

✘ For many years, there has been a healthy debate in the United States about the role nuclear power should play in our future energy plans. In the energy law courses that I teach, I have been struck with the consistent support among students for expanding our reliance on nuclear power as part of a comprehensive strategy to reduce greenhouse gas emissions. Even in the wake of the Fukushima disaster a year ago, support among students remained strong.

It has become increasingly clear, however, that where one stands on the topic of a nuclear renaissance simply does not matter – it isn't going to happen.

Consider some of the evidence: A year after the meltdown began in Fukushima, almost all of the plants on Japan's extensive nuclear roster remain idle. Germany responded to the disaster by taking eight nuclear plants off line within several weeks and announcing its intention to shut down the rest by 2022. Unit 3 of the Olkiluoto Nuclear Power in Finland, scheduled to begin production in 2009, is delayed until at least 2014. In the United States, New York is fighting the relicensing of Indian Point, and Vermont wants to close down Vermont Yankee. California's San Onofre Nuclear Plant and its 2,200 megawatts of generating capacity are off line indefinitely while operators try to understand why tubes carrying radioactive water, installed only two years ago, are leaking. Meanwhile, the state's other coastal plant at Diablo Canyon is under increased scrutiny as experts consider the implications of yet another earthquake fault discovered near the plant. Both of the California facilities are up for relicensing in the next several years and face strong opposition.

Nuclear power continues to be prohibitively expensive and even expedited licensing processes in the United States can take more than five years to complete. Yet, the biggest problems with nuclear power come in two varieties. First, there is little tolerance for low-probability failures with devastating consequences. This is a sensible condition. We would not want to send air passengers aloft without great confidence in the safety of the aircraft and the competence of the traffic controllers. When that confidence lags, we ground the planes or replace the controllers until we figure things out. This tendency suggests that every time there is a Fukushima, or a Chernobyl, or a Three Mile Island, licensing and construction will slow down, if not stop entirely. The other big problem is that the generating facilities have to sit on the ground somewhere, and locals are not as likely to be satisfied with the big picture – the view that allows many to tolerate occasional disasters in the hopes that the greater body of nuclear plants will make a sizable dent in greenhouse gas emissions. From the perspective of people living and working downwind from a nuclear plant, the tradeoffs can seem intolerable, and resistance can be strong.

If we rely on expanded nuclear generation as a major component of a greenhouse gas reduction strategy, it is likely that we are in for a major disappointment.