WebMemo
Published by The Heritage Foundation
No. 2709
November 23, 2009

The Clean Energy Act of 2009: A Missed Opportunity for Real Nuclear Energy Policy Reform

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Senators Lamar Alexander (R–TN) and Jim Webb (D–VA) recently introduced their bipartisan Clean Energy Act of 2009 (CEA 2009), which aims to create a business and regulatory environment to double nuclear power production in just two decades. While their reform efforts are laudable and necessary, most of their recommendations will not bring about their desired results.

Loan Guarantees Promote Government Dependence. The CEA 2009 effectively doubles the federal clean energy loan guarantee program to $100 billion by authorizing $10 billion to cover the subsidy costs, which are calculated based on the likelihood of default. Assuming a 10 percent default risk, which the bill does, $10 billion is adequate to cover $100 billion in loans. While minimal loan guarantee programs are beneficial in some limited circumstances, they should not be the foundation on which entire industries depend. Yet that is what the CEA 2009 potentially creates. It is a massive direct government intervention into capital markets that artificially and broadly discounts the cost of capital for an entire industry. Because it is not coupled with adequate reforms to address underlying issues like waste management and inefficient regulation, the program essentially promotes bad business and bad public policy. It allows the recipient to be competitive as a result of government support rather than through innovation or greater efficiency and it allows the federal government to avoid making tough policy decisions while claiming to help the nuclear industry.[1]

The provision does supply some important reforms that will allow for the Department of Energy to more efficiently issue the $18.5 billion in nuclear loan guarantees that were authorized by the Energy Policy Act of 2005.

The Workforce Is Growing. Why Subsidize It? CEA 2009 also subsidizes the nuclear workforce at $100 million per year for 10 years—a completely unnecessary subsidy. Adequate infrastructure and a capable workforce are certainly prerequisites to any substantial expansion of nuclear energy, which is why the private sector is making those investments right now absent any federal handouts. It is something the nuclear industry, not the American taxpayer, can supply and is supplying.

The Nuclear Energy Institute (NEI) reports that by the end of 2008, "private investment in new nuclear power plants has created an estimated 14,000–15,000 jobs."[2] Large universities are expanding to meet the nuclear industry's demands for more engineers and skilled laborers as well. At least 31 major universities continue to offer a degree in nuclear engineering, and many of those programs are expanding at rapid rates.[3]

This paper, in its entirety, can be found at:
www.heritage.org/Research/EnergyandEnvironment/wm2709.cfm

Produced by the Thomas A. Roe Institute for Economic Policy Studies

Published by The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002–4999
(202) 546-4400 • heritage.org

Efficiency Improvements Already Being Made. To increase the lifetime of a reactor and increase its energy efficiency, the bill would invest $50 million a year for 10 years. Like the nuclear workforce, this is something the nuclear industry is capable of handling and, in fact, already is.

According to the NEI, "the average capacity factor for U.S. plants in operation in 1980 was 56.3 percent; in 1990, 66 percent; and in 2008, 91.5 percent."[4] By comparison, in 2008 coal's average capacity factor was 70.8 percent, gas (combined cycle) was 41.7 percent, wind was 31.3 percent, and solar was 21.1 percent.[5]

Extending the lifetime of a nuclear reactor is also a decision best left to the private sector and the Nuclear Regulatory Commission (NRC). If a company finds it profitable to extend the life of its existing reactor, it will do so—and they have been doing so. The lifetimes of over 50 reactors in the U.S. have already been granted license renewals to extend operations, and most other reactors are expected to do the same.[6]

Waste Management Reform. Alexander and Webb are correct to address the nuclear waste issue. An economically rational, long-term solution to waste management is a necessary component of a nuclear renaissance. Unfortunately, CEA does little to bring about the necessary reform.

First, its reaffirmation of the federal government's commitment to dispose of nuclear waste is nice, but not needed. The 1982 Nuclear Waste Policy Act legally obliges the federal government to dispose of nuclear waste, and the 2002 House Joint Resolution 87 signed into law by President Bush names Yucca Mountain as the nation's repository.[7]

Second, simply supporting the Department of Energy's (DOE) blue ribbon commission on nuclear waste does not advance solutions. While DOE's commission could be useful, it will have no real credibility unless it looks at all options, including Yucca Mountain.[8] Yet Secretary of Energy Steven Chu has been clear that he has already decided that Yucca will not be considered.[9] A mandate to consider all options would have significantly contributed to solving America's nuclear waste issue.

And finally, the bill specifically states that funds will be set aside for research and development into Generation IV reactors that are designed to consume nuclear waste. Though these reactors could make a real contribution to addressing nuclear waste, such decisions should be the responsibility of the private sector.

Nuclear waste producers are the real beneficiaries of a waste solution. They should be responsible for it. Besides, the DOE and America's national laboratories are already heavily engaged in nuclear fuel

1. See Jack Spencer, "The Problem with Increasing Energy Loan Guarantees," Heritage Foundation *WebMemo* No. 2062, February 6, 2009, at *http://www.heritage.org/Research/EnergyandEnvironment/wm2277.cfm*.
2. Nuclear Energy Institute, "New Nuclear Plants: An Engine for Job Creation, Economic Growth," at *http://www.nei.org/resourcesandstats/documentlibrary/newplants/whitepaper/new-nuclear-plants-an-engine-for-job-creation-economic-growth* (November 17, 2009).
3. Angela Neville, "Generation Next: Strategies for Recruiting Younger Workers," *Power*, Vol. 152, No. 7 (November 17, 2009).
4. Nuclear Energy Institute, "U.S. Nuclear Industry Capacity Factors (1971–2008)," at *http://www.nei.org/resourcesandstats/documentlibrary/reliableandaffordableenergy/graphicsandcharts/usnuclearindustrycapacityfactors* (November 17, 2009).
5. Nuclear Energy Institute, "U.S. Capacity Factors by Fuel Type 2008," at *http://www.nei.org/resourcesandstats/documentlibrary/reliableandaffordableenergy/graphicsandcharts/uscapacityfactorsbyfueltype* (November 17, 2009).
6. World Nuclear Association, "Plans for New Reactors Worldwide," September 2009, at *http://www.world-nuclear.org/info/inf17.html* (November 17, 2009).
7. H.J.RES.87 at *http://thomas.loc.gov/cgi-bin/bdquery/z?d107:H.J.Res87* (November 18, 2009).
8. Jack Spencer, "Secretary Chu's Blue Ribbon Commission on Nuclear Waste," Heritage Foundation *WebMemo* No. 2382, April 6, 2009, at *http://www.heritage.org/Research/EnergyandEnvironment/wm2382.cfm.*
9. Daniel Whitten, "Obama Rejects Nuclear Waste Site After 20-Year Fight," Bloomberg, February 26, 2009, at *http://www.bloomberg.com/apps/news?pid=20601072&sid=a8vjuGJCg4ao&refer=energy* (November 19, 2009).

recycling activities. Beyond that, the federal government has demonstrated that it is unable to effectively manage American's nuclear waste.

To make real progress, Senators Alexander and Webb should acknowledge that America's current strategy for managing nuclear waste is broken, and they should put forward a new plan that gives more responsibility for waste disposal to waste producers while focusing the government's responsibility on efficient regulation.

Moving Small and Modular Reactors Forward. Part of the Alexander–Webb plan is to invest $200 million per year for five years to enable the NRC to review reactor designs for small and modular reactors. These emerging reactor designs are critical to the long-term success of American nuclear energy. Indeed, they could provide the affordability, mobility, and scalability that large light-water reactors do not. And their introduction into the marketplace would provide additional choices to those considering investing in nuclear energy.

The entire regulatory and government support system is geared toward large light-water reactor technology, which presents a major barrier to market entry for new reactor technologies and thus protects existing technologies from competition. CEA would begin to build the regulatory structure necessary to support the introduction of these technologies into the marketplace.

Real Regulatory and Waste Management Reform Needed. A true nuclear renaissance cannot be micromanaged from Washington. While subsidies and government support programs may have been part of the emergence of America's nuclear energy industry, it was also this dependence that helped to bring it down.

But the industry did not die. Indeed, just the opposite happened. As government support waned, America's private sector took its existing reactors and made them some of the safest and most efficient energy producing machines in the world. America's nuclear operators know that nuclear energy is a safe, affordable, and clean source of power, and that is why they invest in it. And if Washington would put the right free-market policies in place, the stage would be set for not just a handful of new reactors but a sustainable nuclear resurgence.

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