

Submission to the Senate Select Committee - Fair Dinkum Power

Energy Networks Australia

15 February 2019

Energy sector needs strong policy direction

Energy Networks Australia welcomes the opportunity to provide a submission responding to the Senate Select Committee's Inquiry into Fair Dinkum Power.

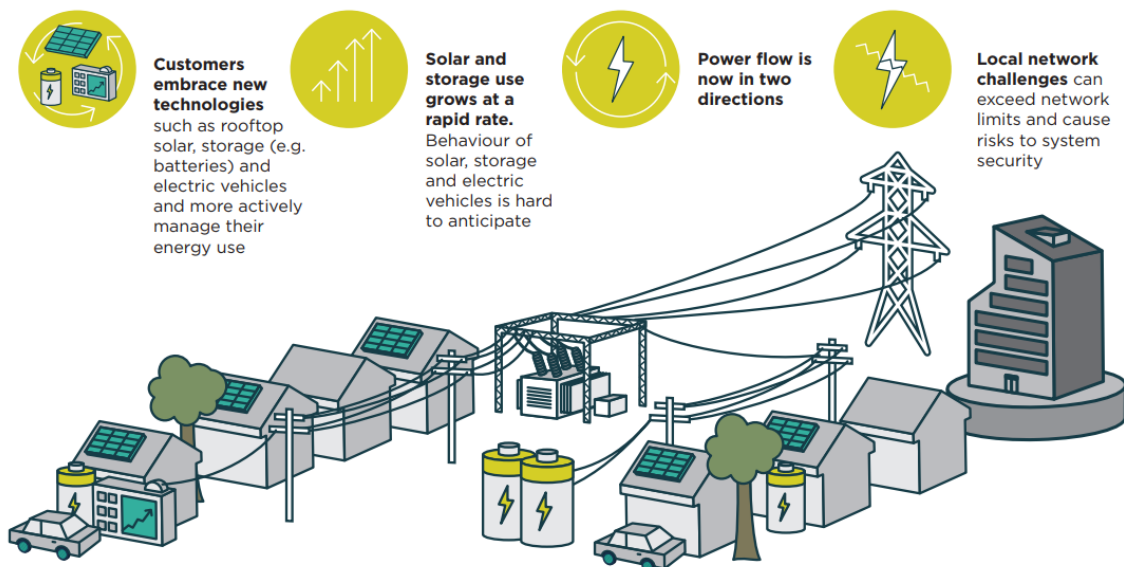
Energy Networks Australia is the national industry body representing businesses operating Australia's electricity transmission and distribution and gas distribution networks, with 24 member companies providing more than 16 million electricity and gas connections to customers across Australia.

Energy Networks Australia and its members recognise the importance of system reliability, security and affordability for all consumers.

The energy transformation

Australia is in the midst of an energy revolution – and it's rapid. What was once a network system of poles, wires and pipes operating a one way energy supply to a customer is evolving into a two-way system, where consumers can export power to the grid via their own mini generation systems – rooftop solar and, increasingly, batteries.

Changes in the current landscape



There has been enormous growth in household solar. In 2008, there were just 14,000 solar PV systems installed on our rooftops. Today, we have about two million. At a commercial scale, as at the end of 2017, there were more than 50 large-scale wind and solar projects under construction or due to start, representing more than 5,300 MW of new generation. This rapid technological change poses significant opportunities but



also challenges for networks to manage the safe and reliable integration of all these distributed energy resources into the grid.

Connecting distributed energy resources

Energy Networks Australia is currently collaborating with the Australian Energy Market Operator in developing a co-ordinated approach to improve the electricity system as it transforms to meet the changing demands placed on the grid. The joint project, called 'Open Energy Networks', has undertaken significant consultation aimed to identify how to best transition to a two-way grid that allows better integration of Distributed Energy Resources (DER), leading to better outcomes for all customers.

As part of this project, and our work more broadly, we have been looking at how to best integrate household solar and storage, including electric vehicles, into the grid. We are also considering the role of hydrogen production units as a means to balance the grid. Overall, we are looking at a systems approach linking electricity, gas and hydrogen fuels to achieve the best outcomes for customers.

Policy framework needed

Energy Networks Australia has a policy wish-list to help bring much needed stability and long-term focussed policies and regulation to deliver best outcomes for customers.

1. Fairer network pricing

Networks traditionally operated as a one-way flow of electricity from generators to customers, but increasingly are becoming a two-way platform for generators large and small to trade their electricity. The Electricity Network Transformation Roadmap estimates that \$16 billion can be saved by implementing cost-reflective network tariffs. While end consumers should be given choices and options around their pricing structures, it is essential we evolve how we charge for the network to reflect not only how much electricity our customers use, but when they use it. Network costs are driven by usage at peak times. Smarter price signals that reflect this will be fairer for all and ensure that a much wider range of customers participate and benefit from the two-way flow of electricity in the modern age of energy.

2. A more connected future

Australia's energy sector is undergoing unprecedented change. Coal generation that supplies the equivalent of NSW's entire demand is set to retire by 2035 and must be replaced with new generation, which is unlikely to be built in the same location. New generation is increasingly from variable renewable sources such as wind and solar that are not always available on-demand to meet customer energy needs. To ensure Australia's energy supply is affordable, reliable and secure into the future, the National Electricity Market (NEM) will need diverse generation and load sources, storage and dispatchable on-demand energy. Greater interconnection across the NEM can support these outcomes.

The Australian Energy Market Operator's Integrated System Plan (ISP) is a whole-of-system coordination document which identifies where transmission infrastructure is needed most to support expected future generation. We would like to see COAG support the inclusion of an actionable Integrated System Plan framework into the National Electricity Rules, preferably so that the next ISP, which is already under development, is under an appropriate rule governance framework.

3. Distributed Energy Resources

We must design the systems to manage an increasingly distributed network to achieve the best long term outcomes for customers. The optimal system to manage a two-way network is one where network businesses maintain their local networks and aggregate their information to the market operator for system planning and market operation purposes. This allows network businesses to design interfaces that best meet their customers' two-way needs and manage their network constraints locally.

4. Smart meter rollout

The current smart meter rollout across New South Wales, Queensland, South Australia, Tasmania and the Australian Capital Territory has not been a positive experience for many customers. The current approach sees smart meters installed on an arbitrary replacement basis, meaning most customers only get a smart meter when their current meter is at the end of its life. The many system benefits from smart meters would be maximised by replacing smart meters on a targeted basis in areas where they are needed, such as in high solar penetration areas. This, combined with ensuring distributors have better access to the smart meter data needed to run a smart grid, would mean voltage and frequency levels could be better maintained, ensuring safer appliances and more customers could safely connect solar and batteries to the grid.

5. Distributor-led Stand Alone Power Systems

The benefits of Stand Alone Power Systems (SAPS) are unquestionable. They have the potential to lower prices for all customers and improve reliability for those at the edge of the grid. A regulatory regime that supports networks' capacity to take customers off grid in appropriate locations (such as some remote and regional areas) and provide an alternative SAPS solution has the potential to lower costs for all customers and improve local reliability of power supplies.

6. Hydrogen

The COAG Energy Council is progressing a national hydrogen policy under the guidance of Australia's Chief Scientist Dr Alan Finkel. Hydrogen has enormous potential as a zero-emission energy source, produced carbon-free from excess renewable energy during sunny and windy days when generation is high and demand is low. Hydrogen offers the opportunity for new export markets, domestic use in existing gas networks and importantly, as large-scale energy storage, providing dispatchable power to back up non-synchronous generation. Hydrogen is already in use in northern Europe for domestic energy supplies and as fuel for freight and domestic public transport.



The facts show that a future where gas and electricity work in harmony produces better outcomes than either could achieve in isolation.

7. Regulation focused on long-term outcomes

The national energy objective, which is the summation of what all the rules and regulations aim to achieve, seeks efficient investment, operation and use of electricity and gas services for the long term interest of consumers. It is imperative that this objective and clear evidence is the prime consideration when regulatory decisions are made.

Most importantly, Australia needs a consistent, stable energy policy framework that encourages and supports the investment the system needs to safely and affordably manage the massive and rapid transformation that is underway.