

Energy Transition Will Confront Legal and Policy Impediments

The Inflation Reduction Act is potentially the most impactful climate legislation ever enacted, but it only addresses two legs of a three-legged stool. The IRA addresses technology—spurring development of a wide range of clean energy innovations—and economics, significantly lowering costs. What it doesn't address are the new legal frameworks that must be developed if the energy transition is to become a reality.

The sheer scale of the build-out required for the many needed types of clean energy projects, the magnitude of the infrastructure and supply chains necessary to support them, and the speed with which this transformation must be accomplished is difficult to fathom. Experts say that to reach net-zero carbon emissions, new utility-scale wind and solar generation will have to be sited, permitted, and constructed across a land area

equivalent to several large midwestern states. To deliver that power to where it's needed, studies show that transmission will have to increase 25 percent over a decade. According to the Princeton-led REPEAT Project, if we can't build new transmission at a fast enough pace, roughly 80 percent of the emissions reductions expected from the IRA might not happen.

Meanwhile, the need for exponential growth in carbon capture from emissions and direct air capture will require rapid expansion in the number of capture facilities, CO₂ transportation channels, and sequestration sites. With sequestration taking place in areas of deep geologic storage around the country, including in the Gulf of Mexico, tens of thousands of miles of high-capacity trunk pipelines and over 100,000 miles of spur pipelines will be needed to deliver CO₂ to permanent storage locations.

And if the hydrogen economy is going to take hold—which many believe is necessary to help the transportation, industrial, and power sectors transition from fossil fuels—the country will need to build large-scale hydrogen hubs with an abundance of new infrastructure for storage and distribution.

Mining operations will inevitably need to be expanded to meet rapidly rising demand for critical minerals like lithium, nickel, cobalt, and rare earth elements used in the production of batteries, magnets, catalysts, and energy storage systems. Some forecasts predict that graphite production will need to increase by almost 1,000 percent to meet the need for electric vehicle batteries. The International Energy Agency

warns that “demand for critical minerals—in most cases well above anything seen previously—poses huge questions about the availability and reliability of supply.”

Do we have the legal frameworks in place to build big enough and fast enough? A growing chorus of experts says, “no.” In their provocative article, “The Greens’ Dilemma,” J.B. Ruhl and James Salzman, professors of environmental law at Vanderbilt and UCLA, summarize the paradox confronting environmental practitioners: “The massive scale of new climate infrastructure urgently needed to meet our nation’s greenhouse gas emissions reduction policy goals will face a substantial obstacle in the form of existing federal, state, and local environmental laws.”

As *New York Times* columnist Ezra Klein recently observed, proponents of climate action “wanted more money for clean energy and more ambitious targets for phasing out fossil fuels and got them. Now that new energy system needs to be built, and fast.” And stakeholders are “nowhere near agreement on how to do that.”

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Ethan Shenkman is a partner in the environmental practice at Arnold & Porter. Ethan.shenkman@arnoldporter.com.

Government officials agree. California Governor Gavin Newsom recently remarked, “You can’t be serious about climate and the environment without reforming permitting and procurement in this state.” John Podesta, who is overseeing implementation of the IRA for the Biden administration, put it bluntly: “We got so good at stopping projects that we forgot how to build things in America.” Meanwhile, the sclerotic permitting process and other legal challenges are blocking hundreds of renewable-energy projects, according to the Sabin Center for Climate Change Law.

How do we move forward? Professors Ruhl and Salzman call the question: “How can environmental law be reformed to facilitate building climate infrastructure faster without unduly sacrificing its core progressive goals of environmental conservation, distributional equity, and public participation?”

That question implies others. What legal reforms are needed? What are the societal implications of this energy and infrastructure transformation? How do we ensure that the transition will be equitable for all segments of society? And what is the role of environmental and energy transition practitioners in helping us get there?

This November, the Environmental Law Institute and Georgetown Climate Center will be convening a diverse array of experts to discuss these fundamental questions at the “Energy Transition Conference” in Washington, D.C. Stay tuned for further details.