

Amendments to the Market Ancillary Service Specification

Draft Report – Expedited consultation
for the National Electricity Market

Published: 25 May 2023

aemo.com.au

New South Wales | Queensland | South Australia | Victoria | Australian Capital Territory | Tasmania | Western Australia
Australian Energy Market Operator Ltd ABN 94 072 010 327

© 2023 Australian Energy Market Operator Limited. The material in this publication may be used in accordance with the [copyright permissions on AEMO's website](#).

Explanatory statement and consultation notice

The publication of this draft report commences AEMO's expedited consultation on proposed amendments to the Market Ancillary Services Specification (**MASS**) (the **proposal**) under the National Electricity Rules (**NER**).

This consultation is undertaken as required by NER 3.11.2 following the procedure in NER 8.9.3. AEMO considers that the expedited rules consultation procedure is appropriate because the proposed amendments:

- Are limited to one parameter of the specification for Very Fast FCAS to be registered for the Tasmania region only, from 9 October 2023. They will only affect the determination of Very Fast FCAS amounts enabled and delivered in that region.
- Have been developed with the input of relevant Tasmanian registered participants to appropriately reflect the particular needs and standards for the Tasmanian power system.
- Have no impact on the current FCAS market arrangements.

AEMO considers the proposed amendments to the MASS are necessary following further evaluation of the technical requirements for the Tasmanian system, after the conclusion of AEMO's 2022 MASS consultation to introduce the Very Fast FCAS specification¹.

AEMO's draft proposal is to amend the MASS in the form published with this draft report, with a proposed effective date of **9 October 2023**.

Consultation notice

If any person considers that AEMO should follow the standard (rather than expedited) consultative procedure for this proposal, they can submit a request for AEMO to do so (a **procedure change request**) within 10 business days after publication of this draft report. Any procedure change request must be sent to **mass.consultation@aemo.com.au** by 5:00 pm (Melbourne time) on **8 June 2023**. In accordance with NER 8.9.3(b), a request must include reasons why the person considers the proposal is not a 'Non-material Proposal' as defined in NER 8.9.1 – that is, why it would have a significant effect on the NEM or on the activities of a relevant group of registered participants.

AEMO invites written submissions from interested persons on this draft report and the draft proposal to **mass.consultation@aemo.com.au** by 5:00pm (Melbourne time) on **23 June 2023**.

Submissions may include alternative or additional proposals you consider may better meet the objectives of this consultation and the national electricity objective in section 7 of the National Electricity Law. Please include supporting reasons.

Before making a submission (including a procedure change request), please read and take note of AEMO's consultation submission guidelines, which can be found at <https://aemo.com.au/consultations>. Subject to those guidelines, submissions will be published on AEMO's website.

¹ AEMO, Amendment of the Market Ancillary Service Specification – Very Fast FCAS, Final Report and Determination, 7 October 2022, at <https://aemo.com.au/consultations/current-and-closed-consultations/amendment-of-the-mass-very-fast-fcas>.

Please identify any parts of your submission that you wish to remain confidential, and explain why. AEMO may still publish that information if it does not consider it to be confidential, but will consult with you before doing so. Material identified as confidential may be given less weight in the decision-making process than material that is published.

Submissions received after the closing date and time will not be valid, and AEMO is not obliged to consider them. Any late submissions should explain the reason for lateness and the detriment to you if AEMO does not consider your submission.

Interested persons can request a meeting with AEMO to discuss any particularly complex, sensitive or confidential matters relating to the proposal. Please refer to NER 8.9.1(k). Meeting requests must be received by the end of the submission period and include reasons for the request. AEMO will try to accommodate reasonable meeting requests but, where appropriate, we may hold joint meetings with other stakeholders or convene a meeting with a broader industry group. Subject to confidentiality restrictions, AEMO will publish a summary of matters discussed at any stakeholder meetings.

Contents

Explanatory statement and consultation notice	3
1 Stakeholder consultation process	6
2 Background	8
2.1 Context for this consultation	8
2.2 NER requirements	8
2.3 The national electricity objective	8
3 Proposal discussion	9
3.1 Description of proposal	9
3.2 Impact of the change – examples	10
3.3 How the proposal meets the objectives	11
4 Draft determination	11
4.1 Draft determination	11
4.2 Effective date	11

Tables

Table 1 Consultation process and timeline.....	6
--	---

Figures

Figure 1 Impact of choice of Fast Frequency Ramp for a fast variable controller.....	10
Figure 2 Impact of choice of Fast Frequency Ramp for a switching controller	11

1 Stakeholder consultation process

As required by National Electricity Rules (**NER**) clause 3.11.2, AEMO is consulting on proposed amendments to the Market Ancillary Service Specification (**MASS**) (the **proposal**) in accordance with the expedited rules consultation procedure in NER 8.9.3.

Note that this document uses terms defined in the NER or the MASS, which are intended to have the same meanings.

AEMO's process and expected timeline for this consultation are outlined below. Future dates may be adjusted and additional steps may be included as needed, as the consultation progresses.

Table 1 Consultation process and timeline

Consultation steps	Dates
Initial communication and feedback from Tasmanian participants	13 March 2023 to 14 April 2023
Ancillary Services Technical Advisory Group (ASTAG) forum	28 April 2023
Draft report published	25 May 2023
Procedure change request deadline	8 June 2023
Submissions due on draft report	23 June 2023
Final report published	Expected 28 July 2023

AEMO considers that the expedited rules consultation procedure is appropriate for the proposal because it is not expected to have a significant impact on either:

- The NEM wholesale market or power system, because the proposed amendments are limited to one parameter of the specification for Very Fast FCAS to be registered for the Tasmanian region, with effect from commencement of that market on 9 October 2023. The proposed amendments to the specification will only affect the determination of Very Fast FCAS amounts enabled and delivered in Tasmania. They will facilitate the efficient maintenance of power system security in Tasmania having regard to the technical requirements of the power system, the applicable frequency operating standard (**FOS**), and the capabilities of FCAS sources in the region.
- The activities of the group of registered participants that the proposal relates to, because the proposed amendments reflect Tasmanian power system needs and applicable frequency operating standards, and have regard to the technical capabilities for the provision of Very Fast FCAS from prospective facilities in the region. AEMO has developed the proposal with the benefit of information and feedback from relevant Tasmanian registered participants.

The proposal has no impact on the current FCAS market arrangements.

This consultation will be limited to the issues raised in the proposal, to appropriately define the Very Fast FCAS specification for Tasmania only. To allow the consultation to be completed well before commencement of the Very Fast FCAS market², any other material issues raised in submissions will not be addressed as part of this consultation. AEMO requests

² Under NER 3.11.2(e), MASS amendments cannot take effect for at least 30 days after publication. To provide certainty for potential providers intending to register, AEMO will endeavour to complete this consultation as early as practicable.

stakeholders to limit submissions in this consultation to issues that are relevant to the subject matter of the proposal.

At any time before the final report is published, and based on information received through submissions to this draft report, any procedure change requests under NER 8.9.3(b) or otherwise, AEMO may decide that the proposal can no longer be considered non-material. If so, AEMO will switch to a standard consultation by publishing a notice under NER 8.9.3(f).

AEMO's consultation webpage³ for the proposal will contain all previous published papers and reports, written submissions, and other consultation documents or reference material (other than material identified as confidential).

In developing the proposal, AEMO undertook informal consultation via email with identified potential Tasmanian Very Fast FCAS providers and TasNetworks during March 2023, with further discussion at AEMO's ASTAG forum on 28 April 2023, attended by Tasmanian participants including Viotas, Hydro Tasmania, Firmus and TasNetworks.

AEMO thanks all stakeholders for their feedback on the proposal to date, which has been considered in preparing this draft report, and looks forward to further constructive engagement on the proposal.

³ 2023 MASS consultation page, at <https://aemo.com.au/consultations/current-and-closed-consultations/mass-consultation---revision-of-tasmanian-settings-for-very-fast-fcas>

2 Background

2.1 Context for this consultation

Following the 2022 MASS consultation on establishing the specifications for Very Fast FCAS⁴, AEMO's subsequent work on developing the new markets identified a shortcoming in one of the settings determined in that process. As a result, AEMO considers that the proposed Fast Frequency Ramp rate used in establishing the registered quantities Very Fast FCAS for the Tasmania region should be amended from 1 hertz per second (**Hz/s**) to 2 Hz/s.

2.2 NER requirements

To make any change to the MASS, NER 3.11.2 requires AEMO to follow the rules consultation procedures in NER 8.9. AEMO considers that the expedited rules consultation procedure specified in NER 8.9.3 is appropriate for this consultation given that the proposed change is very limited in scope and has no adverse impact on either NEM operations or registered participants.

2.3 The national electricity objective

Within the specific requirements of the NER applicable to this proposal, AEMO will seek to make a determination that is consistent with the national electricity objective (**NEO**) and, where considering options, to select the one best aligned with the NEO.

The NEO is expressed in section 7 of the National Electricity Law as:

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

⁴ 2022 MASS consultation page, at <https://aemo.com.au/consultations/current-and-closed-consultations/amendment-of-the-mass-very-fast-fcas>.

3 Proposal discussion

3.1 Description of proposal

AEMO proposes to amend the MASS procedures by changing the definition of the Fast Frequency Ramp so that the setting to apply for Tasmania is 2 Hz/s rather than 1 Hz/s. The setting for the mainland would remain at the existing setting of 1 Hz/s, determined in the 2022 MASS consultation. AEMO proposes that the amended version of the MASS would come into effect on 9 October 2023, effectively replacing version 8.0 which has the same effective date and was determined on 7 October 2022.

The purpose of the Fast Frequency Ramp is to set the conditions for the tests applied to a facility to determine the quantities it may register for each category of Contingency FCAS. The current specification for Fast FCAS (6 second response) employs a different frequency ramp rate for the mainland (0.125 Hz/s) to Tasmania (0.4 Hz/s) in recognition of the different expectations around frequency behaviour and the different FOS requirements. In last year's MASS Review to establish Very Fast FCAS, AEMO adopted a common Fast Frequency Ramp setting of 1 Hz/s for assessing Very Fast FCAS for both the mainland and Tasmania.

While AEMO considers this setting remains appropriate for the mainland, it has become apparent during subsequent work on developing the Very Fast FCAS markets and systems that a setting of 2 Hz/s would be more appropriate for Tasmania. This is because:

- The amount of Contingency FCAS that may be registered is based on a facility's change in active power over the 1 second immediately following a frequency disturbance.
- At 1 Hz/s, this means Tasmanian frequency would reach 49 or 51 Hz (starting from nominal 50 Hz) in the Very Fast FCAS timeframe. However, the FOS states that Tasmanian frequency must be arrested between 48 and 52 Hz for a credible generation or load event (see Table A1 of the FOS).
- In the currently specified Very Fast FCAS timeframe of 1 second, an assumed Fast Frequency Ramp of 1 Hz/s would result in frequency only reaching 49 to 51 Hz. However, an assumed 2 Hz/s Fast Frequency Ramp for Tasmania allows for a greater range of frequency change within the applicable band, but still maintains the capability to arrest it within 48 to 52 Hz.
- This setting also aligns better (though not exactly) with the credible event RoCoF limit proposed in the new FOS of 3 Hz/s that will apply from 9 October 2023.

The effects of this proposal are:

- AEMO's Contingency FCAS registration tests would assess a facility's response to a 2 Hz/s ramp for 1 second, rather than a 1 Hz/s ramp for 1 second for Tasmanian services.
- This could result in some facilities being able to register more Very Fast FCAS, as their change in active power would be measured over a 2 Hz change in 1 second, rather than a 1 Hz change in 1 second.
- Facilities that do not register for Very Fast FCAS are unaffected by the proposal. The existing Standard Frequency Ramp Rate of 0.4 Hz/s would still be used.

3.2 Impact of the change – examples

The following examples are provided to illustrate the potential impact of the revised Fast Frequency ramp on Very Fast FCAS registration. Note that in the examples, the facilities operate with the same control parameters whether the 1 Hz/s or 2 Hz/s ramp rate is used in the assessment. It is only the FCAS measurement that is affected.

When considering these examples, it is important to be aware that the difference that the assumed ramp rate makes for any individual facility will very much depend on the deadband, droop, or frequency trigger employed by the facility. The figures below illustrate the potential difference using assumptions about these values that AEMO considers to be reasonably representative.

Figure 1 shows an example of a variable (proportional) controller with a deadband of 0.15 Hz (that is, at the edge of the normal operating frequency band (NOFB)). Utilising a Fast Frequency Ramp of 2 Hz/s, this facility would be able to register a maximum Very Fast FCAS quantity equal to its full capacity (subject to any response delays), whereas a ramp of 1 Hz/s would restrict this to a maximum of ~54% of its full capacity.

Figure 1 Impact of choice of Fast Frequency Ramp for a fast variable controller

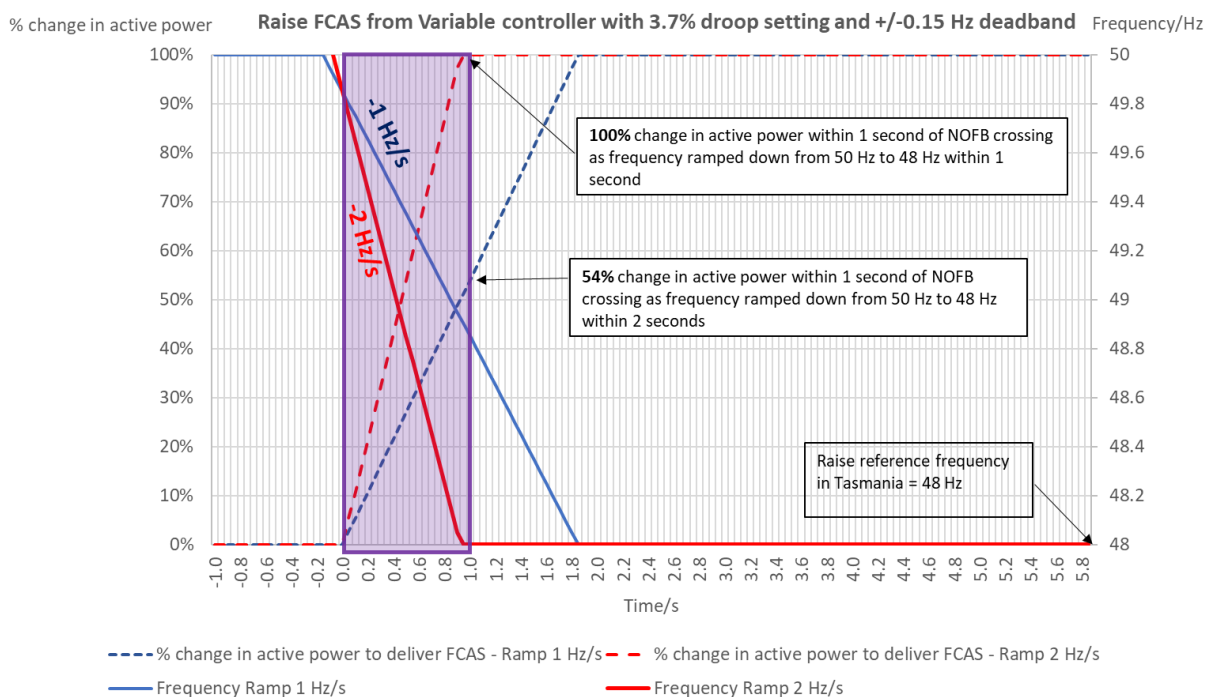
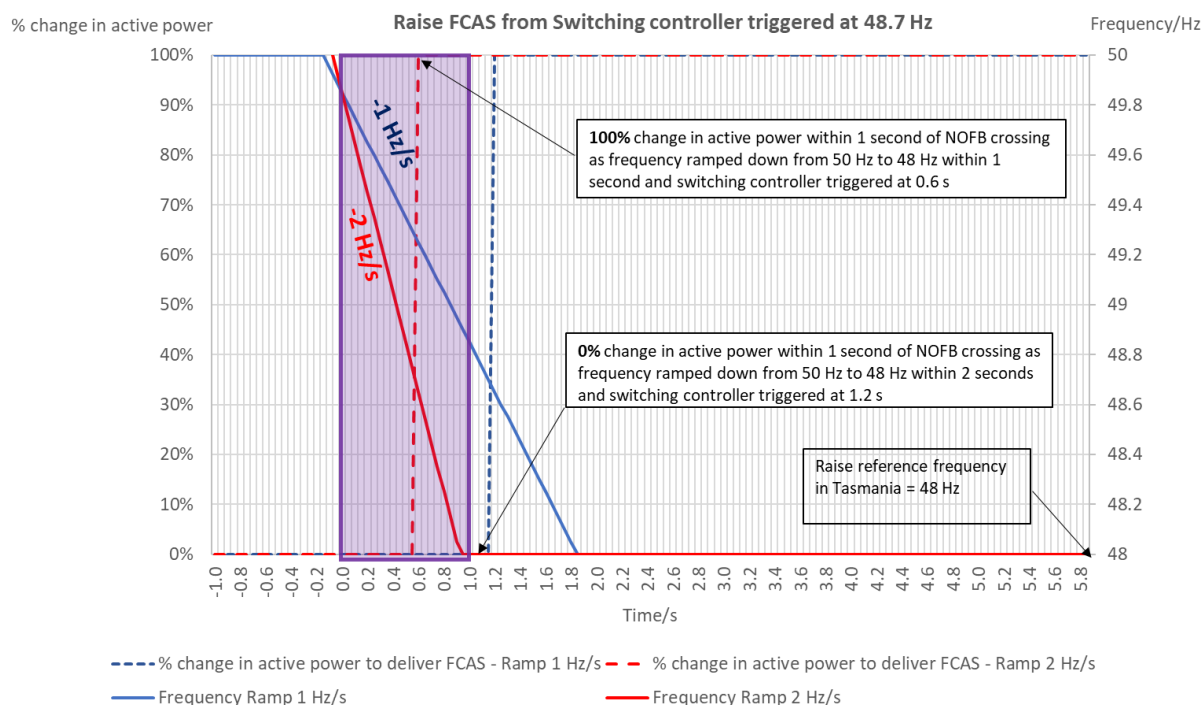


Figure 2 demonstrates the effect of the proposed change for a switching controller with a 48.7 Hz trigger point. A 1 Hz/s ramp rate would mean that this facility could not be registered for Very Fast FCAS at all, because it would not deliver any FCAS within the 0-1 second timeframe as the frequency would not have reached 48.7 Hz. With a 2 Hz/s ramp rate, it will trigger at 0.7 seconds. Note that the actual registered quantity will depend on the length of time the facility takes to respond.

Figure 2 Impact of choice of Fast Frequency Ramp for a switching controller



3.3 How the proposal meets the objectives

As discussed in section 3.1, AEMO considers that changing the assumed Frequency Ramp Rate for Tasmania is appropriate and consistent with the NEO as it leads to more efficient investment by:

- Aligning better with the FOS, and with the strategy employed for assigning the equivalent settings in the mainland;
- More appropriately valuing the response of Very Fast Contingency FCAS providers in Tasmania, and;
- Removing barriers to providers of Very Fast Contingency FCAS in Tasmania.

4 Draft determination

4.1 Draft determination

AEMO has prepared a draft of amendments to the MASS reflecting the proposal, as published with this draft report in mark-up format from the current version. AEMO’s draft determination is to make the MASS in that form.

4.2 Effective date

AEMO’s proposed effective date for the determination is 9 October 2023, such that it comes into effect from the commencement date of the Very Fast FCAS markets and will replace the published MASS version 8.0.