

Carbon sequestration policy must balance private property, public good

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The lack of a settled legal framework that balances private property rights while maximizing the public good ultimately hinders the large-scale commercial deployment of geologic carbon sequestration, according to research by A. Bryan Endres, a professor of agricultural law at Illinois. Credit: L. Brian Stauffer

The lack of a settled legal framework that balances private property rights while maximizing the public good ultimately hinders the large-scale commercial deployment of geologic carbon sequestration, according to published research by a University of Illinois expert in renewable energy law.

In order to justify the extensive up-front capital investment by firms, issues with the property rights of the subsurface pore space that would permanently house the captured [carbon dioxide](#) must be resolved first, says A. Bryan Endres, a professor of agricultural law at Illinois.

"You have a new technology that requires a lot of upfront [capital investment](#), but you don't have a [legal framework](#) for how you're going to be able to implement this technology with regard to property rights," said Endres, who also is the director of the university's European Union Center. "What's unique about property rights is they're usually pretty well settled, and yet here we are dealing with a situation where ownership isn't quite so clear. That's a key question, because a firm isn't going to invest money in a carbon sequestration plant before they are confident about who owns the area underneath."

According to the study, published in the *University of Illinois Law Review*, ownership of the pore space at the depths necessary for permanent geologic carbon sequestration is still an open question in the vast majority of states.

"Right now, only Wyoming, Montana and North Dakota have assigned the property rights of the pore space to the surface property owner," Endres said. "While that might make good political sense, I don't think that makes good policy sense because it creates a patchwork of small land-holdings. With carbon sequestration, the geology is going to determine the limits, not some grid-based property system. This is why we need to have legislative involvement to clarify the situation."

Endres says sequestration operations implicate a unique set of property rights issues, one that's analogous to a plane flying over a house at 30,000 feet.

"Do you own the airspace above your house?" he said "Well, no, and the reason we know the answer to that question is that there was a court case that settled the issue. And that was one of the things that allowed the airline industry to develop, so that planes didn't have to weave around an easement, like railroads do. Similarly, picture a really deep hole that may start on your land but goes down 7,000 feet. Who owns that? One

argument is that a property owner does not have a reasonable expectation of ever using the pore space at such extreme depths."

Like air transport, carbon sequestration should be thought of as a public good – one that has the added potential to reduce carbon dioxide emissions and curb global climate change.

"It makes more sense to treat it as you would airspace for an airplane, in that it belongs to the state and they can decide who's going to access it," Endres said. "It would be a much more efficient system if the state had ownership of it."

Endres notes that there's also the potential for states to generate a significant amount of revenue from carbon sequestration, either through an auction or a royalty system.

Because of its unique [geology](#), the Mount Simon formation, which makes up a large swath of the Illinois Basin that extends to parts of Illinois, Indiana and Kentucky, is a potentially ideal site for [carbon sequestration](#).

"It would behoove a state like Illinois to be a leader at settling these [property rights](#) issues, and not just for climate change purposes but also for job growth and revenue generation," Endres said. "It's a resource the state should take advantage of so that it can become a center of innovation for this new industry."

While this isn't necessarily the silver bullet to reverse carbon dioxide emissions, Endres says it's one of many ready-made and already available tools that could slow the growth rate of global climate change.

"This is a technology that will allow us to utilize natural resources like coal while also shrinking its carbon footprint," he said. "So it's important

to get this framework in place so the industry can really take off, because now you just have a lot of speculation, experimental labs and pilot projects. This is something that needs to get developed sooner rather than later."

Provided by University of Illinois at Urbana-Champaign

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