Loan Guarantees for New Nuclear Power Plants?: Congressional Testimony

Testimony prepared for the Domestic Policy Subcommittee of the Oversight and Government Reform Committee of the U.S House of Representatives Concerning the Economic Advisability of Increasing Loan Guarantees for the Construction of Nuclear Power Plants

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Full Testimony

Excerpt from Section F:

“Is there any way to estimate accurately how much loan guarantees for nuclear power plants are going to cost taxpayers?”

While a precise estimate of the risk of default and hence the cost of the nuclear loan guarantees to taxpayers does not appear feasible, one can approach the estimation of the cost of loan guarantees for new reactors by considering the economic and energy environment in which they are being built and examining whether there are historical parallels that can guide us. The declining demand per capita and per unit of economic output in the United States points to a very similar situation as that in the post?1973 period when utilities overbuilt and when the impact of rising prices on demand was not taken into account adequately. Cost escalations were rife. These problems continue today. The NRC’s plan to streamline procedures by pre?certifying reactors is not working. Costs have been rising rapidly since 2003, even without delays. Given that none of the nuclear reactors ordered after October 1973 was completed, the parallels with the earlier period indicate a high risk of default.

In addition, there is no indication that the long lead?time of new reactors is going to be reduced significantly. On the contrary, delays and cancellations are already occurring in a much earlier phase of nuclear reactor planning than was typical in the late 1970s and the 1980s. A delay on a two?reactor project could cost $800 million to $1.2 billion a year, according to Florida Power and Light in 2007.

Finally, we can compare the situation today with the one that prevailed when the Energy Policy Act was passed in 2005. Prior to that, in 2003, the Congressional Budget Office estimated that the risk of default on nuclear loan guarantees was well over 50 percent. Restraints on carbon emissions being enacted in the states and on the discussion table in Congress and the EPA would put a price on carbon and make nuclear power as well as renewables and efficiency more attractive compared to fossil fuels. But several factors are pushing the risks of investments in nuclear reactors higher.

First, the same carbon restraints would tend to increase investments in efficiency, which is cheaper than new energy sources. Hence the energy landscape will shift from supply to more efficient delivery of energy services like lighting and air?conditioning.

Second, carbon restraints will also benefit renewables. In the 1980s, renewables were generally more

expensive than most nuclear power investments. This is no longer the case. Wind-generated electricity is cheaper than nuclear. Even when energy storage is added, compressed air energy storage plus wind power would be generally cheaper than unsubsidized nuclear, presuming both have to be financed on the open market. Given Wall Street's reluctance, really refusal, to finance nuclear, investments in that technology must be considered on a par with lower grade junk bonds.

Third, there are considerable uncertainties associated with the costs of spent fuel management. If the sentiment towards reprocessing – separation of plutonium and uranium from fission products – prevails, costs could increase substantially. It is worth noting here that, contrary to popular impression, reprocessing in France has significantly increased costs and only marginally decreased uranium resource use. In fact, the French spend about two cents more for every kilowatt hour generated from plutonium fuel, which provides less than ten percent of French nuclear fuel requirements.

Fourth, the costs of solar technology are coming down rapidly and energy storage technologies are also progressing fast. It is generally considered that solar?generated electricity, which is only now entering maturity and large?scale production, will be less than ten cents per kilowatt?hour in a few years. It is a reasonable prospect that nuclear?generated electricity will be economically obsolete before the first set of new nuclear reactors comes on line. In any event, such a prospect presents a major risk for nuclear power investments at the present time that cannot be disregarded. Should it come to pass, independent generators like NRG will be out of a market, and taxpayers will be out of a great deal of money.

Fifth, the much shorter lead time and modular nature of wind, solar and gas plants poses a risk to nuclear investments. If you build half a wind farm or solar PV installation, you get half the electricity. If you build half a nuclear reactor, you get nothing but the bills. Even two?reactor projects like the one in South Texas are generally phased so that the completion times of the two reactors are close together.

Finally, those who say that solar and wind are intermittent and cannot replace baseload have not caught up with the Internet age. Jon Wellinghoff, the Chairman of the Federal Energy Regulatory Commission (FERC) has made the following comment about baseload power. He said it is "like people saying we need more computing power, we need mainframes. We don't need mainframes, we have distributed computing." Appliances like clothes washers and dishwashers can be made to turn on when the wind is blowing or the sun is shining, all with an override switch. We will need a smart grid in any case and with that approach, dispatching renewables will be in a quite different regime than the century?old approach that prevails today and is still at the center of much utility thinking.

Read the Full Testimony

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