



20 April 2017

Mr John Pierce  
Chairman  
Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

Submitted online: [www.aemc.gov.au](http://www.aemc.gov.au)

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Dear Mr Pierce

### **SYSTEM SECURITY MARKET FRAMEWORKS REVIEW - DIRECTIONS PAPER 2017**

Origin Energy Limited (Origin) welcomes the opportunity to comment on the System Security Market Frameworks Review which details how inertia and fast frequency response (FFR) will be incorporated into the national electricity market to ensure ongoing system security and stability.

The key points in our submission are:

- Where it is deemed appropriate that a contracting mechanism for inertia and FFR is required, AEMO and not TNSPs should be made responsible for procuring these services. AEMO is well placed to carry out this function given it is: responsible for system security overall; has experience in contracting for system restart ancillary services (SRAS) and; is the party most likely to ensure procurement of the services at least cost.
- New non-synchronous generators could be required to have an FFR capability and, in areas of low system strength, be responsible for maintaining a minimum level of short circuit ratio, if these measures are proven to not be overly burdensome.
- AEMO should determine the interchangeability of inertia and FFR to guarantee availability of FFR in low voltage system events.

#### **AEMO – Responsible Contractor**

Origin does not believe that the AEMC's preference for TNSPs to be made primarily responsible for contracting inertia and FFR services will drive the lowest cost for consumers. In our view AEMO is best placed to carry out this function given its management of the electricity market, its responsibility to maintain and improve power system security (NER 4.1.1(b)) and its experiencing in contracting for SRAS.

It is not clear how TNSPs will optimise procurement given the likely bias to install synchronous condensers<sup>1</sup> which would be incorporated into their regulated asset base.

The Paper<sup>2</sup> suggests that it may be difficult to develop clear criteria by which AEMO could assess competing disparate offers and that consumers would bear risks of over or under-procurement. This, however, is not a compelling reason to rule out AEMO from the procurement role given that these issues would also need to be overcome if the TNSPs were given responsibility for contracting. Irrespective of which party is responsible for procuring inertia and FFR, clear policies and procedures will need to be developed to help ensure an efficient level of contracting.

For example to safeguard against the risk of under or over procurement, the minimum inertia levels should be carefully set. Origin supports the process outlined in the Paper which would see AEMO

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<sup>1</sup> Page 60 – AEMC Directions Paper

<sup>2</sup> Page 22 – AEMC Directions Paper

model a number of scenarios and procure a minimum level that satisfies a defined percentage of scenarios. The exact percentage or number of scenarios covered should examine the likelihood of an event versus the procurement costs to meet that level. This would be similar to the examination of scenarios that is being undertaken by the Reliability Panel for 'protected events' under the Emergency Frequency Control Scheme.

### **Medium to Long Term Outlook**

The AEMC has a preference for a continued contracting requirement for inertia and a three year transition to a market based mechanism, similar to the current FCAS market, for the FFR market. Origin supports the transition of the FFR contract market, to a market based solution and believes this will drive lowest cost outcomes by parties looking to maximise income from additional revenue streams that their plant is capable of providing. However we question an unlimited contract length for FFR services, especially if the AEMC intends to transition to a market based approach after 3 years. A limit on contract length would not unduly undermine investment certainty and will provide greater clarity around the planned transition.

Origin understands the difficulty in integrating an inertia price within the energy market price, especially as it is a by product (as opposed to an additional service such as FFR) of synchronous generation operation. In light of this, we support a contract market for inertia where tenders from generators and synchronous condensers are evaluated. The contracts will provide price certainty to prospective providers of inertia and FFR.

### **Inertia and FFR interchangeability**

The Directions Paper discusses the relative infancy of FFR and the need for AEMO to test and develop robust specifications for different providers of FFR. Origin welcomes this step and believes it to be prudent to first understand and test the limitations and compatibility of FFR before allowing it to operate within the NEM. Origin further notes that the provision of traditional inertia is a tested and proven by-product of synchronous generators and an invaluable tool in the dampening of frequency oscillations.

Origin would like to caution against the reliance on, and substitutability of, FFR for inertia when assessing the ideal co-optimisation levels for either service. This is especially true in areas susceptible to low voltage which could cause a cascading trip of the FFR providers, potentially resulting in a breach of the minimum inertia requirement. In other words, a reliance on FFR within an area susceptible to voltage fluctuations could result in all FFR providers tripping offline at once due to their technical parameters. This could result in overconfidence in the level of inertia procured, because it is thought that FFR would meet any inertia shortfall.

### **New Generator Requirements**

The introduction of a requirement for new non-synchronous generation to have FFR capability could be considered if it is found to not be overly onerous for these plant. Origin also supports the requirement that new non-synchronous generators who connect into areas of low system strength should be required to maintain a minimum level of short circuit ratio at their cost.

If you have any questions or wish to discuss this information further, please contact James Googan on [james.googan@originenergy.com.au](mailto:james.googan@originenergy.com.au) or (02) 9503 5061.

Yours sincerely,



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