 generating units.[7] One of the reasons for this success is that ERCOT employs a "connect and manage" approach to the interconnection of new renewables.[8] These projects are allowed to freely connect to the grid, even if transmission constraints and a lack of large loads in the area will lead to the curtailment of their production. A consequence of this approach is a faster pace of renewable resources' growth, but also that these resources' production is more frequently curtailed due to the interrelated reasons of local nodes that are oversupplied during certain hours with energy compared to demand, and because those resources are not able to export that surplus to centers of demand where it might have positive economic value (i.e., the transmission facilities are congested). No other organized electricity market in the United States uses "connect and manage," as ERCOT does. NRG submits that this unique regulatory process, in combination with Texas' rich renewable resources, is the primary reason why solar curtailment was greater than 10% in 2022 for ERCOT, which was more than three times higher

[6] Claire Hao, "Texas leads the nation in solar installed on its power grid, surpassing California," Houston Chronicle, October 27, 2023. https://www.houstonchronicle.com/business/energy/article/texas-most-utility-scale-solar-power-18447562.php.
[7] ERCOT, "2023 Fall Seasonal Assessment of Resource Adequacy" (Sept. 2023). https://www.ercot.com/files/docs/2023/09/19/SARA_Fall2023.pdf
[8] Claire Wayner, Katie Siegner, Mathias Einberger, Russell Mendell, and Sarah Toth, "Going the Distance on Interconnection Queue Reform," Rocky Mountain Institute, August 2, 2023. https://rmi.org/going-the-distance-on-interconnection-queue-reform/.

than the only other RTO/ISO that had any recorded solar curtailment whatsoever.[9] Wind curtailment in ERCOT is also substantial.[10]

The Section 45V rule should take account of ERCOT's unique characteristics by acknowledging that some fraction of legacy renewable facilities in ERCOT have not been productive to date, but will produce a greater share of energy either when additional loads are locally present or when transmission congestion is resolved.[11] NRG suggests that the final rule rely upon ERCOT's latest transmission expansion study, which estimates a curtailment of 1,836 GWhs of solar and 4,922 GWhs of wind on an annual basis in 2025.[12]

Table 2: Monthly Energy Curtailments of Wind and Solar Resources in 2025[13]

2025		
Month	**Solar Curtailment (GWh)**	**Wind Curtailment (GWh)**
January	82	340
February	233	403
March	408	894
April	329	750
May	300	803
June	177	500
July	59	180
August	20	80
September	41	136
October	62	201

[9] Fed. Reg. Vol. 88, No. 246 at 89232, fns 18-19. Bolinger *et. al.*, "Utility-Scale Solar, 2023 Edition: Empirical Trends in Deployment, Technology, Cost, Performance, PPA Pricing, and Value in the United States," Lawrence Berkeley National Laboratory. (Oct. 2023), at 39-40. https://emp.lbl.gov/sites/default/files/utility_scale_solar_2023_edition_slides.pdf

[10] *Id.* Only SPP, to Texas's north, outpaces ERCOT wind curtailment on a percentage basis. NRG surmises, for SPP, this is due to the prevalence of virtual power purchase agreements in the wind industry, which are not necessarily matched to sinks of demand in the same region.

[11] Once the value of congested resources exceeds the cost of constructing new transmission, then ERCOT authorizes the transmission-owning utilities within its footprint to build additional facilities, unlocking additional production from legacy resources (See ERCOT, *Report on Existing and Potential Electric System Constraints and Needs*, December 2023. https://www.ercot.com/files/docs/2023/12/22/2023-Report-on-Existing-and-Potential-Electric-System-Constraints-and-Needs.pdf.) The Texas legislature has passed a law, and the PUCT is currently implementing an associated regulation, that reweighs the cost-benefit analysis inherent in this test in favor of constructing additional transmission and thus unlocking new supply from existing (and future) renewable resources in these remote areas (See SB 1281. https://capitol.texas.gov/tlodocs/87R/billtext/pdf/SB01281F.pdf#navpanes=0.)

[12] ERCOT, "Report on Existing and Potential Electric System Constraints and Needs," December 2023. https://www.ercot.com/files/docs/2023/12/22/2023-Report-on-Existing-and-Potential-Electric-System-Constraints-and-Needs.pdf.

[13] ERCOT, *2023 Regional Transmission Plan*, December 2023, Figure 15, p. 27. https://www.ercot.com/gridinfo/planning. Also available through ERCOT Market Information System [accessed Feb. 2, 2024].

November	81	332
December	42	304

By taking these values as the dividends, and the amount of installed solar and wind capacity as the divisors (18.4 and 37.8 GWs), the quotients yielded are 99.91 GWhs per 1 GW of solar and 130.21 GWhs for 1 GW of wind. NRG proposes that these values be used to allow each solar and wind facility that had a commercial operation date prior to 2023, as reported in the last ERCOT Seasonal Assessment of Resource Adequacy ("SARA") for that year, to claim and sell environmental attributes to qualify as eligible for the purpose of making a claim of producing clean hydrogen, up to 99.91 MWhs and 130.21 MWhs for each MW of solar and wind, respectively, that remains commercially operational on an annual basis.[14]

Adopting this approach balances the likelihood that additional demand, together with the steps Texas is taking to reduce transmission congestion, will manifest in additional economic production from existing renewable resources that should be acknowledged as additional within the meaning of the rule. While NRG has considered an approach where solar and wind facilities in Texas could be assigned a regional or even a unique percentage, NRG believes this would unduly complicate this relatively limited exception to the rule's general prohibition on qualifying pre-2023 facilities from being considered additional. In total, NRG estimates that, on an annually matched basis (for the time in which annual matching is the compliance methodology), this grant to legacy resources would amount to a little more than 750 MWs of around-the-clock electrolysis production, assuming, rather generously, that every single eligible environmental attribute from each of 181 solar facilities and 355 wind facilities was sold for that purpose.[15]

While it is reasonable for the final rule to adopt this safe harbor on a market-wide basis for ERCOT, it would be arbitrary and capricious to adopt it on a nationwide basis. The proposed rule itself relies on information that notes there are many markets that have no or minimal curtailment of renewable resources. A nationwide safe harbor would unduly impute to those markets

[14] The SARA contains a full list, by name and location, of each eligible facility that the IRS may use to administer this safe harbor. The IRS should allow any resource that had a commercial operation data in the three months following the publication of this report to demonstrate that it was online by the end of 2023 to qualify for the same safe harbor. https://www.ercot.com/files/docs/2023/09/19/SARA_Fall2023.pdf

[15] Clearly, due to transaction costs and the sale of environmental attributes to other purposes, the actual amount would be expected to be less. (1,836 GWhs of solar eligible + 4,922 GWhs of wind eligible) / 8,760 (hours in typical year) = 771.5 MWs of baseload operation.

additional production from existing resources that they are incapable of, absent an uprate that would separately and fully qualify as additional.

Beyond the safe harbor NRG offers above, the final rule should allow any resource that demonstrates that its actual level of resolved curtailment exceeds the marketwide average to be entitled to sell a greater number of environmental attributes for this rule's purposes for the period in which annual matching is in effect (e.g., until 2028 under the proposed regulation).

NRG believes this approach balances the interests of simplicity and fairness, and is a reasonable and tailored modification to the proposed rule's provisions on additionality.[16] Meanwhile, it would not be unusual in the context of a rule affecting electricity production for Texas to be treated specifically and differently. Texas is the only state in the contiguous United States where the wholesale market design of electricity, and the transmission policies that give rise to certain of the requirements in this instant rulemaking, are not controlled by the Federal Energy Regulatory Commission, and instead controlled by a state commission, the PUCT.

III. The Final Rule Should Provide ERCOT Market Participants More Time to Meet the Temporal Matching Requirements

ERCOT's environmental-attribute tracking system lacks the functionality to track clean energy production on an hourly basis. While ERCOT has substantial advanced metering at customer premises, which allows loads to track their consumption on a granular basis, it is not possible today for the REPs that serve those retail customers to buy ERCOT-tracked environmental attributes exactly matched to their customers' demand profile. Additionally, the business models of all market participants involved in hydrogen transactions will need to evolve to be able to anticipate in advance the production profiles of qualifying resources with the load profiles of the hydrogen demand that these resources are designed to supply environmental attributes to, in order to achieve compliance with the rule.

[16] An alternative and also reasonable approach, using the same sources cited to above, would take the difference between expected curtailments between 2028 and 2025, as reported, in ERCOT's *2023 Regional Transmission Plan* (*supra* fn 13, Tables 15-16, p. 27), and use those values as the dividend for the purpose of the equation related above. This would result in approximately halving the legacy environmental attributes deemed additional by the safe harbor, though on balance NRG believes that this approach, predicated essentially only on congestion relief resulting from transmission construction, likely undervalues the potential of additional loads to support additional renewable production.

Accordingly, the proposed regulation should contemplate an extension that is sufficient for at least two purposes: First, to allow ERCOT to adopt the necessary modifications to engage in hourly tracking and, second, a period of learning once that system is adopted to allow market participants to become familiar with how to sell and purchase the hourly environmental attributes that will likely match their load position. In NRG's experience, many environmental attribute purchases are made on a forward basis, and the compliance with this regulation is likely to encourage that trend further, since it would be untenable for a hydrogen producer to leave its electricity consumption exposed to the spot market of an hourly-traded product, and thus risk foregoing the Section 45V tax credit.

Texas established its REC trading program under PURA § 39.904 to implement statutory mandates during the preparation for the competitive retail electricity market, which fully opened in 2002. The original intent was that 2,000 MW of new renewables would be installed in Texas by 2009.[17] At the time 880 MW were installed, and as shown above, the current installations have far exceeded the initial and succeeding statutory requirements, which have since been repealed or set to expire in the coming years. Today, ERCOT's work in tracking environmental attributes is relatively limited for the purposes of ensuring compliance with the state's renewable-portfolio-standard goals, and by 2025 it will exist only to track voluntary procurements, not those required by state or federal law. The application of the Section 45V tax credit will reintroduce a statutory requirement to the purpose of ERCOT's work in this regard, albeit an optional and not mandatory election.

ERCOT has served as the Program Administrator since the establishment of the REC trading program. Originally ERCOT's tracking system worked to track RECs for fulfillment of yearly requirements from 2002 through 2009, but the period was later extended. Certain market participants were given set requirements for retirements each year, and in addition to this, voluntary retirements were also tracked. The Public Utility Commission adopted PUCT Rule 16

[17] The definition of renewable energy technology at the time was: Any technology that exclusively relies on an energy source that is naturally regenerated over a short time and derived directly from the sun, indirectly from the sun, or from moving water or other natural movements and mechanisms of the environment. Renewable energy technologies include those that rely on energy derived directly from the sun, on wind, geothermal, hydroelectric, wave, or tidal energy, or on biomass or biomass-based waste products, including landfill gas. A renewable energy technology does not rely on energy resources derived from fossil fuels, or waste products from inorganic sources.

Tex. Admin. Code § 25.173 to set forth requirements, which has been updated with changes in legislation. ERCOT Protocols Section 14 also addresses the program.

In 2005, the legislature increased the requirement to an additional 5,000 MW of generating capacity from renewable technology by 2015, and 10,000 MW by 2025.[18] In 2005, the legislature also established a target (which was interpreted to not be a requirement) of having at least 500 MW of capacity from a renewable energy technology other than a source using wind energy. This resulted in a rulemaking in 2007 with changes including the addition of compliance premiums issued to non-wind RECs that operated like a bonus REC in certain capacities (to incentivize purchases of non-wind RECs). In 2023 legislation was passed to establish a solar-only renewable portfolio standard to be phased out by September 1, 2025, to end the renewable portfolio standard for other types of renewables, and to provide that ERCOT would continue to administer a REC trading program for voluntary purchases.[19]

For 2022, ERCOT's Annual Report on the REC Program reported approximately 56,000 MW Capacity for renewable technologies, well exceeding the requirement for 2025.[20] For Compliance Year 2021, ERCOT reported over 10 million mandatory REC retirements, and almost 37 million voluntary REC retirements. In 2021, there were also almost 35 million voluntary retirements for previous compliance years. These statistics do not include compliance premiums for non-wind RECs that resulted from the 2007 rulemaking.

In ERCOT, the REP attributes are currently vintage year, quarter, technology type, facility identification number, quantity, and REC number.[21] ERCOT does not currently establish or track hourly timestamps or any other temporal signifier other than the quarter and year of production. PUCT Rule 16 TAC § 25.173(g)(2), as revised in 2023 following the latest statutory changes to the program, provides that ERCOT may assign additional attributes to RECs, such as more

[18] H.B. 20, 79th First Called Session (Tx. 2005).
[19] Sections 37, 46, and 53 of House Bill (HB) 1500 enacted by the 88th Texas Legislature (R.S.). Section 37 established PURA § 39.1113 to require ERCOT to maintain an accreditation and banking system to award and track voluntary renewable energy credits. Section 33 repealed PURA § 39.904, which previously provided for the renewable energy standard. Section 53 required the establishment of a solar-only program to be phased out by Sept. 1, 2025.
[20] ERCOT's 2022 Annual Report on the REC Program (May 15, 2023), available at: https://sa.ercot.com/rec/public-reports. The Total Current MW Capacity reported in the 2022 report broke down to 285.8 MW for Biomass, 156.5 MW for Hydro, 81.1 for Landfill Gas, 14,762.2 for Solar, and 41.088.3 MW for Wind.
[21] ERCOT Protocol § 14.3.2.

precise REC generation timestamps. It declined, however, to require this. To do so, changes would have to be made at ERCOT to the market operator's governing protocols, which are subject to PUCT approval, and to its tracking system.

Since Winter Storm Uri in 2021, ERCOT and the PUCT have an extremely full regulatory calendar as the state seeks to ensure the reliability of its power system.[22] Given the various projects that ERCOT is undertaking, it is unclear how long changes to enable hourly-tracking of environmental attributes could take, assuming it was directed by the legislature or PUCT, or alternatively commenced through the appropriate stakeholder process at ERCOT. Interviewed by the Center for Resource Solutions in 2023, ERCOT declined to give a timeline for how long it would take to implement hourly tracking.[23] However, other tracking system operators indicated it would require 9 to 36 months to complete the stakeholder process to determine to move forward with hourly tracking, and another 3 to 24 months to complete the implementation.[24] Other tracking systems already have this capability, namely PJM GATS, which began issuing hourly-tracked certificates in early 2023,[25] and M-RETS (in MISO and SPP) which launched hourly tracking in 2021. But even these tracking systems are only partially functional and will require more development before hourly certificates can be easily traded and retired.[26] ERCOT is starting from a significant disadvantage, and the PUCT, having only recently adopted a rule change compelled by state law to alter the tracking system, is unlikely to be in a position to expedite another rule change in view of so many competing regulatory priorities in electricity market regulation in the state.

The Section 45V rule should take account of the PUCT's and ERCOT's circumstances in the context of others' experience and the Texas regulatory structure that exists to govern ERCOT in all its functions, including the tracking system function. NRG accordingly proposes extending

[22] While there is no master calendar for ERCOT work, see for example the 141 approved and 29 pending Nodal Protocol Revision Requests here: https://www.ercot.com/mktrules/issues/reports/nprr/approved and https://www.ercot.com/mktrules/issues/reports/nprr/pending.
[23] Rachel Terada, "Readiness for Hourly: U.S. Renewable Energy Tracking Systems," Center for Resource Solutions (June 15, 2023), slide 26. https://resource-solutions.org/wp-content/uploads/2023/06/Readiness-for-Hourly-U.S.-Renewable-Energy-Tracking-Systems.pdf
[24] *Ibid*, slide 41.
[25] https://www.pjm-eis.com/-/media/about-pjm/newsroom/2023-releases/20230213-pjm-eis-to-produce-energy-certificates-hourly.ashx
[26] Terada, slides 26-29.

the period during which annual matching is permitted from 2028 for another three years, through the end of the decade.

IV. Conclusion

As described above, NRG believes that it is an important protection for electricity consumers and for the electric reliability of ERCOT that additional, subsidized hydrogen loads be matched to additional supply. To encourage additional flexibility, we offer above two tailored modifications for the ERCOT market:

1. Allowing a resource with a commercial operation date earlier than Jan. 1, 2023 to sell up to 99.91 MWhs and 130.21 MWhs in environmental attributes for solar and wind, respectively, on an annual basis for the purpose of hydrogen electrolysis producers and to have these environmental attributes qualify for the purposes of Section 45V; and
2. Extend annual matching until the end of the decade, through tax year 2030, before hourly matching is implemented.

NRG believes that the amount of electrolytic hydrogen loads permitted under its first proposal either will be matched to additional supply or, if not because the proposal is a generally applicable safe harbor, then be relatively *de minimus* in the totality of the ERCOT market. Meanwhile, the second requirement maintains a transition to hourly matching toward the end of the period in which Section 45V is in effect, providing that any possible reauthorization of the subsidy will be accomplished with a transition to hourly matching having been substantially accomplished. NRG believes the development window for hydrogen electrolyzers is long-dated enough that even a project now under development in Texas will have a transition view toward hourly matching if this extension is granted, and on balance NRG believes an extended period will limit harms from the illiquidity that may result from a novel hourly market in environmental attribute as ERCOT makes such a transition.

NRG thanks the agency for the opportunity to comment, and NRG welcomes any discussion or questions regarding its comments, which may be directed to the signatory below.

[signature block follows]

Respectfully submitted,

/Travis Kavulla/

Travis Kavulla
Vice President, Regulatory Affairs
NRG Energy, Inc.

1825 K St. NW, Ste. 1203
Washington, D.C. 20006
Travis.Kavulla@nrg.com