



29 June 2022

Charles Pople
Chair
AEMC Reliability Panel

Lodged online: www.aemc.gov.au

Dear Mr Pople,

REVIEW OF THE FREQUENCY OPERATING STANDARD 2022 – ISSUES PAPER

Origin Energy Limited (Origin) welcomes the opportunity to provide feedback to the AEMC Reliability Panel on the issues paper for the Review of the Frequency Operating Standard 2022.

Origin supports the Panel reviewing the Frequency Operating Standard (FOS) given the transformation underway in the market and the challenges this presents in managing the system.

Our primary views on the issues discussed in the issues paper are summarised below:

- The introduction of the proposed Normal Operating Primary Frequency Band (NOPFB) has not been substantiated. Origin suggests there is a need to conduct an economic assessment of the potential benefits and costs (e.g. increased regulation FCAS costs) of adopting the NOPFB. If the Panel ultimately decides frequency should be more tightly managed, the existing Normal Operating Frequency Band (NOFB) should be amended, rather than a new band introduced.
- We consider the introduction of a rate of change of frequency (RoCoF) standard may be useful – the RoCoF standard would represent a formal guide that may support the clear and transparent modelling of Very Fast FCAS requirements (and potentially inertia).
- We do not support amending the FOS to include a maximum limit on contingency sizes for the mainland – this is a blunt approach that could discourage investment in new generation as projects could face a greater risk of curtailment.
- We believe it is appropriate for the Panel to review accumulated time error to determine any impacts of the change made in the 2017 FOS review.

Below we provide further comments on these key issues.

Settings in the FOS for normal operation

Origin does not support introducing an additional frequency band - the NOPFB, which would be set at 49.95 to 50.05Hz.

- In the absence of supporting evidence to the contrary, our initial view is that the NOPFB seems excessively stringent. As the Panel notes, there is a trade-off between the security benefits of a tighter FOS, and increased costs of procuring greater volumes of regulation FCAS to maintain frequency within a tighter normal operating band.¹ Ultimately these costs would be borne by consumers.
- We do not consider that sufficient evidence has been provided to justify a NOPFB set at 49.95 to 50.05Hz. Origin encourages the Panel to engage an independent expert to model the expected FCAS costs associated with different band settings.
- If the Panel ultimately determines frequency should be more tightly managed, the existing NOFB should be amended. The establishment of a new frequency band (the NOPFB)

¹ AEMC Reliability Panel, *Review of the Frequency operating standard 2022 – issues paper*, p. 20

introduces unnecessary complexity. If the NOPFB was introduced, it is not clear what role/purpose the NOFB would retain.

The Panel is also considering the Primary Frequency Control Band (PFCB) as part of the FOS review.

- As the existing PFCB was not informed by a cost benefit assessment, we consider there would be merit in an independent expert analysing the costs and benefits of changing the current 15 mHz deadband.
- If the PFCB is tightened, it is likely that some generators may not be able to provide the required capability, which reduces the pool of primary frequency response (PFR) providers.
- We reiterate that PFR should be appropriately valued, and we support the AEMC's efforts in the *Primary frequency response incentivise arrangements* rule change.

Introduction of a RoCoF standard

A new RoCoF standard in the FOS may be a useful inclusion as it could be used to inform Very Fast FCAS and inertia requirements for future markets.² If the calculation of optimal Very Fast FCAS volumes for different system conditions is guided by a formal RoCoF standard this may help to make the process more transparent and consistent.

We suggest that the Panel carefully consider how any new RoCoF standard would interact with existing connection requirements (chiefly, RoCoF withstand capability) specified in the generator performance standards, to avoid any conflicts/confusion between the respective standards.

Contingency event limit

Origin does not support the specification of a maximum contingency limit on the mainland as this could have serious implications for new projects. We consider this to be a blunt approach, and not well suited to the changing power system. For instance, a strict FOS limit on contingency size may give rise to a scenario where AEMO is compelled to constrain low-cost generation, even though the cost of procuring additional FCAS would be lower. This would be an inefficient outcome.

A contingency limit on loads may also have implications for the size and charging patterns of new large-scale batteries.

Accumulated time error

Origin considers it prudent to review the impact of the Panel's 2017 decision to increase the limit on accumulated time error in the NEM from 5 seconds to 15 seconds.

Looking ahead, if the Panel is proposing to remove accumulated time error limits from the FOS - Origin would encourage the Panel to consider the usefulness of accumulated time error as a diagnostic tool.³

² The ability of Very Fast FCAS to assist with high RoCoF events is a key consideration of AEMO's current review of the Market Ancillary Services Specification. AEMO, *Market Ancillary Services Specification Consultation – May 2022 Issues paper*, p. 27

³ Accumulated time error provides an indication of overall system frequency drift.

Should you have any questions or wish to discuss this submission further, please contact Thomas Lozanov at thomas.lozanov@originenergy.com.au.

Yours sincerely,

A handwritten signature in blue ink, consisting of a series of fluid, connected strokes that form a stylized representation of the name 'Steve Reid'.

Steve Reid
Group Manager, Regulatory Policy