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Australian Energy Market Commission

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Primary Frequency Response Rule Changes – Draft Determination

The Australian Energy Council (“**AEC**”) welcomes the opportunity to make a submission to the draft determination of two of the three rule changes associated with Primary Frequency Response (PFR).

The AEC is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

Summary

As presented in our submission to the Consultation Paper, the AEC accepts that NEM frequency performance is presently inadequate and that PFR should be part of its correction, however it considers that uncompensated mandatory provision of PFR is neither a fair nor economically sustainable approach to its acquisition.

The draft determination appears to agree, however it nevertheless proposes to impose the obligation. The AEC recognises the difficult circumstances surrounding this draft determination, with a sense of system security urgency being placed upon the AEMC and unwillingness of the market operator to manage a short-term correction through the AEC’s offered voluntary trial.

Whilst the AEC is disappointed that ERC0274 is to be made largely as proposed, it is very appreciative of the AEMC’s express recognition of the rule change’s faults, the imposition of a sunset and a new work plan towards a sustainable long-term solution. The AEC understands it is very unusual for the AEMC to impose a rule sunset, but, given an inability to complete the Frequency Control Frameworks Review (2018)’s work plan, considers a sunset essential to enforce the new plan.

The AEC also supports the deferral of the draft determination of ERC0263 – Removal of disincentives to PFR – which enables one form of PFR compensation stream to be analysed as part of the new work plan.

Deadband

The AEC considers that the proposed ± 0.015 Hz deadband for mandatory PFR is unprecedented in Australia and unreasonably narrow. As stated in our earlier submission, a wide “last-resort” deadband would be appropriate if the rule change’s objective is limited to system resilience to non-credible events such as 25 August 2018. The AEC understands a narrow deadband is proposed in order to also improve Normal Operating Frequency Band (NOFB) performance. It is however in this range where the greatest risks of unintended consequences – technical and economic - emerge.

Even if the AEMC is convinced that a within NOFB deadband for mandatory PFC is justified, the AEC remains concerned that moving in one step to ± 0.015 Hz is risky and inappropriate. It feels that a value consistent with Australian experience is a safer first step.

The AEC supports the altered governance proposal of a “*primary frequency control band*” (PFCB), set by the Reliability Panel, which would set the minimum deadband that could be imposed on PFR providers. This allows flexibility on this important parameter and for the deadband to be imposed prudently. This improved governance is however undermined by listing ± 0.015 Hz as the Rules’ default PFCB ahead of the Panel’s consideration. Beginning narrow and allowing it to be widened is in reverse of the prudent approach. The default should instead be a historical norm, such as ± 0.050 Hz, and, when the Reliability Panel is convinced it is safe to do so, they will have the power to subsequently narrow it.

Exemptions

The AEC supports the inclusion within the rule of an exemptions framework under 4.4.2B and broadly supports the five criteria listed. The need for a clear exemptions framework including explicit recognition of the costs of conversion is particularly essential since the AEMC has proposed to delete any compensation for conversion.

The AEC also agrees that if a mandatory obligation must apply, exemption should be based on technical, economic and practicality grounds and that there should not be any blanket minimum size or technology-type exemptions.

The AEC agrees the principles should include guidance on the trade-off between compliance costs and the economic size of the PFR provider. The AEMC has proposed a form of words in principle (2), to which the AEC comments:

- The cost side of the trade-off should contemplate ongoing as well as conversion costs with the following inclusion:

“the costs that are likely to be incurred in augmenting [*and operating*] the generating system to be able to operate in a frequency response mode....”
- Whilst market turnover is a reasonable proxy for comparing the relative economic sizes of different providers, the draft wording could be misinterpreted that costs right up to the *entire* market turnover are acceptable, which would be absurd. As Frequency Control Ancillary Services (FCAS) markets have a turnover of around 1-2% of the energy market then this risk could be eliminated by explicitly including:

“relative to [*1% of*] the turnover derived from, and the expected operating hours, of the generating system in relation to its operation in the national electricity market.”

Whilst a structured exemptions framework is supported, the AEC considers it should be operated by the Australian Energy Regulator (AER) rather than AEMO. This would be more consistent with the AER’s technical compliance enforcement responsibilities across the Rules.

Having AEMO solely determine exemptions would be unfair upon a provider as its only recourse for an unfavourable decision is to launch a chapter 8 dispute. It would be very difficult to prosecute, as the provider would not have access to all the relevant matters that AEMO contemplates in providing an exemption, particularly where parameters are considered in relative terms against its competitors.

In contrast, an AER process requires that all parties present robust justifications for their positions before an independent third-party.

The AEC supports publication of granted exemptions.

Scope of Mandatory PFR Requirement

The AEC supports elevation into the rules of an explicit exclusion of a need to maintain additional stored energy. Stored energy is expensive and an obligation to retain it would have been seriously distortionary.

However as stated in our first submission, the AEC feels a governor obligation on its own, without any way of procuring stored energy, may not be effective at maintaining frequency. It may also distort the workings of the FCAS contingency markets by drawing stored energy away from providers pre-contingency. These obvious problems emphasise the importance of working towards a sustainable long-term mechanism for PFR that incorporates stored energy sourced from willing suppliers.

Battery response is to be exempted when energy dispatch is non-positive, justified by avoiding discrimination compared to conventional generation. A desire for non-discrimination on this sole aspect is puzzling within a proposal that is fundamentally discriminatory. The rule change is an unashamedly Marxian “from each according to ability” obligation. For example, it obliges steam generators to provide more PFR than gas turbines; variable renewable energy need only provide downwards PFR; and less flexible generators will be exempted entirely. As argued in many submissions, natural PFR response capability varies enormously across the fleet, and the rule intentionally and perversely discriminates against those with the best PFR capability.

It is therefore entirely predictable that the best PFR providers will be the most discriminated against. If the best technology’s obligation can be reduced to the second best’s ability, then why should not the obligations of both be brought down to the third, and so on? AEMO claims that the power system’s entire PFR capability should be activated (with exceptions only on the grounds of practicality), and exempting one highly practical source upon a single application of a principle of non-discrimination seems to undermine AEMO’s main premise.

By extension, it is not clear why the rule change’s scope should not extend to scheduled loads, such as pumps..

Performance measurement

The AEC agrees that providers who have not installed the high-speed metering equipment as required to verify performance in the FCAS markets should not be obliged to install it¹.

“The Commission has made a draft rule that does not require the installation of any new additional equipment for the purpose of verifying compliance with the mandatory PFR...”²

The high-speed metering equipment necessary for demonstrating delivery of FCAS contingency does not retain a continuous record as would be necessary to demonstrate compliance with the PFR provision. Consistent with the statement above, there should be no ability to require the adaptation of such meters.

It is not clear how the draft 4.4.2A (b) (4) achieves the AEMC’s intent. It would appear to remain open to AEMO to oblige such equipment through its Primary Frequency Response Requirements (PFRR). The rule should include an explicit prohibition of these requirements as the AEMC has applied to stored energy in 4.4.2A (d).

Work plan

Pages 62-65 of the draft contain an excellent summary of the widespread stakeholder concerns about the deleterious implications of an uncompensated mandatory PFR obligation. At no stage does the draft determination attempt to rebut these implications, and indeed appears to confirm them. The only rationale for making the rule, in spite of these flaws, is the pressure that has been placed on the rule-making process. This comes about through the sense of system-security urgency, and the unwillingness of the system operator to address these short-term security concerns in other ways, for example through the AEC’s proposed voluntary PFC trial.

In that context, the provision of a work plan towards a more appropriate means of acquiring PFR is strongly supported. In particular the AEC sees the three year sunset as a critical feature of the draft determination and is very appreciative of the AEMC making an exception to its usual preference of avoiding sunsets. In this case the sunset has two critical benefits:

¹ Draft Determination page 75 and 76

² Draft Determination page 76

- It sends a clear message that the AEMC shares these stakeholders' concerns and that it is only prepared to support the rule as a stop-gap measure to address an immediate security issue; and
- It forces all parties to commit constructively to the work plan knowing that a better solution must be in place by 2023. The deadline pressure it places on parties should hopefully avoid a repeat of the collapse of the 2018 FCFR work plan.

The activities listed in the work plan for calendar year 2020 are all supported, but these seem to be only a combination of broad research and matters associated with implementation of the existing three rule changes. The work plan has not yet indicated a clear design period for a way to reasonably procure PFC. It has referred to the broad market design work being carried out for the Post-2025 Market Design by the Energy Security Board, but the AEC considers this process to be likely to be too long-term, and generic, to recommend a sustainable PFC solution in time for the 2023 sunset.

Instead the AEC recommends a more dedicated focus upon a replacement to ERC0274. AEC feels the key parties are AEMC, AEMO, the Reliability Panel and PFC providers. The most appropriate platform for its development would be the PFC Technical Working Group, led by AEMC. In that respect, the workplan should identify specific deliverables, allocated to specific parties, by specific dates.

The work plan also needs a steward to keep track and report progress towards its goals. An expert consultant could be appointed to achieve this goal.

Outcome Reporting

In July 2019 the AEMC made Rule ERC0273³ that obliges reporting on the outcomes of FCAS markets by:

- The AER in respect of market outcomes; and
- AEMO in respect of technical performance.

It is worth updating rule 4.8.16 to recognise the very significant development of mandatory PFR, by requiring AEMO to report on its outcomes. It should require reporting on the amount of PFR that AEMO considers to have been active, and, as the PFR will have a deadband well within NOFB, reporting on the spread of within-NOFB frequency outcomes and any observed oscillations.

The Rule should also require AEMO to provide an interpretation of the effectiveness of the PFR obligation, targeted toward informing the work plan. In particular information that could inform the work plan towards the appropriate minimum quantities of PFR and stored energy that should be acquired by a future market arrangement.

Transparency

As mentioned earlier, the AEC supports draft rule 4.4.2A (d) publishing a list of exemptions. In our earlier submission we also recommended a number of live reports that should be presented as part of the obligation: aggregated information in relation to activated provision of PFR, dead-bands, droop and response time.

The draft determination did not appear to address this suggestion. If the AEMC is in agreement, it may be that the specifics of the publication can be left to the PFRR, but it would be worthwhile including in the rules an expectation that the PFRR should incorporate publication of aggregate PFR quantities.

Conclusions

The AEC is seriously concerned about the non-market direction for frequency provision in this rule change, and is disappointed that it is to be made largely as proposed. It however accepts the circumstances behind the decision. The AEC is very pleased that the AEMC has articulated in the draft determination similar concerns, and has applied a three-year sunset and a work plan to an economically sustainable long-term

³ <https://www.aemc.gov.au/rule-changes/monitoring-and-reporting-frequency-control-framework>

solution. We recognise a rule sunset is a significant departure from AEMC practice but consider it essential to enforce the work plan. The work plan in the draft determination is however insufficiently developed and lacks clear tasks, accountabilities and timeframes with respect to developing a long-term solution. The AEC trusts that the final determination's work plan will be more fully developed.

The AEC supports the rule improvements regarding stored energy and the PFCB governance. We consider however the initial PFCB should be a deadband closer to Australian historical practice.

As stated by many submitters, the AEC is troubled by an arrangement that obliges providers to deliver up to their full capability, perversely discriminating against those who have invested in the best capability. However, this being the case, it is inconsistent to propose that a small group of very good providers be partially exempted on the basis of non-discrimination.

The AEC supports the exemptions framework subject to some minor modification. It however suggests that exemptions be considered by an independent party, the AER.

Any questions about our submission should be addressed to me by email to ben.skinner@energycouncil.com.au by telephone on (03) 9205 3116.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Ben Skinner', with a stylized flourish at the end.

Ben Skinner
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