

Minimizing Risk & Harm: Preparing for Pennsylvania's Hydrogen Future (5 minutes)

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Good Afternoon, my name is Megan McDonough and I am the Pennsylvania Director at Food & Water Watch.

Thank you all for allowing me the opportunity to share with you all what we know is a very concerning development in the energy sector—a scheme to introduce hydrogen into the natural gas fuel stock. Disguised as a sustainable solution, this plan not only extends the lifespan of existing fossil fuel infrastructure but also enables utilities to profit from their ongoing environmentally harmful investments.

Amid investor skepticism about the future of natural gas and buoyed by lucrative subsidies from recent infrastructure bills, utilities have eagerly presented plans to transition from natural gas to hydrogen. The potential market for injecting hydrogen into the natural gas system is vast, with federal incentives providing up to \$3 per kilogram of hydrogen produced.

However, this apparent shift towards hydrogen is far from the clean transition it purports to be. Despite promises of reduced emissions, actual evidence contradicts such claims. Shockingly, as of 2020, a staggering 99% of U.S. hydrogen was produced from fossil fuels. Even when hydrogen is generated from fossil fuels with carbon capture and storage, the emissions are higher than burning natural gas.

Utilities advocate for blending hydrogen into natural gas to meet emissions targets, but the environmental benefits are almost non-existent. For instance, a 5% blend of hydrogen results in a mere 2% reduction in natural gas use at power plants. Even a 20% blend, the highest currently considered, only marginally reduces carbon dioxide emissions by 6.5%.

Moreover, the existing gas grid, already plagued by leakage issues, is ill-equipped to handle hydrogen. A thorough examination of natural gas infrastructure exposes its vulnerabilities, with aging pipes contributing to an alarming estimated 659,000 leaks annually in the U.S. alone. Tragically, these leaks disproportionately impact non-white, lower-income communities.

The transition to hydrogen in power plants is also fraught with challenges. Modern gas turbines have stringent fuel mix requirements, and incorporating hydrogen could result in significant additional costs. The efficiency of using hydrogen in power plants is lower, with more than 71% of energy lost during hydrogen production, transport, and combustion.

However, the risks to health and safety associated with blending hydrogen with natural gas deserve particular attention. Hydrogen, being leakier than natural gas, substantially heightens the likelihood of pipeline blowouts and explosions. Unlike natural gas, hydrogen is odorless and cannot be easily detected, amplifying the risks to health and safety. Even small amounts of hydrogen pose significant risks to those using gas in their homes or living near gas storage facilities and pipelines.

To exacerbate matters, the transition to hydrogen infrastructure comes with a staggering price tag. Converting natural gas pipelines to handle hydrogen is an expensive endeavor, with even small-diameter hydrogen pipelines costing over \$1 million per mile. While the recent infrastructure bill allocates \$8 billion for the construction of hydrogen hubs, the associated costs will undoubtedly be passed on to consumers, disproportionately impacting lower-income households.

Even so called "clean" hydrogen is not without environmental consequences. When burned, hydrogen produces harmful pollutants, and its water requirements are exorbitant, posing challenges in regions grappling with water scarcity already. The U.S. Department of Energy's call for 50 million metric tons of hydrogen production each year by 2050 could require up to 1 trillion gallons of freshwater annually—equivalent to the annual water use of over 33 million Americans.

So what does all of this actually mean for the everyday resident in Pennsylvania? I know we are throwing a lot of information out there to people today, but I want to make sure what we're saying is understood.

So imagine your home's gas stove – it's been a reliable part of your kitchen for years. Now, picture a plan to mix a bit of hydrogen into the gas it uses. Sounds eco-friendly, right? Well, not quite. This is part of a bigger scheme where utilities want to blend hydrogen with the natural gas we use for heating and cooking. How many know right now whether your home's gas stove, or hot water heater are equipped to handle this or if yours would need to be replaced? How many people sitting here or listening right now would know what to look for in the event of a problem or leak? How many people sitting here or listening can afford to replace your home appliances? Who will pay for that? Certainly not the utility companies or industry.

And while we are discussing cost - upgrading our gas infrastructure for this hydrogen mix is going to be expensive. And guess who'll end up paying? That's right, it's us—the consumers. This means higher bills, and not everyone can afford that, especially lower-income households. Pennsylvania residents are already struggling with higher utility bills, higher food costs, and overall higher cost of living. What is being proposed here is to increase that burden on Pennsylvania families already living paycheck to paycheck.

In fact, let's dive a little deeper into consumer safety. Blending hydrogen with gas makes this problem so much worse. In a non-science way of explaining it, Hydrogen is like the sneakiest ninja of gasses – molecularly it's smaller which means it leaks more and can't be easily smelled. Hydrogen is also 14 times more flammable than natural gas. There are currently no regulations that I am aware of that require odorants to be added to hydrogen. So, if there's a leak, unlike the mercaptan you smell with a natural gas leak in your home or neighborhood it might go undetected, putting our homes and neighborhoods at risk. It's like having a silent intruder in your house or neighborhood.

If we simply apply common sense to this issue we get to the right answer on whether this new scheme should be supported or not. Think about your neighborhood's water pipes. If they're old and leaky, adding a new ingredient to the water won't fix the underlying issues. Similarly, our gas pipelines are aging and prone to leaks, and blending hydrogen into them won't magically solve the problem. It's like putting a band-aid on a leaky pipe—it might look better, but the core issue remains. And gas leaks that cause catastrophic damage and loss of life are already here. This is already an issue we are way behind addressing not only nationally but right here in Pennsylvania. In August of this year DeNova Detect released a report that there were 4 gas explosions in 2021, 13 gas explosions in 2022, and 5 so far this year in Pennsylvania alone which caused injury and loss of life. And the numbers nationally are even worse. Now we are discussing pumping a much more leak prone, volatile compound into these same lines?

All of this risk and the hydrogen blend they're proposing doesn't actually do much of anything for the environment. Most of the hydrogen we have is made from fossil fuels, which we know isn't clean. Even if they say it's for reducing emissions, the numbers clearly show it's not as effective as they claim.

So, here's the bottom line: Instead of investing in these risky, patchwork solutions, it makes more sense to focus on proven, reliable alternatives. And if you're still on the fence - here is a test that I will bet gets you to the same conclusion; I want you to go to your local grocery store, find a local mom shopping for meals for her kids and ask her "we in the state legislature are looking at plans to support a new scheme that may require you to replace your current gas appliances, will require upgrades to our already faulty gas infrastructure that will be passed onto you as a consumer by the utility companies resulting in higher utility bills, it will put you and your family at higher risk of catastrophic explosions and it doesn't really do much for the environment, but we think it's a good plan that we are willing to pump your taxpayer dollars into. Are you in?" Let me know how that conversation goes. I can tell you from a consumer standpoint this will be the biggest waste of Pennsylvania dollars we have seen yet. To be honest, it's also the most appalling decision you can present to Pennsylvanian's. Either avoid catastrophic risk by electrifying if you can afford it, and for those that can't, you will still pay more and pray for the best every time your hot water tank

lights, or you turn on your stove to make your kids a meal for zero benefit to you and your family. That's what we're really saying here.

So instead, let's aim for a future where we make choices that are both sustainable and sensible for everyone. And if the state legislature isn't willing to support the regulations necessary to avoid this then I implore everyone sitting here and listening to get in contact with me and we will get common sense regulations passed at the local level to truly protect Pennsylvanian's.