

# WebMemo



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## A To-Do List for Secretary Chu on Nuclear Energy Policy

*Jack Spencer*

President Barack Obama has charged his first secretary of energy, Steven Chu, with an ambitious agenda. At a recent speech at the Department of Energy (DOE) to promote his stimulus bill, the President called on Dr. Chu to reduce America's reliance on foreign oil, create jobs, and spur innovation.<sup>1</sup> Interestingly, nuclear energy—the one technology that could help the President and his secretary meet these objectives—was mentioned in neither the President's speech nor his stimulus package. This is unfortunate because with the right policy reform, nuclear technology could help the nation meet each of the President's important energy objectives.

**Meeting the President's Energy Objectives with Nuclear Power.** Nuclear energy is a jobs creator. According to the Nuclear Energy Institute, the nuclear industry has created some 15,000 jobs in recent years.<sup>2</sup> These include jobs in the sciences, manufacturing, and construction that private-sector investors have created as they prepare to meet future construction demand. Once construction begins, up to 2,000 workers will be required to build each plant and approximately 500–600 will be needed to operate it.

Furthermore, while primarily used to produce electricity today, nuclear energy's versatility could allow it to be used for other applications in the future, which would mean using less fossil fuel.

Finally, innovation is at the heart of the nuclear industry. Nuclear reactors come in all shapes and sizes. They range from large 1,600-megawatt facili-

ties that provide electricity for up to a million homes to small 25-megawatt plants that power rural communities or specific industrial activities. While the backbone of the nation's nuclear infrastructure will likely remain large light-water reactors, there are other reactors that can help transform America's energy future.

**What to Do.** To bring about these benefits, Secretary Chu should implement the following policy changes:

- *Set an end-game for Nuclear Power 2010 (NP 2010).* NP 2010 began in 2002 as a public/private partnership to develop a roadmap to bring an advanced light-water reactor on line by 2010. This is obviously not going to happen, but the program has made significant progress toward addressing the technical and regulatory challenges that faced the industry at the program's inception. Its mission to define the arduous plant permitting and design certification process was needed, but its justification is beginning to wane. The submittal of permit applications to construct 30 new reactors demonstrates that the program is close to meeting its primary objectives and should be wound down. While it should not end

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immediately, it should be phased out as new reactor construction begins. At that point, the government's role in bringing advanced light-water reactors to the market place should come to an end.

- **Accelerate the Next Generation Nuclear Plant program (NGNP).** The Next Generation Nuclear Plant is a public/private cost-sharing technology development program. The high-temperature gas cooled reactor (HTGR) technology being developed by NGNP is critical to the future of nuclear energy. While large light-water reactors are very good at producing base-load electricity (the power used for everyday living), other technologies like the HTGR will make nuclear technology available for other energy-intensive applications, such as refinery operations, fertilizer production, and the plastics industry. The problem is that the U.S. needs an efficient regulatory process to support the introduction of new technology into the marketplace as soon as possible. Unfortunately, the DOE and Nuclear Regulatory Commission's (NRC) NGNP strategy uses a nine-year licensing timeline that would not allow for a new HTGR reactor to come on line until 2021.<sup>3</sup> This is too long. The DOE and NRC should revisit their licensing timeline with the purpose of accelerating it substantially.
- **Create an Office of Nuclear Entrepreneurship.** Innovation in the nuclear sector has burgeoned in recent years. The problem is that the system of policies and regulation used to govern commercial nuclear power in the U.S. is built around support for existing technologies. America's regulatory system not only reflects this technological bias but is in many ways a product of the 1970s anti-nuclear and post-Three Mile Island mindset. The regulatory burden that this creates

essentially prevents any new technologies from entering the marketplace in a reasonable time frame, which reduces their value for potential customers. Without customers, the NRC is reluctant to invest the resources to build the necessary regulatory framework to bring these new designs to the market. Indeed, many companies are investing in new technologies now without the help of the federal government. If these companies are continually slowed by systemic obstacles, they will be discouraged from investing, and innovation will be stifled. An Office of Nuclear Entrepreneurship could help innovators overcome these obstacles by developing policies and regulatory guidance that promote private-sector technological innovation.

- **Stay out of the commercial spent fuel recycling business.** The Bush Administration's plan to construct a national reprocessing facility was not a good idea. Dr. Chu and his team are lucky not to have been handed another bloated DOE construction project. Chu should ensure that he passes that dignity onto his successor by clearly stating that his department is not interested in pursuing any government-run reprocessing activities.
- **Transfer responsibility for commercial used fuel management to the private sector.** It is not coincidental that the front end of the fuel cycle and operations are both privately operated and *functional*. On the other hand, back-end activities (waste management) fall under the purview of the federal government and are completely *dysfunctional*. If nuclear power has any chance at a sustainable comeback, this must change. The best way to ensure that process is economically rational and sustainable is to transfer responsibility for waste management to the private sector.<sup>4</sup>

1. President Barack Obama, remarks promoting the recovery plan with Secretary Chu, Department of Energy, February 5, 2009, at [http://www.energy.gov/news2009/documents2009/President\\_Obama\\_DOE.pdf](http://www.energy.gov/news2009/documents2009/President_Obama_DOE.pdf) (February 19, 2009)
2. Nuclear Energy Institute, "New Nuclear Plants: An Engine for Job Creation, Economic Growth," at [http://www.nei.org/filefolder/10\\_WHITEPAPER-NewNuclearPlants-AnEngineforJobCreationEconomicGrowth.pdf](http://www.nei.org/filefolder/10_WHITEPAPER-NewNuclearPlants-AnEngineforJobCreationEconomicGrowth.pdf) (February 19, 2009).
3. U.S. Department of Energy, "Next Generation Nuclear Plant Licensing Strategy: A Report to Congress," August 2008, at [http://www.nuclear.energy.gov/pdfFiles/NGNP\\_reporttoCongress.pdf](http://www.nuclear.energy.gov/pdfFiles/NGNP_reporttoCongress.pdf) (February 20, 2009).
4. Jack Spencer, "A Free-Market Approach to Managing Used Nuclear Fuel," Heritage Foundation *Backgrounder* No. 2149, June 23, 2008, at <http://www.heritage.org/Research/EnergyandEnvironment/bg2149.cfm>.

- *Ensure a science-based outcome for Yucca Mountain.* President Obama has stated he does not support the Yucca Mountain project. He believes that the people of Nevada do not support the project and that its safety has not been scientifically proven. Fortunately, deciding such an outcome is neither his nor Dr. Chu's concern. Instead, the NRC is charged with that responsibility. The DOE submitted a license application to the NRC to construct and operate the repository in 2008. It is now the NRC's responsibility to consider the application and issue a judgment one way or the other. Dr. Chu has said that he supports allowing the NRC to continue reviewing the Yucca application but cautions that Pres-

ident Obama does not support the repository.<sup>5</sup> The best policy would be to recognize the authority of the NRC to carry out its review and respect its conclusions.<sup>6</sup>

**Go Nuclear.** Official Washington is starting to recognize that President Obama will not be able to meet his energy objectives without a strong nuclear industry. The question for Secretary Chu is what the Department of Energy's role should be. The policies outlined above are at least part of the answer.

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5. Steve Tetreault, "Energy Chief Says Keep Yucca License on Track—For Now," *Las Vegas Review Journal*, February 19, 2009, at <http://www.lvrj.com/news/39837517.html> (February 27, 2009).
  6. Jack Spencer and Nick Loris, "Yucca Mountain Remains Critical to Spent Nuclear Fuel Management," Heritage Foundation Backgrounder No. 2131, May 1, 2008, at <http://www.heritage.org/Research/EnergyandEnvironment/bg2131.cfm>.