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# Nuclear? It's just too expensive, for us and the rest of the world

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It is economics that has prevented any new nuclear power plants being approved for construction in the US since 1973. This is true, even though safety, waste-handling and storage, security and weapons proliferations remain real contentious and unresolved issues.

Last week President Barack Obama announced a a US\$8.3 billion (A\$9.3 billion) government loan guarantee to a private company to build twin nuclear reactors in the southern state of Georgia.

What more conclusive proof does one need to demonstrate the economic inviability of nuclear power, even in an industry that is 50 years old? Without such a massive financial crutch, private companies and their investors have declined to fund any new nuclear plants for 37 years — not just in the US, but anywhere in the world.

As previously outlined, nuclear plants routinely have such financial problems because it is a hugely capital intensive industry. Delays greatly add to the cost of capital long before any revenue is generated. Construction is extremely complex, compounded by safety regulation.

Every new plant or new design is promised to be simpler, cheaper and quicker to build but proves to be the opposite. The most notable example is the plant being constructed by the French state-owned company Areva at Olkiluoto, Finland, which has doubled in costs and construction time.

Today Areva estimates that building the same 1.6 gigawatt reactor would cost \$US8 billion (\$A9 billion). The US loan guarantee is for 70 to 80 per cent of the total cost of the two 1.1 gigawatt Georgian reactors, thus putting the construction cost at between US\$10.4-\$11.9 billion. This is broadly comparable with the French costs (US\$5-\$5.4 billion a gigawatt). Of course, the American reactor has not been built and will not be for almost another decade, based on previous experience. In fact the AP1000 design intended for Georgia has not yet been certified by the Nuclear Regulatory Commission and is not expected to be until the end of next year.

No doubt Australian nuclear enthusiasts, such as Ziggy Switkowski and Barry Brook, will claim that Obama's decision vindicates their nuclear advocacy. But really it deviates from their version of reality so far as to shatter it.

First, the cost is astronomical and requires endless government subsidy. On top of the construction subsidies there is an assumption of all liability and risks by government.

Second, the reactors to be funded are not the Integral Fast (Breeder) Reactors that advocates claim will solve all the problems of nuclear power. The US cancelled its IFR research program 16 years ago. The new reactors will be standard thermal designs from the Japanese-owned Westinghouse.

Yesterday Professor Leslie Kemeny again urged that [Australia construct five 1 gigawatt reactors](#) . Based on current estimates, this would cost at least \$A28 billion. Most likely, the cost will be much, much more because Australia would have to build nuclear infrastructure from scratch, and because "overnight costs" ignore the construction delays and safety issues that invariably arise — the reasons dozens of reactors have been begun and abandoned in the US and elsewhere in the past 30 years.

But don't take the interpretation of a non-nuclear scientist such as me. Here is what eight experts think, as reported by [The New York Times](#):

Robert Hahn (visiting fellow Oxford University) and Peter Passell (editor, *Milken Review*): "this sort of indirect subsidy leaves a lot to be desired from an economist's point of view."

Ellen Vancko (Union of Concerned Scientists): "rapidly escalating construction costs could be the industry's biggest challenge."

Peter van Doren and Jerry Taylor (senior fellows, Cato Institute): for nuclear energy to be competitive with existing gas-fired generation, a carbon tax "would have to be \$80 a ton" but using the nuclear industry's historical cost overruns "would require a \$150 per ton carbon tax to induce market actors to build nuclear power plants".

Samuel Thernstrom (American Enterprise Institute): "the greatest danger associated with these loan guarantees is not environmental but financial; the risk of default on these loans is high."

Christopher Paine (nuclear program director at the US Natural Resources Defence Council): "the primary obstacle has been and remains the financial cost."

Denis Du Bois (*Energy Priorities Magazine*): "loan guarantees won't completely neutralise the risks of construction delays, cost overruns, lawsuits, credit downgrades and regulatory uncertainty. Guarantees will, however, leave taxpayers on the hook for several billion dollars."

The Obama decision is disappointing to advocates of renewable energy in the US as it continues the subsidy of non-solutions to the low-carbon energy problem and sends the wrong message to just about everyone: companies developing renewable energy, markets, financiers and voters. Some are interpreting it as a bribe to Republican supporters of the nuclear power industry, in the hope of getting their support of Obama's Cap and Trade bill. Even if that is true — and the ploy seems unlikely to succeed — these events only underline the surreal nature of Australian advocates' hopes for a nuclear-powered answer to the fossil-fuelled electricity industry here.

Kemeny said that all of the world's top 25 economies, except Australia, are planning nuclear expansion. This is a misleading statement that nuclear advocates continue to broadcast. As I have written previously, [among developed economies, Austria, Italy, Norway, Portugal, Poland and Ireland have no active nuclear plants and none under construction](#), though some have plans of varying credibility. The Netherlands has one plant and no plans for any new ones. Even if the nuclear route makes some sense for other countries, does that mean we should simply play follow the leader?

The real question for Australia, given the irrefutable costs and our exceptional access to solar, wind and geothermal resources, is whether we should throw \$30 billion or more at an old industry that creates new problems. The real cost is the lost opportunity in renewable energy industries, true industries of the future.

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*This story was found at: <http://www.smh.com.au/opinion/society-and-culture/nuclear-its-just-too-expensive-for-us-and-the-rest-of-the-world-20100225-p4y3.html>*