

09 June 2017

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Inquiry into the licensing arrangements for generators in South Australia – Draft Report (May 2017)

Energy Networks Australia welcomes the opportunity to make a submission to the Essential Services Commission of South Australia's (ESCOSA) Inquiry into licensing arrangements for generators in South Australia's [Draft Report](#) (May 2017).

Energy Networks Australia is the national industry body representing businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy to virtually every household and business in Australia.

We note that in the Draft Report, ESCOSA is proposing changes to licence conditions applying to electricity generators in South Australia, and that these positions have been determined with the assistance of the Australian Energy Market Operator (AEMO).

Current context

Energy Networks Australia supports ESCOSA progressing these licensing changes as a key step to a national approach. However, the approach to be adopted by ESCOSA may require further review given the release of the Final Report of the Independent Review into the Future Security of the National Electricity Market. The Final Report was released on the same day as this submission has been lodged (i.e. 9 June 2017) so Energy Networks Australia has not been able to consider the Report in detail.

The Final Report recommends for instance, new approaches related to Energy Security obligations including those below.

Recommendation 2.1

The Australian Energy Market Commission (AEMC) by mid-2018:

- » *Require new generators to have fast frequency response capability*
- » *Review and update the connection standards in their entirety*

- *Updated connection standards should address system strength, reactive power and voltage control capabilities, the performance of generators during and subsequent to contingency events, and active power capabilities.*
- *To be approved for connection, new generators must fully disclose any software or physical parameters that could affect security or reliability.*

Recommendation 3.4

- » *By mid-2018 that AEMO and the AEMC assess the effectiveness of the new licensing arrangements, the subject of this inquiry and whether they should be applied in other National Electricity Market regions.*

As a result, the comments provided below by Energy Networks Australia have been made prior to any holistic consideration of the Final Report. ESCOSA and stakeholders may need to reconsider their current positions after reviewing the Final Report.

The proposed technical recommendations for electricity generators are aimed at promoting the resilience and security of the South Australian power system, in the context of a greater, and more variable, proportion of non-synchronous generation. AEMO's recommendations to ESCOSA seek to ensure that generators are better able to 'ride through' power system disturbances and, with active power controls, will have the ability to both better control their energy output during a dispatch period as well as being able to assist with the control of voltage and frequency if required.

In particular, AEMO's recommendations encompass the following matters:

- » static and dynamic reactive power requirements
- » voltage control capability
- » performance during, and subsequent to, contingency events
- » active power control facilities
- » the ability to assist with system restart
- » the provision of simulation models, and
- » regular updates to the Commission's framework

Energy Networks Australia supports the work currently being undertaken by ESCOSA (and AEMO) in dealing with the operational challenges, which are emerging as a result of changing technologies on the transmission and distribution systems. We consider that the technical obligations contained in ESCOSA's Draft Report are an appropriate way to assist with managing these challenges, and to extend the capability of the South Australian electricity network to better integrate additional renewable energy developments.

Nationally integrated approaches to these issues are vital. This body of work should be progressed as a key step to achieving a national approach to help ensure the security, reliability and resilience of the National Electricity Market (NEM) going forward.

Other related reviews and rule changes

As ESCOSA is anticipated to finalise its Inquiry by the end of July 2017, it should be cognisant of, and consistent with, the outcomes of the large number of concurrent system security related reviews and rule changes being conducted. These include, but are not limited to:

- » the [Independent Review into the Future Security of the National Electricity Market](#)¹ (as outlined above)
- » the Australian Energy Market Commission's (AEMC) [System Security Market Frameworks Review](#), that has also incorporated separate rule change proposals by:
 - AGL, on an Inertia Ancillary Service Market
 - The South Australian Minister for Mineral Resources and Energy on Managing the rate of change of power system frequency, and
 - The South Australian Minister for Mineral Resources and Energy's on Managing power system fault levels
- » AEMO's [Generating System Model Guidelines](#) rule change proposal²
- » the House of Representatives' Standing Committee on the Environment and Energy's inquiry into [Modernising Australia's electricity grid](#)³ and
- » the [South Australian Legislative Council's State-wide Electricity Blackout and Subsequent Power Outages Inquiry](#).

¹ A related point made at page 36 of Energy Networks Australia's March 2017 submission to this Review is that for new generator connections, this could include an obligation on these new generators to provide inertia and system strength to the NEM, as well as other technical capabilities.

² At page 10 of our 12 April 2017 submission, Energy Networks Australia supported AEMO's proposal that all new inverter-based generators connected to the transmission system deliver an electromagnetic transient models (EMT-type) to both AEMO and relevant Network Service Providers (NSPs). Energy Networks Australia considers that such an approach: (i) is reasonable for all large scale inverter-based generators; (ii) would not materially increase costs to potential connection proponents using commercially mature technologies; (iii) would minimise legacy issues and likely delays in assessing connection proposals; and (iv) clearly places the obligation on the initial proponent/developer to provide the model and not encumber a potential subsequent owner to provide and pay for this type of modelling data at a later date (and probably at a more significant cost).

³ At page 11 of that May 2017 submission, Energy Network Australia considers that there is a need for strengthened generator obligations in licence conditions, including the need to meet connection and performance standards. In addition, based on locational conditions, efficient system security outcomes are likely to require that the relevant NSP should be in a position to holistically consider the necessary requirements for generator performance.

Should you have any additional queries, please feel free to contact Norman Jip, Energy Network Australia's Senior Program Manager - Transmission on (02) 6272 1521 or njip@energynetworks.com.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'John Bradley', written in a cursive style.

John Bradley
Chief Executive Officer