

INTERIM PRIMARY FREQUENCY RESPONSE REQUIREMENTS CONSULTATION FORUM NOTES

DATE: Wednesday, 22 April 2020

TIME: 10.30 am

VIDEOCONFERENCE: Webex

ATTENDEES:¹

COMPANY	NAME
AEMO	Ben Hiron, Tyson Vaughan
AEMO	Mark Stedwell, Andrew Groom, Andrew Paver, Evy Papadopoulos, Laura Walsh
AGL	Darren Hunt, Liz Gharghori
Alinta Energy	Kunan Patel, John McCullough, Paul Grey
CS Energy	Barry Downes, Henry Gorniak
Delta Electricity	Simon Bolt
ERM Power	Tim Carr
Horizon Power	Shan Paramasibam
InterGen	Francis Holmes, Franco Rabines
Origin Energy	Alex, Fattal, Derek Freeman
Stanwell Corporation	Nicholas Buckley, George Picoto

The forum was organised by AEMO as part of AEMO's consultation on the draft Interim Primary Frequency Response Requirements (IPFRR).

Mark Stedwell chaired the forum and conducted a page-turn of the document. The numbers refer to the questions from participants. The blue text is AEMO's response to the question above it.

1. Will the IPFRR be updated prior to the close of submissions?

AEMO wants to ensure that all submissions are based on the same version of the document, so no updates will be published prior to the close of submissions.

2. Section 2 – Why does the document not refer to minimum load?

AEMO understands the point, however, is constrained by how the rule was drafted in specifying that it applies to relevant generating systems in receipt of a dispatch instructions to generation a volume of electricity of greater than zero MW.

¹ There was a total of 26 participants for most of the time. Not all participants' names appeared are known as they were dialling by mobile.

Although section 4.2 is intended to cover this, AEMO will look into the issue further, to identify when operating in frequency response mode might not be appropriate. This could be considered as a condition for a 'standing variation'.

3. Section 3.2 – Should this section read 'wider than' or 'narrower than'?

AEMO agrees the drafting could be improved. The provision will be amended for clarity.

AEMO's intention is to specify a deadband limit that equates to the primary frequency control band. Affected Generators must not operate their generating systems with a wider deadband than that but can operate at a narrower deadband if they wish.

4. Section 3.2 – Can a Generator apply for a wider deadband as a variation?

The end point is ± 0.015 Hz. A wider deadband would only apply as part of a staged narrowing of deadbands by many generating systems at once to minimise the impact on any individual generating system.

AEMO would not entertain any request for a generating system to operate permanently with a deadband that is wider than ± 0.015 Hz unless there were extenuating circumstances, such as physical incapability of operating at that deadband.

5. How did AEMO come up with ± 0.015 Hz as the preferred deadband?

This is a matter that was dealt with extensively as part of the AEMC's rule change process. Anyone wishing to revisit that can do so by reading the material on the AEMC's website at <https://www.aemc.gov.au/rule-changes/mandatory-primary-frequency-response>.

6. Section 3.2 – Will AEMO adopt the same methodology for new generation?

Yes, although the vast majority of new generation would be captured as part of Tranches 2 and 3, which means that the greatest impact of changes to deadbands will have already been experienced.

7. Clause 3.2 – There are generating units that operate with no deadband. How does this affect them?

Any Generator who wants to operate with a deadband that is narrower than ± 0.015 Hz, including zero, is free to do so.

The rule prevents AEMO from requiring any Generator to do so. The other thing the new rule has changed is that compliance with an energy dispatch instruction is subject to being frequency-responsive.

8. Section 3.3 – Why is it that PFR is required at all times, and not only when frequency is within the Normal Operating Frequency Band (NOFB)?

To require it only within the NOFB would not achieve all of AEMO's objectives in seeking the rule change.

9. Section 3.4 – Has there been any discussion on the use of P_{max} as a reference point?

AEMO is open to the use of other parameters if they are more appropriate and looks forward to suggestions from Consulted Persons on this issue. If a Generator wishes to use a different Power base for specifying droop, this should be noted in the self-assessment.

10. Section 3.4 – The reference to control settings being ‘adequately damped’ is problematic.

This is a standard requirement for all control systems. It is prescribed by the National Electricity Rules (NER).

11. Section 5 – What does ‘Affected GS’ mean?

It picks up the NER definition of ‘generating system’ and affected means any scheduled or semi-scheduled generating system. The aggregation of generating units for the purposes of dispatch (ie one DUID) is picked up by the use of the term in determining what is an ‘Affected GS’.

12. Section 5.1 – What does the last paragraph mean?

This was included to assist with the paperwork where a Generator has many generating systems it operates, so that it can include all self-assessment results in the one submission. It is optional. A Generator may also submit results for different Affected GS separately, if it wishes to do so.

13. Section 5 – Some Generators will rely on the responsiveness of their original equipment manufacturer (OEM) to provide detailed results and supporting information. Some OEMs are renowned for their tardiness. How will AEMO address this?

AEMO expects Generators to be proactive and seeking OEM advice from now and not leave it until June. Those who are genuinely being held up by their OEMs may apply for an extension of time under section 6.2.

14. Section 6.1 – Deadline for provision of further information is too short.

As noted in response to question 13, AEMO expects Generators to be actively seeking information from third parties right now. Generators have on notice for some months about the need for technical information demonstrating PFR capability. In reality, the timeframe is much longer than 5 business days.

15. Section 6.3 – What is AEMO’s expectation of a deadband? Generators need to know what the expectation for the market as a whole is before carrying out their self-assessments.

The point of the self-assessment is for Generators to advise AEMO of their plant’s current capabilities. This should have nothing to do with what anyone else might be proposing.

16. Section 6.3.1 – There is a typo. The Appendix referred to should be C, not B.

Noted.

17. Section 7 – The difference between exemptions and variations.

AEMO considers an exemption to be appropriate if plant cannot be made frequency-responsive after having considered every available option and having applied the principles in clause 4.4.2B of the NER.

A variation would be appropriate if plant is frequency-responsive but cannot meet one or more of the parameters AEMO expects to provide PFR.

18. Section 7 – What types of evidence will AEMO require?

This will vary, depending on the plant.

For example, with run-of-river hydro plant, AEMO understands that it is possible that the plant might never have been designed to be frequency-responsive, so they might only need to provide design information.

Some older wind farms might be capable of being frequency-responsive, but only after modification. If the changes are only software updates, that might be all the evidence required, but if more changes are required, AEMO will need an engineering report explaining this.

19. Section 7.1.3 – Can this include reference to consulting engineers as well as OEMs?

Yes.

20. Section 7.1.5 – Confused about dispatch inflexibilities. Will current practice continue?

AEMO does not intend to change normal practice or overwhelm the control room with requests for variations. If Consulted Persons can advise of the frequency with which these and other issues could arise, AEMO can determine whether they are better dealt with as standing variations, or ad hoc variations.

Clause 4.4.2B of the NER includes these types of issues in the principles AEMO must consider when reviewing applications for exemption or variation. It might be that this is how they must be addressed in the IPFRR, rather than in section 4.2 and 9.1.

21. Section 8 – If the changes made to plant are only the DCS, will modelling be required?

No. It is noted that, in many cases, AEMO does not hold models of DCS for thermal generation, and there is no expectation that new DCS models would be required as a result of this new rule.

The Generator will only need to carry out a singular step change test.

If Generators make changes to plant for other reasons, modelling might be required because the usual clause 5.3.9 process applies to changes that could impact the GPS.

22. Section 8 – What about a trip-to-house-load test? Would that suffice?

AEMO will consider whether it would.

23. Section 8 – When does the singular step change test need to be carried out?

It is not required that tests be carried out before Generators complete the self-assessment. If a Generator wishes to do so, for example, to increase confidence in the results of its self-assessment, it may do so.

The possibility of providing recent governor test data to demonstrate stable response was suggested. AEMO is considering this issue.

AEMO suggested that where multiple near-identical generating units exist within an Affected GS with identically applied settings, testing of one of these units may be sufficient.

If Affected GS have operated recently with settings identical, or very similar, to those proposed for the provision of PFR, evidence may be available to demonstrate stable operation with settings that are proposed in an Affected Generator's self-assessment. If this is the case, that evidence could be submitted with the self-assessment.

AEMO could, perhaps, consider amending the response required by section 6.1.3 to include details about when the test should be carried out, but this also means asking questions about the test as part of the self-assessment.

24. Section 8 – If a Generator has recently carried out extensive testing, will they need to redo the step response test?

AEMO needs evidence that changing the deadband does not alter generating unit performance. See AEMO's response to Q23.

25. Section 8.1 – What does 'material' (used in the second paragraph) mean?

AEMO agrees it could be drafted better, but it is intended to mean that the only test required is a singular step change test if the only material changes to plant made by a Generator to meet the IPFRR are:

- (a) Changes to the DCS;
- (b) Governor deadbands; or
- (c) Plant load controller deadbands.

26. Section 8.2 – Can AEMO publish every generating system's current settings to assist with the self-assessment?

No, AEMO is unable to publish that information.

27. Section 9.1 – Can this be reconciled with section 7.1.5?

Yes, it will be. AEMO will probably develop a list of standing variations.

28. Section 10 – How much detail will AEMO be publishing?

AEMO will be publishing three lists of Generator names:

- (a) Those who meet the PFR settings.
- (b) Those who have been granted a variation.
- (c) Those who have been granted an exemption.

For those who've been granted a variation, AEMO will also publish which parameter has been varied.

Extension of deadline for submissions

AEMO advised that the deadline for submissions to the consultation will be extended to 8 May 2020.