



02/26/2024

Attention Docket ID No. REG-117631-23  
Internal Revenue Service  
CC:PA:LPD:PR (REF-117631-23)  
Room 5203  
P.O. Box 7604, Ben Franklin Station  
Washington, DC 20044

**RE: Comments on Department of the Treasury's December 26, 2023 Proposed Rule, "Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property" [88 FR 89220].**

The Ohio Environmental Protection Agency (Ohio EPA) would like to thank the Department of Treasury's Internal Revenue Service for the opportunity to comment on the hydrogen tax credit proposed rule (henceforth referred to as "the Rule") regarding subsidization for clean hydrogen power. Hydrogen stands as one of the most important energy sources for a future of decarbonization, and it is essential that the credits identified in the Inflation Reduction Act are provided in a manner that promotes widespread hydrogen use and is not overtly restrictive.

Ohio EPA has concerns surrounding five topics raised in response to this proposal. It is imperative that the Treasury Department's proposed rules consider the issues raised by Ohio EPA in this letter when determining the level of tax credit given to hydrogen production facilities. The agency urges the Treasury Department to consider implementing less stringent restrictions on the criteria proposed for tax credit qualification and increasing the amount of credit granted for hydrogen production.

Sincerely,

A handwritten signature in cursive script that reads "Robert Hodanbosi".

Robert Hodanbosi, Chief, Ohio EPA Division of Air Pollution Control

**Topic: The United States has a continually increasing electricity demand which needs to be matched with an equally aggressive approach with offering hydrogen production tax credits**

With the rise of data centers and other heavily electricity-dependent projects such as the installation of electronic vehicle and semiconductor facilities across the United States, the need for power has exploded in recent years. Projections for electricity dependency have risen from the typical 1% annual electricity demand growth to 1.5% for the next five years (2). The United States acts as a leader for new technological advancements, so this trend shows no sign of slowing. Staying in this leadership position requires a reliable electric grid that can cope with the energy growth the country is facing.

The technology boom is not the only contributor to the electricity crisis. Extreme weather conditions have led to extensive power grid failures across multiple states in recent years. Texas faced a massive electricity shortage in February 2021, where the onslaught of freezing temperatures caused power outages for more than 4.5 million homes and resulted in close to \$200 billion in property damages and 57 citizen deaths (3). This devastating event was met with constant media coverage and invited many to weigh in on the faulty infrastructure and lack of preparedness from the state.

Frigid temperatures and high wind speeds in the PJM Region (an area covering 65 million people) caused a surge in electricity demand in December 2022. Emergency orders were issued by the Department of Energy (DOE) to PJM for the company to operate some of their units at maximum capacity to cover the unforeseen increase and prevent rolling blackouts (4). Instances of energy demand spikes from weather events are becoming more frequent and without adequate power on hand, outages are guaranteed to become more common. These cause disruptions on the economy and, in severe cases, are a threat to human life.

Pacific Gas and Electric's (PG&E) Diablo Canyon Power Plant, California's only nuclear power plant, was scheduled to cease operation of their two reactor units by 2025, but an extension has been approved by the California Public Utilities Commission for the reactors to continue operation until 2030 (1). This decision was made as a tactic to avoid future electricity shortages. Additionally, the state has also seen the extension of operation for three natural gas power plants until 2026 to provide power in emergency circumstances (7). While these are vital commitments made to circumvent future events of increased energy need, they illustrate the need for additional hydrogen sources if there will be lower carbon emissions from power plants in the future.

The culmination of unsteady weather patterns and new technology in the country has set a clear standard that there's an urgent need for reliable power in mass quantities. While many companies would prefer to operate using renewable energy, this new energy push has commanded facilities to fall back on fossil fuel-fired energy. Electricity has to be sourced where it's available, and if a sufficient amount of hydrogen power is not at the ready, the only choice will be violations of the upcoming federal CO2 reduction requirements from power plants or power shortages. Creating a well-subsidized path into the hydrogen industry that can produce hydrogen at a reasonable cost is critical to avoid an energy crisis.

**Topic: U.S. EPA's proposed rules for power plants to tackle greenhouse gas emissions will lead to a reliability of these plants on hydrogen energy, increasing the urgency for a steady hydrogen generation industry**

On May 11, 2023, U.S. EPA proposed new rules to reduce greenhouse gas emissions from power plants [New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emissions Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule; Docket ID: EPA-HQ-OAR-2023-0072]. These proposed standards effectively require power plants to abide by one of

four options: install carbon capture and sequestration (CCS), co-fire coal plants with natural gas (with commitment to shut down in 2040), and co-fire natural gas plants with clean hydrogen (10) or shutdown earlier. If implemented in its current form, the need for hydrogen would increase dramatically as a response to the provisions for natural gas plants. Concurrently, this increases dependency on the Rule to provide adequate incentivization for hydrogen suppliers. This is especially true considering that CCS requires up to 44% more fuel when used, leading many power plants to favor co-firing in comparison (8). By 2038, baseload natural gas power plants (those that operate at more than 50% capacity) will be required to co-fire 96% of their gas with clean hydrogen (10). Smaller plants that operate between 20% and 50% capacity will need to co-fire with 30% clean hydrogen by the same deadline (10).

Without access to enough hydrogen, these power plants are often left with no option other than to close operation to avoid the high cost of CCS. This decrease in energy availability would be a devastating blow to the electricity grid as the energy demand in the United States is already projected to increase in rate, as discussed in the previous Topic. Maintaining power plant operation is needed to match the electricity demand the country is seeing, and reaching net zero carbon in the coming decades is only possible if the plants have a cheaper option for clean hydrogen co-firing. Ohio EPA strongly suggests considering how the proposed federal rules in combination with U.S. EPA proposed mandate to dramatically reduce fossil-fuel fired electric generation will affect the country's electricity availability when deciding the leniency of hydrogen tax credit given.

**Topic: Funding of The Regional Clean Hydrogen Hubs by the Department of Energy is helpful, but long-term investment into hydrogen generation is crucial for a carbon net-zero future**

Ohio EPA wishes to stress that the DOE's initial \$7 billion funding of H2Hubs will be a massive assistance in beginning the United States' future in achieving net zero carbon emissions by targeting larger-scale carbon emitting industries. Investing in hydrogen generation is crucial to setting the country on the path of a future based on renewable and clean energy sources. This initial fiscal contribution, coupled with this Rule's tax credit, are key factors in determining whether this country can meet the federal government's mandates for decarbonization in power production.

While the DOE's funding is beneficial for capital investment to kickstart widespread hydrogen generation, the tax credit is a necessary second step to aid in the continuation of the hydrogen hubs. Allowing for the greatest ease of entry for producers into the hydrogen industry is critical for ensuring enough hydrogen is generated to power a cleaner future. Additionally, greater fiscal contribution to each of the tax credit brackets would incentivize the creation of a surplus of hydrogen energy and guarantee stability for the country's hydrogen industry. Long-term reduction in hydrogen cost, which can be established by loosening the stringency on the Rule's requirements for qualification, is essential to providing a clean future.

**Topic: The requirement for facilities to match electricity represented by energy attribute certificates (EACs) on an hourly basis is a major limitation to hydrogen production operations**

One of the requirements set as part of the Rule is for time-matching, where the EACs obtained as proof that the electricity generated is from renewable sources needs to begin to match on an hourly as opposed to an annual basis beginning in 2028. This provision, even with the multi-year transition period, is wholly restrictive against the hydrogen industry. Facilities attempting to break into the industry are likely to lack the funding necessary to cover the cost of technology needed to closely track their credits. The goal of the tax break should be to bolster both existing and potential hydrogen power generators, but this restriction actively works against this objective.

The switch from annual to hourly time-matching could be considered justifiable if it resulted in a substantial decrease in emissions, but this is not the case. Electrolyzers that use hourly versus annual time-matching don't see enough of a benefit in emissions reductions to justify the cost of overbuilding clean electricity to ensure there's enough in a certain hour (5). Maintaining the provision that EACs should be tracked on an annual basis requires facilities to still be held accountable for tracking their energy consumption and guarantees the energy is both produced and used in the same time period, while still allowing for a margin of leniency on smaller companies.

The expectation from the Treasury Department is that hourly tracking systems will be more readily available by the time the switch has to be made. This time-matching stipulation is based on a prediction that may or may not accurately represent where time tracking technology stands by 2028. Since the underlying purpose of a conversion to a hydrogen as a main supplier of energy is to reduce long-term impacts of carbon emissions, the hourly tracking of EACs does not appear to be justified.

**Topic: The requirement for nuclear power plants to generate new energy will cause delays and unnecessary costs in creating a strong hydrogen generation market in the United States**

As a major source of clean energy, nuclear power will play a critical role as a power source in the race for ramping up hydrogen production in the United States. The Rule proposal requires that clean power is generated at the same time hydrogen is produced as part of the "incrementality/additionality" pillar.

Currently, nuclear plants typically run at full capacity and may be unable to ramp up production to create new power to meet the tax credit's additionality provision. It is unrealistic to require nuclear plants to be able to increase operating capacity when most are currently operating at or near capacity. Companies must rely on coal and natural gas fuel to help with any flexibility since solar and wind renewables are not always available (9). The gap that would be created from diverted power could be closed by allowing existing nuclear energy to qualify for the tax credit. Pulling back on this provision would allow nuclear plants the option maintain energy funneled into the grid while still feeding into the hydrogen industry.

## References

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