



# Market Ancillary Service Specification (MASS) Consultation

Feedback & Information Session

A photograph of a dense forest with tall, thin trees and a clear blue sky. The trees are green and have a textured bark. The sky is a bright, clear blue. The overall scene is peaceful and natural.

## Acknowledgment of Country

**We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.**

**We pay our respects to their Elders past, present and emerging.**

# AGENDA

1. Purpose of Forum
2. Overview of feedback from Second Stage Consultation
3. Topics for further analysis
4. Beyond the MASS Consultation
5. Q&A

# Purpose

**Provide** an overview of the feedback received in the second stage of consultation that has influenced AEMO's decision to conduct further analysis.



**Inform** stakeholders of:

- our thinking and approach to extending the consultation with a further draft determination and consultation period.
- further analysis being undertaken to inform the draft determination.

**Respond** to any questions stakeholders have on the approach.



Note: We request that any feedback from stakeholders be provided as a formal submission during the third stage of consultation.

# Feedback Overview

# Key topics raised

① Measurement sampling rate - Adequacy to confirm FCAS Delivery

② The location of the measurement of FCAS for the purpose of FCAS verification.

③ The transitional arrangements for existing VPP Demonstrations participants.

# Measurement Sampling Rate

- First draft determination: keep 50ms measurement sampling rate due to:
  - power system security concerns
  - ability to determine adequacy of FCAS delivery

While some submissions supported this position, others suggested:

- that power system security concerns should be considered a separate issue.
- that higher sampling rates would be sufficient to verify FCAS Delivery
- changes to the FCAS verification methodology to improve the accuracy of the tool with data captured at a slower sampling rate

# Measurement Sampling Rate

- *"The Draft Determination appears to conflate distribution network constraints and system security risks with the metrology requirements associated with market settlement." [CEC]*
- *"10 Hz sample rates are close to the boundary of what can reliably be achieved with simple and inexpensive microcontroller-based measurement techniques. While the maximum error when using 10 Hz sample rates (and the trapezoidal integration method) was calculated by AEMO to be 2.3% in the consultation document, the average error, based on Figure 2 of the document, appears to be less than 1%. " [Dreambox Co.]*
- *"Any error is more appropriately characterised as a shortcoming of the existing verification approach, rather than a sampling rate deficiency or measurement error." [Evergen]*
- *"The AEC generally accepts...the decisions not to change the measurement time resolution and measurement location point" [AEC]*
- *"We note that the UoM analysis concluded that the 100 and 200ms measurement options are sufficient to meet AEMO's system security concerns." [AGL]*
- *"We simply note that the draft determination concluded that the error would likely be overcome with reasonable changes to the verification tool. We therefore propose that these changes be pursued and consultation renewed with an updated verification tool." [Solar Analytics]*





# Location of the measurement of FCAS

- First draft determination maintained FCAS measurement location 'at or near' to the connection point

Feedback on this was also varied:

- In favour - some supported decision indicating it would provide greater accuracy, reduce potential for gaming, and support system management.
- Against - some noted that measurement at device/asset level was more consistent with the P2025 reform initiatives, reduced barriers to entry, and enhanced innovation.
- Additional feedback - suggested measurement location reflect the point at which FCAS was being delivered, or based on the number of controllable devices at the site.

# Location of the measurement of FCAS

- *“Measuring at the NMI level makes FCAS validation of sites with multiple responding devices possible and is desirable to support a broad range of use cases.” [Intellihub]*
- *“We support their (Evergen, Tesla) findings in relation to simple systems, allowing device level metering. We also support an approach where the VPP must ensure that more complex systems involving more than one appliance, must bid conservatively in order to ensure the vector sum of responses from the various appliances BTM are accurately reflected in the bid, and that this be allowed by various means including metering at the point of connection or other reasonable means.” [Members Energy]*
- *“There may be circumstances when relying on device level data is sufficient and this should not be precluded as the market develops. One option would be to allow device level measurement when only one device is being orchestrated BTM. We would suggest that AEMO test verification at both the metering and device level as part of ongoing trials.” [Origin]*
- *“Reposit reasserts that moving the metering point increases FCAS delivery uncertainty and creates perverse incentives for FCAS Providers.” [Reposit]*



# VPP Demonstrations participant transitional arrangements

- First draft determination put forward transitional arrangements for existing VPP Demonstrations participants
  - Enable them to continue to participate until 30 June 2023 with: 1s sampling, a discount applied, and no further growth of VPP capacity.

A number of submissions suggested alternatives including:

- Allowing additional VPPs to join under these conditions.
- Allowing VPP Demonstration participants to increase portfolio size
- Reducing the proposed discount amount for sampling rates slower than 50ms.
- Extending the VPP Demonstrations to allow further time for analysis, learning, and industry growth.

# VPP Demonstrations participant transitional arrangements

- *"We note that while VPPs will form a material part of the energy system in future, especially in SA, they are only operating at small scale today, and hence the risk to broader system arising from the issues identified is relatively small. There is the opportunity for further investigation of these issues, including a second phase trial to answer some of the questions raised in the MASS review that were not answered through the VPP Demonstrations, without material risk to system security." [SAPN]*
- *"Given the small discount applied to 50–200ms metering range, Shell Energy considers it would be reasonable to allow all participants– not just Trial Participants – to deploy meters with a resolution of 100ms on an ongoing basis with the discount rate applied. This should be permissible beyond Trial Participants (which is now closed) and available beyond the end of the proposed transitional period to 30 June 2023." [Shell Energy]*
- *"Hydro Tasmania would also like to suggest reducing the proposed discount for 1s or 200ms metered assets for Trial Participants. This aligns with AEMO's comments on the negligible impact on system security without having 50ms metering, and enables further testing of 1s data of current Trial Participants." [Hydro Tasmania]*
- *"Rather than freeze re-enrolment at larger sizes for these VPPs, Evergen recommends that AEMO instead put a cap of 10MW (or else current fleet capacity if it is already above 10MW) on Trial Participants." [Evergen]*



# Consultation Extension & Topics for further analysis

# Consultation Extension

AEMO considered either:

1. Concluding the consultation and making a Final Determination
2. Extending the consultation to
  - Allow time for some further analysis
  - Final submission on changes resulting from this analysis

AEMO received significant feedback on the sampling rate, error introduced, and ability to identify DER behaviour at sampling rates slower than 50ms.



AEMO decided to:

- Extend the consultation to **22 December 2021** to conduct further analysis

# University of Melbourne analysis

Considering feedback received, AEMO is seeking further independent analysis by the **University of Melbourne** on:

- Ability for slower sampling rates to be utilised for the purpose of FCAS verification.
- Impact on the error introduced at sampling rates other than 50ms as more sites are added to a fleet.
- Mathematic methodology most appropriate for FCAS verification.
- Calculation of inertial component using slower sampling rates

**AEMO will:**

- Use this information to inform the second Draft Determination
- Publish the outcomes of this analysis

# Final Stage of Consultation

- Tight timeframe to include extra work and extra round of consultation.
- AEMO are unlikely to accept late submissions to meet the Final report publication date.
- Primary focus is on DER Review components of the MASS.

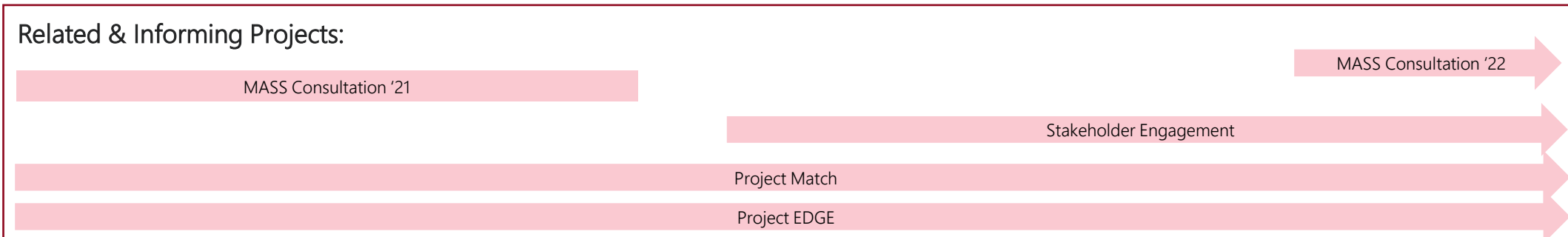
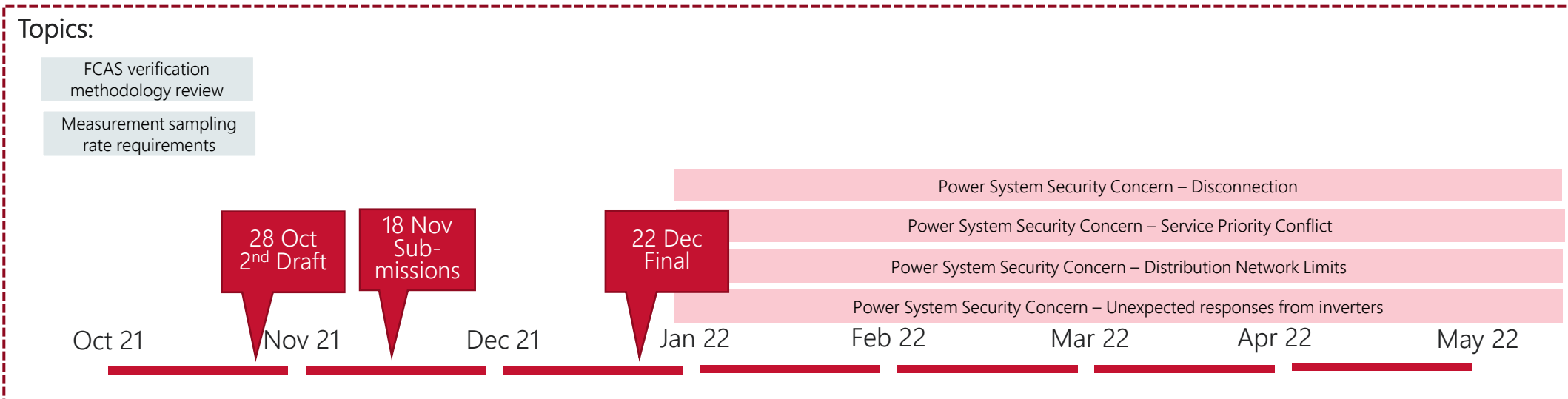
Deliverable	Date
Second Draft Determination & Notice of third stage consultation published	28 October 2021
Submissions due on Second Draft Report	18 November 2021
Final Report published	22 December 2021



# Beyond the MASS consultation

# Addressing Power System Security Concerns

- AEMO will undertake further investigation into the power system security issues identified as part of the MASS consultation following the publication of the Final Determination.



# Q&A