



Alliance for Renewable Clean  
Hydrogen Energy Systems

October 1, 2024

The Honorable Janet Yellen  
Secretary  
U.S. Department of the Treasury  
1500 Pennsylvania Avenue NW  
Washington, D.C. 20220

The Honorable Jennifer Granholm  
Secretary  
U.S. Department of Energy  
1000 Independence Ave SW  
Washington, D.C. 20585

John Podesta  
Senior Advisor to the President for Clean Energy Innovation and Implementation  
The White House  
1600 Pennsylvania Ave NW  
Washington, D.C. 20500

Dear Secretaries Yellen and Granholm and Mr. Podesta,

The leadership of the DOE California Hydrogen Hub, the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES), is aware of several letters and perspectives related to the IRA 45V hydrogen production tax credit. Most recently, we learned of the September 11, 2024 Congressional sign-on [letter](#), led by Senator Whitehouse, that focuses on finalizing rules and guardrails to ensure no net increase in carbon pollution. We agree with the letter's intent to reduce carbon emissions by ensuring the development of clear definitions, rules, and guardrails. However, if not developed correctly, definitions may be used inconsistently, and rules and guardrails may have unintended consequences of *increasing* carbon emissions. The details matter for effective implementation and market development to achieve our common objectives.

Senator Whitehouse acknowledges that "certain allowances can be made to facilitate compliance with the rules," but the emissions integrity of 45V cannot be compromised. He highlights several proposed exemptions and modifications. In particular, we want to focus on the *incrementality* compliance pillar, where we believe a win-win is possible. One point in Senator Whitehouse's letter discusses an "Incrementality Exemption for State Clean Energy Mandates," stating that "an exemption for incrementality should only be granted if the states can

credibly demonstrate that their policies can constrain indirect emissions from electrolyzers without leaking emissions to neighboring states.” This approach is exactly what California’s legally binding and enforceable policy framework is set up to do – and is effectively achieving. Below is our updated suggested regulatory text, reflecting feedback from discussions with environmental stakeholders. We initially focused on just the 100% clean electricity standards as the backstop for our proposal, and we have evolved to focus on carbon emission caps, thus aligning with the work of the Environmental Defense Fund.<sup>1</sup> Either approach works for California, but also focusing on carbon emission caps helps us achieve our shared goals:

**Recommendation 1: Amendment to §1.45V-4: Procedures for determining lifecycle greenhouse gas emissions rates for qualified clean hydrogen.**

We propose minimally invasive revisions to the draft regulations through the addition of the following italicized and underlined text in section 1.45V-4(d):

...The requirements of this paragraph (d)(1) apply regardless of whether the electricity generating facility is grid connected, directly connected, or co-located with the hydrogen production facility. However, the requirements of this paragraph shall not apply, and a taxpayer shall not be required to acquire and retire qualifying EACs, for hydrogen production facilities where all of the following conditions exist and are verified in accordance with section 45V-5(g)(6):

(i) The hydrogen production facility is located in a state where power sector emissions are subject to a high integrity emissions cap, with annual, binding, enforceable limits on state GHG emissions as well as those associated with electricity imported from other states by a date certain and *in no circumstances later than December 31, 2050*:

(ii) Any hydrogen production facility relying on grid power has the capability to increase or decrease electricity consumption on demand to follow grid needs; and

(iii) The hydrogen production facility’s electricity demand is fully accounted for in the state’s energy planning system, including applicable system-level, state-mandated time-matching and deliverability requirements.

**Recommendation 2: Amendment to §1.45V-5: Procedures for verification of qualified clean hydrogen production and sale or use.**

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<sup>1</sup> See Environmental Defense Fund and ERM’s January 2024 [report](#) and EDF’s official [45V comments](#) to Treasury.

We propose that the aforementioned alternative compliance pathway can be verified by adding the following new subsection to section 1.45V-5(g):

If the taxpayer claims an exemption from acquiring and retiring EACs pursuant to section 45V-5(d)(1), a statement that the hydrogen production facility meets the three conditions described in sections 45V-5(d)(1)(i)-(iii).

What is the practical impact of our proposed revisions?

Without an alternative compliance pathway, as defined above, **it would be nearly impossible to build IRA tax credit qualified grid-connected electrolyzers in California.** The reason is that these producers would have to procure renewable electricity above and beyond the 7,000MW+ California is adding every year, putting them in direct competition with load serving entities with legally binding mandates to fully decarbonize the grid.

Based on direct feedback from hydrogen producers, most, if not all, grid connected hydrogen producers will not move forward. Specifically for California's Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) Hydrogen Hub, going forward without an alternative compliance pathway, based on the projects approved by the DOE, the ARCHES system size would be reduced by over 23 percent (from 515 tonnes per day to 401 tonnes per day)—*directly reducing jobs, community benefits, economic investment and emissions reductions.*

Climate Impact:

The reduction in hydrogen production resulting from the current draft 45V regulations would have practical implications—more diesel in trucks and port operations, and more natural gas in the power sector. Therefore, this reduction would lead to approximately *500,000 tonnes of additional climate emissions* per year, roughly equivalent to burning an additional 50,000,000 gallons of diesel every year.

To be clear, some of the concerns addressed in Senator Whitehouse's letter have merit at the national level. But in California, the story is different because of our clean grid and existing binding environmental and climate commitments.

Three emissions sources should be considered when evaluating the hydrogen tax credit strategy:

	<b>Emissions Source</b>	<b>National Emissions Risk</b>	<b>California Emissions Risk</b>
<b>1</b>	Direct emissions from production	<u>No Issue</u> Projects need to be below 4kg CO2eq/kg H2, measured directly	<u>No Issue</u> Same as national
<b>2</b>	Indirect emissions induced by hydrogen production	<u>Potentially an issue</u> H2 production could soak up renewables, leading other sectors to backfill with fossil	<u>No Issue</u> <b>California has a legally binding and enforceable carbon emissions cap</b> , which includes energy brought in from other states
<b>3</b>	End use emissions	<u>Huge risk</u> Every kg of hydrogen not produced is one less kg that can displace fossil	<u>Huge risk</u> For example, every tonne of H2 <i>not</i> produced and used in HD transportation, 18 tonnes of carbon emissions are released into the atmosphere.

In short, the emissions risks articulated in Senator Whitehouse’s letter are mitigated by California’s clean electricity grid with a mandate for full decarbonization and legally-binding, economy-wide, declining cap on carbon emissions. A failure to consider California’s binding emissions cap in determining eligibility would have a perverse impact: decreasing hydrogen production which, in turn, would prolong the use of fossil fuels and related negative impacts across the state for decades to come.

A compromise position is possible

The Biden-Harris Administration can adopt California’s proposal of an Alternative Compliance Pathway for projects developed in states with clean electricity grids and binding carbon emissions caps. This proposal is widely supported by climate leading states like California, which have already achieved high percentages of renewable integration and are committed to economy wide decarbonization by a certain date. This Alternative Compliance Pathway would not compromise any of the principles in Senator Whitehouse’s letter, and it would result in far greater emissions reductions—including criteria pollution—for current and future generations of Americans.

Thank you for your consideration of our feedback and our proposal for an Alternative Compliance Pathway.

Sincerely,



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ARCHES CEO



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