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Primary Frequency Response rule changes consultation paper

AGL Energy (**AGL**) welcomes the opportunity to comment on the Australian Energy Market Commission's (**AEMC**) consultation paper on the proposed Primary Frequency Response (**PFR**) rule changes ERC0263, ERC0274, and ERC0277.

AGL is one of Australia's leading integrated energy companies and the largest ASX listed owner, operator and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources. AGL is also a significant retailer of energy and provides energy solutions to over 3.6 million customers in New South Wales, Victoria, Queensland, Western Australia and South Australia.

The rule change requests from the Australian Energy Market Operator (**AEMO**) and Dr Peter Sokolowski to mandate PFR, have been put forward in response to declining frequency performance in the National Electricity Market (**NEM**). AEMO's additional rule change request, to remove disincentives for providing PFR during normal operation seeks to reverse the trend of reduced provision of PFR from generation, which is widely agreed to be a significant contributor to frequency degradation.

Over the years, many generators that had previously provided PFR reverted to setpoint control, removing or entirely defeating primary frequency control (**PFC**). In AGL's view, two key factors drove this change:

1. Maintaining compliance with dispatch instructions, as required by clause 4.9.8 of the National Electricity Rules (**NER**), where this was the subject of several Australian Energy Regulator (**AER**) enforcement actions between 2014 and 2018; and
2. Reducing exposure to causer pays liability, by ensuring dispatch instructions are complied with as a priority above responding to a frequency event.

AGL shares what we hope is an accepted consensus that frequency performance in the NEM has degraded, resulting in a less resilient power system. We also agree that changes to the regulatory framework will be needed to incentivise generators, regardless of technology type, to provide an appropriate amount of PFR to support the power system.

Mainland trial of PFC

In its response to the AEMC's Frequency Control Frameworks Review (**FCFR**), AEMO listed several actions it was working through to better understand the drivers of the deterioration of frequency performance, and ways of combatting the deterioration. The actions were neatly summarised in the FCFR



Final Report,¹ and included investigating changes to Frequency Control Ancillary Services (**FCAS**), reporting on frequency outcomes, and conducting a trial of PFC in Tasmania, followed by a mainland trial. We consider there is significant merit in AEMO and industry continuing to work through these actions, particularly the mainland trial of PFC.

A mainland trial with enough participating generators is likely to address the shorter-term need for increased PFR in the NEM, while informing what the AEMC described as “an explicit mechanism to incentivise the provision of a sufficient quantity of primary regulating services to support good frequency performance during normal operation.”² AGL anticipates there would be sufficient levels of industry support to get a trial underway in the coming months without the need for regulatory change, but we note this would require support from AEMO and the AER.

The AER’s role in a trial or any proposed reform in this area is critical, given the NER clause 4.9.8 requirement to comply with dispatch instructions. It is not possible for plant to be automatically responsive to power system frequency deviations while also following dispatch targets. As mentioned above, the AER pursued several clause 4.9.8(a) enforcement matters from 2014 to 2018, which all but ensured that generators would prioritise compliance with dispatch instructions over PFR since that time.

On this basis, AGL supports AEMO’s proposed amendments to clause 4.9.8 to explicitly state that generators providing frequency response, in AEMO’s words, “will not be non-compliant with their dispatch instructions.”³ In the absence of any such rule change, AGL would hope that if a PFC trial is pursued in the short term, that trial participants would not be penalised through clause 4.9.8 or related obligations.

Valuing services in the NEM

The AEMC asks whether the proposed rules are a cost-effective solution to the frequency control issues identified by the proponents. AGL does not consider that the proposed rules are cost effective, particularly the proposed NEM-wide mandatory PFR.

AGL appreciates the significant challenges faced in maintaining power system security and reliability in the face of rapid energy market transformation and declining synchronous capacity. However, we consider it is preferable to pursue a more measured approach than that suggested by the proponents. We point to the AEMC’s commentary “that regulatory arrangements should continue to evolve in order to efficiently value the provision of frequency control to keep pace with the system transformation.”⁴

Accordingly, AGL’s preference is for the development of a market-based outcome, where PFR need is mapped and competitively procured at necessary levels, rather than the “all in” approach put forward by the proponents. A trial would present an excellent opportunity to determine what level of frequency response is needed and the best geographical locations from which to procure it.

An informed, evidence-based approach to PFR is consistent with AEMO’s current review into the regional allocation of contingency FCAS. We understand AEMO’s review is seeking to address the lack of diversity in the distribution of FCAS reserves, identified following the events of 25 August 2018 as a contributing factor to poor power system resilience.

¹ AEMC, Frequency control frameworks review, Final report, 26 July 2018, pp. 36-37.

² AEMC, Frequency control frameworks review, Final report, 26 July 2018, p. viii.

³ AEMO, Electricity rule change proposal, Removal of disincentives to the provision of primary frequency response under normal operating conditions, 1 July 2019, p. 39.

⁴ AEMC, Primary frequency response rule changes, Consultation paper, 19 September 2019, p. 94.



A market-based outcome is also consistent with the AEMC’s view “that the economic optimisation of the provision of PFR is also an important consideration in minimising the long-term costs to consumers.”⁵ This is further supported by comments from the Energy Security Board’s Post 2025 Market Design Issues Paper that in the face of a changing technical landscape consideration must be given to “what services will be required and how they should be valued, procured and delivered to the system.”⁶

We are concerned that the mandatory provision of PFR could open the door to a NEM where some services are appropriately valued and paid for and some are not. As stated in our submission to the recent AEMC Draft Rule Determinations on NEM intervention and compensation frameworks, the NER allow Network Service Providers to be paid for providing system strength and inertia services, while generators can be paid for network support and control ancillary services. AGL’s view is that frequency, voltage, and other services should be treated consistently, and appropriately valued through amendments to the regulatory framework.

Implementing PFR settings

As with other services including inertia and system strength, PFR has historically been the province of synchronous generation. As synchronous generators exit the market, renewables will need to fill the gap and provide these services. When determining the technical parameters of PFR, AGL urges the AEMC (and AEMO) to be future focused, balancing the need for an appropriate PFR deadband and not disadvantaging newer technology types from providing PFR. Appropriate PFR settings would better allow non-synchronous generators to access a service revenue stream, along synchronous generators, should a market for PFR ultimately emerge.

We have considered the achievability of the proposed technical requirements for mandatory PFR should the AEMC proceed with this option. It is likely that many synchronous generators can implement the proposed settings, as can some newer non-synchronous generators. Conversely, a large amount of non-synchronous generation entered the NEM at a time when PFR was not required to be provided and thus PFR enablement was not a design consideration. We expect that many existing non-synchronous generators would have difficulty implementing PFR and that the costs of doing so may be unreasonably high due to the need to retrofit plant. We would not support a requirement on such generators to implement PFR. Should the mandatory PFR rule change progress, exemptions from providing PFR must cover both technical and economic considerations.

Causer pays relief and FCAS market impacts

AEMO proposes to reward generators who provide additional PFR by excusing their causer pays liability. AEMO’s proposal is the carrot incentivising generators to participate beyond the proposed mandatory PFR deadband, in the absence of the more economically and practically efficient option of a market for PFR.

We find it difficult to support AEMO’s proposal. As noted above, some generators can provide PFR at little to no cost, while others have been constructed without PFR capability. Therefore, it does not seem appropriate that the latter group be penalised because of the state of the regulatory framework at the time of their development. These generators would incur their causer pays liability along with a share of the ‘excused’ liabilities of the generators who can provide the additional PFR.

Causer pays is intended to incentivise participants to not cause frequency deviations. AEMO’s proposal effectively changes the game, without delving further into the issue to determine whether revisions to the

⁵ AEMC, Primary frequency response rule changes, Consultation paper, 19 September 2019, p. 94.

⁶ Energy Security Board, Post 2025 Market Design, Issues Paper, September 2019, p. 24.



FCAS framework are needed. Far more consideration needs to be given to how PFR would operate alongside existing FCAS markets, lending further weight to the utility of a mainland trial of PFR ahead of progressing regulatory amendments.

AGL has considered the likely impacts of mandatory PFR considering that a degree of PFR is effectively procured through Contingency FCAS at present. AEMO notes that should mandatory PFR be implemented, it could increase the number of generators offering services into Contingency FCAS markets, potentially reducing overall generator revenues from this market.⁷ This means that generators who previously were paid to provide Contingency FCAS within the relevant band, will no longer be paid to the extent that the band intersects with the mandatory PFR requirements.

The AEMC has identified that there may also be impacts to regulation FCAS, noting that a benefit of the rule change proposal is the “potential reduction in expenditure on FCAS procurement by AEMO, predominantly due to a potential reduction in the need for regulation services.”⁸

AGL tends to agree with these predictions of FCAS market outcomes, with the result that generators receive less overall FCAS revenue. Generators will then look elsewhere to recover these losses, hence AGL anticipates that the energy price will rise with mandatory PFR in place. A rise in the wholesale price is likely to lead to high prices for customers, which is an entirely undesirable outcome. It would be preferable to introduce new markets to efficiently procure and price services in the NEM.

If you have any queries about this submission, please contact Liz Gharghori on (03) 8633 6723 or lgharghori@agl.com.au.

Yours sincerely,

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⁷ AEMO, Electricity rule change proposal, Mandatory primary frequency response, August 2019, p. 56.

⁸ AEMC, Primary frequency response rule changes, Consultation paper, 19 September 2019, p. 97.