



April 4, 2023

Chair Marsh, Vice-Chairs Levy and Levy, and Members of the Committee,

Re: Testimony in opposition to HB 2170

My name is Danny Noonan, and I am a Climate and Energy Strategist with Breach Collective, a 501(c)(3) nonprofit based in Eugene and Portland. Breach Collective partners with communities on the front lines of the climate crisis to advance justice through locally-driven campaigns rooted in the power of grassroots organizing, legal advocacy, and human stories.

We respectfully submit this testimony in opposition to HB 2170, including the -3 amendment. Breach Collective generally supports investigating development of a renewable hydrogen hub as part of a comprehensive renewable energy and electrification strategy for Oregon. However, the text of HB 2170 – as passed and referred to the Joint Committee on Ways and Means – contains problematic definitions and lacks important safeguards. Combined, these shortcomings jeopardize the hub’s emissions reduction potential, and pose unacceptable safety risks to rural Oregon communities.

The -3 amendments to HB 2170 undermine the emissions reduction potential of a renewable hydrogen hub

Most of the testimony and discussion of HB 2170 during the April 3, 2023 Committee hearing was premised on a hydrogen hub in Coos Bay that would produce hydrogen using nearby offshore wind energy. HB 2170 *as-introduced* aligned with this vision, insofar as it specifically directed a feasibility study for a “renewable hydrogen” hub, where “renewable hydrogen” was defined as “hydrogen gas derived from energy sources *that do not emit greenhouse gases*” (emphasis added).¹

However, the -3 amendment to HB 2170 introduces a broader set of definitions. The first of these, “green electrolytic hydrogen,” includes hydrogen produced via electrolysis from “A renewable energy source as defined in ORS 469A.005.” ORS 469A.005 itself defines “Renewable energy source” as “a source of electricity described in ORS 469A.025.” Crucially, ORS 469A.025 includes energy from combustion of biomass and various biomass by-products, including biogas, within the definition of “Renewable energy source,” provided the biomass has not been treated with chemical processes.²

¹ See [bill text of HB 2170 as-introduced](#), ss. 1(1)-(2).

² See ORS 469A.025(2)-(3).

Consequently, despite the impetus for establishing a Coos Bay hydrogen hub being the port's proximity to planned offshore wind generation, the -3 amendment to HB 2170 actually directs the Oregon Department of Energy ("ODOE") to explore the feasibility of a Coos Bay hydrogen hub that produces hydrogen via electrolysis from biomass and other greenhouse gas-producing energy sources (among others). We have multiple concerns with this more expansive definition, which include but are not limited to potential for such a hub to incentivize more destructive forest management practices and/or emissions-intensive forms of agriculture.³

Additionally, under the -3 amendment, the first sentence of s. 1(2) of HB 2170 now reads "The State Department of Energy shall conduct a study on the feasibility of establishing a *renewable hydrogen* hub at the Oregon International Port of Coos Bay *to include green electrolytic hydrogen*" (emphasis added). We interpret this text as suggesting that the feasibility study envisions a hub that produces not just "green electrolytic hydrogen," but also "renewable hydrogen." The definition for "renewable hydrogen" in the -3 amendment is largely identical to "green electrolytic hydrogen," but importantly *does not exclude* "hydrogen manufactured using any conversion technology or steam reforming that produces hydrogen from a fossil fuel feedstock." It is not entirely clear what the purpose of including this slightly more expansive "renewable hydrogen" definition could be, other than to potentially provide an additional loophole to produce hydrogen at the hub from fossil fuel feedstocks.

Combined, these amendments shift the focus of the ODOE's feasibility study from the production of hydrogen from entirely non-emitting sources (i.e. offshore wind), to sources that may themselves have substantial real-world emissions, and/or have the indirect effect of prolonging or expanding fossil fuel infrastructure.⁴ Either outcome would undermine rather than support our State's energy and emissions reduction goals, but HB 2170 directs ODOE to explore them.

The feasibility study directed by HB 2170 lacks appropriate sidewalls and safeguards

Beyond these definitional issues, the lack of any detailed direction to ODOE as to the content and considerations of the proposed feasibility study creates additional risks. Two considerations that we wish to bring to this Committee's attention in particular are as follows:

(1) Appropriate end-uses for hydrogen produced and/or stored at the hub

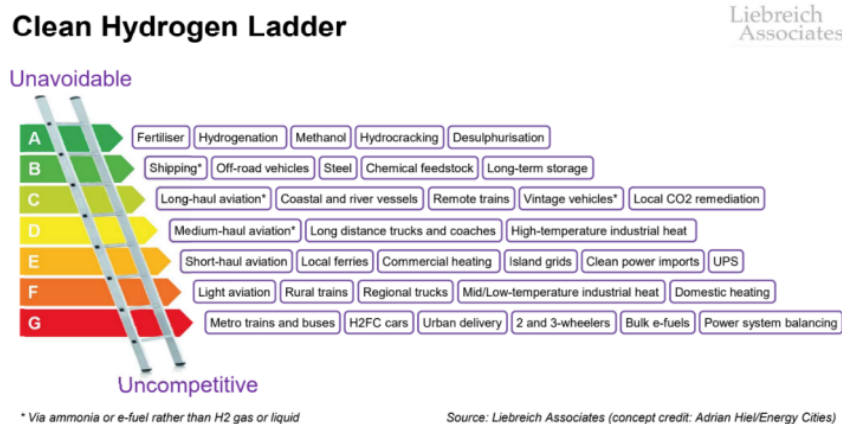
³ See, for example, the following study showing that the only economically-viable agricultural sources of biogas are large-scale dairy operations. Lauer et al, *Making money from waste: The economic viability of producing biogas and biomethane in the Idaho dairy industry*, Applied Energy 222, pp. 621-636 (2018). See also <https://www.desmog.com/2023/02/22/natural-gas-methane-manure-dairy-digester-net-zero/>.

⁴ Taking woody biomass as an example, even if we set aside the contentious and dubious claim that burning wood pellets is "carbon neutral" because those wood pellets were once part of trees that sequestered carbon, there are still emissions associated with the harvesting, transport and processing of those wood pellets for combustion.

As members of this Committee correctly recognized during yesterday’s hearing, regardless of the energy source used, producing hydrogen is inherently energy-intensive. Consequently, it is important in any sound economy-wide decarbonization strategy that hydrogen be prioritized if not reserved for end uses that achieve the greatest emissions reductions at the lowest cost, and/or achieve emissions reductions in areas of the economy where decarbonization by other means is either technically or economically infeasible. The Oregon Department of Energy already recognizes this concept, as indicated by ODOE representative Rebecca Smith citing the below figure in a presentation to this Committee on February 6, 2023:⁵

POTENTIAL APPLICATIONS IN OREGON BY 2030 (cont’d)

- Where RH2 should be used – merit order of deployment



As this figure indicates, long-term energy storage, high-temperature industrial process heat, and certain transportation fuels are higher-order use cases, whereas domestic and commercial heating are lower-order use cases. However, several of this State’s gas utilities are targeting both producing synthetic methane from hydrogen, and blending hydrogen with methane into their existing pipeline network, as ways of complying with the State’s Climate Protection Program⁶ – despite both technologies being, at this stage, speculative, expensive and inherently scarce.⁷ Without direction to

⁵ <https://olis.oregonlegislature.gov/liz/2023R1/Downloads/CommitteeMeetingDocument/260124>

⁶ See, e.g., <https://www.nwnatural.com/about-us/the-company/carbon-neutral-future>

⁷ Specifically, hydrogen-methane blending reduces emissions at a much higher rate than electrification, the technical safety limit for blending hydrogen into existing methane gas pipelines is approximately 20% (i.e. a 1:4 blend of hydrogen to methane), and many existing gas stoves and other appliances may need to be replaced to function properly with such a high blend. For a detailed critique of NW Natural’s synthetic methane plans, see NW Natural’s IRP Proceeding, PUC Docket LC 79, [Climate Advocates’ Opening Comments](#), at pp. 22-29.

ODOE in HB 2170 to focus on the highest-order end uses for the renewable hydrogen hub, we are likely to see significant lobbying by gas utilities to gain access to this hydrogen, which, if they are successful, will be used as a tool to prolong fossil fuel infrastructure and delay electrification – all to the detriment of this State’s climate goals. Furthermore, it should be obvious that the emissions involved in shipping renewable hydrogen long distances overseas for export would undermine its emissions-reduction case regardless of the end use envisioned by the country importing it. Yet, because no direction was given in HB 2170 for ODOE to evaluate appropriate end uses in its feasibility study, it is possible that the study would include no consideration of this issue whatsoever.

(2) Safety risks associated with transporting hydrogen by rail or pipeline

Hydrogen is a highly-combustible fuel, especially when stored or transported in a concentrated form. The safety risks of hydrogen development has, to this point, been something of a blind spot for this Committee’s consideration of hydrogen-related legislation. These risks are, however, well-documented elsewhere.

For instance, a recent report commissioned by the Pipeline Safety Trust and produced by Accufacts, Inc. details the safety concerns of hydrogen.⁸ This report built and expanded on the findings of another recent report by the University of California Riverside and the California Public Utilities Commission.⁹ As the report’s Summary for Policymakers indicates:

The report finds that transporting hydrogen by pipeline poses serious explosion risk due to hydrogen’s flammability, propensity to leak, pipeline integrity issues, and other factors. Furthermore, hydrogen is an indirect greenhouse gas, making its leak-prone nature concerning from a safety and climate perspective. The report finds transportation of hydrogen blends in existing gas distribution systems particularly problematic; however, even pure hydrogen in gas transmission systems will require additional research and careful consideration.¹⁰

These safety concerns were largely unaddressed by ODOE’s 2022 renewable hydrogen feasibility study, but are of particular relevance to the feasibility of a hub in Coos Bay. Specifically, identifying whether and in what cases it is truly safe to transport hydrogen produced by a Coos Bay hub – whether by pipeline, rail, or otherwise – will be essential to ensuring buy-in by Tribes, Native American and

⁸ <https://pstrust.org/hydrogen-pipelines-unique-risks-prove-dangerous-for-pipeline-transportation/>

⁹

<https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-issues-independent-study-on-injecting-hydrogen-into-natural-gas-systems>

¹⁰ https://pstrust.org/wp-content/uploads/2023/01/hydrogen_pipeline_safety_summary_1_18_23.pdf

Indigenous Persons, landowners, residents and other community members who previously opposed the Jordan Cove LNG terminal and Pacific Connector pipeline. In the wake of recent environmental disasters stemming from train safety issues, these considerations should have been front-of-mind for this Committee and included in the bill text.

Conclusion

The sheer amount of funding available for renewable hydrogen development under the Inflation Reduction Act has drawn the attention of a broad range of acts in the public and private sectors, many of whom are far more interested in profiting off of hydrogen investment and policy than they are in pursuing hydrogen for its emissions reduction outcomes. For Oregon, renewable hydrogen funding thus presents both an opportunity and a cause for concern.¹¹ The opportunity is, obviously, to access that funding to develop renewable hydrogen resources in a way that creates much-needed, family-wage, union jobs in rural communities, while advancing State, federal and global climate action and helping achieve emissions reduction goals. The concern is that hydrogen funding could be misdirected in a manner that is inconsistent with the best use-cases for renewable hydrogen, primarily benefits fossil fuel companies and other vested interests, and provides little or no broader benefit to the climate or general public.

Because of our concerns that the feasibility study envisioned by HB 2170 may put Oregon on the path to the latter outcome rather than the former, we respectfully oppose it. We hope these comments will help inform the legislature's further consideration of HB 2170 this session.

Sincerely,

/s/

Danny Noonan

Climate and Energy Strategist, Breach Collective

¹¹ For the federal context, see <https://www.desmog.com/2023/03/16/grist-fight-to-define-green-hydrogen-could-determine-america-emissions-future/>