

Energy in a Changing Climate

Magical Solutions

“Magical solutions” describe policies that are all about symbolism with little or no impact on real-world outcomes. The term was coined by political scientist Harold Lasswell 50 years ago according to Roger Pielke, a professor in the Environmental Studies Program at the University of Colorado (“[The folly of ‘magical solutions’ for targeting carbon emissions](#)”).

Australia had its own magical solution 20 years ago when then Prime Minister Bob Hawke claimed that “by 1990 no Australian child will be living in poverty”. Full of symbolism, but with no positive outcome.

Pielke says that setting unattainable emissions targets is focussing on magical solutions. He believes the UK target to achieve a 34 per cent emissions reduction below 1990 levels by 2022 is symbolism disconnected from reality. Pielke estimates that the UK would need to deploy the equivalent of 30 new nuclear power plants in the next six years just to get part way to the target. A clearly impossible task.

We are starting to see the same climate policy magical solutions in Australia popping up from all sides of politics including the government, the coalition and the Greens. In all cases, targets and timetables are set without considering the realism of the proposals.

The coalition’s advisors, Frontier Economics, are suggesting a policy to implement a steeply reducing emissions intensity baseline for the electricity sector over the next 20 years. The target would be to reduce the emissions intensity (the greenhouse gas emissions produced per unit of electricity generated) by more than two-thirds by 2030. This will only be remotely possible if all the brown coal and most of the black coal plants in Australia were retired and replaced with gas and the remaining black coal plants converted to carbon capture and storage (CCS).

At least in the UK, the new nuclear power plants are proven commercial technology even if the timescale is clearly absurd. CCS is still only in its pilot phase and will not be commercially ready until after 2020. If CCS fails to become commercially viable then the only chance of achieving Frontier Economics’ emissions intensity baseline would be a total conversion from coal to gas and even that wouldn’t achieve the 2030 target alone. This is certainly starting to sound like one of those magical solutions.

The Greens wanted the renewable energy target for 2020 to be lifted from 20 per cent to 30 per cent.

The Renewable Energy Target (RET) scheme is designed to encourage the installation of the lowest cost renewable electricity generation technology. Today that is wind power, so much of this increase in renewable energy will be wind. Unfortunately wind is one of the least attractive solution for generating electricity. The variable nature of wind means it provides

minimal additional capacity (hence minimal replacement of coal or gas) and increases the risk of grid instability. Just ask the Essential Services Commission of South Australia – the state with the greatest proportion of wind power. This problem already exists with the RET's 20 per cent target but would be made much worse by the Greens' "symbolic" 30 per cent.

Under the RET scheme, wholesale electricity buyers (electricity retailers and large users) will need to source a progressively increasing percentage of their electricity from renewable generators. Alternatives like solar, wave or tidal power are likely to be too expensive to be attractive to these wholesale buyers (compared to wind) so they will only make a limited contribution to the RET target.

Biomass like crop or wood waste could provide baseload but, like hydro, there is constraints on fuel supply so the contribution to the RET scheme will also be limited.

Geothermal is expected to provide baseload eventually. However, (as with CCS) the technology proposed for Australia is unproven commercially which makes it problematic to assess the final cost or the actual availability.

If geothermal also proves to be too expensive or hasn't delivered by 2020 then the electricity network operators could be faced with trying to cope with a significant proportion of the energy coming from intermittent sources - particularly if the Greens get their way. Such high intermittent percentages in isolated networks like we have in Australia are yet to be tested anywhere in the world. These magical solutions, where policy debate gets detached from reality, can finish up doing a great deal of harm.

Even if the networks could find a way to accommodate large amounts of intermittent generators, the practicality of installing the equipment is daunting. The RET target could require a 10-fold increase in wind power over the next 10 years. Leaving aside whether there are adequate suitable sites or available turbines, it takes time to implement new generators and extensive upgrades will be needed to the grid. I suspect that none of this had been seriously considered by the Greens when they proposed lifting the target even further.

The government's CPRS is also looking like a magical solution. It has the symbolism of targets and timetables while avoiding the reality of how the emission reduction targets might actually be achieved. That will be left to the market which could well disappoint when it comes to actually reducing emissions in Australia because it may be cheaper to buy emissions permits from overseas. Particularly if the emissions reduction targets are unrealistic to start with as seems likely. Buying permits created from overseas emissions savings does nothing for Australian emissions.

As Professor Pielke says, "climate policy has become about demonstrating one's strong feelings about the reality and urgency of climate change and not much about implementing policies that can actually work." A bit like Bob Hawke's strong feelings for social welfare reform back in 1987. It seems the stronger the feelings, the higher the targets demanded but the more unrealistic the proposals. Magical solutions indeed.

Written by Martin Nicholson and first published in On-line Opinion 27 August 2009