



Energy  
Networks  
Australia

# IMPLEMENTING THE ELECTRICITY NETWORK TRANSFORMATION ROADMAP

**Released in April 2017, The Energy Network Transformation Roadmap is helping pave the way to support the huge changes required of Australia's electricity system as we modernise, decarbonise and support customers as they embrace new technologies.**

The Roadmap identified the complex challenges facing Australia's electricity system and set out how networks must innovate and adapt to help achieve a secure, reliable, affordable energy system. Based on extensive research and consultation, the implementation program is now well underway for the Roadmap's 45 Milestones and 158 Actions.

Since the Roadmap was released, the fast-moving energy landscape has shifted. There have been advances in the environment that have required rapid, but well-planned responses.

The most notable advances have been as a consequence of the *Independent Review into the Future Security of the National Electricity Market*, chaired by Dr Alan Finkel. This blueprint echoed many of the Roadmap's findings, and its recommendations and the subsequent establishment of the Energy Security Board have had a material effect on the Roadmap's implementation.

This is particularly evident in the work of the Australian Energy Market Operator (AEMO) on an Integrated System Plan and AEMO's project with Energy Networks Australia to co-design the development of an 'open energy networks' model to enable the effective integration and orchestration of technologies such as household solar and batteries into the grid.

This year's addendum to 2017's Roadmap aims to build on the significant engagement and collaboration already achieved across a range of deliverables from consumer engagement, 'NewReg' approaches, distributed energy resource connection guidelines and the development of the 'open energy networks' model.

A key area where progress has been limited is the transition to smarter and fairer pricing for electricity. As the Roadmap identified, changing the way we charge for electricity is an enabler of many further reforms that can save customers billions over coming decades. Energy networks around the country are continuing to focus on electricity pricing as a priority.

Energy Networks Australia is supporting network businesses to respond to the evolving environment with the agility, innovation and collaboration required to secure Australia's energy future.

 <b>CUSTOMER ORIENTED ELECTRICITY</b>	<p><b>Improve trust with customers</b> through better engagement, customised services and reform of customer protection frameworks.</p>
 <b>POWER SYSTEM SECURITY</b>	<p><b>Implement new frameworks and services for achieving system security</b> with diverse generation and energy technologies and retain focus on physical and cyber security.</p>
 <b>CARBON ABATEMENT</b>	<p><b>Secure a stable carbon policy</b> including a trading scheme for generator emissions, enabled by agile network connection and integration of large and small technologies.</p>
 <b>INCENTIVES &amp; NETWORK REGULATION</b>	<p><b>Incentivise efficiency and innovation</b> through: implementing fair and efficient demand based network tariffs; enabling standalone systems and micro-grids, and; modernising regulation and competition frameworks.</p>
 <b>INTELLIGENT NETWORKS &amp; MARKETS</b>	<p><b>Develop essential information tools for a cost effective integrated grid</b>, including: open standards, extended monitoring, advanced planning and feeder hosting analysis, and the mapping and locational valuation of distributed energy resources.</p>

# Foundation Phase: 2018 Report Card

KEY ACTIVITIES		FOCUS AREAS	
2017	2018	2018	2019
 <p><b>CUSTOMER ORIENTED ELECTRICITY</b></p>	<p><b>2017/18 Key Activities:</b></p> <ul style="list-style-type: none"> <li>» Establishment of a biannual national forum for networks and key stakeholders to share engagement best practice. The first of these took place in May 2017 and included presentations from the Consumer Challenge Panel, Energy Consumers Australia (ECA) and the Australian Energy Regulator (AER);</li> <li>» Institution of a consumer engagement specialist group to share experience and expertise;</li> <li>» Creating the Energy Consumers Australia Energy Network Consumer Engagement Awards. The Inaugural award winners, announced at the Energy Networks Australia Annual Dinner in November 2017, were ElectraNet and Mondo Power.</li> </ul>	<p><b>2018/19 Focus areas:</b></p> <ul style="list-style-type: none"> <li>» Strengthening collaboration between Energy Networks and advocates through the biannual forums;</li> <li>» Research and information sharing to improve data analytics capabilities and understanding of diverse customer needs.</li> </ul>	
 <p><b>POWER SYSTEM SECURITY</b></p>	<p><b>2017/18 Key Activities</b></p> <ul style="list-style-type: none"> <li>» Establishment of the Energy Security Board in August 2017, as proposed by Energy Networks Australia and recommended by the Finkel Review;</li> <li>» Delivery of practical solutions and outcomes for better connecting generators to the grid;</li> <li>» ARENA and AEMO awarded funding of \$35.7M for ten pilot projects under the demand response initiative to manage electricity supply during extreme peaks. The initiative will deliver 200 megawatts (MW) of capacity by 2020;</li> <li>» Produced updated system guidelines for modelling generator connections to strengthen system planning and security;</li> <li>» Publication of AEMO's System Restart Ancillary Services Guideline;</li> <li>» Delivery of the Reliability Panel's Frequency Operating Standards Review (stage one) and the AEMC's Reliability Frameworks Review.</li> </ul>	<p><b>2018/19 Focus Areas:</b></p> <ul style="list-style-type: none"> <li>» Continued innovation to deliver additional Finkel recommendations, including a review of generators' fast frequency response and capability;</li> <li>» 'Further strengthening of the sector's cyber security capability';</li> <li>» AEMO's Generator Technical Performance Standard rule change progression;</li> <li>» Establishment of improved forecasting capability to anticipate network constraints.</li> </ul>	
 <p><b>CARBON ABATEMENT</b></p>	<p><b>2017/18 Key Actions:</b></p> <ul style="list-style-type: none"> <li>» Industry contribution to the design of the National Energy Guarantee;</li> <li>» Commencement of an Energy Networks Australia strategy for the decarbonisation of Australian gas networks utilising hydrogen;</li> <li>» Establishment of the Future Fuels CRC including \$26M Commonwealth Government funding.</li> </ul>	<p><b>2018/19 Focus areas:</b></p> <ul style="list-style-type: none"> <li>» Provide leadership and support to the Future Fuels CRC;</li> <li>» Develop a plan outlining the pathway to a hydrogen future to support decarbonisation of gas networks.</li> </ul>	
 <p><b>INCENTIVES &amp; NETWORK REGULATION</b></p>	<p><b>2017/18 Key Actions:</b></p> <ul style="list-style-type: none"> <li>» Energy Networks Australia collaborated on a 'NewReg' project with the ECA and the AER (including a trial by AusNet Services) focused on placing customer outcomes at the centre of network proposals and regulatory processes;</li> <li>» Commenced preliminary exploration of TOTEX as an alternative regulatory model;</li> <li>» The AEMC's review of future economic regulatory frameworks examined international experiences of TOTEX approaches;</li> <li>» Developed a review of network tariff strategies that could be used to support the transition to fairer electricity pricing.</li> </ul>	<p><b>2018/19 Focus areas:</b></p> <ul style="list-style-type: none"> <li>» Continuation of 'NewReg' trial and incorporation of learnings into wider collaborative project;</li> <li>» Supporting members to build public and political consensus around the move to pricing structures that support the evolving energy system with a customer-centric focus;</li> <li>» Commencement of consultation with key stakeholders on 'NewReg';</li> <li>» Undertake stakeholder dialogue regarding TOTEX and potential network risks through the development and release of public discussion papers.</li> </ul>	
 <p><b>INTELLIGENT NETWORKS &amp; MARKETS</b></p>	<p><b>2017/18 Key Actions:</b></p> <ul style="list-style-type: none"> <li>» Energy Networks Australia launched a collaborative project with AEMO to co-design a framework for effective integration of Distributed Energy Resources (DER) into the National Electricity Market (NEM);</li> <li>» Energy Networks Australia has started development of a suite of National DER Connection Guidelines that sets out the framework, principles, approach and technical settings to better facilitate the efficient integration of distributed energy resources into the grid;</li> <li>» Trials and projects established to orchestrate DER through the distribution networks across Australia, helping to keep the power on during extreme weather or disturbances in the network, whilst enabling cost savings to customers.</li> </ul>	<p><b>2018/19 Focus Areas:</b></p> <ul style="list-style-type: none"> <li>» Continued collaboration between Energy Networks Australia and AEMO to develop a White Paper identifying a framework for the establishment of open energy networks which will enable distribution level coordination and optimisation of DER;</li> <li>» Development and publication of guidelines detailing specific technical requirements for network connection of DER for network service providers, to be based on the Framework and Principles Guideline due in 2018;</li> <li>» Continue to work with Standards Australia and other key stakeholders to better align Australian technical standards with international equivalents that are more open and enable interoperability.</li> </ul>	