

**From:** Michael Angwin  
**Sent:** Tuesday, 20 October 2009 10:57 AM  
**To:** Committee, Fuel Energy (SEN)  
**Subject:** RE: Senate Select Committee on Fuel and Energy - questions arising from 25 Sep 2009 public hearing

Dear Ms Tieu

Senator Hutchins asked me whether the AUA we would be able to give a comparison between the cost of building a nuclear power plant now and building one on 10 years; and whether Australia should build now rather than in 10 years.

As a preface to my answer, I have provided links to two reputable sources on this question, the World Nuclear Association and the International Atomic Energy Agency. These give an overview of the issue but I caution against drawing too firm conclusions from any one study or summary of the costs of nuclear power plant construction.

<http://www.world-nuclear.org/info/inf02.html>

<http://www.iaea.org/Publications/Magazines/Bulletin/Bull482/pdfs/06Biol.pdf>

It is worth bearing in mind the concluding summary in the IAEA paper which said, among other things, that specific country conditions have to be taken into account; existing well functioning NPPs have proven their competitiveness; the potential competitiveness of nuclear power depends on many variables including energy demand and structure of the energy consumption, country specific risks and favorable conditions, internationalization of external costs, etc; that country specific energy studies are needed as a prerequisite to decisions on nuclear power; nuclear industry and research organizations are continuously optimizing the design, construction and operation practices to increase the competitiveness of nuclear power.

Manfred Lenzen also examined the academic and other research on the question of costs – see pages 57 to 59 of his report. The research found that:

- Investment decisions for nuclear power are affected mainly by interest rates and government regulation
- Nuclear power construction was comparatively costly because, with long lead times, NPPs attracted higher capital costs
- Greater experience with construction technology could reduce costs
- Competitiveness was affected by coal and gas prices
- Decommissioning and spent fuel and waste disposal would not add significantly to cost
- Carbon pricing would 'radically' alter the competitive landscape in favour of nuclear power.

Notwithstanding the Lenzen summary, the earlier caution is still apposite: country conditions matter and specific study is required.

To this, I'd add a couple of points of my own: imposing a carbon price that drives competitive behaviour will help speed technology development and reduce costs for all non-fossil fuels technologies; future nuclear technology might be asked to meet different standards for safety, waste minimisation and non-proliferation resistance, the price effects of which are not possible to estimate with any accuracy.

Regards

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