

LAW:

Study attempts to set a liability scheme for underground leaks of stored CO2

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The federal government should established a "two-tiered" system outlining who would be responsible in future cases of water contamination and leakage associated with the underground storage of carbon dioxide, according to a new paper.

The problem is not that the risks of problems from underground storage of CO2 are actually high or worrisome, the authors say. Rather, it is a challenge of public perception and investment: Without a comprehensive liability structure in place, banks are less likely to offer money for projects and the public is more likely to protest against the idea of underground CO2.

"We are offering a way to supplement existing regulation," said David Adelman of the University of Texas School of Law, co-author of the [paper](#), published in the Duke Environmental Law & Policy Forum. Adelman spoke about the research at a panel in Washington, D.C., on Friday co-sponsored by the Environmental Law Institute and the Vanderbilt University Law School.

Carbon capture and sequestration technology has never been proved at scale on coal plants or in the power sector. In the meantime, there has been a raging debate about how to structure a legal liability framework to provide certainty for developers.

In 2010, a federal interagency task force [cited](#) liability as a key barrier to deployment of the technology. Under tighter regulations, coal-fired power plants would have to inject large amounts of it deeply underground.

According to Adelman, much of the debate about risk with carbon capture is focused in the wrong place.

Possibilities of risk

While the overall risks of the technology are small and manageable, there should be a greater focus on water contamination that could occur from the migration of briny water displaced deep underground by injected CO2 into drinking water aquifers, he said. Briny water sits in pore spaces in underground rock and could be displaced by injected CO2.

Instead, much of the debate about risk is focused on the possibility of leakage of CO2 itself, which is much less likely, he said. The water risk is higher because the area of elevated underground pressure -- which could affect briny water -- would be far greater with sequestration than the span of an underground CO2 plume, the authors say.

CO2 that somehow escaped into the atmosphere can be deadly in sufficient concentrations, but prevailing theories hold that the gas would be trapped underground. The leakage of CO2 is of "secondary importance" to the water issue, the paper says.

The authors suggest that the federal government, perhaps through the U.S. Geological Survey, establish two classes of future storage sites.

Both would meet existing EPA standards for injection sites, but one would go far beyond the other in terms of deemed safety. A high-security site for storage of CO2, for example, might be far away from drinking water aquifers and have a much thicker caprock for holding water and CO2 in place underground.

With these highly secure sites, the authors say, there should be a higher burden of proof in case of problems. In their case, it would have to be proved not only that a company caused the problem but that it acted without "due care," explained Adelman.

With the less secure class of sites, on the other hand, there should be strict liability, where it is easier to hold anyone involved with a contamination or leakage issue liable, Adelman said.

Incentive to find safest sites

This system would not only create more legal certainty, but prompt companies to invest in the most secure, lowest-risk sites for CO2 storage in the first place, the authors say.

"None of the existing federal laws, on its own, provides a comprehensive regulatory framework for carbon sequestration," the paper says. "The law does not provide any incentives for companies to go beyond the EPA's minimum standards."

In theory, the idea of strict liability would provide clarity with the water issue, Adelman said. Water contamination, if it ever occurred, would be more difficult to pin on any one company or person, he explained.

Strict liability also would force developers to seek out the safest injection sites to avoid getting put in the injection class with "easier to prove" lawsuits.

But several experts were skeptical of the paper's framework, considering that it would require new federal legislation, among other things.

Frederick Eames, a partner at Hunton & Williams, said it was a "misnomer" to characterize EPA's existing regulations as minimal and without incentive to drive developers to the highest-quality sites.

"Those standards are quite robust," he said. EPA regulates CO2 injection sites as a special class of Class VI **well** under the Safe Drinking Water Act.

There also are concerns about the idea of pre-empting state authority, said Priya Aiyar, deputy general counsel for the Department of Energy's Environment and Nuclear Programs. Some states have passed their own liability regimes, so a new federal law could breach their authorities, she said.

Further, it's not clear that two classes of safety wells would help with public outreach and understanding.

"It may actually do more to create a public perception that somehow the federal government is sanctioning CCS projects that aren't safe," Aiyar said.

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