



Energy market reform shortlist released

The Energy Security Board (ESB) today released a shortlist of options for the redesign of the National Electricity Market (NEM)

The options address the influx of renewables, and retirement of coal generation in some jurisdictions, which are pushing the existing energy system to its technical limits.

The work is in response to a request from energy ministers in March 2019.

A final round of consultation will happen over the next few months prior to the ESB providing advice to the Energy National Cabinet Reform Committee by mid-2021.

ESB Independent Chair, Dr Kerry Schott AO, said it is impossible to overstate the scale and pace of change in Australia's electricity sector. Reforms are needed to address it.

"The rapid spread of large-scale wind and solar, along with rooftop PV, across Australia means our energy system is experiencing the fastest and most substantial change in the world," Dr Schott said.

"We are already exceeding the step change scenario forecast in the Integrated System Plan (ISP) in 2020. Our generation mix is changing fast, but the physics of our power system cannot change in the same way.

"We are preparing the advice Ministers need to enable the critical decisions needed for an affordable, reliable and secure electricity system that can ultimately operate at net zero emissions."

The *post 2025 market design options paper* narrows the options under consideration following consultation with industry and governments since the release of the *post 2025 market design directions paper* in January 2021. It provides coordinated options to address four critical areas:

- **Preparing for old coal retirement** by facilitating the timely entry of new generation, storage and firming capacity, and an orderly retirement of ageing thermal generation. Options include new ways to manage early exits and drive investment in new resources including: modifications of the new retailer reliability obligation (RRO) which requires retailers to buy advance contracts to fill supply gaps, a possible new operating reserve, and long-term transition cost monitoring.

Reliability means having enough generation, energy storage, and demand-side response to supply consumers' needs at all times. We also need the transmission capacity to deliver that supply to customers' premises. We are particularly looking for your views on a potential NEM-wide, common approach to integrate jurisdictional underwriting and investment schemes for new investment.

- **Backing up power system security** by ensuring the resources like inertia, voltage and frequency control services are available and measures are in place to manage more variable renewable energy without AEMO intervention. Feedback is being sought on a possible new operating reserve (as above) and/or the development of other new procurement mechanisms to keep the technical characteristics of the power system within safe limits. This is the most urgent issue in the NEM. It is being dealt with through the rule change process at the AEMC which is coordinating with the ESB on this work.

Security is all about keeping the lights on by maintaining the power system's technical parameters like voltage, frequency and current flows under control and within safe limits. Change needs to be disciplined, making the most of innovations like batteries, and demand management. This is an eye-glazing, highly technical area of reform, which is absolutely fundamental to the building of sustainable, increasingly renewable power supply without imposing unnecessary costs on consumers.

- **Unlocking benefits for all energy consumers of recent changes including solar PV, batteries, and smart appliances.** Many consumers can access new ways to receive and use energy and be rewarded for doing so flexibly for the benefit of all. New consumer protections and technical standards would be combined with tariff and pricing reforms, management of minimum demand and further investigation of flexible trading arrangements. The options are being developed to enable two-way electricity flows on the network to address technical problems and improve access for those with solar, batteries or electric vehicles. Lower overall system costs, including that for consumers who don't have solar PV should result.

We are concerned about the side-effects of high penetration of rooftop solar including those technical problems which stop solar being used most effectively because of issues like poor voltage control. We are already changing the way the power system is managed to help fix those problems. This area of reform is marked by great opportunity – we need to make sure new standards and new consumer protections are introduced alongside this change.

- **Opening the grid to cheaper large-scale renewables** in both the short and longer term by putting generation and transmission together to minimize the costs of transformation. Building on AEMO's actionable Integrated System Plan (ISP) to ease congestion on the grid and get renewables to market, the next immediate reforms include facilitating the establishment of priority renewable energy zones (REZs) with a consistent framework to promote investment, and allow generators to fund shared assets. Given the complexity involved, medium-term access reform options are likely to be necessary before a long-term shift to locational marginal pricing and financial transmission rights.

This transmission network reform creates opportunities for jurisdictions to remove barriers in the way of new, renewable generation – encouraging the cheapest, greenest combination of energy into the market.

Dr Schott said rather than a single big bang reform, the pathway developed accommodates different jurisdictional schemes and priorities, while reflecting the urgency of the situation.

“There is no doubt that policy changes are needed to the existing market design and the decisions that Ministers make mid-year, and in the future, are critical to reaching an affordable, reliable and secure electricity system that is able to operate at net zero emissions,” Dr Schott said.

“The physics of power are complicated to manage in practice as the system changes; and every state and territory has different priorities, goals and risks in terms of price, reliability and emissions.

“We are taking a pragmatic approach to clearing the path for technology to make people's lives easier while keeping the lights on at the lowest possible cost. Some measures are

immediate or already underway, others are near-term but require further development, and others will happen if and when they are needed,” Dr Schott said.

“This is the best chance we have of setting up Australia’s energy system for the future. We can’t kick these challenges any further down the road.”

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
Drew Clarke	Chair of the Australian Energy Market Operator

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