ENERGY SECURITY BOARD

At a glance: Electricity market redesign advice publicly released (26 August 2021)

The Energy Security Board (ESB) welcomes today's release of its recommendations for the redesign of the national electricity market (NEM). These were submitted to energy ministers on the Energy National Cabinet Reform Committee (ENCRC) at the end of July.

ESB Independent Chair, Dr Kerry Schott AO, said the release of the detailed recommendations enables informed public debate about the package of interrelated reforms and will be of interest to industry and consumers and help inform future decisions by energy ministers and National Cabinet.

"The release of our complete advice should end the guesswork about certain aspects of the proposed reforms which has certainly not enabled an informed debate." Dr Schott said.

"This is not one big bang reform for the redesign of the electricity market. It is a set of interrelated measures to be implemented and considered over time. The reforms aim to deliver reliable, affordable, lower emissions electricity for consumers and to keep the lights on as the system decarbonises."

Making way for new large-scale generation

The ESB is recommending four key pathways for reform to manage both the orderly exit of old technologies (especially ageing coal fuelled generation) and pave the way for new technologies.

"The job is to get firm and flexible supply that is affordable." Dr Schott said.

"To achieve that we need improved information, harmonised jurisdictional schemes, orderly generator exit and timely entry of investment in new resources.

"We also need a capacity mechanism alongside the energy only market to bring forward the right mix of firm, flexible and variable resources when needed. That capacity might come from pumped hydro, batteries, wind, gas or coal, with those most able to be fast and flexible most likely to be relied upon and most likely to receive revenue.

"Participants need sufficient incentives and confidence to invest in new capacity. While that confidence is present for wind and solar generation, along with some battery storage, it is not evident for pumped hydro or gas peakers that can provide 'deep' storage on the probably few occasions when it is needed.

"Jurisdictions need assurance that participants will meet the power system's physical needs at all times and if that assurance is not there, governments will intervene (as they have done) to provide missing gas peakers and pumped hydro as thermal coal exits."

Recommendations include:

- Providing governments with tools to organise extra supply when they decide more 'insurance' is needed through a new opt-in strategic reserve or by triggering the current retailer reliability obligation (RRO), alongside principles to better align investment nationally.
- Incentivising the market to bring forward the right mix of firm, flexible and variable resources, including storage, through a new medium-term capacity mechanism.
- Increasing transparency to the market by requiring generators to provide more information about early exit and power supply status.
- Enhancing data capacity to enable tracking and forecasts of consumer choices, demand response, value of reliability, and better understanding of the wholesale market and changing contracting behaviours.

Connecting renewables to the grid

The ESB recommendations are also about getting new renewable generation to consumers.

"We need to build new transmission projects and we are already well progressed down this path through the actionable Integrated System Plan (ISP). New generation investment is 27% ahead of the ISP step-change scenario and the delivery of new transmission must meet the target dates" Dr Schott said.

"Nevertheless, even if it were physically possible to build enough transmission to connect all new generation projects located in increasingly remote locations, the costs to consumers would be unjustifiably high.

"A new efficient grid network will have some congestion. But the level of congestion needs to be managed. The benefits of new renewable generation diminish as the energy generated from new solar or wind farms either goes to waste or displaces existing renewable energy. These changes will help ensure that the generation that is being built can be operated successfully rather than building new projects that can't connect to the grid and/or force those already there to be constrained. The reforms favour long-term operators over short-term speculators."

The ESB recommendations complement planned transmission projects in AEMO's ISP and the development of Renewable Energy Zones (REZs) with a congestion management mechanism to encourage more generation into renewable energy zones (and the limited other places) where transmission costs can be shared and firm access secured.

- Supporting the development of renewable energy zones through a consistent NEM-wide framework including principles to manage, planning, connections, access, funding, and economic regulation.
- Encouraging generators and others to locate in renewable energy zones (and the limited other ideal locations) via a dual mechanism of congestion charges and rebates.
- Identifying ways to maximise the timely and efficient delivery of major poles and wires (including ISP) projects.
- Enabling effective locational forecasting to help plan and prioritise transmission augmentation.

New modelling done for the ESB has been released recently to demonstrate the extent of future congestion challenges – link to separate FTI media release.

People's generation – rooftop solar and other distributed energy resources

Properly harnessing latent demand side flexibility and solar PV will make the grid more productive, cutting both costs and emissions.

"The benefits of harnessing the power of rooftop solar, batteries and new technologies is clear," Dr Schott said.

"These reforms will make it easier and more seamless for consumers to benefit more from these resources and manage their demand in return for financial rewards."

- Resolving identified technical and market issues which slow down and make it harder for customers and the grid to get the full value of distributed energy resources. A detailed 3-year implementation plan has been mapped out with industry and consumers.
- Opening up new ways for customers with solar, batteries or smart appliances to be rewarded for responding to system needs, backed up by emergency tools to help keep the grid stable.
- Putting fit for purpose consumer protections in place that are based on a new risk assessment tool to assess potential harm to customers associated with new products and services.

Strengthening the power system

Lack of essential system services has cost consumers a lot of money in recent years as a result of expensive interventions that have had to be made by the operator to keep the system stable. New technical backups (frequency, inertia, system strength, operating reserves) are needed urgently with the increasing wind and solar (asynchronous) generation and falling levels of coal-fired (synchronous) generation.

Dr Schott said new technologies like large-scale batteries and flexible demand will help make the system stronger.

“We must restore confidence in the system, avoid high running costs for consumers, and value the capabilities of batteries and other innovations,” she said.

- Supporting availability and investment in the four essential system services - frequency, operating reserve, inertia, and system strength - through actions already underway.
- Providing new tools to help AEMO manage the complexity of scheduling these essential system services as the resource mix on the grid changes.
- Further monitoring of market conditions to identify the need for longer term reforms like the further bundling of system services and an integrated ahead market or development of an inertia spot market.
- Providing critical data for monitoring and forecasting of required services weather-driven generation and demand.

The ESB will continue to work with the Australian Energy Market Commission (AEMC), Australian Energy Market Operator (AEMO) and the Australian Energy Regulator (AER) to progress reforms to the National Electricity Rules while the broader advice is considered by governments.

About the Energy Security Board

The Energy Security Board reports to the Energy National Cabinet Reform Committee (ENCRC). The ENCRC and the energy ministers’ meeting are ministerial forums for the Commonwealth, States and Territories to work together in pursuit of national energy reforms. The ENCRC and energy ministers’ meeting were established following cessation of the Council of Australian Governments (COAG) in May 2020.

The Energy Security Board has five members:

Dr Kerry Schott AO	Independent Chair
David Swift	Independent Deputy Chair
Clare Savage	Chair of the Australian Energy Regulator
Anna Collyer	Chair of the Australian Energy Market Commission
Daniel Westerman	CEO and Managing Director of the Australian Energy Market Operator

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