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Senate Attempts to Promote Small Nuclear Reactors Fall Short

Jack Spencer

The Senate is considering two bills that are meant to help small and modular nuclear reactor development. Unfortunately, the Nuclear Energy Research Initiative Improvement Act (S. 2052) and the Nuclear Power 2021 Act (S. 2812) would have the opposite impact.

Together (or individually), these bills would smother the private-sector initiative and free-enterprise spirit that has driven small and modular reactor development in recent years. Instead of embracing this new and innovative approach to nuclear energy development, these bills would subject the small and modular reactor business to the same government-depressed trajectory that plagues traditional reactors.

The Nuclear Energy Research Initiative Improvement Act (S. 2052). S. 2052 would authorize \$250 million over five years to support the emergence of small and modular nuclear reactors. While the spirit of the act is laudable, its approach is mostly counterproductive. The essence of the act is to mandate that the Department of Energy (DOE) develop a five-year plan to “lower effectively the costs of nuclear reactors.”

There are several problems with the act:

- *More government support is not needed.* Private investors have been driving the small and modular reactor business in recent years. They recognized that small and modular reactors could potentially fulfill a market demand that large reactors could not, and they did it without government support.

- *The government is neither capable nor qualified to reduce the prices of nuclear reactors.* Private industry has the interests, expertise, and background to develop cost-effective manufacturing and construction techniques. History demonstrates that government intervention would only slow the phenomenal progress made on the small reactor front.
- *Government intervention has not produced a single new large reactor, and there is no reason to think it would work for small ones.* The federal government’s attempts to subsidize the commercialization of large reactors have failed to create a viable nuclear industry. The small reactor business has taken a different approach. Instead of leaning on government to direct the progress of industry, they have by and large built privately funded commercial enterprises out of federal research and development projects. Instead of controlling this innovation through DOE meddling, the federal government should embrace it as a model for other energy sectors.
- *The bill plays into the hands of the anti-nuclear agenda.* The bill directs the DOE to conduct “public workshops” to generate “public com-

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214 Massachusetts Avenue, NE
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(202) 546-4400 • heritage.org

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ment” to inform its five-year plan. This opens the door to over-politicization and legal sandbagging—two of the anti-nuclear lobby’s favorite progress-killing tactics.

- *Creating an arbitrary timeline makes no sense.* Government program timelines to produce commercial projects do not work. Once the government creates a development program, the market begins to revolve around it. Then as the timeline slips—as they always do—so does the eventual introduction of the products. Timelines should be market- and investor-driven, not dictated by Congress or the DOE.

The Nuclear Power 2021 Act (S. 2812). S. 2812 creates a DOE program to develop and demonstrate two small and modular nuclear reactor designs. In essence, it authorizes the DOE to dictate who will make up America’s small, modular reactor business for the foreseeable future.

This is the wrong approach because:

- *It is anti-competitive.* Multiple companies have invested private dollars and resources to build the commercial small and modular nuclear reactor business. By choosing winners and losers, the DOE would take away the incentive to compete and replace it with the incentive to lobby Washington. The result would be that Washington, not the market, would decide which technologies move forward.
- *It stifles innovation.* This anti-competitiveness results in less innovation in the marketplace. The irony is that private-sector innovation is what has given rise to the small and modular reactor market to begin with. As the established nuclear industry became bogged down in federal bureaucracy, nuclear energy entrepreneurs were investing in new and innovative ways to bring nuclear technology into the marketplace. S. 2812 would apply the same anti-innovation bureaucracy to the small and modular reactor business.
- *It deters private-sector investment.* Multiple companies are currently investing in small, modular reactors. By picking which two get government support, S. 2812 essentially punishes those companies that were not chosen. This signals to

private investors to either not get into the nuclear business or to spend significant resources on lobbying instead of product development.

Not All Bad. However, the bill does contain some good provisions. In addition to raising the profile of small reactors, both bills attempt to address (though unsuccessfully) one legitimate government function: licensing.

The long-term success of nuclear power, regardless of reactor type, will depend on an efficient regulatory regime. This is especially true for small and alternative reactor types. The lack of regulatory structure for these reactors represents a major barrier to market entry. Though neither piece of legislation fixes this problem, both recognize it.

A Better Approach. Congress could allow small and alternative reactor technologies to move forward by doing the following:

Reject Additional Loan Guarantees. Loan guarantee proponents argue that high upfront costs of new large reactors make them unaffordable without loan guarantees. Presumably, then, a smaller, less expensive modular option would be very attractive to private investors even without government intervention.

But loan guarantees undermine this advantage by subsidizing the capital costs and risk associated with large reactors. A small reactor industry without loan guarantees would also provide competition and downward price pressure on large light water reactors.

Avoid Subsidies. They do not work. Despite continued attempts to subsidize the nuclear industry into success, the evidence demonstrates that such efforts invariably fail.

The nuclear industry’s success stories are rooted in the free market. Two examples include the efficiency and low costs of today’s existing plants and the emergence of a private uranium enrichment industry. On the other hand, government intervention is the cause of the industry’s failures, as illustrated by the government’s inability to meet its nuclear waste disposal obligations.

Build Expertise at the Nuclear Regulatory Commission (NRC). The NRC is built to regulate large light water reactors. It simply does not have the reg-

ulatory expertise to efficiently regulate other technologies, and building that expertise takes time.

Helping the NRC to develop that expertise now would help bring new technologies into the marketplace more smoothly.

Establish a New Licensing Pathway. The current licensing pathway relies on reactor customers to drive the regulatory process. The problem is that the legal, regulatory, and policy apparatus is built to support large light water reactors, effectively discriminating against other technologies.

Establishing an alternative licensing pathway could help build the necessary regulatory support on which commercialization ultimately depends.

More Harm Than Good. It seems that some Members of the Senate are making a real effort to help move small, modular reactors forward with S. 2052 and S. 2812. Unfortunately, their efforts would do more harm than good.

In the process of attempting to help small, modular reactors, in practice, these measures would smother the very market forces that have driven the success of small, modular reactors to begin with.

—*Jack Spencer is Research Fellow in Nuclear Energy in the Thomas A. Roe Institute for Economic Policy Studies at The Heritage Foundation.*