NEW YORK STATE | NYSERDA

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February 26, 2024

VIA The Federal eRulemaking Portal at www.regulations.gov

Internal Revenue Service
CC:PA:LPD:PR (IRS and REG-117631-23)
Room 5203
P.O. Box 7604
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Washington, DC 20044

The New York State Energy Research and Development Authority (NYSERDA) submits these comments in response to the Department of the Treasury's Notice of Proposed Rulemaking for the Section 45V Credit for the Production of Clean Hydrogen and Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property, 88 Fed. Reg. 89220 (Dec. 26, 2023) (the "NPRM"). NYSERDA would like to thank the Internal Revenue Service for its leadership on this issue, and strongly supports the Administration's efforts to support the electrolytic hydrogen industry to enable market adoption and the continued innovation of its supply chain. Our hope is that through the leadership of the Internal Revenue Service, a highly effective set of rules and guidance will issue that will help to reduce costs, administrative burden, and uncertainty at this critical stage of industry development.

To meet New York State's Climate Leadership and Community Protection Act (Climate Act) obligations, a clean hydrogen industry must develop simultaneously with a 100% clean power sector. New York State's Integration Analysis, the analysis that lays out our potential pathways to reaching the goals of New York's Climate Act, illustrates that the need for electrolytic hydrogen to decarbonize the economy has already begun. The Integration Analysis indicates an estimated 5 Tbtu of clean hydrogen will be required by 2025 and 27 Tbtu by 2030, the point at which New York will reach 70% zero emissions electricity. This need for clean hydrogen rises to 90 Tbtu by 2040, the date at which New York is required by law to have a 100% zero emissions electric grid. Furthermore, to meet our 2040 100% zero emissions electricity goal, New York expects to install up to an additional 5,114 GWH of firm capacity.

New York is currently examining the technology options for the zero-emission grid, and the potential for electrolytic hydrogen to contribute to the future electricity mix will depend on the ability of the industry to find a path to economic viability. That process requires the use of appropriately designed tax policy to support the accelerated growth of needed electrolytic hydrogen resources throughout the 2020s and 2030s. In order to successfully meet New York State clean energy goals, a robust, liquid supply of clean hydrogen at reasonable cost must exist well in advance of 2040.

Within this context, we offer the following technical recommendations to support an approach to structuring the production tax credit (PTC) that enables a competitive, cost-effective, clean hydrogen industry.

1. **Electrolytic Hydrogen must receive flexible and aggressive support to scale and reduce costs now**. Draft results of analysis developed for NYSERDA assessing the implementation of the "3 Pillars" approach adopted in the proposed rules (requiring additionality, regionality, and time matching) reveals that requiring hourly matching within the NYISO area would lead to increased cost of electrolytic hydrogen of 19-80% per kilogram in 2025 and even greater increases in 2030. Costs further increase when layering on delivery at the sub-NYISO zonal level. These cost increases would unfortunately counteract the intended support for scaling of the nascent electrolytic hydrogen industry, during a time when success depends on cost reductions.

Estimated Resource Contributions from NYS Climate Action Council Scoping Plan:						
NYS Annual Fuel Mix (Energy GWh)	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Nuclear	26,452	26,452	26,452	26,452	26,452	16,835
Gas & FO	54,160	21,282	21,778	-	-	-
Zero-Carbon Firm Resource	-	-	-	5,114	8,176	4,203
Other	2,721	2,721	2,721	-	-	-
In-State Hydro	26,844	27,835	29,367	28,285	28,429	29,954
Hydro Imports (Existing)	10,361	10,361	10,361	10,361	10,361	10,361
Hydro Imports (New)	-	10,403	10,403	10,403	10,403	10,403
Wind	10,148	22,866	33,011	42,283	47,704	49,047
Wind Imports	-	-	-	-	-	-
Offshore Wind	4,459	25,687	45,761	62,066	66,993	84,906
Solar	18,135	30,687	45,266	69,935	89,724	102,483
Battery Storage	67	(1,037)	(1,514)	(1,606)	(2,478)	(3,439)
Pumped Storage	(66)	(17)	(3)	(138)	(192)	(268)
Imports*	**4,262**	**924**	**910**	**9,599**	**11,404**	**13,713**
Exports	**(6,466)**	**(10,812)**	**(14,139)**	**(9,599)**	**(11,404)**	**(13,713)**
Load	**151,077**	**167,351**	**210,377**	**253,154**	**285,571**	**304,484**

*Hydro Imports from Canada are included in the generation mix table and are therefore not included in the Imports row.

2. **The existing hydrogen industry should not lose existing jobs and projects through burdensome tax credit obligations**: A number of projects already under development in New York are at risk under the proposed 3 Pillars framework and broader obligations of the draft rulemaking. In New York alone, there are two hydrogen production facilities planned totaling nearly $800m in investment and planned to produce over 100 tons per day of clean hydrogen. Under draft rulemaking, these projects, using existing hydro power resources, would not be eligible for the 45v production tax credit. These first mover projects should be supported by government for the risks they have taken to lead this industry. The 3 Pillars will also have a broader chilling impact on investment in the clean hydrogen manufacturing industry. With over 1000 employed in New York, the hydrogen fuel cell and electrolyser manufacturing industry has already taken root in New York but is in danger of contraction. The 3 Pillars raise the cost of hydrogen and hinder the business model of hydrogen supply chain manufacturers, putting economic benefits and the creation of thousands of additional jobs at risk. New York and the nation need more first movers in the hydrogen industry and need to support them with a flexible path to market and an opportunity to receive the full production tax credit in order to enable their rapid growth and project development.

3. **The 3 Pillars will not necessarily result in improved emissions outcomes**: Regarding emissions effects, draft NYSERDA analysis demonstrates stricter approaches to the 3 Pillars do not necessarily result in better emissions outcomes.
    a. Additionality: NYSERDA analysis assuming up to 7% of total NYISO load is new electrolysis by 2030, (one of the highest estimates of hydrogen production growth across New York State's Integration Analysis) simultaneously forecasts renewables development to outpace load growth from electrolytic hydrogen production and in-State electrification efforts. As a result, without an additionality obligation on electrolytic hydrogen, the NYISO grid average emissions factor is forecast to be at or below the threshold for the maximum 45v production tax credit payment (.45 kg CO2e/kg H2) during this time period.
    b. Hourly Time Matching: NYSERDA analysis further assesses the emissions outcomes from hourly vs. annual matching obligations on electrolytic hydrogen. The annual matching approach to renewable energy integration leads to lower emissions compared to hourly matching, across all expected scenarios for both 2025 and 2030. The lower emissions are largely due to the annual matching method's greater flexibility in utilizing renewable energy throughout the year. This approach allows for more efficient integration of renewable sources into the grid, optimizing the production of hydrogen in a way that is not constrained by the immediate availability of renewable energy.
    c. Geographic Matching: While NYISO was a boundary condition for the NYSERDA analysis, New York's Climate laws do require the State to account for and mitigate the carbon intensity of imported power. As such, no geographic matching boundary for electrolytic hydrogen and its power source would be required to maintain the expected carbon intensity of the New York State grid.

4. **Ensure projects are financeable through a Beginning of Construction Standard (BOC) or similar construct:** Certainty drives down costs by reducing risk. Certainty is exactly what nascent industries need to scale and mature. To this end, the greater certainty that 45v guidance can provide to projects, the more projects will be built and the lower their costs will be. Leaving ambiguity as to what model will be used to measure carbon intensity or other rules of the program over the lifetime of the credit will lead to greater risk for the entire industry and fewer projects built, fewer jobs, and less economic growth. One path forward would be a Beginning of Construction Standard that guarantees that the rules of the PTC at the time construction begins would be certain for that project throughout the lifetime of that project or the life of the PTC.

As noted above, NYSERDA is excited about and committed to the economic growth and several thousand existing and potential new family-sustaining jobs with this new industry. With globally-leading companies in electrolytic hydrogen and a strong start to scaling this industry in New York and the United States, we believe strong but flexible support is paramount to ensure the electrolytic hydrogen industry reaches its potential for our climate, economic, and national security goals.

NYSERDA appreciates the work and leadership of the Treasury Department and the IRS expanding the clean energy market in the U.S. NYSERDA hopes these comments recommending an expansion of the eligible technologies are helpful to the Treasury Department and IRS, and if there are any questions regarding these comments, please feel free to contact Kevin Carey, NYSERDA's Director of Government Affairs at kevin.carey@nyserda.ny.gov or John Williams at john.williams@nyserda.ny.gov.

Respectfully Submitted,

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