ENVIRONMENTAL ENTREPRENEURS

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Nuclear Power Plant Sticker Shock

Another reason Congress should stay neutral and let the market decide

On May 12, 2008 The Wall Street Journal ran an article on the current cost for nuclear power plants.[1] The opening reads, "A new generation of nuclear power plants is on the drawing boards in the U.S. but the projected cost is causing some sticker shock: $5 to $12 billion a plant, double to quadruple earlier estimates." **A new nuclear plant is likely to take 11 years[2] to come on-line and will have to charge more than two times the current wholesale electricity rate.**

It has been over 30 years since the last U.S. nuclear power plant began construction. Much work has been done in the interim to reduce delays and capital costs in the permitting and construction process. Based on this data a number of studies have predicted capital costs and cost of electricity if a plant were constructed today. But all of these estimates are far below the real-world costs as described in the WSJ article and, for example, by Florida Power and Light in their recent application.[3] The large increase in capital costs is not surprising in view of the increase in steel and other commodity costs in recent years but nuclear plant costs have been rising much faster than the cost of other power plant technologies,[4,5] almost tripling since 2000.

The increase in capital cost has a corresponding effect on the cost of electricity produced. When the higher capital costs are used in existing pricing models, **wholesale electricity from new nuclear plants costs 13-20 cents per kilowatt-hour (kwh)** – more than double current wholesale prices for electricity. (Estimates for nuclear power have historically been too optimistic. For example, the Energy Information Agency's 2007 forecasts are 6 – 7 cents per kwh.[6] Independent predictions for nuclear power of 6 to 7 cents per kilowatt-hour from 2003[7] and 2004[8] increased to 8 to 11 cents per kwh in a 2007 report.[9, 10])

The price of wholesale electricity from new nuclear plants now falls in the same range as renewable energy alternatives. For example, a 2008 California PUC report estimates wholesale solar thermal power cost at 14 to 18 cents per kilowatt-hour.[11]

Environmental Entrepreneurs urges Congress to be technology neutral and let the market decide which technologies provide the best, most cost effective solutions.

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[1] http://online.wsj.com/article_print/SB121055252677483933.html
[2] http://www.psc.state.fl.us/library/filings/07/09467-07/09467-07.pdf page 68
[3] http://www.psc.state.fl.us/library/filings/07/09467-07/09467-07.pdf
[4] http://www.cera.com/aspx/cda/public1/news/pressReleases/pressReleaseDetails.aspx?CID=9314
[5] http://online.wsj.com/article_print/SB121184813975221465.html
[6] EIA Annual Energy Outlook 2007, Figure 59
[7] http://web.mit.edu/nuclearpower/
[8] http://www.anl.gov/Special_Reports
[9] http://www.keystone.org/spp/documents/FinalReport_NJFF6_12_2007(1).pdf
[10] None of these figures cited contain Federal loan guarantees, subsidies or special tax breaks. An estimate of the wholesale cost of electricity produced by new nuclear power plants requires assumptions regarding fraction of full capacity at which the plant will operate, the terms of its financing, the time it takes to permit and build the plant, cost escalation during construction and a number of others costs. Choices of these assumptions determine the range in resulting costs in the various reports.
[11] http://www.energy.ca.gov/2008publications/RETI-1000-2008-002/RETI-1000-2008-002-D.PDF

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