

Confusion and logic in the nuclear power debate

Paul Monk

Should we spurn nuclear energy, despite the need for alternative energy sources that will enable us to cut greenhouse gas emissions? Ian Lowe, president of the Australian Conservation Foundation, argues that we should in the latest of Black Inc.'s Quarterly Essays, *Reaction Time: Climate Change and the Nuclear Option*. The nuclear option, he claims, would be a decisive step in the wrong direction and it is 'very strange' that it is being considered, especially as a solution to climate change, given that, by the end of the twentieth century, nuclear energy looked like 'a dying industry'.

Actually, it isn't that strange. The surge in world energy demand, driven chiefly by the extraordinary economic growth in China and India, has led to a sextupling of the spot price for uranium over the past four years. This has rekindled interest in both mining and exploration. The market has done its work. Furthermore, the use of uranium does cut greenhouse gas emissions, so recommending it for this reason is hardly strange.

Whether or not it is 'strange', Lowe objects to the use of uranium. His essay is a response to the appearance, in 2006, of two substantial government reports which made the case not only for expanded uranium mining but for a nuclear industry in Australia. Those two reports were *Australia's Uranium: Greenhouse Friendly Fuel for an Energy Hungry World*, produced by the bipartisan House Standing Committee on Industry and Resources, chaired by Geoff Prosser; and *Uranium Mining, Processing and Nuclear Energy—Opportunities for Australia?*, produced for the Department of the Prime Minister and Cabinet by a task force chaired by Ziggy Switkowski.

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Who is being 'rational' here?

Unlike the authors of the reports, Lowe is convinced that nuclear energy is 'not a sensible response to climate change'. He remarks that 'that section of the press' represented by *The Australian*

rang me to ask if I had been persuaded by the 'rational argument' [Lowe's own inverted commas] of the [Switkowski] report to 'move beyond my emotional opposition to nuclear power.' I told them that my opposition to nuclear power was rational and based on both the experience of the last fifty years and a sober assessment of global futures.

His 'rational' opinion is that 'promoting nuclear power as the solution to climate change is like advocating smoking as a cure for obesity'. Instead, he advocates the immediate embrace of renewable energy. Yet the authors of the two reports do not promote nuclear power as *the* solution to climate change, but as a useful *part* of it. They believe there is no possibility whatsoever of renewables providing the solution to both baseload power needs and greenhouse gas emissions for many years to come. They call for a combination of cleaner and more efficient use of fossil fuels, nuclear energy and renewables.

How are we to discriminate between these two sets of 'rational' arguments? Reading the two reports, one can't help being impressed by the volume of evidence and opinion that they drew upon and their efforts to ponder the many issues raised by nuclear energy. Depending upon their predispositions, however, most people will either accept the reports as authoritative and dismiss Lowe, or accept Lowe's critique without actually reading the reports. That, all too often, is how public debate goes.

Both the government reports and Lowe's essay are rich in claims and data, but we need to see and assess the reasoning that connects their data to their conclusions. Both in the summaries of key points and in the conclusions to chapters, the reports present many findings and recommendations. What they do not do is make explicit how they derived these from their data. Nor do they acknowledge where they are most open to objections. Lowe, conversely, has offered us a passionate essay, but the argument he makes is discursive and must be pulled together if we are to evaluate it.



Uranium mining

The two reports argue that Australia should increase the mining and export of uranium on two basic grounds: it would be profitable and it would be globally responsible. Lowe disagrees with both claims. His case against the profitability of uranium mining and exports looks far weaker than his case against the claim that such mining and exports are globally responsible. But to be confident of any of this we would want to check out a number of patently contradictory factual claims by the two sides about the prospects for export earnings from uranium or how long the supply of conventional uranium resources will last.

The latter is especially troubling. Is it less than 50 years, as Lowe argues, 85 years, as the Switkowski report argues, or, as the House Standing Committee on Industry and Resources argues, 270 years? Even if it would last only 50 years, it might be worth exporting, but it would plainly only be part of an interim solution either to energy supply problems or greenhouse gas emission

reductions. But of course how long it would last depends on the rate at which it is used and also how efficiently it is used. If you are following the debate, this is one indicator to watch: just in so far as one or another estimate is better justified, our opinion regarding the case as a whole ought to be proportionally affected. Neither Lowe nor either of the reports offers a compelling case for any of these widely differing estimates.

Lowe's strongest suit appears to be his claim that the use of nuclear energy to try to reduce greenhouse gas emissions is too risky. There are several grounds for this claim—that there is no safe way to store high-level radioactive waste, that there could be catastrophic accidents with nuclear reactors and that uranium can end up in hostile hands as weapons—but the reports address each of them. The problem with his essay is that he is too eager to dismiss their answers to his questions. He thinks that they lack credibility, but he diminishes his own by simply trying to sweep objections to his opinion aside.

The two reports, for their part, amply acknowledge the importance of the 'nuclear energy is too risky' line of argument. A third of the House Report (chs 5, 6, 7 and 8) and fully half of the Switkowski Report (chs 5, 6, 7, 8 and 9) address risk and safety issues. The consensus of both panels is that those risks are far less dramatic than popular fear or critical opinion, including Lowe's, suggests. They also urge a major public education campaign to address people's fears. Instead of embracing this idea, Lowe asserts that it would merely consist of propaganda.

'Propaganda' or evidence? The Chernobyl deaths

What constitutes propaganda and what constitutes correction of error are not merely matters of arbitrary opinion, but of the best evidence. Take the case of the real or alleged risks to our safety from using nuclear energy. This is, perhaps, the biggest shibboleth in the debate. The risk of nuclear accidents is commonly believed to be far more alarming than

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accidents related to fossil fuels. Think: *The China Syndrome*, Three Mile Island and, especially, Chernobyl.

The House Report examined this concern in detail, drawing upon a wide range of expertise and interest group submissions. Its findings were that, when we look at the actual statistics of accidents, nuclear energy has a very much better safety record than fossil fuels. The mortality rates from mining accidents and the morbidity rates from fossil-fuel pollution are far worse than the deaths or disease that can be attributed to the peaceful use of nuclear energy. Why, therefore, do the public fear nuclear energy?

Chernobyl is part of the answer, but the evidence in this regard is remarkable. Ever since the reactor at Chernobyl exploded in April 1986, it has been widely regarded as a damning indictment of nuclear energy. The House Report offered a good deal of evidence that the Chernobyl incident should not weigh as heavily in the scales of our judgment as it tends to do. In particular, it found that the incident caused far fewer deaths than are commonly attributed to it.

The panel heard and recorded Helen Caldicott's claims that the Chernobyl death toll included 5,000 to 10,000 clean-up workers alone, and will end up killing between 140,000 and 450,000 people through cancer. A major 2005 UN report, *Chernobyl's Legacy: Health, Environmental and Socio-Economic Impacts*, however, in the most comprehensive evaluation of the Chernobyl accident's consequences to date, concluded that there were only 47 deaths directly attributable to the Chernobyl incident between 1986 (28) and 2004 (a further 19 in 18 years) and that the radiation released by the explosion will end up causing fewer than 10,000 cancer deaths over a 50-year period from 1986.

This sounds like a lot of deaths, but it represents a tiny proportion of the background rate of cancer deaths and is spread over decades. Consider, by comparison, that between 10,000 and 15,000 coal miners die in mining accidents around the world annually. The overall contrast with Caldicott's figures is stunning. What it underscores is the need to cross-examine the evidence on which we base our overall judgment in this matter and to see where that judgment is most sensitive to such cross-examination—regardless of our starting point.

If you are disposed, as Lowe is, to suspect the motives or integrity of the bipartisan House panel, you need, in this case, to challenge the integrity of the Chernobyl Forum, which produced the 2005 report. The Chernobyl Forum comprised eight international agencies and three national governments and drew upon the contributions of 100 recognised international experts. Does this make it definitive? Perhaps not, but it must carry considerable weight.

The advocacy of James Lovelock

On the broader issue of the riskiness of nuclear energy, there is the opinion of world famous ecological campaigner James Lovelock. He wrote in 2004:

I am a Green and I entreat my friends in the movement to drop their wrongheaded objection to nuclear energy. Even if they were right about its dangers, and they are not, its worldwide use as our main source of energy would pose an insignificant threat compared with the dangers of intolerable and lethal heat waves and sea levels rising to drown every coastal city in the world....civilization

is in imminent danger and has to use nuclear—the one safe, available, energy source—now or suffer the pain soon to be inflicted by our outraged planet.

Never mind whether you believe the planet can be 'outraged'. 'Destabilised' will do the work. Never mind, either, whether or not you accept Lovelock's apocalyptic prognosis regarding the 'imminent danger' to civilisation. Here is a renowned environmental activist who believes that global warming is a dire reality and who, far from thinking that the use of nuclear energy is a 'very strange' response to this state of affairs, is urging his 'friends in the movement' to accept it. He goes so far as to assert that it is 'the one safe, available energy source', which, if true, would be seriously disconcerting, given the limited uses to which we can put it in the near future. But he does believe that it can and should be used.

Considerations such as these suggest that Lowe's passionate objection to the expansion of Australian uranium mining and exports is less soundly based than he believes. Of course, this analysis is merely indicative, not exhaustive. It illustrates, nonetheless, how our reasoning can aid us in navigating around the complexities of a debate, instead of either being overwhelmed by them or waving them aside and making a judgment based on only a few salient considerations.

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