

US may face inevitable nuclear power exit

March 1 2013

In a 2012 report, the Obama administration announced that it was "jumpstarting" the nuclear industry. Because of the industry's long history of permitting problems, cost overruns, and construction delays, financial markets have been wary of backing new nuclear construction for decades. The supposed "nuclear renaissance" ballyhooed in the first decade of this century never materialized. And then came Fukushima, a disaster that pushed countries around the world to ask: Should nuclear power be part of the energy future? In the third and final issue in a series focused on nuclear exits, the *Bulletin of the Atomic Scientists*, published by SAGE, turns its attention to the United States and looks at whether the country's business-as-usual approach may yet lead to a nuclear phase-out for economic reasons.

The Obama administration injected significant funding into two new [nuclear reactor](#) projects in Georgia in 2012. But this investment—the first of its kind in three decades—belies an overall dismal US nuclear power landscape. Where Japan and many European countries responded to the Fukushima disaster with [public debate](#) and significant policy shifts in the nuclear arena, the US has scarcely broached the subject. According to former [Nuclear Regulatory Commission](#) Commissioner Peter Bradford, [current market](#) forces challenge the [economic viability](#) of existing nuclear power plants, with new [reactors](#) representing an extremely unattractive investment prospect.

Allowing existing reactors to simply run out their licensed lifetimes in the current scenario, nuclear power may simply disappear, he writes. "Absent an extremely large injection of [government funding](#) or further

life extensions, the reactors currently operating are going to end their licensed lifetimes between now and the late 2050s," Bradford concludes. "They will become part of an economics-driven US nuclear phase-out a couple of decades behind the government-led nuclear exit in Germany."

Also in this special issue, Sharon Squassoni, a non-proliferation expert at the Center for Strategic and International Studies in Washington, DC, writes that a US nuclear phase out will have only minor international implications. Governmental attempts to buoy the US commercial [nuclear industry](#) for national security reasons run the risk of blurring the distinction between civilian and military nuclear programs, undermining public backing for both, she adds.

The *Bulletin* canvassed opinion on the economic and environmental implications of a US phase from leading institutions. Massachusetts Institute of Technology (MIT) experts Henry D. Jacoby and Sergey Paltsev modeled a number of scenarios, focusing particularly on the effects of greenhouse gas regulations. They also looked at the impacts of a nuclear phase out on greenhouse gas emissions, electricity prices, and the national economy. They conclude that a US exit from nuclear power would impose costs on all three.

Colorado-based Rocky Mountain Institute chairman and chief scientist, Amory Lovins, says that as the US electricity system ages, most of its power plants and transmission grid must be replaced by 2050. The cost will be roughly the same, whether the rebuilt system is fed by new [nuclear power plants](#) and "clean coal" facilities or centralized and distributed renewable energy plants: "The inevitable US nuclear phase-out, whatever its speed, is [...] just part of a far broader and deeper evolution from the remarkable electricity system that has served the nation so well to an even better successor now being created," he writes.

The earlier issues in this Nuclear Exit series looked at neighbors France

and Germany. Germany is a trailblazer for countries considering an exit from commercial nuclear power, embarking on an ambitious *Energiewende*, or energy turnaround, that includes a quick nuclear phase-out and an enthusiastic embrace of renewable energy. Just next door, France is taking a more cautious approach, and is currently carrying out an extensive, multi-stakeholder debate on the country's energy future. With three-quarters of France's electricity derived from nuclear power, a rapid or total exit seems unlikely.

The breadth and depth of the data and analysis presented by the authors in all three Nuclear Exit issues make clear that this question has no simple, one-size-fits-all answer. They make something else clear: The question deserves a serious, considered answer in every country with a commercial nuclear power industry.

More information: "The US Nuclear Exit" by John Mecklin published 01 March 2013 in the *Bulletin of the Atomic Scientists*.

"How to close the US nuclear industry: Do nothing" by Peter. A. Bradford published 01 March 2013 in the *Bulletin of the Atomic Scientists*.

"The economics of a US civilian nuclear phase-out" by Amory b. Lovins published 01 March 2013 in the *Bulletin of the Atomic Scientists*.

"The limited national security implications of civilian nuclear decline" by Sharon Squassoni published 01 March 2013 in the *Bulletin of the Atomic Scientists*.

Provided by SAGE Publications

Citation: US may face inevitable nuclear power exit (2013, March 1) retrieved 27 April 2024 from <https://phys.org/news/2013-03-inevitable-nuclear-power-exit.html>

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