



Australian Government

Department of the Environment and Energy

**Dr Gordon de Brouwer PSM
Secretary**

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Ms Peggy Danaee
House Committee
Committee Secretary
PO Box 6021
Parliament House
Canberra ACT 2600

Dear Ms Danaee

Thank you for your invitation to make a submission to the House Committee Inquiry into modernising Australia's electricity grid.

The Department of the Environment and Energy provides advice to the Australian Government on climate change and energy policy issues. Our Minister, the Hon Josh Frydenberg MP, is the Chair of the Council of Australian Governments (COAG) Energy Council. Comprising the energy ministers of the states, territories and the Australian Government, the Council is responsible for the legislation which establishes the National Electricity Market in Queensland, New South Wales, the Australian Capital Territory, Victoria, South Australia and Tasmania.

Prioritising the security, reliability and affordability of energy supplies

The COAG Energy Council has made clear it places a premium on the security and reliability of the National Electricity Market as we make the transition to a low-emissions economy. This will ensure consumers pay no more than necessary for safe, reliable and secure electricity supplies.

To that end, the Council is conducting a number of reviews into the operation of the National Electricity Market, as part of an extensive energy security work program. I would like to draw your attention to the progress of these reviews, including measures already implemented by the Council. I trust this will provide the Committee with greater insight into the national reform agenda that is addressing the challenges and opportunities facing our electricity grid.

Independent review into the future security of the National Electricity Market

The COAG Energy Council has tasked an independent panel, chaired by Australia's Chief Scientist, Dr Alan Finkel AO, to provide advice to governments on a coordinated, national

reform blueprint to maintain the future security and reliability of the National Electricity Market.

The panel delivered its preliminary report in December 2016, which highlighted the implications for security and reliability of the shift from coal-fired generation to wind and solar photovoltaics. The panel also considered the solutions available to allow the effective integration of variable renewable generators into the electricity grid, including the use of storage, wind turbine controllers and synchronous condensers.

Following the panel's preliminary report, in February 2017, the COAG Energy Council agreed to accelerate consideration of proof-of-concept projects to demonstrate the viability of these technologies.

The Review is also considering other countries' experience in the electricity sector as part of its recommendations for maintaining the future reliability of the National Electricity Market. These insights will form part of the review's final report to COAG leaders, due in the first half of 2017.

The preliminary report is available at www.environment.gov.au/energy/national-electricity-market-review.

Review of the Regulatory Investment Test for Transmission

In 2016, the COAG Energy Council conducted a review of the regulatory test that applies to investment in new electricity transmission assets in the National Electricity Market. The review assessed whether the Regulatory Investment Test for Transmission remains effective in light of the transition underway in Australia's electricity grid.

Broadly, the review found the Regulatory Investment Test remains an appropriate mechanism to ensure new transmission infrastructure in the National Electricity Market is built in the long term interests of consumers. The review identified a number of areas for potential improvement to the test itself and wider transmission planning arrangements. These include reviewing the Australian Energy Regulator's Regulatory Investment Test application guidelines, with a view to better reflect the net system benefits of options including those related to system security, renewable energy, and climate goals.

The final report is available at <http://www.coagenergycouncil.gov.au/publications/review-regulatory-investment-test-transmission-rit-t>.

System security market frameworks review

As discussed at the Committee's recent roundtable on 30 March 2017, the Australian Energy Market Commission (AEMC) is the rule maker for the National Electricity Market, and provides advice to the COAG Energy Council on strategic issues in the gas and electricity markets. The AEMC is conducting a review of the market frameworks that will be needed to ensure the security and reliability of the electricity system is maintained as it makes the transition to a low-emissions future.

On 23 March 2017, the AEMC released a directions paper to present its proposed approach to solving these challenges, particularly the issue of frequency control. Changes to the

generation mix mean that new services will be required to maintain the stability of the system, including inertia and fast frequency response services.

The AEMC is also considering a number of proposals (described below) to change market rules to improve security, in parallel with its security market frameworks review. The final report of the review will recommend any additional market mechanisms needed to provide better incentives for business to deliver system security services, and consider other technical requirements to support the stability of the electricity system.

The interim report is available at www.aemc.gov.au/Major-Pages/System-Security-Review.

System security rules changes

The AEMC is also assessing proposed changes to the National Electricity Market to maintain the security and reliability of the National Electricity Market as it increasingly relies on renewable generation sources.

On 30 March 2017, the AEMC released a new management framework for emergency frequency control schemes which are considered last line of defence mechanisms to help prevent system-wide blackouts. The new rules require the Australian Energy Market Operator (AEMO) to regularly and transparently assess emerging risks caused by the displacement of older, synchronous generators (such as coal-fired generation) for non-synchronous generation technology like wind and solar.

The AEMC is considering a rule change proposal to reduce the settlement period in the wholesale electricity market from 30 minutes to five minutes. This could assist adoption of resources such as batteries and demand response technologies, which are able to change their output quickly in response to market signals. The AEMC is due to issue a draft determination on the proposed move to five minute settlements in the National Electricity Market in July 2017.

Details of these rule change requests are available at the website noted above.

Future power system security program

AEMO is the operator of the National Electricity Market and is responsible for maintaining power system security. AEMO is working closely with the AEMC to identify the security and reliability challenges associated with a modernising electricity grid.

In particular, I draw your attention to AEMO Future Power System Security program. This is aimed at identifying opportunities and challenges related to power system security, as well as priority actions for the market operator.

AEMO has released a number of reports and fact sheets under this program which are helpful for understanding the technical issues and emerging challenges in the electricity system. These are available at www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/FPSSP-Reports-and-analysis.

The Department would be happy to keep the Committee updated on the progress of these reforms into the security and reliability of Australia's electricity grid, as well as any other relevant reforms by the COAG Energy Council. The appropriate contact is Assistant Secretary, Electricity Branch

Yours sincerely

Gordon de Brouwer

21 April 2017