POST 2025 ELECTRICITY MARKET DESIGN

OPTIONS PAPER FOR CONSULTATION: 30 APRIL 2021

ENERGY SECURITY BOARD

THERE'S TIME TO BUILD A STRONGER, CLEANER POWER SYSTEM… IF WE START NOW

Renewables penetration in Australia is massive and leading the world. Large-scale wind and solar, along with rooftop PV, is spreading so fast the power system is reaching its technical limits. Great opportunities lie ahead. We just need the right consumer protections along with strong, deliberate policy to connect new generation securely, and keep the lights on at the lowest cost possible.

We report back to energy ministers in mid-2021 with final recommendations for a redesigned electricity market.

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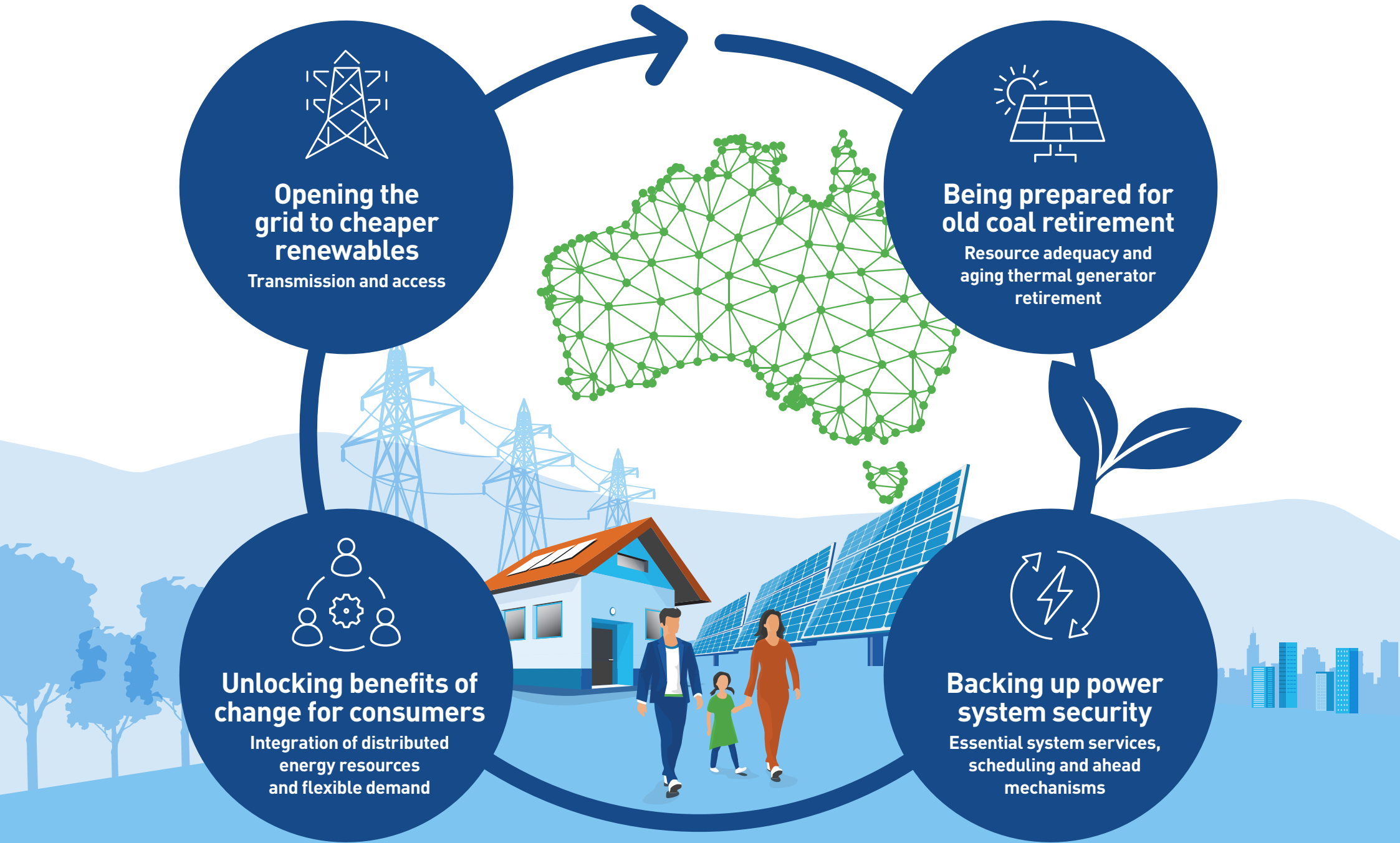
Getting new generation onto the grid is vital to enable orderly exit of coal-fired power. Wind and solar is being built so fast, in so many places, that networks are overloaded, slowing down the grid and stopping new energy technologies reaching consumers. We have already introduced whole of system transmission planning (AEMO's actionable integrated system plan). We propose new ways to bridge the gap between immediate work being done to implement renewable energy zones that can provide for easier connection of new generation and, then, in the medium term, make arrangements to manage network congestion between renewable energy zones and customers.

Australia will replace most of its generation by 2040. This rollover is being accelerated by government investment schemes. Cheaper renewables are coming to market faster, cutting spot and contract prices and driving less economic generation (mainly coal powered) to close. We propose new ways to manage early exits, and drive investment in new resources including modifications of the retailer reliability obligation which requires retailers to buy advance contracts to fill supply gaps, a possible new operating reserve and long-term transition cost monitoring.



Along with supply-side variability linked to weather dependent generation there's rising variability on the demand side with uptake of rooftop solar, batteries and smart appliances. Looking ahead we'll see all sorts of services rewarding people for changing demand patterns or contributing to innovations like community batteries. We propose consideration of consumer protections to keep pace with change, and solutions for local congestion/stability issues so more home-made solar power can help lower system costs for everyone.

All day, every day the system must balance electricity supply and demand to keep the lights on. That's harder to do when more generation is weather driven, especially when the aging coal fleet is less dependable. Security can no longer be taken for granted. We propose a new framework to secure essential services like frequency and voltage control and inertia, and developing new procurement mechanisms to keep the technical characteristics of the power system within safe limits.