



13 February 2020

John Pierce
Chairman
Australian Energy Market Commission

Lodged online: www.aemc.gov.au

Dear Mr Pierce

AEMC: MANDATORY PRIMARY FREQUENCY RESPONSE DRAFT RULE

Origin Energy Limited (Origin) welcomes the opportunity to provide comments on the draft rule from the AEMC requiring mandatory provision of Primary Frequency Response (PFR) in the National Electricity Market (NEM).

Origin considers that the market operator should procure system security services, such as PFR, through an efficient market-based approach. A mandatory obligation for services places costs on all market participants and reduces incentives for innovation.

However, we understand that the AEMC has made this draft rule to introduce a temporary mandatory obligation due to AEMO's concerns on the urgency of improving frequency response in the NEM. Notwithstanding this, it is important the making of this rule does not detract from the development of a permanent market-based solution.

Market bodies should therefore maintain momentum in developing the appropriate framework as quickly as possible, backed by a clear work plan set out in the final determination. The workplan should include a rules-based obligation on AEMO to report on several issues that are likely to help inform the development of a market-based framework. This information could include:

- The volume and profile of PFR responses under the mandatory obligation, and how this compares to the needs of the system.
- The geographic location of generators providing PFR, and any implications for future procurement decisions
- Providing details on frequency excursions outside of the deadband specified in the Primary Frequency Response Requirement.
- The performance of the FCAS markets with the introduction of PFR

We support generators being able to request an exemption from providing PFR. In deciding on whether to approve such a request, AEMO should consider all costs that generators could face including those related to maintaining compliance with existing safety and environmental obligations. Additionally, there should be a clear dispute mechanism for generators that have an exemption request refused.

The Attachment below expands further on these points. Should you have any questions or wish to discuss this submission further, please contact Alex Fattal via email alex.fattal@originenergy.com.au or phone, on (02) 9375 5640.

Yours sincerely

A handwritten signature in blue ink, consisting of a single, fluid, sweeping stroke that starts on the left, rises to a peak, and then descends to the right.

Steve Reid
Group Manager, Regulatory Policy

ATTACHMENT 1: DETAILED COMMENTS ON ISSUES RAISED IN THE DRAFT DETERMINATION

Work on a market based framework should be prioritised

Introducing a market for the provision of Primary Frequency Response (PFR) will allow for the most efficient sources to be used and encourage investment in the service. On the other hand, a mandatory PFR obligation places inefficient costs on generators, removes investment signals for new entrants to provide PFR, and could potentially distort existing energy and ancillary service markets. Given this, Origin supports the AEMC placing a sunset clause in the draft rule, along with the requirement for the publication of a workplan to develop an incentive scheme for the provision of frequency response services.

The June 2023 sunset should be viewed as the deadline for the introduction of a market framework, with provision for the mandatory obligation to end prior to this date if an incentive arrangement is developed earlier. The final determination should include more detail on the workplan including timelines and key milestones. The draft determination outlined that both the AEMC and ESB will have input into the future design of a market mechanism; however, it would also be useful for the final determination to provide some view on the expected delineation of responsibilities between both bodies.

AEMO should be required to report on frequency performance

One challenge with developing a future incentive arrangement is the lack of information on the needs of the system compared to the response capability of participants. This was one of the reasons for the proposed trials set out in the 2018 Frequency Control Frameworks Review. However, trials on the mainland were not undertaken prior to AEMO's proposal for mandatory PFR.

We support the AEMC's statement that it is important that "AEMO continues monitoring and reporting on power and generation system behaviour, which informs the work of all market bodies on enduring solutions for frequency control."¹ The final rule should therefore include an obligation on AEMO to report on PFR performance during the mandatory period.

Issues that should be reported on include:

- The volume of PFR provided by generating units and batteries, along with the profile of responses to frequency responses outside the deadband.
- The needs of the system, and how the provided PFR has impacted frequency performance
- The geographic location of generators providing PFR, and any implications for future procurement decisions
- An extension of AEMO's reporting on the performance of the Frequency Operating Standard to include frequency excursions outside of the deadband specified in the Primary Frequency Response Requirements.
- The performance of the FCAS markets given mandatory PFR (see the section below)

The mandatory PFR requirement could adversely impact FCAS markets

We are concerned the temporary implementation of mandatory PFR has the potential to undermine the operation of the existing FCAS framework. Our concerns outlined below underline the importance of the timely development of a permanent market-based framework.

¹ AEMC, 2019, *Mandatory Primary Frequency Response Draft Determination*, page 43

Distortion of ancillary service costs

AEMO are currently consulting on a change to the Market Ancillary Service Specification (MASS) so that a generator's PFR response is included as part of its contingency FCAS response. This change to the MASS is necessary as it is impossible for generators to unbundle their PFR and FCAS response.

However, this change will introduce inconsistency as generators with similar frequency responses would receive different levels of compensation. If a generator is enabled for contingency FCAS, it will be paid for being able to provide a response. On the other hand, generators which have not entered the FCAS markets will be expected to provide a similar response without compensation under the mandatory PFR obligation.

As stated by the AEMC, this change to the operation of FCAS could lead to a short-term reduction of prices for some contingency FCAS services.² This reduction in price could have the unintended consequence of signalling to participants that frequency response is less valued by the market, leading to a lack of investment in FCAS capability. This could result in new entrants choosing to not provide frequency response higher than the mandated minimum. Additionally, participants which are not included in the PFR obligation (such as demand response) may choose not to provide undervalued frequency response.

This demonstrates the importance of keeping to the workplan to develop a market-based solution, and not extending the mandatory PFR requirements.

Depletion of capability

The draft rule makes clear that generators do not need to maintain headroom to meet their PFR obligations. We support this decision, as a mandatory obligation to retain headroom would result in each generator having to store energy, and inefficient costs being absorbed by all participants. However, generators that supply contingency FCAS must retain headroom to meet their FCAS obligations. The mandatory PFR framework is likely to rely on the headroom provided from generators providing FCAS to be effective.

We are concerned that when large deviations occur, and frequency exits the normal operating frequency band, the available contingency FCAS could prove insufficient to restore frequency control. In this scenario, the generators supplying contingency FCAS may have depleted their capability in the PFR range and be less able to respond to a large frequency shock.

Setting an appropriate deadband will be crucial

The current implied deadband of the NEM is set through the Frequency Operating Standard (FOS), with responsibility for amending this held by the Reliability Panel. We consider that if a new tighter deadband is to be introduced, the Reliability Panel should be the responsible body for any changes, as this is consistent with the existing framework. We support the AEMC's proposed governance arrangements whereby responsibility for adjustments to the Primary Frequency Control Band (PFCB) is with the Reliability Panel.

Notwithstanding this, we are concerned the AEMC's proposed initial value for the PFCB of $\pm 0.015\text{Hz}$ sits close to the technical limit of the NEM's capability. The power system and individual generators have not been tested with a deadband approaching such narrow specifications. We therefore suggest the final determination reinforces that as AEMO consults on the PFRR, it should be mindful that the PFCB is a limit, and not a target. As part of its reporting on the temporary obligation, AEMO should provide information on the operation of the system with a narrower deadband, and how this will factor into long-term market design.

² AEMC, 2019, *Mandatory Primary Frequency Response Draft Determination*, page 71

Exemption criteria should be well defined

For some generators a mandatory PFR obligation is likely to be physically impossible or excessively expensive. Therefore, we support the draft rule including a clear exemption framework.

The exemption criteria should be extended to include not just the direct control system upgrade costs, but also consider other obligations that generators must meet such as jurisdictional safety and environmental legislation. The cost of continuing to meet these obligations could change if a generator is required to operate in frequency response mode.

The rules should also provide an appeals mechanism if an initial exemption request is not granted, with the AER potentially having a role for independent oversight.

The final rule should also provide for the application of temporary exemptions. A generator that supplies PFR may experience a temporary issue where it is unable to provide its tested level of frequency response but can still otherwise operate. We consider that in these situations, a temporary exemption should be available to allow energy to be generated, as this minimises the risk to reliability from an unexpected generation shortfall.

Compliance costs should be kept to a minimum

The draft determination sets out a policy position that generators will not be required to install expensive FCAS capable meters to prove compliance. We agree with this position and consider it should be extended so that generators that currently have FCAS capable meters are also not required to increase their memory capacity to store information on all their PFR responses. For some generators, a memory upgrade for FCAS metering would be expensive

Obligation should only apply to generators with a greater than zero dispatch target

We agree with the AEMC that the PFR obligation should apply to generators only when they have a dispatch target greater than zero, as phrased in proposed rules clause 4.4.2(c1). We observe that some generating units have minimum generation levels of 0MW, so the rule ensures that these units are not required to ramp in response to frequency changes. Therefore, we support the obligation only applying to generators with a dispatch target greater than zero.