

## Financing New Nuclear Power Plants

April 2008

### Key Points

- Experts agree that the electric power industry must invest \$750 billion to \$1 trillion in new generating capacity, new transmission and distribution infrastructure, and environmental controls by 2020.

- The Energy Policy Act of 2005 provides limited investment stimulus for the construction of power facilities, including nuclear power plants.

- A properly priced loan guarantee program enables companies to use project financing on a non-recourse basis.

- Loan guarantees are important to new nuclear plant financing for companies operating in both unregulated and regulated markets.

- The loan guarantee program is not a subsidy. Unlike other federal loan guarantee programs, project developers are required to pay the cost of the loan guarantee, as well as the full cost of administering the program.

- The loan guarantee program provides benefits to consumers of electricity. Because it lowers the cost of capital, the plants produce lower-cost electricity than they would in the absence of the loan guarantee.

### Industry Must Invest Up to \$1 Trillion In Electric Power Infrastructure

Consensus estimates suggest that the electric power industry must invest between \$750 billion and \$1 trillion in new generating capacity, new transmission and distribution infrastructure, and environmental controls by 2020. This new capital spending represents a challenge to the electric power industry.

Required Electric Infrastructure Investment by 2020	
Generating capacity	\$250-\$300+ billion
Environmental controls	\$45-\$50 billion
Transmission	\$150+ billion
Distribution	\$300+ billion
<b>Total = \$750 billion to \$1 trillion</b>	

The Energy Policy Act of 2005 recognized this financing challenge and provided limited investment stimulus for construction of new baseload power plants. In the case of nuclear energy, that stimulus includes:

- A production tax credit of \$18 per megawatt-hour for 6,000 megawatts of new nuclear capacity for the first eight years of operation.
- A form of insurance (called standby support) under which the federal government will cover debt service for the first few plants if commercial operation is delayed. This coverage is capped at \$500 million for the first two reactors, and \$250 million for the next four reactors. The delays covered include NRC failure to meet schedules and litigation.
- Federal loan guarantees for clean-energy technologies for up to 80 percent of total project cost.

Of the three major incentives for new nuclear power plant development provided by the Energy Policy Act, the loan guarantee program is the most effective in addressing the major challenge facing new nuclear power plant construction—construction financing.



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### **Properly Priced Loan Guarantees Provide Efficient Financing Structure**

A properly priced loan guarantee program would enable companies to employ project financing on a non-recourse basis. The ability to use non-recourse project finance structures offsets one of the most significant financing challenges facing new nuclear power plant construction – the cost of these projects relative to the size, market value and financing capability of the companies that will build them.

A new nuclear plant is a multibillion-dollar project (including interest during construction). Although such projects are not unique in the energy business, they are typically built by consortia of major oil companies with market values many times larger than the largest electric companies.

Project financing, supported by loan guarantees, also allows a more efficient, leveraged capital structure, which reduces the weighted average cost of capital and thus provides a substantial consumer benefit in the form of lower electricity prices. Loan guarantees also mitigate the impact on the balance sheet of these large capital projects that would otherwise place stress on credit quality and bond ratings.

### **Loan Guarantees Are Important in Regulated, Unregulated Markets**

Loan guarantees are important to new nuclear plant financing for both unregulated and regulated companies. Unregulated generating companies will be hard-pressed to build nuclear power plants and other large capital-intensive baseload projects except on a project finance basis with the debt financing secured by the federal government. Unregulated companies may not have the capacity to finance these projects on their balance sheets.

Many regulated electric companies, especially those pursuing multiple generating and transmission projects at the same time, may be limited in their ability to finance projects without project finance capability because of substantial pressure on credit quality and debt ratings.

The federal government uses loan guarantees widely and successfully to ensure investment in critical infrastructure, including shipbuilding, transportation infrastructure, exports of U.S. goods and services, affordable housing, and many other purposes. The government manages a successful loan guarantee portfolio of \$1.1 trillion.

The energy loan guarantee program is not a subsidy. Unlike other federal loan guarantee programs, project developers are required to pay the cost of the loan guarantee, as well as the full cost of administering the program. The program addresses market imperfections that otherwise would restrict access to capital or impose inordinately high financing costs on projects. The Office of Management and Budget noted that federal credit programs, such as the energy loan guarantee program, “effectively fill the gaps created by market imperfections.”

The Department of Energy finalized the loan guarantee program in October 2007. According to the final rule, a guarantee may cover 100 percent of the project debt, provided the debt does not exceed 80 percent of the project’s cost. In December 2007, Congress authorized DOE to grant \$18.5 billion worth of loan guarantees to new nuclear projects.

Now that the rules and authorization are in place, the industry expects solicitations from DOE for nuclear projects in 2008. At that time, companies will submit applications and begin to negotiate terms and conditions of the guarantee.

*This policy brief is also available at [www.nei.org](http://www.nei.org), where it is updated periodically.*