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ERC0274 Mandatory Primary Frequency Response draft rule determination

AGL Energy (**AGL**) welcomes the opportunity to comment on the Australian Energy Market Commission's (**AEMC**) Mandatory Primary Frequency Response (**PFR**) draft rule determination.

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.

AGL supports the introduction of an interim mandatory PFR requirement to address declining frequency performance in the National Electricity Market (**NEM**), while further reforms are implemented to appropriately value and reward provision of frequency control services. Our views on more detailed aspects of the draft rule are set out below.

The mandatory PFR requirement
The draft determination provides that, unless exempted, all registered scheduled and semi-scheduled generators who are given a dispatch instruction to generate a volume greater than 0 MW must provide PFR within a band no narrower than the National Electricity Rules (**NER**) prescribed control band of 49.985Hz to 50.015Hz. Additional requirements will be detailed in the Australian Energy Market Operator's (**AEMO**) Primary Frequency Response Requirements (**PFRR**).

The AEMC proposes that mandatory PFR be in place until 4 June 2023, by which time a market-based framework will be considered. AGL strongly supports the sunsetting proposal and the move towards appropriately valuing and paying for necessary market services, including frequency response. Additionally, this is consistent with what the Energy Security Board has foreshadowed for the NEM.[1]

AGL had expressed a preference for running a mainland PFR trial, which would identify the necessary levels of frequency response and the best geographical locations from which to procure it. We considered that this was consistent with AEMO's review into the regional allocation of contingency Frequency Control Ancillary Services (**FCAS**), which seeks to address the lack of diversity in the distribution of FCAS reserves and subsequently decreased power system resilience. In the absence of a trial, we support the temporary requirement for certain generators to provide mandatory PFR.

[1] Energy Security Board, Post 2025 Market Design, Issues Paper, September 2019, p. 24.

AGL expects that as the AEMC and stakeholders consider a replacement to mandatory PFR, that consideration will be given to how PFR will operate alongside existing FCAS markets and what changes may be required. The AEMC has foreshadowed this in the draft determination with respect to regulation FCAS and the impacts to causer pays arrangements.

A more immediate concern is the interaction between mandatory PFR and contingency FCAS. Will contingency FCAS providers be paid for PFR where the frequency bands of the services intersect? If so, is this fair to PFR providers who are not contingency FCAS providers? AGL considers that the AEMC should provide guidance in this area during this current rule change process, rather than leaving this issue to the procedure amendment process.

In a similar vein, AGL supports prescribing the maximum primary frequency control band within the NER rather than leaving it to the AEMO's discretion through the PFRR, in addition to specifying that generators need not maintain headroom. This provides impacted participants with a degree of certainty that key elements of the mandatory PFR requirement cannot be easily amended, except by the Reliability Panel through the Frequency Operating Standard (**FOS**). Any changes to the control band or headroom requirements would necessitate further plant changes, placing additional regulatory and cost burden on participants.

Looking specifically at the PFR deadband, we understand that +/- 0.015Hz has been selected as a best practice standard. The draft rule specifies that AEMO cannot prescribe a narrower deadband in the PFRR, but can set a wider allowable deadband. AGL supports the draft rule providing such flexibility, however AEMO's draft PFRR has removed the flexibility prescribed by the AEMC by strictly utilising the +/- 0.015Hz deadband.

The problem with AEMO's strict imposition of a narrow deadband is that a significant amount of plant in the NEM simply cannot meet the requirement without investment. An incentive based PFR scheme would encourage participants to invest, but in the absence of this, we strongly urge AEMO to pull back from its all or nothing position, or ask the AEMC to redraft the rule in a way that directs AEMO to a more practical conclusion.

For further context, much thermal plant in the NEM was constructed and designed with PFR at +/- 0.025Hz, while other plant control systems can only be set to two decimal places and therefore cannot measure a PFR response to three decimal places, as proposed. In AGL's view, for plant that cannot easily provide PFR at +/- 0.015Hz, it is better to have these generators contributing at +/- 0.025Hz or +/- 0.02Hz than not at all. Having generators providing PFR at slightly different deadbands is also likely to assist with engineering concerns about what would happen if all PFR kicked in at the same point.

Similarly, with AEMO's proposed droop requirement of five per cent, the Australian Standard has historically been set at four per cent, and any plant changes required to adopt a new limit will be expensive in dollar terms and engineering hours. A preferable mandatory PFR requirement should see existing plant providing PFR with fixed droop and deadbands within their design limits, but as close as practical to AEMO's chosen parameters of +/- 0.015Hz and 5% droop. New generation can more easily be designed for +/- 0.015Hz dead and 5% droop, should these be the preferred parameters going forward.

The process for exemption or variation to the performance parameters for the provision of PFR
As noted above, many existing generators can provide PFR, but not at the narrow levels prescribed in the draft PFRR. Further, many generators entered the NEM at a time when PFR was not required to be provided and thus PFR enablement was not a design consideration. These groups would presumably fall into the respective categories of partial and full exemption. We would like to see further detail in the PFRR

or the final rule on how AEMO will assess technical ability and economic viability in determining whether a generator should be fully or partially exempt from providing mandatory PFR.

This rule change covers similar ground to NER clause 4.16, which sought to ensure that the actual capability of plant be taken as the appropriate performance standard for that plant to meet. To ensure that onerous retrofitting requirements were not placed on existing generators, clause 4.16.7 allowed for expert determination where the generator and AEMO could not agree on plant performance. This avoided applying the protracted NER chapter eight arbitration provisions, limited the grounds for dispute, and appointed an appropriately qualified technical expert. It may be appropriate to mirror these dispute resolution provisions in the final mandatory PFR rule, to give participants comfort that unreasonable requirements will not be imposed on them.

The arrangements for implementation of the mandatory PFR requirement
AGL supports the draft rule placing an obligation on AEMO to set out the process for the coordinated activation of changes to generating systems in the PFRR (cl. 11.[XXX].2(c)(3)). As noted by other stakeholders, the draft PFRR did not detail such information. Given the significant disadvantage that first movers could face as PFR is rolled out across the network, AGL considers the final rule must go further. AEMO should be required to ensure that PFR implementation is appropriately staged in terms of timing and geographic distribution, minimising the risk that any individual generator is subject to loss or damage.

We note the AEMC's draft determination to not provide for direct reimbursement of plant upgrades costs when a generator implements mandatory PFR. This decision was made on the basis that a generator could seek to gold plate any upgrades, that the generator will be able to derive revenue from any upgrades it makes, and where costs are too high, the generator will be exempt from having to upgrade at all. We do not disagree with the AEMC's reasoning.

That said, it must be acknowledged that current generator control systems were established in good faith to comply with the regulatory requirements of the day and generators will lose a degree of this capital expenditure in the shift to mandatory PFR. The AEMC's decision to not provide compensation only strengthens the need to develop a framework for incentive based PFR provision, which would allow generators to recoup some of these losses.

Finally, on the PFRR, Clause 4.4.2A(4) of the draft rule requires that the PFRR include details of compliance audits or tests a generator must conduct to verify compliance with applicable settings. The PFRR specify that at a minimum, a step response stability test is required, and that further tests may also be necessary.

It is possible that for some generator system changes, AEMO will seek to apply NER processes such as those in clause 5.3.9 and S5.2.2 and this may result in generators being asked to conduct modelling. Modelling would significantly slow the implementation of the PFR and result in significant cost to generators, entirely counteracting the urgency driving this rule change forward. Accordingly, the final rule should establish that mandatory PFR implementation will not give rise to generator change processes under clause 5.3.9 and S5.2.2, nor will generators be required to undertake power system modelling.

Other changes to the NER that relate to the provision of PFR by market participants in the NEM
AGL supports the draft rule amendment to cl. 4.9.8 to explicitly state that generators providing frequency response, in AEMO's words, "will not be non-compliant with their dispatch instructions."[2] Under the existing

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

rule, it is not possible for plant to be automatically responsive to power system frequency deviations while also following dispatch targets. As the AEMC is aware, the AER pursued several cl. 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.

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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