February 12, 2024

Governor Gavin Newsom
1021 O Street, 9th Floor
Sacramento, CA 95814

RE: Concern regarding ARCHES' efforts to weaken vital protections for 45V tax credits

Dear Governor Newsom,

The undersigned climate, environmental justice, and consumer advocate groups are writing to express our concern with efforts by the ARCHES hydrogen hub leadership and some of the hub participants to weaken climate-aligned and legally necessary rules[1] for the federal 45V clean hydrogen production tax credits. For example, the ARCHES' August 2023 letter to the IRS advocates for weak incrementality and temporal matching requirements.[2]

It is imperative that hydrogen projects receiving the highest level of public dollars are powered by clean energy that meets three criteria: incrementality, geographical deliverability, and hourly

[1] Treasury, Section 45V Credit for Production of Clean Hydrogen, 88 Fed. Reg. 89,220 (Dec. 26, 2023), https://www.federalregister.gov/documents/2023/12/26/2023-28359/section-45v-credit-for-production-of-clean-hydrogen-section-48a15-election-to-treat-clean-hydrogen (45V Proposed Rule).
[2] ARCHES letter to IRS, (Aug. 23, 2023) https://www.politico.com/f/?id=0000018a-6cd6-dd5e-abfe-efd6906c0000&nname=california-climate&nid=00000189-315c-d8dd-a1ed-797dc9f10000&nrid=ad1ab22e-203c-479d-8d76-dd580beb334e&nlid=2745178

temporal matching. Those criteria are required by law, as affirmed by the Environmental Protection Agency's (EPA) letter to Treasury,[3] and constitute key protections against increased climate and environmental pollution as well as electricity price spikes caused by hydrogen production without these guardrails.

ARCHES is an entity with direct support and leadership from California's state government. We urge you to intervene so that ARCHES does not work to weaken these vital federal standards, which would undermine the credibility of ARCHES projects on the ground in California. We cannot emphasize enough the detriment to our state's climate and affordability policies of a California-backed entity calling on the Federal government to adopt weaker standards for hydrogen production, especially as California seeks to position itself as a global leader on climate action.

Weak standards without the three pillars would endanger the climate and public health

The law requires incrementality, deliverability and hourly matching, often referred to as the "three pillars." Section 45V awards tax credits based on the "lifecycle greenhouse gas emissions rate" of hydrogen projects. Section 45V defines "lifecycle greenhouse gas emissions" of hydrogen projects by referencing Section 211(o)(1) of the Clean Air Act, which in turn defines those emissions to include both "direct emissions and significant indirect emissions" linked to the production of a fuel. EPA has supported Treasury's determination that for electrolytic hydrogen projects, induced emissions impacts on the grid resulting from hydrogen projects are "significant indirect emissions" given their magnitude. Without the three criteria, in most cases the hydrogen production emissions limits set forth in 45V will be far exceeded by the induced grid emissions, amounting to a **cumulative increase of hundreds of millions of tons of carbon emissions and significantly increased air pollution.** Numerous independent studies all corroborate this result.[4]

Reducing the stringency of Treasury's proposed rule—for example by adding large exemptions to or removing entirely the incrementality requirement, or delaying the implementation of hourly matching—would lead to significant emissions increases from hydrogen production, contrary to

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[3] EPA, Letter to Assistant Secretary Batchelder, Department of Treasury (Dec. 20, 2023), https://home.treasury.gov/system/files/136/45V-NPRM-EPA-letter.pdf (EPA 45V Letter).

[4] Ricks, W., Xu, Q., & Jenkins, J. D. (2023). *Minimizing emissions from grid-based hydrogen production in the United States*. Zenodo. https://doi.org/10.5281/zenodo.10041735;
Schittekatte, T., Cybulsky, A., Giovanniello, M., & Mallapragada, D. (2023). *Producing hydrogen from electricity: How modeling additionality drives the emissions impact of time matching requirements* [Preprint]. In Review. https://doi.org/10.21203/rs.3.rs-2834020/v1;
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Haley, B., & Hargreaves, J. (2023). *45V Tax Credit: Three-Pillars Impact Analysis*. Evolved Energy Research. https://www.evolved.energy/post/45v-three-pillars-impact-analysis;
Blanford, G., & Bistline, J. (n.d.). *Impacts of IRA's 45V Clean Hydrogen Production Tax Credit*. EPRI. Retrieved January 29, 2024, from https://www.epri.com/research/products/000000003002028407.

the statutory requirements set out in the Inflation Reduction Act. If you redirect existing renewable energy sources from the current users of that power, those households and businesses will still need electricity and in California that means more gas plants will need to be fired up. This would directly harm the health of overburdened communities already impacted by air pollution from California's dirtiest power plants.

This would also put our state's ambitious climate goals at risk. Allowing hydrogen producers to add substantial new electricity demand on the grid and cannibalize existing clean energy to meet that demand will drive increased fossil fuel generation to fill the gap and significantly compromise the achievement of a zero-emission grid by 2045. In fact, California has already adopted rules to prevent precisely the kind of resource shuffling that weakening the proposed incrementality requirement would allow. Public Utilities Code §454.53(a) states that the 100% zero-emission grid by 2045 target must be achieved without resource shuffling or increasing carbon emissions in other parts of the West. Incentivizing hydrogen production that shifts emissions would therefore be at odds with current California policy.

By opposing strong federal rules, as it did in the August 2023 letter, ARCHES is attempting to secure the maximum federal subsidy for hydrogen projects that will drive increased fossil fuel generation. Over 40 environmental justice groups spanning 15 states wrote to the Biden administration in support of the three pillars to protect communities from the health-harming pollution that could otherwise result from electrolytic hydrogen production.[5] California-based signatories include Asian Pacific Environmental Network, California Environmental Justice Alliance, Center for Community Action and Environmental Justice, Center on Race, Poverty, and the Environment, Communities for a Better Environment, Physicians for Social Responsibility Los Angeles, and The Greenlining Institute.

Without the three pillars, ARCHES projects could drive wholesale electricity and capacity price spikes that will be borne by California households and businesses

The proposed rule from Treasury[6] requires the procurement of new clean power—not renewables already powering homes and businesses—to meet the large new electricity demand from electrolyzers, at the same hour and region of the grid as the demand. This is critical to protect consumers from power price spikes from hydrogen production, especially in states like California with a strong RPS. If existing renewable resources are no longer available to California's homes and businesses because hydrogen producers with significant federal subsidies

[5] See California Environmental Justice Alliance, Environmental Justice Groups Across the Country Issue Letter to the Department of the Treasury on Hydrogen Funding, https://caleja.org/2023/11/ej-groups-letter-hydrogen-45v-tax-credit/.
[6] Treasury, Section 45V Credit for Production of Clean Hydrogen, 88 Fed. Reg. 89,220 (Dec. 26, 2023), https://www.federalregister.gov/documents/2023/12/26/2023-28359/section-45v-credit-for-production-of-clean-hydrogen-section-48a15-election-to-treat-clean-hydrogen (45V Proposed Rule).

take these contracts, then utilities and community choice aggregators will be forced to pay more to fill this gap.

The cost of new clean power will fall on utility customers in the form of higher electricity and resource adequacy prices, instead of on the hydrogen producers who have access to a tax credit equivalent to $60 / MWh. This has already been shown in Princeton's ZERO Lab's modeling of the California energy system, which found marked power price increases from hydrogen production absent the three pillars.[7] Crypto mining offers a helpful lesson, as it is also a power hungry process just like electrolysis. The impacts of inadequately regulated crypto mining include increases of tens to hundreds of millions of dollars in utility bills for households and businesses in upstate New York[8], and costly grid reliability issues in Texas.[9]

The economic risk posed by hydrogen production has been robustly documented[10] and has driven a large contingent of consumer groups in the U.S.—including The Utility Reform Network (TURN) and California Public Interest Research Group—to urge the Biden administration to require the three pillars for all hydrogen projects seeking the 45V tax credit.[11] It would be fundamentally inequitable if the ARCHES hub projects—which would receive taxpayer-funded subsidies from both DOE and Treasury—drives up electricity prices and socializes the costs of increased electricity demand from hydrogen production onto all electricity customers, including low- and moderate-income households.

The three pillars can enable viable clean hydrogen projects in California

We encourage you to be cautious when evaluating claims from some companies that including the three pillars in the 45V rules will make hydrogen production in California impossible. A meta-analysis of cost studies[12]—including studies by electrolyzer manufacturers, hydrogen and renewable developers, and academics—find three-pillar projects will be cost-competitive from day one and conclude that the three pillars will support substantial clean hydrogen deployment. Reputable research groups such as the Electric Power Research Institute[13] and Bloomberg New

[7] Ricks, W., Xu, Q., & Jenkins, J. D. (2023). *Minimizing emissions from grid-based hydrogen production in the United States*: *Research Addendum on Consumer Price Impacts,* Zenodo. https://doi.org/10.5281/zenodo.10041735;

[8] Laura Counts, *Power-hungry cryptominers push up electricity costs for locals*, BerkleyHaas (Aug. 3, 2021), https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/.

[9] Elizabeth Napolitano, *Texas paid bitcoin miner more than $31 million to cut energy usage during heat wave*, CBS News (Sept. 7, 2023), https://www.cbsnews.com/news/bitcoin-mining-cryptocurrency-riot-texas-power-grid/.

[10] Energy Innovation, *Consumer Cost Impacts of 45V Rules*, https://energyinnovation.org/wp-content/uploads/2023/11/Consumer-Cost-Impacts-of-45V-Rules-1.pdf

[11] Letter from consumer advocates to White House and Treasury officials on 45V (Oct. 26, 2023), https://www.citizen.org/wp-content/uploads/Consumer-Advocates-45V-Letter.pdf.

[12] Ricks, W. & Jenkins, J. D. (2023). *The Cost of Clean Hydrogen with Robust Emissions Standards: A Comparison Across Studies*. Zenodo, https://doi.org/10.5281/zenodo.7838873.

[13] EPRI, *Impacts of IRA's 45V Clean Hydrogen Production Tax Credit* (Nov. 3, 2023), https://www.epri.com/research/products/000000003002028407.

Energy Finance[14] came to the same conclusion. In fact, the proposed 45V rules were praised[15] by a wide range of companies[16] spanning the hydrogen value chain who expressed confidence in the rules' ability to support a *truly clean* hydrogen industry.

Our understanding is that the ARCHES hub *already* includes projects that can and will adhere to the three pillars. This is a viable approach in California and elsewhere, and certainly the leaders of California should oppose weakening standards that will increase environmental harm and increase the cost of electricity in California, and across the country. Additionally, the hub is not yet even at the "Stage 1" of planning and design and is still in negotiations with the Department of Energy. It is not too late to rethink projects that do not meet the three pillars.

The ARCHES hydrogen hub must support and adhere to strong Treasury rules

We urge you to uphold the strong proposed Treasury rules and ensure that ARCHES adheres to them. This is necessary to build a *truly clean* hydrogen industry in our state, that would not compromise our state's climate goals, and harm our communities' environmental and economic well-being. In contrast, if ARCHES continues to attempt to weaken the federal standards and advances projects that fail to meet these criteria, these projects will face stiff opposition from climate, environmental justice, and consumer advocate groups.

Our organizations stand ready to work with you to ensure strong 45V tax credit implementation that protects the climate, public health, and electricity consumers and would urge a reset in California's public position regarding these critical federal guidelines. We would be happy to discuss these issues with you at the earliest opportunity.

Sincerely,

Asian Pacific Environmental Network

California Environmental Voters

Center for Biological Diversity

Center for Community Action and Environmental Justice

Center on Race, Poverty, & the Environment

Earthjustice

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[14] BloombergNEF, *US Hydrogen Guidance: Be Strict or Be Damned* (Sept. 21, 2023), https://about.bnef.com/blog/us-hydrogen-guidance-be-strict-or-be-damned/

[15] Treasury, *What They Are Saying: U.S. Treasury Department Framework Will Grow Clean Hydrogen Industry* (Dec. 22, 2023), https://content.govdelivery.com/accounts/USTREAS/bulletins/381482f.

[16] Hystor Energy, *Hydrogen Industry Support of Strong 45V Rules* (Dec. 20, 2023), https://hystorenergy.com/hydrogen-industry-support-of-strong-45v-rules/.

Environmental Defense Fund

Leadership Counsel for Justice and Accountability

Natural Resources Defense Council

Pacific Environment

Physicians for Social Responsibility - Los Angeles

Sierra Club CA

Small Business Utility Advocates

Sunflower Alliance

The Climate Center

The Greenlining Institute

The Utility Reform Network (TURN)

Union of Concerned Scientists

Utility Consumers' Action Network

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