Dear Mr. Garcia and members of the Hydrogen Task Force,

The impacts of climate change are being felt across the world and here in Connecticut where we are experiencing warming waters, hotter summers, severe weather events, flooding, and more. These impacts are deadly and costly.

Unfortunately, Connecticut is not currently on track to meet its greenhouse gas reduction commitments under the Global Warming Solutions Act. We must do more to fight the primary cause of climate change - greenhouse gas emissions.

That is why we, the undersigned environmental, environmental justice, and social justice organizations, join together to urge the Hydrogen Task Force to adopt a clean hydrogen definition that includes only non-fossil fuel, 100% zero-carbon feedstock. We urge you to reject any definition that would include fossil fuels, biogas or biomass as a feedstock.

A non-fossil fuel, 100% zero carbon feedstock definition aligns with state law Public Act 22-5 requiring 100% zero emission electricity supplied to electricity customers in the state and aligns with the IIJA requirement of de minimus emissions (2kg CO2e/kg H2).

We oppose allowing fossil fuels, biomass or any methane-based gas as a feedstock, with or without carbon capture, in the definition of clean hydrogen. Relying on blue (or gray) hydrogen rather than green hydrogen would eviscerate the intended climate benefits (increasing rather than decreasing total greenhouse gas emissions).

Professors Bob Howarth and Mark Jacobson recently studied the emissions implications of these alternative hydrogen production methods.[1] The authors assumed captured carbon dioxide could be stored indefinitely without any leakage, an extremely charitable assumption given the completely unproven validity of long-term carbon dioxide storage. The authors found that the greenhouse gas footprint of blue hydrogen is 20 percent greater than burning natural gas or coal for heat and 60 percent greater than burning diesel oil for heat.[2] This is because, while blue hydrogen reduces direct carbon dioxide emissions (albeit incompletely), it increases fugitive emissions of methane, a far more potent greenhouse gas. In fact, due to this methane leakage, total carbon dioxide equivalent emissions from blue hydrogen were only 9-12 percent lower than gray hydrogen.[3] The authors further tested the robustness of their conclusions against different assumed leakage rates and found that the conclusion held even assuming a low methane leakage rate of 1.54 percent.[4] The authors also tested the robustness of their conclusions assuming blue hydrogen is produced with 100 percent zero emissions renewable energy—while retaining assumptions that captured CO2 can be stored indefinitely without leakage—and found that total greenhouse gas emissions were still nearly half those from

[1] Howarth & Jacobson, How green is blue hydrogen? Energy Sci. & Eng'r (July 2021).
[2] Id.
[3] Id.
[4] Id.

combusting natural gas as a fuel.[5] The emissions limitations of blue hydrogen are in addition to other challenges, including achieving high rates of carbon capture in practice[6] and the cost per ton of capturing the carbon.[7]

With a clean hydrogen definition that includes only non-fossil fuel, 100% zero-carbon feedstock, Connecticut can use local renewable resources to produce green hydrogen for the sectors of the economy that are most challenging to electrify. This will help meet our climate goals, support local jobs, and insulate consumers from fossil fuel price shock volatility.

Sincerely,

Samantha Dynowski, State Director
Sierra Club Connecticut

Ben Butterworth, Director: Climate, Energy & Equity Analysis
Acadia Center

Chris Phelps, State Director
Environment Connecticut

Tom Swan, Executive Director
Connecticut Citizen Action Group

Lori Brown, Executive Director
CT League of Conservation Voters

Peter Millman, Secretary
Eastern CT Green Action

Leticia Colon de Mejias
Green Eco Warriors
Warriors for a Livable - Tomorrow Together - One Planet- One People

Sharon Lewis, Executive Director
CT Coalition for Economic and Environmental Justice
Tenaya Taylor, Executive Director

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[5] Id.
[6] Carbon capture projects associated with hydrogen production to date have achieved onsite carbon dioxide capture rates below 70 percent, far below the blue hydrogen industry goal of 95 percent. David Schlissel et al. Blue Hydrogen: Technology Challenges, Weak Commercial Prospects, and Not Green, IEEFA (Feb. 2022), at Slides 18- 20, available at Blue-Hydrogen-Presentation_February-2022.pdf (ieefa.org).
[7] These costs have been in excess of $63/ton for capture rates below 85 percent, and substantially higher for higher capture efficiency. Id. at Slide 26. These are more than double the costs that would be required to make carbon capture financially viable.

Nonprofit Accountability Group (NAG)

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