



U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY

Opening Statement

Chairman Jamaal Bowman (D-NY)
of the Subcommittee on Energy

Energy Subcommittee Hearing:
H2Success: Research and Development to Advance a Clean Hydrogen Future

February 17, 2022

Good morning, and thank you to all of our witnesses who are joining us virtually today to discuss the importance of clean hydrogen research. This is a timely topic, one that has quickly risen to the center of energy policymaking and debate. There is no doubt that hydrogen can play a valuable role in our national and global decarbonization efforts. But crucial questions and uncertainties remain, and our work on this committee can help resolve them.

In setting the stage for this hearing, I would like to offer a few thoughts that I believe can help guide us. And I welcome further discussion with those who may disagree with some aspects of my perspective.

Current hydrogen production methods are very carbon intensive, and are responsible for 830 million metric tons of carbon dioxide per year – the equivalent of the annual CO₂ emissions of the United Kingdom and Indonesia combined. We must complement our excitement about hydrogen’s potential with caution, and care.

In my view, when it is made from 100% renewable electricity, using a process called electrolysis, what is known as “green hydrogen” has the potential to make a crucial, but targeted contribution to meeting our climate goals.

We can replace the polluting forms of hydrogen that are currently used in certain industrial processes. Green hydrogen could be one of the keys to decarbonizing difficult sectors like long-haul shipping, aviation, and steel production. And fuel cells powered by green hydrogen, or other storage mechanisms, could help stabilize and secure the grid as we scale up wind, solar, and geothermal power.

There is exciting and necessary research to conduct in the areas I have just described. And of course, federal R&D programs may demonstrate that additional applications make sense. Across the board, challenges in hydrogen storage, transportation, durability, costs, and safety must be addressed.

We must also be cognizant of the fact that the fossil fuel industry is lobbying for a different vision of our hydrogen future – a much more expansive one. As our colleagues on the House Committee on Oversight and Reform have been highlighting recently, this is an industry that uses its wealth to deceive the American people about the nature of the climate crisis and the solutions we need. That is a fact. And as scientists and public servants, we must subject their claims to intensive scrutiny.

We are in a climate emergency, and we do not have time to waste this decade. When hydrogen is made from fossil fuels, I do not believe that we should call it clean. In areas where there are established, safe, widely-available, and cost-effective ways to eliminate carbon emissions, we should not be trying to clear an uncertain path for hydrogen with public funds. We will have to be strategic, and prioritize. And since we already need to deploy much more wind and solar just to power the grid, we should avoid wasting hydrogen in applications like vehicles and appliances that can run on renewable electricity directly—and more efficiently.

In my state of New York, industry is trying to sell major expansions of fossil gas infrastructure by promising a future conversion to hydrogen. Thankfully, our new Governor is not buying it. Utilities, meanwhile, which are already passing on outrageous costs to my constituents, want to use hydrogen to heat our homes. For people who struggle with energy poverty and injustice, that would raise costs even further. Efficiency and electrification using heat pumps would reduce those costs.

As these examples show, questions of political economy cannot be artificially separated from our scientific research endeavors. There may be additional uses of hydrogen beyond what I have described that, in theory, can play a transitional role to a fully renewable future. But if we are going to safely explore those possibilities, surely we must also discuss the safeguards and planning capacities needed to actually ensure a transition – rather than simply leaving it to the market. We need to address the risks of locking in fossil fuel infrastructure, and of creating dangerous new path dependencies. And we must evaluate the potential impacts on communities not just at one point in the process, but all along the hydrogen supply chain.

If designed and deployed correctly, hydrogen can contribute to the growth of good, clean energy jobs, and help us limit global warming to 1.5 degrees Celsius. It is incredibly important that we meet this moment properly. We cannot afford to miss the mark.

I want to again thank our excellent panel of witnesses assembled today, and I look forward to hearing your testimony.