

The Messenger Opinion.

It's time to break the news.

News Politics Opinion Business Entertainment Coming soon: Sports



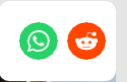
OPINION

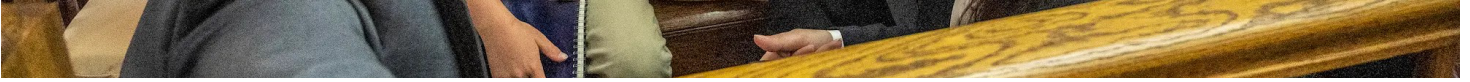
THE VIEWS EXPRESSED BY CONTRIBUTORS ARE THEIR OWN AND NOT THE VIEW OF THE MESSENGER

Climate Court Victory in Montana Should Lead to Real Solutions, Not Gimmicks

Published 08/17/23 09:00 AM ET

Mark Z. Jacobson





Lead claimant Rikki Held, 22, confers with members of Our Children's Trust legal team before the start of the nation's first youth climate change trial at Montana's First Judicial District Court on June 12, 2023 in Helena, Montana. A judge ruled in the youth plaintiffs favor on August 14. William Campbell/Getty Images

Something really amazing happened this week. For the first time in U.S. history, a [court found](#) that a state's law promoting the use of fossil fuels — while ignoring their climate impacts — violates the state's constitution. The court ruling stated, "Plaintiffs have a fundamental constitutional right to a clean and healthful environment, which includes climate as part of the environmental life-support system." Although the ruling applies to one state, Montana, whose constitution specifically provides for this right, other states, including New York, Hawaii, Illinois, Pennsylvania, Massachusetts and Rhode Island, have constitutions with similar clauses.

The case, *Held v. Montana*, was brought by [Our Children's Trust](#) on behalf of 16 youth plaintiffs. I was fortunate to have been asked by the plaintiffs to be a pro bono expert witness on their behalf. In [my testimony](#), I discussed the [ability of Montana](#) to transition away from fossil fuels to 100% clean, renewable energy across all energy sectors (electricity, transportation, buildings and industry) at low cost. The testimony was based largely on a study I [published](#) on this subject for all 50 states. I also discussed the fact that Montana already produces over [92% of the electricity it consumes](#) (not generates) with hydroelectricity, wind and solar. I further discussed the fact that we already have 95% of the technologies we need to transition worldwide. Such technologies include electric vehicles, heat pumps, induction cooktops, arc furnaces, induction furnaces, resistance furnaces, batteries, electrolyzers, fuel cells and more. Based on this testimony, the court [concluded](#), "undisputed testimony established that clean, renewable energy is technically feasible and economically beneficial in Montana." Based on all testimony in the case, the court also concluded, "Montana's GHG (greenhouse gas) emissions and climate change have been proven to be a substantial factor in causing climate impacts to Montana's environment and harm and injury to the Youth Plaintiffs."

The court's remedy in *Held v. Montana* was to "invalidat(e) statutes prohibiting analysis and remedies based on GHG emissions and climate impacts..." Now, Montana cannot prohibit accounting for GHG emissions or their climate impacts.

However, this ruling opens up a major new concern. It is easy for Montana and other states to pretend they are reducing GHG emissions by promoting "greenwashing" technologies that may market a "clean" spin on a product that doesn't actually cut emissions. Advocates of such technologies allege they reduce CO₂ but, on closer inspection, the technologies instead increase it along with air pollution, fossil mining and fossil infrastructure. That's hardly what the Montana court intended.

Four greenwashing technologies include carbon capture and storage or use (CCSU), synthetic direct air carbon capture and storage or use (SDACCSU), blue hydrogen and electro-fuels. CCSU is the capture of CO₂ from the exhaust stream of a power plant, factory or other emission source, and the piping of the CO₂ to an underground storage facility, an oil field to increase oil production, or a factory to produce fuels (called electro-fuels) that replace liquid transportation fuels. SDACCSU is the same, except the CO₂ is extracted from the air. It differs from natural direct air capture, which is photosynthesis that causes plants and trees to grow by naturally removing

CO₂ and water from the air. Natural removal is fine. Blue hydrogen is the production of hydrogen from fossil gas (also known as natural gas) and then adding usually two sets of carbon capture equipment to capture the CO₂ emitted during this process.

All four technologies actually increase CO₂, air pollution, fossil mining and fossil infrastructure. The reason is simple. All four processes require electricity for both the capture process and compressing CO₂ for pipes. Even in the best case where the electricity is renewable (from wind, water or solar), that electricity is now prevented from replacing a fossil emission source, whether fossil electricity generation, a factory burning fossils for heat, or a fossil vehicle. Eliminating a fossil source of emissions eliminates not only the CO₂ from that source, but also the air pollution, mining and infrastructure from that source.

Thus, by using limited renewable electricity for any of the four processes instead of using it to replace a fossil source, those four processes increase fossil fuel air pollution, mining and infrastructure. In addition, those processes remove less CO₂ than does replacing the fossil source with that renewable electricity, so they also increase CO₂. The increased CO₂ and increased social cost (energy plus air pollution plus climate cost) due to CCSU and SDACCSU are [well demonstrated with data](#): For example, when the exact same amount of wind for replacing coal is used to run synthetic direct air carbon capture and storage or use technology, 560 g of CO₂ emissions per kWh more is emitted.

In addition, what happens to CO₂ that is captured? [About 73%](#) worldwide is used for enhanced oil recovery, a process by which [40% of the CO₂ is lost](#) right back to the air and causes more oil to be burned, creating more CO₂ and air pollution. When the CO₂ is used for electro-fuels, the CO₂ needs to be combined with even more electricity and chemicals – and the fuel is burned, producing more CO₂ and air pollutants. It is far cleaner to use renewable electricity to power electric vehicles.

The above problem with these four technologies applies until the last fossil source on Earth is eliminated, which won't occur for an estimated 30 years. Until then, it is impossible for these four technologies to provide a genuine benefit, only an opportunity cost. Investing in them will only delay our solution to the climate problem.

In sum, the Montana ruling is historic. Now, however, we need to focus on real problems of global warming, air pollution and energy security, namely electrification and the use of clean, renewable sources to provide electricity. We should not let the solution be hijacked by the fossil fuel industry and greenwashing technology gimmicks.

Mark Z. Jacobson is a professor of civil and environmental engineering at Stanford University and the Author of "[No Miracles Needed: How Today's Technology can Save our Climate and Clean our Air.](#)"

o

t
h
e

p