

Proposed Hydrogen Hub Generates Controversy

A proposal to ramp up New Mexico's hydrogen production with the hope of uniting environmentalists and the fossil fuel industry behind a supposedly cleaner energy source is instead further dividing them in the fight against climate change.

Gov. Michelle Lujan Grisham's administration is expected to introduce a bill in the upcoming legislative session that would offer tax incentives to develop the infrastructure and supply chain for what she describes as a low-carbon hydrogen economy.

The Democratic governor and her allies tout the proposed Hydrogen Hub Act as reducing the state's economic dependence on the fossil fuel industry while helping New Mexico create jobs and reduce climate-warming greenhouse gases.

But one fossil fuel would remain in the mix.

The plan calls for separating hydrogen from natural gas while capturing the carbon dioxide and storing it underground, producing what's known as "blue hydrogen." It would have a wide range of uses, from powering electric plants to fueling transportation to heating homes.

The natural gas component has stirred fierce opposition from environmental groups and wariness from some state Democratic lawmakers who view blue hydrogen as benefiting the industry more than the climate.

Critics point to a recent peer-reviewed study that says blue hydrogen has a 20 percent greater carbon footprint than burning natural gas or coal for heat.

"To pursue blue hydrogen at all is not a climate solution," said Tom Solomon, a retired electrical engineer and co-coordinator for 350 New Mexico, a climate advocacy group.

It's different from green hydrogen, which is separated from water through electrolysis using renewable energy to power the process, Solomon said.

Green hydrogen, which consumes massive amounts of water, could be used at some point for, say, trans-Atlantic flights and cross-country trucking when recharging electric batteries would be difficult, he said.

Right now, the most urgent priority is cutting fossil fuel emissions as quickly as possible to avert a climate disaster, and hydrogen distracts from that pursuit, Solomon added.

Still, the governor vigorously champions her administration's current blue hydrogen plan.

"Hydrogen for an energy state is more jobs, and we want that in every context," Lujan Grisham said in a podcast earlier this year. "The second vision that we have here is that hydrogen in the energy environment gives us a clean energy platform, continues to meet our goals for renewable energy and decarbonization."

The proposed bill coincides with the recently passed federal infrastructure package, which funnels \$8 billion toward creating four hydrogen hubs across the nation, preferably in the most oil-rich states.

New Mexico is second only to Texas in fossil fuel production, making it eligible for the federal money.

Maddy Hayden, the governor's spokeswoman, wrote in an email producers would be rewarded with more generous tax benefits for making lower carbon-intense hydrogen.

The tax incentives would encourage companies to build the infrastructure needed to produce and deliver hydrogen as well as install fueling stations.

An oil-and-gas trade group spokesman said the industry supports state and federal efforts to produce hydrogen.

“The industry is committed to working with all policymakers to expand commercial applications of our oil and natural gas resources, including hydrogen produced using natural gas,” Robert McEntyre, a spokesman for the New Mexico Oil and Gas Association, wrote in an email.

“Because of our energy leadership and vast oil and natural gas resources, these are the type of ideas that New Mexico should leverage.”

However, the policies must be “technology neutral,” meaning they don’t prescribe a particular method such as using renewable energy, McEntyre added.

The proposed legislation will enable New Mexico to cash in on a global trend, helping industries that lack an alternative energy source to decarbonize, state Environment Department spokesman Matt Maez said.

“The hydrogen economy is growing worldwide and right here in New Mexico,” Maez wrote in an email. “Producing, distributing and using low-carbon hydrogen will accelerate our progress in combating climate change — or we wouldn’t be pursuing this legislation.”

The Lujan Grisham administration has imposed tougher regulations and beefed up enforcement of rules in sectors that emit the most greenhouse gases, including oil and gas, Maez wrote, adding that will curb carbon emissions as the hydrogen hub is being built.

Solomon, the climate advocate, said it’s no surprise the industry supports the bill, which would subsidize operators through tax breaks while keeping natural gas flowing to manufacture blue hydrogen.

Those in the fossil fuel industry fear a declining demand for their products, so they began promoting hydrogen as an alternative, Solomon said, calling it a false green solution.

“The purpose of it [hydrogen] is to provide a path to sell more natural gas and delay the clean energy transition,” he said.

How hydrogen is made is at the heart of environmentalists’ discontent.

About 98 percent of hydrogen is now “gray.” It is derived from breaking methane into hydrogen and carbon monoxide through intense heat, pressure and steam. But unlike the blue version, which comes from the same method, the pollutants are spewed into the atmosphere.

Blue hydrogen is significantly cleaner than gray. However, it has a large carbon footprint across its supply chain due to methane leaks during drilling, processing and delivery, as well as the natural gas needed for raw material and to power much of the equipment, according to a study published in *Energy Science & Engineering*.

It’s also unclear how well the current technology captures the carbon emissions while blue hydrogen is made, Solomon said. Another concern is when hydrogen is burned, it produces nitrogen oxide, an element in forming toxic ground-level ozone.

Erik Schlenker-Goodrich, executive director of the Western Environmental Law Center, told lawmakers in November blue hydrogen — or any expansion of oil and gas infrastructure — will impede the state’s effort to reach net-zero emissions by 2050.

“There’s no such thing as zero emissions from fossil gas hydrogen,” he told the interim Legislative Economic Development and Policy Committee. “It’s just a reality.”

The state must work to decrease demand in fossil fuels, not boost it by chasing federal money for hydrogen projects that offer no long-term benefit for New Mexicans, Schlenker-Goodrich said.

After his presentation, several lawmakers expressed concerns about how quickly the push to make New Mexico a hydrogen hub was moving and the fact that blue hydrogen would require fracking.

Sen. Carrie Hamblen, D-Las Cruces, worried about how severely fracking would affect front-line communities, including minority neighborhoods and tribes.

Hamblen, who is president and CEO of the Las Cruces Green Chamber of Commerce, said there are concerns about blue hydrogen and what it does as an extractive industry.

“I appreciate and just applaud the governor for trying to get more money to New Mexico because we’re constantly at the bottom of the list of things,” she said. However, she added, “I think based on the conversation we had in the committee, there might be some concerns that this might not be the best way to try and get those resources to the state.”

Solomon said Hamblen was among the 17 Democratic lawmakers to whom he has presented a slideshow on blue hydrogen, so they would be better informed when they take up the bill. He saw no point in asking any Republicans to view it because they’ll back a bill that benefits the industry, he said.

Dan Klein, managing partner for Libertad Power in Santa Fe, said both blue and green hydrogen have their flaws and trade-offs.

Klein said his company, which works with utilities to generate and sell power in the West, is venturing more into hydrogen as an energy source.

Green hydrogen takes twice as much water to manufacture as blue hydrogen, he said. But with blue hydrogen, there are questions about how cleanly it can be produced.

It’s important to rely on data to determine the best hydrogen rather than depending on a color code, Klein said.

“You want to mitigate the effects of climate change,” he said. “What gets you there quicker, what gets you there cheaper? And if you’re looking at blue hydrogen ... are the problems that are now identified with it so egregious and so irreparable that you do away with the technology altogether?”

Solomon said rather than worrying about how to capture blue hydrogen’s carbon emissions during production, don’t bother with it at all — and leave the natural gas in the ground.

As for green hydrogen, the state should focus instead on developing solar and wind power, given the large quantity of water it would demand in an arid region, he said.

“New Mexico, with its ongoing drought and water issues, is probably not the right place to produce green hydrogen,” Solomon said. “States with a better supply of fresh water would make more sense to do that.”