



**Testimony before the Committee on Energy, Utilities and Technology
in opposition to L.D. 1775,
An Act to Establish a Clean Hydrogen Pilot Program**

May 2, 2023

Senator Lawrence, Representative Zeigler, and members of the Committee on Energy, Utilities and Technology, my name is Emily Green and I am a senior attorney with Conservation Law Foundation (CLF). I appreciate this opportunity to testify regarding L.D. 1775, An Act to Establish a Clean Hydrogen Pilot Program.

CLF, founded in 1966, is a public interest advocacy group that works to solve the environmental challenges threatening the people, natural resources and communities in Maine and across New England. In Maine for almost four decades, CLF is a member-supported organization that works to ensure that laws and policies are developed, implemented and enforced that protect and restore our natural resources; are good for Maine's economy and environment; and equitably address the climate crisis.

While CLF recognizes green hydrogen as a promising decarbonization strategy for certain applications, there are many reasons to tread carefully when it comes to investment in this technology. CLF does not question the good intentions of L.D. 1775. However, we are concerned that it may encourage investment in hydrogen and natural gas to the detriment of Maine's mandatory carbon reduction levels, contrary to its intention. Therefore, we oppose the bill as written.

We urge Committee members not to support L.D. 1775 without careful parameters to avoid greenwashing. Initially, the bill needs a more restrictive definition of clean hydrogen. The lifecycle emissions associated with hydrogen use turns largely on its source. Ninety-nine percent of hydrogen produced in this country is sourced from fossil fuels. To avoiding incenting non-green hydrogen, it is critical that L.D. 1775 define clean hydrogen as that produced using electrolysis from zero-carbon renewable energy. Moreover, any facilities selected for a pilot must be fueled by electricity generated by (1) new renewable sources or renewable sources with excess power that are (2) producing at the same time the hydrogen facility is using power and (3) produced near the hydrogen facility.

L.D. 1775's proposed definition, allowing 4 kilograms of CO₂e per kilogram of hydrogen, would likely encompass blue hydrogen—that created through a steam methane reforming process and paired with carbon capture and storage. But blue hydrogen is not a climate solution. A recent study found the greenhouse gas footprint of blue hydrogen is 20 percent greater than burning



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natural gas or coal for heat and 60 percent greater than burning diesel oil for heat.¹ The authors assumed captured carbon dioxide could be stored indefinitely without any leakage, a charitable and unproven assumption. Though blue hydrogen reduces direct carbon dioxide emissions, it increases fugitive emissions of methane, a more potent greenhouse gas. Due to this methane leakage, total carbon dioxide equivalent emissions from blue hydrogen were only 9-12 percent lower than gray hydrogen (that produced through a steam methane reforming process, but without carbon capture). The authors found blue hydrogen to be a losing strategy even assuming a low methane leakage rate, and even in a scenario assuming the hydrogen was produced using a combination of natural gas and zero emissions renewable energy.

To avoid supporting technology that could actually increase Maine's carbon emissions, it is also critical that the Committee impose strict limitations on the end use of any hydrogen produced through a pilot program. Potential carbon emission benefits of hydrogen use must be compared to other reasonable alternatives. In most circumstances, electrification is more efficient, cost-effective, safe and viable. However, there are some limited applications for which the use of green hydrogen may prove appropriate—such as high-heat industrial processes where direct electrification isn't feasible. The Committee must ensure that any hydrogen produced through a pilot goes only toward those limited applications. Where direct electrification is cheaper and readily available, such as for heating residential and commercial buildings and the vast majority of transportation use cases, Maine must not pursue hydrogen.

In addition to prescribing acceptable end uses for hydrogen produced through a pilot, this Committee should question how the hydrogen will get to its final destination. Transportation, storage, and delivery of hydrogen can represent significant costs and energy inefficiencies due to hydrogen's relatively low volumetric energy density. This Committee should disallow any expansion of, or investment in natural gas infrastructure to support hydrogen transport under L.D. 1775.

This Committee should protect ratepayers from the fiscal implications of the pilots under L.D. 1775. Given unprecedented availability of federal funding for these projects, ratepayers should not be tapped for funding. CLF also questions the need for exemptions from distribution and delivery charges, effectively a ratepayer subsidy for hydrogen.

As noted above, gas utilities must not be permitted to justify long-term infrastructure investments premised on the concept of blending hydrogen into gas pipelines. This approach runs counter to Maine's significant and ongoing investment in building electrification, the Climate Action Plan, and the statutory decarbonization targets. Moreover, it has additional implications for gas ratepayers. The Legislature (and the Public Utilities Commission) should regard all proposed gas system infrastructure investments as likely to become stranded assets burdening the dwindling

¹ Howarth & Jacobson, How green is blue hydrogen? *Energy Sci. & Eng'r* (July 2021).



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gas system rate base. This Committee should prohibit any such investments under the auspices of a hydrogen pilot.

Further, we note that the three pilots L.D. 1775 envisions is too large. We urge Committee members to restrain the pilot to only one and to restrict any further pilots until results are in and considered.

CLF also opposes the exemptions from portfolio requirements and from energy efficiency procurement charges.

Thank you for the opportunity to submit testimony regarding L.D. 1775.