

EXECUTIVE SUMMARY

Australia's electricity system is in transition. There is no going back from the massive industrial, technological and economic changes facing our electricity system. No country is immune to the change. What distinguishes countries' approaches to the transition is how well-prepared they are in ensuring a secure, reliable and affordable electricity system.

We are at a critical turning point. Managed well, Australia will benefit from a secure and reliable energy future. Managed poorly, our energy future will be less secure, more unreliable and potentially very costly. Governments have made commitments to a lower emissions future but the pathway is blocked by uncertainty about how to get there. If we don't take immediate action, or even if we continue as we have been, Australia risks being left behind.

This report recommends a way forward. This *Blueprint for the Future Security of the National Electricity Market* focusses on four key outcomes for the National Electricity Market (NEM): **increased security, future reliability, rewarding consumers**, and **lower emissions**. These outcomes will be underpinned by the three pillars of an **orderly transition, better system planning** and **stronger governance**.

Australia needs to **increase system security** and **ensure future reliability** in the NEM. Security and reliability have been compromised by poorly integrated variable renewable electricity generators, including wind and solar. This has coincided with the unplanned withdrawal of older coal and gas-fired generators. Security should be strengthened through **Security Obligations** for new generators, including regionally determined minimum system inertia levels. Similarly, reliability should be reinforced through a **Generator Reliability Obligation** implemented by the Australian Energy Market Commission (AEMC) and the Australian Energy Market Operator (AEMO) following improved regional reliability assessments. These obligations will require new generators to ensure that they can supply electricity when needed for the duration and capacity determined for each NEM region.

The reliability of Australia's future electricity system will be underpinned by an **orderly transition** that integrates energy and emissions reduction policy. All governments need to agree to an **emissions reduction trajectory** to give the electricity sector clarity about how we will meet our international commitments. This requires a **credible and durable mechanism** for driving clean energy investments to support a reliable electricity supply. Governments need to agree on and implement a mechanism as soon as possible. Ongoing uncertainty is undermining investor confidence, which in turn undermines the reliable supply of electricity and increases costs to consumers.

This report recommends a **Clean Energy Target** as the mechanism for the electricity sector. As part of the orderly transition, generators should also be required to provide **three years' notice of their intention to close**. This will provide time for replacement capacity to be built and for affected communities to plan for change. AEMO should also publish a **register of expected closures** to assist long-term investor planning.

Better **system planning** should see AEMO having a stronger role in planning the future transmission network, including through the development of a **NEM-wide integrated grid plan** to inform future investment decisions. Significant investment decisions on interconnection between states should be made from a NEM-wide perspective, and in the context of a more distributed and complex energy system. AEMO should develop a list of **potential priority projects** to enable efficient development of renewable energy zones across the NEM.

The transition presents significant opportunities to foster innovation. The deployment of new technologies and improved integration of variable renewable electricity generators needs to be supported by **better data, early testing of technology, cyber threat awareness** and **workforce preparedness**. As we increase our reliance on variable renewable electricity generators, AEMO must have access to the best available **weather impact and forecasting** capabilities. Improved confidence, understanding and management of the NEM will be reinforced by greater data transparency, including a **data dashboard** for power system information.

Governments and the community will have better visibility of emerging risks through **stronger governance**. The COAG Energy Council should agree on a **strategic energy plan** for the NEM, building on the recommendations of this blueprint, reflecting government priorities. A new **Energy Security Board** should drive implementation of this blueprint and coordinate whole-of-system monitoring of security, reliability and planning across the functions of our market bodies. **Faster rule change processes**, a **better funded regulator** with **enhanced market monitoring** capabilities and **an operator with a broader planning role** will help drive better overall system outcomes.

Gas plays an essential role in providing secure and reliable electricity for Australians. To help address problems caused by rising prices and reduced availability, AEMO should be given **expanded visibility on gas contracts** so that it can plan responses to shortages. Governments should also work with communities to encourage **safe exploration and production**, based on best available evidence, performance data and appropriate financial rights for landholders.

Consumers are at the heart of the transition. More attention should be paid to how we can best **reward consumers** for **demand management** and the power they generate through **distributed energy resources** like rooftop solar photovoltaic. When combined with **improved energy efficiency**, this will help reduce consumers' electricity bills. The future grid will be more distributed, but its security and affordability will be strengthened through smarter grids, meter data information and clear data ownership rules to promote new ways of trading, including a **demand response mechanism**.

The Panel is confident that adoption of the blueprint will ensure the optimal functioning of Australia's electricity system into the future.