



Analysis of Nuclear Subsidies in Lieberman-McCain Climate Stewardship and Innovation Act of 2007

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Senators Lieberman and McCain's Climate Stewardship and Innovation Act of 2007 (S.280) would authorize more than \$3.7 billion in federal subsidies for new nuclear power plants. The bill provides a wide range of subsidies, including subsidies for engineering and design costs, loans and loan guarantees for building three new plants, and direct financial awards for new projects. Many of these same provisions were passed into law in the Energy Policy Act of 2005, which provides more than \$13 billion in tax breaks and subsidies to the nuclear industry. S.280 also includes extensive subsidies for new coal plants, which are not included in this analysis.

Design and Engineering Subsidies [Sec. 351(c)(3)] \$600 million

Although the federal government has already spent billions of dollars subsidizing the nuclear industry's research and development costs, the Lieberman-McCain bill includes up to \$600 million for three new nuclear reactor designs. Specifically, Sec. 351(c)(3) authorizes \$200 million each for three new reactor designs. Without federal subsidies, the nuclear industry has already recently certified the AP-1000, AP-600, and Advanced Boiling Water Reactor designs with the Nuclear Regulatory Commission. In addition, General Electric (Economic Simplified Boiling Water Reactor) and Mitsubishi (Advanced Pressurized Water Reactor) are in the process of certifying new designs. Clearly, federal subsidies are not necessary for the development of the next generation of reactor designs.

Licensing Subsidies and Incentives [Sec. 351(d)] Cost not specified

As part of the Energy Department's Nuclear Power 2010 program, a government-industry cost-share program underway since FY 2001, DOE has awarded a consortium of nuclear companies \$260 million to assist them with licensing at one site in Mississippi and has agreed to fund another license application in Virginia, the amount to be determined. Despite this, the Lieberman-McCain bill provides an unlimited amount of additional federal subsidies for licensing new reactors. Under Sec. 351(d), the licensing costs are supposed to be shared between the federal government and industry, but it leaves it up to the DOE to determine what portion of the licensing costs will be paid for by the federal government, potentially saddling taxpayers with the entire cost of licensing new reactors.

S.280 also requires that DOE establish a demonstration program to reduce the regulatory costs of the NRC's licensing process. The Energy Policy Act of 1992 made sweeping changes to the NRC's licensing process for new reactors. The industry is currently testing the new process with four pending Early Site Permit applications. No utility has submitted a Combined Construction and Operation license as of yet. It makes no sense to further curtail the NRC licensing process when the existing process has not yet been fully tested.

Secured Loans and Loan Guarantees [Sec. 251-255] \$3 billion

The largest subsidy to the nuclear industry in the Lieberman-McCain bill is secured loans and loan guarantees that would cover up to 80 percent of the cost of building the first of three new nuclear power plants with different designs. The bill leaves it to the discretion of the Secretary of Energy to determine the type of financial assistance that will be provided.

Loan guarantees for various energy sources, including new nuclear power plants, were already authorized in EPACT 2005. DOE is currently in the process of establishing an Office of Loan Guarantees, reviewing pre-applications for loan guarantees, and drafting regulations for the implementation of the necessary regulations.

If Congress were to guarantee loans covering three additional nuclear reactors, this subsidy could potentially cost taxpayers approximately \$3 billion. This assumes a 50% default rate and construction cost per plant of \$2.5 billion, as the Congressional Budget Office has estimated. International experience, however, has shown that actual construction costs are much higher. For example, a 1,300 MW Advanced Boiling Water Reactor built in Japan in the mid-1990s cost \$3.7 billion (1997 dollars), despite the claim by General Electric that it would cost \$2 billion.¹ The French government-owned company Areva is currently building a 1,600 MW reactor in Finland, the same reactor design that the U.S. utility Constellation is considering building in Maryland. Plant construction, which was started in April 2005, is already 18 months behind schedule. Areva lost \$922 million in income in 2006 due to the construction problems.

Awards [Sec. 323]

\$100 million per project—unlimited amount

Finally, Sec. 323 of the bill enables projects within different technology categories, including nuclear power, to bid for an additional federal grant of as much as \$100 million – or more if approved by the Secretary of Energy. Until 2012, each of the grants will be financed through proceeds from the auction of tradable allowances, after which point they will be paid for through the Climate Change Credit Corporation, which is created under the Act purportedly to reduce consumer costs that result from the requirements of this Act. There is nothing to prevent projects that are financed under other provisions in this bill to also be awarded an additional grant under this Section.

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¹ Congressional Budget office, Nuclear Power: Prospects for New Commercial Reactors, July 27, 2001, p. CRS-9.