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The Department of the Treasury
CC:PA:LPD:PR (REG-119283-23)
Room 5203
Internal Revenue Service
P.O. Box 7604, Ben Franklin Station
Washington, DC 20044

RE: Comments on Notice IRS-2024-11719

The California Hydrogen Business Council (CHBC)¹ respectfully submits comments in response to the Department of Treasury's Notice of Proposed Rulemaking IRS-2024-11719 Section 45Y Clean Electricity Production Credit and Section 48E Clean Electricity Investment Credit (89 FR 47792 (June 3, 2024)).

Background

The CHBC is the longest established and largest hydrogen trade association in the United States, comprised of over 120 companies, agencies, and individuals involved in the business of hydrogen. Our mission is to educate the public on the substantial benefits of hydrogen and to develop and advance policy positions that support the commercialization of hydrogen in the energy and transportation sectors to achieve California's climate, air quality, and decarbonization goals.

California has the ambitious goal to achieve carbon neutrality by 2045 and has the most stringent air emission standards in the country. For the past two-plus decades, California has led in the development of the hydrogen industry, with projects ranging from hydrogen production through end use. The California Air Resources Board has identified hydrogen as a necessary decarbonization pathway,² and has a long history of using hydrogen in decarbonization and air quality improvement across the early markets, including power generation and light-duty transportation. California continues to expand the use of hydrogen in transit and heavy-duty fleets, power plants, and maritime and rail sectors. In recognition of its key role, renewable hydrogen is an eligible resource in the California Renewable Portfolio Standard (RPS) and is included in the California Low-Carbon Fuel Standard (LCFS).

The Federal Government has also supported hydrogen and fuel cell systems over the decades, with the most recent and invigorating demonstration of support coming in the form of the Bipartisan

¹ <https://californiahydrogen.org/>

²² [2022 Scoping Plan Documents | California Air Resources Board](#)

Infrastructure Law (BIL) and associated activities and publications, including the U.S. National Clean Hydrogen Strategy and Roadmap³ (“Clean Hydrogen Roadmap”) and the Hydrogen Shot Program. For California, the U.S. Department of Energy’s (DOE) selection of the California Regional Clean Hydrogen Hub, the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES)⁴, has spurred an additional \$11.4B in private investment, above the award of \$1.2B.

Comments

The Section 48 Energy Credit has driven the adoption of hydrogen and fuel cell systems since 2005. This credit spurred domestic development and thousands of jobs in the fuel cell industry. Fuel cell systems using hydrogen provide clean electricity on demand, decarbonizing the power generation sector, and improving air quality with no criteria air pollutant emissions. The passage of the 2023 Inflation Reduction Act (IRA) expanded the IRC section 48(c)(6)(A)(i) to include hydrogen storage property with the intent of further reducing the cost of delivered hydrogen to end users. The IRA (beginning in 2025) designates that this existing credit for fuel cells and energy storage move the new Section 48E Clean Electricity Investment Credit. This credit includes electric generating facilities and hydrogen storage properties that comply with the requisite greenhouse gas emission rates.

Hundreds of megawatts of fuel cells are currently operating in California⁵ due to the consistent availability of the Section 48 Energy Credit, with more projects in the pipeline, many of them through ARCHES. However, those projects cannot come to fruition if Treasury reassigns, as proposed, the definition of fuel cell systems as combustion and gasification (C&G) facilities. The most critical error in the proposed classification is that it is technically incorrect. Fuel cells neither employ combustion, nor do they employ gasification. The conversion of fuel energy to electric power in fuel cells is accomplished through electrochemical conversion, not thermochemical conversion, the mechanism used in combustion and gasification systems. The University of California, National Fuel Cell Research Center assessment, “A 100 Percent Renewable Electric Grid” states: *“Fuel cells are a non-combustion technology that convert the chemical energy of a fuel directly into electricity via an electrochemical reaction. Fuel cells operate on external fuels, such as natural gas, biogas, and/or hydrogen, and continuously provide electricity as long as fuel is provided. In contrast to combustion engines, fuel cells operate at high efficiency... When operating on biogas, fuel cells emit net zero carbon and, when operating on renewable hydrogen, fuel cells emit zero carbon.”* Further, their “Air Quality and GHG Emission Impacts of Stationary Fuel Cell Systems” assessment conclusions include:

- *“...fuel cell systems are ideally suited to balance intermittent wind and solar power on the grid while maximizing the GHG and AQ co-benefits of renewable energy.”*
- *“The use of fuel cell systems yields improvements in both ozone and PM2.5 in key areas of California associated with high populations and unhealthy levels of pollution...”*
- *“The economic value of avoided health impacts from AQ improvements is significant...”⁶*

³ See Energy.gov; U.S. National Clean Hydrogen Strategy Roadmap; (accessed January 8, 2024).

⁴ <https://archesh2.org/>

⁵ [California Stationary Fuel Cell Road Map, Benefits and Vision Through 2050](#)

⁶ [National Fuel Cell Research Center \(NFCRC\), UC Irvine](#)

As such, **CHBC submits that fuel cells should not be categorized as C&G facilities**; hydrogen fuel cells should be eligible for the ITC without qualification, as *“Fuel cell systems employ an entirely different approach to the production of electricity than traditional combustion based prime mover technologies. Fuel cells are similar to batteries in that they both produce a direct current (DC) through an electrochemical process without direct combustion of a fuel source. However, whereas a battery delivers power from a finite amount of stored energy, fuel cells can operate indefinitely, provided the availability of a continuous fuel source. Two electrodes (a cathode and anode) pass charged ions in an electrolyte to generate electricity and heat. A catalyst enhances the process.*

*Fuel cells offer the potential for clean, quiet, and efficient power generation. Because the fuel is not combusted, but instead reacts electrochemically, there is minimal air pollution associated with its use.”*⁷

The Justice40 Initiative,⁸ which is included in the implementation of the Hydrogen Hubs program, identifies eight policy priorities for disadvantaged communities (DACs)⁹. Fuel cells, because of the aforementioned qualities and attributes, are well-suited for community-based microgrids, providing needed resiliency and air quality improvements, inherently meeting the guiding policy priorities for Justice40 benefits.¹⁰

The success of the nascent fuel cell industry, of which California is a major contributor, is due in very large part to the existing fuel cell infrastructure tax credit (ITC) that sunsets at the end of this year. As stated by the U.S. Environmental Protection Agency (EPA), *“Based on their environmental benefits, high efficiency and virtually no emissions of criteria pollutants, fuel cells are supported by a number of state and federal tax incentive programs that help to offset the overall system costs. These incentives have been designed to promote continued fuel cell development, cost reductions, and overall market deployment.”*¹¹ However, the new Section 48E Clean Electricity Investment Credit places the credit for fuel cell systems under the new “technology-neutral” regime. This requires facilities that produce electricity, to produce zero carbon dioxide to qualify, and for facilities producing electricity through combustion or gasification, a separate greenhouse gas rate calculation is used that takes into account the full lifecycle of the fuel used. According to Treasury’s reasoning¹², this proposed categorization of fuel cells as C&G facilities means fuel cells using hydrogen, with zero emissions, would not qualify for the credit.

Prior to Treasury’s release of this proposed rulemaking, the Center for Climate and Energy Solutions (C2ES) submitted in April their “Executive Summary of Draft Regulations for IRC Sections 45Y and 48E” where their recommendations to Treasury include:

- *“...using the most recent version of GREET and including emissions through the point of production (well-to-gate) ...”*

⁷ https://www.epa.gov/sites/default/files/2015-07/documents/catalog_of_chp_technologies_section_6_technology_characterization_-_fuel_cells.pdf

⁸ [Justice40 Initiative | Department of Energy](#)

⁹ <https://www.energy.gov/sites/default/files/2022-09/h2iqhour-08312022.pdf> (slides 14-17)

¹⁰ <https://www.energy.gov/sites/default/files/2022-09/h2iqhour-08312022.pdf> (slide 12)

¹¹ https://www.epa.gov/sites/default/files/2015-07/documents/catalog_of_chp_technologies_section_6_technology_characterization_-_fuel_cells.pdf

- *“Certain clean technologies that produce naturally occurring de minimis emissions, including hydrogen produced with a greenhouse gas emissions rate of less than .45 kilograms of CO₂e per kilogram of hydrogen.... are also recommended to be designated as zero emissions technologies.”*
- *“In the case of hydrogen...the 10 grams de minimis standard is recommended in addition to the .45 kilograms threshold(s) to ensure the eligibility of clean technologies in line with congressional intent.”¹³*

Overarching to the comments herein is the recent Supreme Court ruling overturning the landmark Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984) decision.¹⁴ The June 28, 2024 decision in Loper Bright Enterprises vs. Raimondo (No. 22-4751, 2024 WL 3208360) effectively ends a 1984 legal precedent known as “Chevron deference” – a principle of administrative law that required courts to defer to interpretation of statutes made by government agencies. This decision could limit broad regulatory authority of federal agencies to change legislative intent, as exemplified in this erroneous redefining of fuel cell facilities as combustion facilities, due to an unreasonably restrictive definition of renewable hydrogen, based on subjective criteria, rather than the objective carbon intensity standard that is already in statute. In the case of the proposed guidance for 45E, Treasury’s below approach does not reflect a reasonable interpretation.

A facility that produces electricity using any fuel that was produced using electricity that had been produced, in whole or in part, from the combustion of fossil fuels would be considered a C&G facility. For example, a hydrogen fuel cell would be considered a C&G facility if it produced electricity using hydrogen.¹⁵

While the need to ensure compliance of C&G facilities with the IRA is understood, it cannot go without recognition that the interpretation of the law is overly broad and, given this ruling, certainly exceeds the boundaries of Treasury’s scope, as demonstrated in the example presented in the draft language that “a hydrogen fuel cell would be considered a C&G facility if it produced electricity using hydrogen that was produced by an electrolyzer powered, in whole or in part, by electricity from the grid because some of the electricity from the grid was produced through combustion or gasification.”¹⁶ Additionally, this proposed rulemaking does not meet the intention of the Biden-Harris administration’s goal to develop a 100% clean electricity grid using hydrogen and fuel cells, nor the Hydrogen Hubs program, for which California has just signed a contract with the Department of Energy for up to \$12.6B including private investment. This proposed rulemaking would seriously hinder most of the hubs around the country. Congressional intent was clearly not to cover the whole electrical supply chain and all energy inputs to it, across all technologies.

Should Treasury ultimately continue to pursue the path of this current proposed rulemaking, then the 48E ITC framework must align with the Section 45V lifecycle greenhouse gas emissions framework, so as to avoid the advancement of different lifecycle standards. Taking from the above recommendation, any qualified clean hydrogen meeting the lowest carbon intensity tier (0.45

¹³ <https://www.c2es.org/wp-content/uploads/2024/04/45Y-48E-ES-PropReg.pdf>

¹⁴ <https://www.scotusblog.com/2024/06/supreme-court-strikes-down-chevron-curtailing-power-of-federal-agencies/8>

¹⁵ NPRM, 89 Fed. Reg. at 47800-47801.

¹⁶ <https://www.federalregister.gov/d/2024-11719/p-103>

kg/CO₂e per kg of H₂), should be sufficient for a fuel cell using hydrogen to be categorized as zero-emissions within the Section 48E ITC framework.

Conclusion

Given the environmental, health, and economic benefits fuel cells offer in providing clean power, categorizing fuel cells as a C&G facility for this revised Section 48E credit is not only incorrect and inaccurate, but also counter to the benefits cited herein, the objectives of the administration and the BIL, and to the decarbonization efforts we are undertaking at this moment in our history.

Thank you for your consideration of these comments.

Respectfully submitted,



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