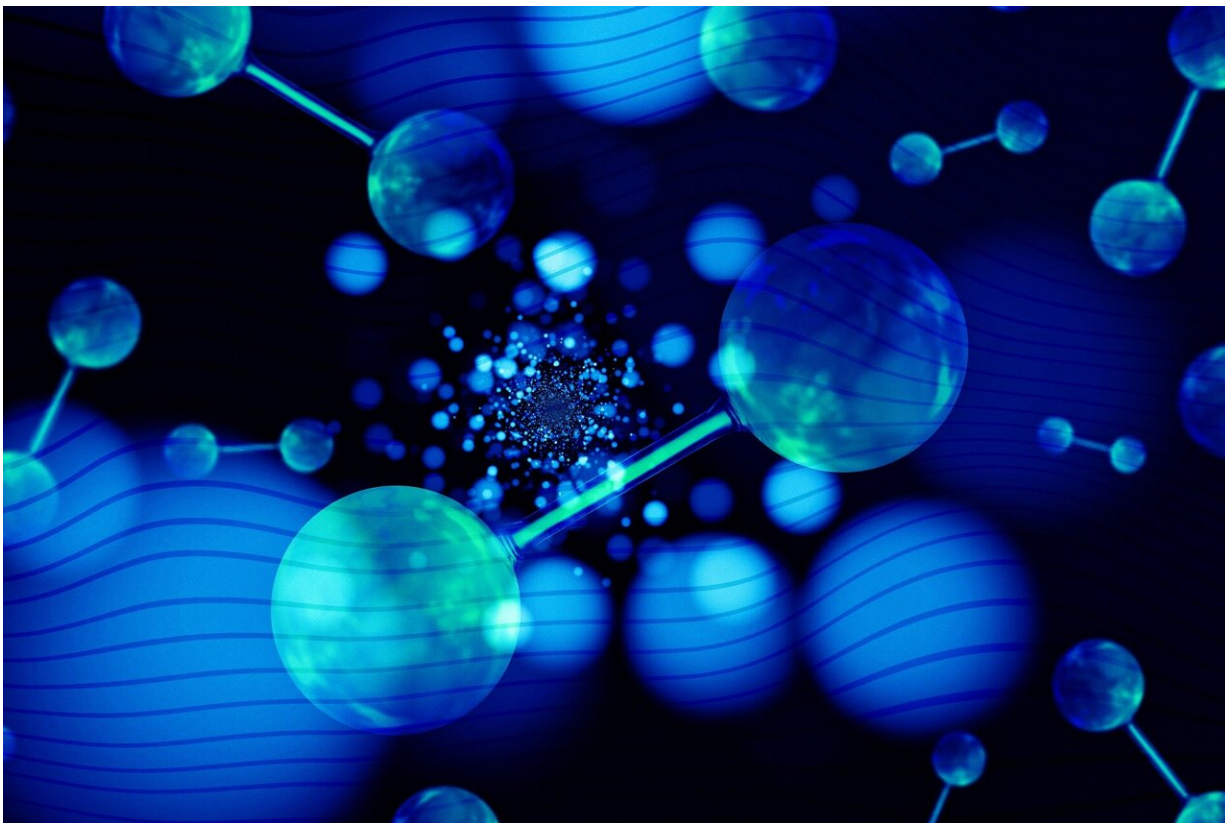


Hydrogen hubs too reliant on fossil fuels, expert says

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The Biden administration has announced the locations of seven regional manufacturing hubs that will receive a portion of \$7 billion in initial funding to help jumpstart a hydrogen industry.

Hydrogen is seen by some as a cleaner alternative to fossil fuels. But others note that the process still relies heavily on fossil fuels as a source feedstock.

Robert Howarth is a professor of ecology and environmental biology and a faculty fellow at Cornell's Atkinson Center for Sustainability.

Howarth's research shows that "blue hydrogen," which uses methane from natural gas, may harm the climate more than burning fossil fuel.

Howarth says, "It is extremely disappointing to see the Biden administration provide funds for hydrogen hubs which will be based on [fossil fuels](#), even with the [carbon capture](#). It takes a lot of natural gas to make hydrogen, since the methane in the natural gas is the chemical feedstock for the process, and natural gas is also burned to power the [chemical process](#) of breaking the methane down into hydrogen and carbon dioxide. So, the emissions of carbon dioxide are quite high.

"'Blue hydrogen' is an invention of the oil and gas industry, a marketing term they came up with only within the last eight years. The concept is to capture the carbon dioxide that is released when the methane breaks down. Unfortunately, this capturing also takes [energy](#), which is met by burning even more natural gas. And the carbon capture is far from perfect: significant amounts of carbon dioxide are still released to the atmosphere.

"It is simply not possible to develop, process, transport, and store [natural gas](#) without some of it being emitted to the atmosphere unburned as methane. The quantity may seem low, but methane is an incredibly powerful greenhouse gas, more than 80 times more powerful than carbon dioxide as an agent of global warming.

"As for the future of hydrogen in a decarbonized energy future, there is a role, but only for 'green hydrogen,' that is hydrogen made from 100%

renewable electricity used to break water down into hydrogen and oxygen, in a process called 'electrolysis,' with no release of carbon dioxide."

Provided by Cornell University

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