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5 May 2017

Mr John Pierce  
Chair  
Australian Energy Market Commission  
PO Box A2449  
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

**Re: AEMC's System Security Market Frameworks Review Directions Paper**

The AER welcomes the opportunity to provide our response to the AEMC's System Security Market Frameworks Review Directions Paper. The AER has appreciated the efforts of the AEMC to involve us and seek our views at both the steering and working group levels of this important process.

The AEMC's proposed direction will have a number of implications for the market and transmission network businesses. We support a number of the proposals and believe that it will help to deliver investment certainty and a reliable electricity supply for customers at a time of transition for the National Electricity Market (NEM), particularly in South Australia. Our submission focuses on a key principle of the NEM - that reliance on competitive markets, where feasible, will deliver the best outcomes for consumers in terms of price and innovation.

This area of power system engineering is evolving rapidly with significant growth in a number of new technologies that can deliver power system security services. We believe that the AEMC's Directions paper is an important step in identifying the latest thinking and potential implications of its proposals. It also provides the opportunity to air a variety of studies and views to ensure that before committing to one particular path, a number of possible solutions are considered to benefit customers over the long term.

Our response focuses on the issue of frequency control raised in the Directions paper.

## **Frequency Control**

### *Inertia and fast frequency*

The AEMC's proposals have been designed around a distinction between inertia and fast-frequency system security services. These new services are required to address the rate of change of frequency (ROCOF) issues we are facing as conventional synchronous generation is replaced by inverter connected generation – assuming this new generation does not provide similar characteristics to manage ROCOF.

We understand that this distinction has been informed by AEMO and highlighted in its recently released report 'Technology Capabilities for Fast Frequency Response' prepared by General Electric International (GE Report). We also understand a number of other experts in this area may have different views around such a distinction. While the GE Report makes recommendations which are a step to resolving some of South Australia's key ROCOF challenges, consideration of further advice received through this process is necessary.

The ROCOF challenge is one which is not unique to the NEM with a number of jurisdictions facing similar challenges. These are new and evolving complex engineering issues and careful consideration of all available evidence would be valuable before committing to a particular path.

Future studies should consider the role of existing technologies, such as battery storage, in further detail to understand how they could deliver services to manage ROCOF. They should also consider how these technologies will evolve over time and what the role of distributed energy services might be. Most importantly they will need to consider how these technologies will interact with the existing and new market mechanism and what barriers exist to their deployment across the NEM.

A distinction between inertia and fast-frequency response creates a potential for over-investment in network solutions to deliver inertia. If this distinction is not significant, then new technologies assumed to only be able to deliver fast-frequency response would not be appropriately valued and market driven solutions will be stifled.

We support the AEMC's decision to introduce a fast-frequency market. We also support the timeframe set by the AEMC.

The fast-frequency market can relatively easily be appended to the existing frequency control ancillary services (FCAS) markets and dispatch of these services can be co-optimised with the wholesale market.

The recent high prices in South Australia's FCAS markets has signalled new investment. We are aware of a number of parties who have signalled an interest in investing in South Australia to capture some of these benefits. This proves the values of markets in delivering investment outcomes.

## **TNSP procurement**

We acknowledge that there are ROCOF challenges in South Australia today. Therefore, we support the AEMC's decision to enable TNSP's in the interim to procure services to provide much needed ROCOF services to improve the stability of the system. However, we do not believe that this should be required once a market in fast-frequency is established. Consequently, we think there would be little value in establishing an inertia specific incentive similar to the Service Targets Performance Incentive Scheme (STPIS).

TNSPs, and AEMO in certain circumstances, can procure ROCOF services today if a need arises or there are market benefits when meeting a Network Support and Control Ancillary Services (NSCAS) requirement. A TNSP would apply the Regulatory Investment Test for Transmission (RIT-T), as it would in any other circumstance. To that end we note that ElectraNet has already requested that non-network providers identify how much fast-frequency response they can deliver through its 'South Australian transformation' RIT-T process.

ROCOF issues have not been considered in previous RIT-Ts to any significant extent, not because they couldn't be procured by TNSPs, but because it was not required. We are facing a period where generators that previously provided ROCOF services at no cost have retired and new generation technologies have not been incentivised to deliver these services, either through obligations or market mechanisms.

ROCOF can also be delivered via the interconnectors into South Australia and these should be considered as part of a joint-planning exercise by the relevant TNSPs and AEMO. We note that the AEMC's Planning and Connections Rule Change, which is currently scheduled to be completed by mid-2017, will help to clarify the roles and responsibilities of TNSPs conducting joint-planning.

We note that there may be some concerns about TNSPs procuring these services, particularly if the most efficient solution is a non-network solution. Unlike Distribution Network Service Providers (DNSPs) TNSPs are not rewarded in the same way for investing in non-network options. We understand that the AEMC may have this in mind when recommending STPIS-like changes. We will consider how the existing STPIS, particularly the NCC could be used to deliver stronger incentives for investments in non-network options.

If a TNSP proposed an augmentation, or a contingent project, to address a ROCOF need today we would consider it as part of their revenue proposal. For example, the TNSP could identify an obligation which drives the need, such as the South Australian 3 Hertz/second ROCOF requirement. If a need changed during the regulatory control period, a TNSP could choose to allocate some of its revenue allocation to fund that project or, if the project is sufficiently large and meets the pass-through provisions, the AER could make further allowances for that investment.

We welcome the opportunity to discuss this submission with you. If you have any questions, please do not hesitate to contact Mark Wilson on 08 8213 3419.

Yours sincerely



Paula W. Conboy  
Chair  
Australian Energy Regulator