

19 April 2018

States can't go it alone on energy

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Published in Fairfax papers on 19 April 2018

<https://www.theage.com.au/national/states-can-t-go-it-alone-on-energy-20180417-p4za2x.html>

There's no such thing as green electrons or brown ones. Your TV and fridge run just the same on solar power from Queensland, wind power from South Australia (SA), hydropower from Tasmania or coal power from the Hunter Valley. Interstate sharing of electricity makes power cheaper and more reliable.

Since the system blackout in SA in September 2016, state governments across our National Electricity Market (NEM), which covers everywhere except Western Australia and the Northern Territory, have adopted parochial and isolationist "my state first" energy policies. While it is human nature to look after your own in a time of crisis, continuing this trend will result in more expensive and less reliable energy supply for all, and more costly emissions reductions.

The solutions to the major energy challenges we face will only be found in a collaborative approach.

South Australia leads the world in intermittent generation – wind and solar – and the adoption of cutting edge technology, such as the 100 megawatt Tesla battery at Hornsdale. Some have seen the fall of the Weatherill Government as the end of pro-renewables energy policy, but that's unlikely when renewables are the cheapest new-build generation. What the SA election might mark is a retreat from a high-watermark of federal versus state energy antagonism. A government investing in new electricity generation that competes with the private sector creates uncertainty - laws that give a state minister power to direct private generators only exacerbate that.

A state attempting to direct flows on an interconnector, a role already assigned to the Australian Energy Market Operator (AEMO), risks us sliding into some sort of weird state energy trade war. A Trump-like approach cannot possibly work.

It is unsurprising that when SA demand is high but wind output is low, as we saw multiple times over the summer, they rely on electrons from Victoria via the Heywood interconnector.

This is not policy failure; it's exactly how a connected, national system should work. As our generation mix inevitably changes, each state attempting to install enough gas turbines and mega batteries to ensure they have sufficient home-grown supply every hour of every day of the year would come at a significant extra cost for Australian homes and businesses.

Analysis by the CSIRO clearly demonstrates that there will continue to be geographic differences in the generation mix between and within States. This ebb and flow of generation capacity across the country was one of the key reasons for establishing the NEM in the first place.

The only electricity future that makes sense for Australia is a more connected future. A recent cross-party federal committee report, *Inquiry into modernising Australia's electricity grid* was a welcome exercise in bipartisanship; recognition that a consensus-based approach is essential if we are to successfully navigate the transformation. A key recommendation is for AEMO to ascertain whether we need additional interconnectors or additional transmission as part of planning for a future of new renewable energy zones.

AEMO recognises this challenge and is already consulting on how to best plan for the transition to a low emissions future. The Integrated System Plan, a product of the Finkel Review, is studying the need for the entire system, not just the grid, to be better coordinated.

Improved network connections must be part of the solution. But building new interconnectors and new transmission lines to renewable energy zones will come at a cost, offset by reductions in wholesale costs due to more competition. Investment should only occur where this infrastructure is essential to ensure safe and reliable supply and where the consumer benefits outweigh the costs.

Most Australians will neither know nor care what proportion of their electricity bill comes from generators, networks or retailers, they just want reliable power at an affordable price. Network prices have been falling across the country over the past three years, but this is no comfort to those who have experienced increases in their bills.

There already exists a method for evaluating whether a new transmission line should be built – the Regulatory Investment Test for Transmission, or RIT-T. You might think the RIT-T should green light new infrastructure that delivers benefits to customers that outweighs the cost, but often that's not the case. The test was designed for a different time, where steady and predictable demand growth would drive incremental system growth; a far cry from what's ahead of us.

This means there are investments that can lower Australians' power bills that aren't being made. As we re-orient our energy sector towards consumer outcomes, it's no surprise the NSW Government is suggesting the RIT-T needed streamlining and the energy rule maker is now looking at options to do just that.

Australia's NEM has been described as the world's biggest machine. We will all be worse off if we have wind farm after wind farm unable to connect to this machine due to capacity constraints. It will be an inefficient and costly outcome if network congestion means solar generators large and small are blocked from injecting into the grid.

Our energy sector faces huge challenges. Some are saying the NEM is broken – but a Brexit-style approach in which states disconnect certainly won't work. We need long-term planning, based on what customers really value, to inform strategic policy and timely investments. The best results can only come from us all working together and that has to start at the COAG Energy Council this week.