

DRAFT ANNUAL MARKET PERFORMANCE REVIEW

The Australian Energy Market Commission's Reliability Panel today published its annual review of the reliability, security and safety of the national electricity market for the period from July 2015 to June 2016.

The Reliability Panel's latest report highlights implications for reliability and security as the market transforms from conventional generators powered by coal and gas, towards new technologies such as wind farms, solar panels and battery storage.

The Panel highlights projections from the Australian Energy Market Operator that show there is a risk of insufficient generation to meet demand in the future. This underlines the need for market responses including more investment in generation and demand-side participation.

Reliability Panel Chairman, Neville Henderson, said the withdrawal of synchronous coal-fired and gas plant was being partially offset by the entry of more intermittent wind and solar generation, but this trend needed to be viewed with caution. Looking ahead, a supply shortfall is forecast for Victoria, South Australia and New South Wales in the short to medium term if sufficient additional investment does not come from the market.

"Potential shortages projected by AEMO highlight the need for efficient investment so consumer demand for energy can continue to be met," Mr Henderson said.

It is important to note the difference between a reliable power system and a secure one.

'Reliability' of the power system is about having enough capacity to generate and transport electricity to meet consumer demand, while 'security' relates to the stability of the power system. The report noted the changing generation mix is also creating challenges for maintaining system security.

"There were a number of system security issues during the year, with several resulting in interruption of supply to customers," said Mr Henderson.

"In a market with a higher penetration of wind and solar, there is less inertia in the power system. We are seeing the implications of this for maintaining system frequency following disturbances."

The report noted that the reduction in synchronous generation has also led to a decrease in system strength in some areas of the power system. This may reduce the stability of the system, which may make it harder for generators to remain connected to the grid. This could in turn increase the risk of interruption of supply to consumers.

The report considers several incidents in 2015-2016 which showed the extent of the potential supply and price impacts for consumers following major security events in the power system.

"Events like the November 2015 trip of the Heywood interconnector between Victoria and South Australia, which resulted in problems controlling the frequency in the islanded South Australian power system, show that regions can be more exposed to reliability and security issues when disconnected from the rest of the market," said Mr Henderson.

"These type of events also show that in order to maintain system security, certain instances require controlled load shedding as a last line of defence."

In the context of these challenges, the Panel acknowledges the significant body of work underway that is considering how to maintain the resilience of the national electricity market. This includes the AEMC's System Security Market Frameworks review, AEMO's Future Power System Security Program and the Independent Review into the Future Security of the National Electricity Market, led by the Chief Scientist, Dr Alan Finkel.

The report noted a number of significant incidents have occurred since the end of the reporting period, including the black system event in South Australia on 28 September 2016. While a brief summary of these events is provided in the 2016 report, the event will be covered in more detail in next year's report.

Purpose of the report

The annual market performance review provides observations and commentary on the reliability, security and safety of the national electricity market. It compiles information collected from a number of sources including the Australian Energy Market Operator, the Australian Energy Regulator, jurisdictional regulators and market participants.

Among other things, the annual market performance review may assist governments, policy makers and market institutions to monitor the performance of the power system, and to identify the likely need for improvements to the various measures available for delivering reliability, security and safety.

Submissions

Submissions on the draft report are open until 2 May 2017. The final report is due to be published in May 2017.

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Reliability Panel

*The **Reliability Panel's** core functions relate to the safety, security and reliability of the national electricity system. The focus of the Panel's work is on determining standards and guidelines which are part of the framework for maintaining a secure and reliable power system. The panel is chaired by AEMC Commissioner, Mr Neville Henderson. Its members are broadly representative of all stakeholders interested in the operation of the power system and the electricity market including consumer groups, generators, network service providers, retailers and the power system and market operator, AEMO.*

Reliability Standard

The reliability standard currently requires there be sufficient generation and transmission interconnection such that 99.998% of annual demand for electricity is expected to be supplied. Put another way, the standard specifies the maximum expected unserved energy (USE) or the amount of electricity demanded by customers which is at risk of not being supplied. It is currently set at 0.002% of the region's annual energy consumption in a financial year.

USE does not include energy that could not be supplied as the result of a system security event or as the result of an outage in the inter-regional transmission or distribution network. This means that customers may experience supply shortages that are not the result of insufficient generation or a lack of interconnection between regions.

It is not a regulatory or performance standard that is 'enforced' but rather it is a planning standard used to indicate to the market the required level of supply to meet demand on a regional basis. The reliability standard was set by the AEMC's Reliability Panel and is now incorporated into the National Electricity Rules. The Panel reviews the standard every four years. In accordance with the rules, the next review must be completed by 30 April 2018.

State and territory governments set the level of reliability that must be provided by transmission and distribution networks ('poles and wires').