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16<sup>th</sup> May 2019

Submitted online to: <https://www.aemc.gov.au/market-reviews-advice/investigation-intervention-mechanisms-and-system-strength-nem>

Dear Ms Brady,

**Investigation into Intervention Mechanisms and System Strength in the NEM**  
**Reference: EPR0070**

The Australian Energy Council (the “**Energy Council**”) welcomes the opportunity to make a submission in response to the Australian Energy Market Commission’s (“**AEMC**’s”) *Investigation into Intervention Mechanisms and System Strength in the NEM Consultation Paper*.

The Energy Council is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

### Introduction

The National Electricity Market (“**NEM**”) is in transition from power supplied mainly by conventional thermal generation to the power being supplied by variable renewable energy plant, supplemented by firming technologies such as conventional thermal peaking plant, hydro (including pumped storage) and batteries. In addition, increasing quantities of distributed energy generation (often also variable in nature) being installed by domestic consumers and businesses contribute to the generation supply mix, and need to be considered.

The Consultation Paper highlights the increasing number of directions in the SA market by the Australian Energy Market Operator (“**AEMO**”) to maintain system strength, and contemplates a number of rule change requests by AEMO to vary the current arrangements for market intervention and pricing. The Energy Council suggests that the use of directions is a function of a number of market dynamics, and notes that AEMO’s most recent Quarterly Energy Dynamics Report shows that directions were in place in Q1 2019 for 4.4% of the time, compared with 13% during Q4 2018.<sup>1</sup>

The Energy Council also notes that the revised generator technical performance standards oblige new generation to meet certain system strength standards,<sup>2</sup> therefore it is possible that the need for AEMO’s intervention may diminish over time as new generation is connected to the power system. In addition, when considering the SA situation, the Energy Council notes that ElectraNet will have installed synchronous condensers by the end of 2020,<sup>3</sup> therefore the need for change to the intervention mechanism may reduce over time.

Nevertheless the Energy Council acknowledges that other NEM regions may undergo a similar journey to increased variable renewable energy penetration, and therefore the Energy Council supports the rule change requests proposed.

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<sup>1</sup> Australian Energy Market Operator, *Quarterly Energy Dynamics Q1 2019*, p.23

<sup>2</sup> National Electricity Amendment (Generator technical performance standards) Rule 2018 No. 10

<sup>3</sup> See <https://www.electranet.com.au/what-we-do/projects/power-system-strength/>

## Discussion

As the AEMC outlines in the Consultation Paper, system strength is critical for the resilience of the power system. In the absence of arrangements for the service to be provided to the market, a proxy can be established by which synchronous generators are required to continue running, in substitution for variable renewable energy plant. The system strength service so provided is not separately valued, and generators providing this service are compensated via the intervention mechanism.

The “Managing Power System Fault Levels” rule change required transmission network service providers to maintain system strength in their networks.<sup>4</sup> ElectraNet has decided the best way to implement this obligation is via the installation of synchronous condensers, but the manufacture and installation will take some time, and to cover the gap until the equipment is available, ElectraNet has sought to enter into a commercial arrangement with local generators. Unfortunately commercial negotiations have been unsuccessful and ElectraNet has decided that it is more cost-effective for the interim system strength arrangements to be provided using AEMO’s directions.

Should ElectraNet have contracted with individual generators, the cost of doing so would have been borne by all ElectraNet’s customers, as will be the case with the synchronous condensers. In contrast, the cost of AEMO directing generators is socialised across affected market participants in that region. According to ElectraNet, not only is the cost cheaper in this instance,<sup>5</sup> but the basis for cost recovery differs, with ElectraNet shouldering proportionately less of the burden.

The Energy Council believes that this behaviour confirms that system strength is a service which should be separately valued and freely available to be traded in a suitable market. An example is AEMO’s 2018 Request for Reactive Power Non-Market Ancillary Services, which sought generation to absorb reactive power until such time as dedicated network reactive equipment could be installed.<sup>6</sup> Furthermore, in the absence of a separate market, using directions and compensating generators by means of the intervention pricing mechanism results in the existing energy markets being distorted.

The Energy Council agrees with the AEMC’s observations about the distortionary aspects of intervention,<sup>7</sup> and considers its use a last resort option. According to AEMO’s South Australian Electricity Report,<sup>8</sup> as at 23<sup>rd</sup> September 2018, AEMO had issued over 140 directions to maintain SA system strength during calendar year 2018. The Energy Council notes that despite Clause 3.13.6A(a) of the National Electricity Rules, which obliges AEMO to publish a report “as soon as reasonably practicable after issuing a direction”, no directions have been reported on since directions to SA generators on 29<sup>th</sup> and 30<sup>th</sup> August 2018.<sup>9</sup> The Energy Council agrees with the AEMC that this delay in reporting affects market transparency, and suggests that the clause be amended to oblige AEMO to issue its reports within three months of a direction being made.

### Hierarchy of Intervention Mechanisms

The Consultation Paper sets out AEMO’s stages of intervention, being Reliability and Emergency Reserve Trader (“**RERT**”) first, then directions and/or instructions.<sup>10</sup> The Energy Council believes that while the RERT mechanism is limited in its market-based characteristics, it is closer than either directions or instructions, therefore as a last-resort means by which system reliability can be maintained, it is preferred. In terms of directions and instructions, as directions act on scheduled plant and market generating units, again this is preferred to instructions, on the basis that it results in actions which occur within the market to units which participate in the market. In contrast, Clause 4.8.9 instructions apply to other market participants, principally requiring unscheduled loads to curtail to maintain system security and/or reliability.

### Mandatory Restrictions

The Energy Council thanks the AEMC for its historical research into the mandatory restrictions framework.<sup>11</sup> The discussion has accurately captured the background, intent and challenges of the Mandatory Restrictions clauses. As set out in the Consultation Paper, the framework was proposed in direct response to the events of February 2000 when a state government mandatory restriction dramatically distorted spot market signals.

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<sup>4</sup> National Electricity Amendment (Managing power system fault levels) Rule 2017 No. 10

<sup>5</sup> Consultation Paper, p.122

<sup>6</sup> See <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Victorian-transmission-network-service-provider-role/Request-for-Information-for-reactive-power-Non-market-Ancillary-Services-in-VIC>

<sup>7</sup> Consultation Paper, p.144

<sup>8</sup> Australian Energy Market Operator, *South Australian Electricity Report*, November 2018, p.53

<sup>9</sup> See <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Market-notice-and-events/Market-event-reports>

<sup>10</sup> p.34

<sup>11</sup> National Electricity Rules, Clause 3.12A

Mandatory restrictions are inherently distortionary and preferably avoided, however it is recognised that state governments will reserve this power, and may exercise it should an extended period of shortfall develop.

The clauses' intent was to restore the necessary investment signals that would have arisen had it not been for the government intervention. Thus the objective of mandatory restriction pricing is similar to that of intervention pricing. However the technique chosen is complex, and open to significant operational risks that would likely produce unfortunate outcomes when invoked during a crisis. Fortunately no mandatory restrictions event has occurred since 2000. This does not mean it will not recur, and when it does, participants and AEMO will be inexperienced in its application, further increasing the operational risks of an already complex process.

The Energy Council supports this review reconsidering the framework, and supports investigating whether it can be replaced with the more familiar intervention pricing technique. Should this prove technically difficult, the Energy Council suggests that on balance, removal of the framework implies less market risk (despite the potential for pricing distortion) than retention in its current form.

### The Use of Intervention

The Energy Council recognises the need for AEMO to retain intervention powers to be as a last resort to avoid serious security or reliability issues. At the same time, it must be recognised that this power is extraordinary, and as such there is always a great risk that it could be abused. For example, it should never be used as a cost-minimisation tool to avoid allowing the market to clear at its true value. It is necessary that the rules frame any use of this power as a market failure, which must be followed by detailed reporting obligations and allocation of responsibilities upon institutions to act quickly to avoid any repetition.

In a similar way, although counteractions are designed to offset and hence limit the wider impact of a direction, the fact of the direction is that the market has not been able to solve the reliability or security problem, and AEMO's intrusion is necessary. This suggests that the market distortion needs to be recognised and compensated adequately, to provide the signals necessary for market change to occur.

### The Regional Reference Node ("RRN") Test

The introduction of the RRN Test in 2000 was to differentiate between regional and local directions, given corrections to local deficiencies should not result in scarcity pricing at the RRN where it would have no effect on the local situation. As the clause is written,<sup>12</sup> there is ambiguity in its application since it does not require a real unit to be directed, and the language is convoluted.

AEMO has proposed broadening the RRN test to include the RERT, and to clarify the working of the test to remove the ambiguity. Doing so will remove intervention pricing being applied when the RERT is used for a forecast shortfall which is strictly local in nature. The Energy Council supports the proposed rule change.

### The Compensation Framework

Compensation should be such that market distortion from any intervention is minimised. This means that market participants should receive compensation which reflects the level at which the market would have settled had the intervention not occurred.

A default compensation of the 90<sup>th</sup> percentile of the regional reference price ("RRP") for the preceding 12 months applies.<sup>13</sup> Should directed market participants' costs exceed this amount, they can claim additional payments, subject to a threshold of \$5,000 per trading interval.<sup>14</sup> The rationale for the threshold is that claims below this amount are immaterial, and not worth the time and cost in making the assessment.

The Energy Council disagrees with this rationale, and supports AEMO's rule change request to have the \$5,000 threshold apply to each event, rather than each trading interval. Although it does increase the likelihood of smaller claims, the starting point for additional costs of the 90<sup>th</sup> percentile of the 12-month RRP does reduce the probability that its exercise will be unnecessarily frequent.

### Minimum Levels of System Strength and Inertia

The Energy Council notes the significant detailed work in Chapter 7 of the Consultation Paper on the analysis of minimum levels of system strength and inertia. Although nominally there has been six weeks for

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<sup>12</sup> *ibid.*, Clause 3.9.3(d)

<sup>13</sup> *ibid.*, Clause 3.15.7(c)

<sup>14</sup> *ibid.*, Clauses 3.15.7B(a4), 3.12.2(b) and 3.12.2(i)

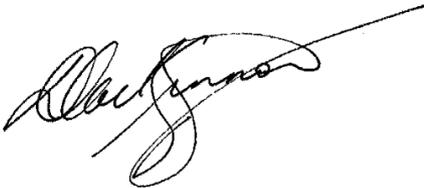
consultation, the intervening Easter and ANZAC Day holiday period has compromised industry's ability to respond fully to the questions raised. Accordingly the Energy Council's members would appreciate further opportunities for consultation be made available, in order to provide considered input on these significant issues.

### **Conclusion**

In conclusion, although the Energy Council believes that directions should be a mechanism used as a last resort, it acknowledges there is the prospect of directions being used in other NEM regions as they each increase their variable renewable energy penetration. On this basis, the Energy Council supports the changes proposed, but continues to advocate for system strength to be valued as a separate service.

Any questions about this submission should be addressed to the writer, by e-mail to [Duncan.MacKinnon@energycouncil.com.au](mailto:Duncan.MacKinnon@energycouncil.com.au) or by telephone on (03) 9205 3103.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Duncan MacKinnon', with a long horizontal stroke extending to the right.

**Duncan MacKinnon**  
Wholesale Policy Manager  
Australian Energy Council