



**Government  
of South Australia**

Department for  
Energy and Mining

Our Ref: D21022756

Australian Energy Market Operator  
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Dear Sir/Madam

**RE: MARKET ANCILLARY SERVICE SPECIFICATION – DRAFT DETERMINATION**

The Energy and Technical Regulation Division (the Division) of the Department for Energy and Mining appreciates the opportunity to make a submission on the Australian Energy Market Operator's (AEMO) *Market Ancillary Service Specification (MASS) Draft Determination*. This submission focuses on the distributed energy resources (DER) component of the draft determination.

The significant stakeholder interest in this consultation process has drawn out often widely divergent and conflicting feedback as to the feasibility, technical merits, and costs of the two options presented. The Division acknowledges the difficulties this has presented AEMO to evaluate submissions and formulate its draft determination. The Division also agrees that the integrity of frequency control ancillary services (FCAS) arrangements needs to be at the forefront of AEMO's considerations. However, the Division is concerned that AEMO's position that it is not prudent to amend the MASS now has the potential to delay the participation of an increasingly significant resource.

For South Australia, with already high levels of DER and reduced system inertia, it is important that FCAS can be harnessed from a large and diverse pool of technologies and providers, including virtual power plants (VPPs).

The South Australian Government has had a significant focus on incentivising the deployment of VPP-enabled energy storage, as well as supporting development and trials of smart appliances. Aggregated DER stand to be an important contributor to reliability and grid security as rooftop solar deployment continues at a rapid pace and thermal generation retires. The opportunity for aggregation and control over a large proportion of distributed storage and other devices is significant, especially in the context of the minimum operational demand challenges and renewable energy generation goals.

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The Division estimates around 1000 MW of current fast raise (R6) capacity could be withdrawn over the next 15 years due to plant closures. At the same time this registered capacity is expected to reduce, the needs of the power system are increasing. Through the *Renewable Integration Study*, AEMO concluded that, under low inertia conditions, there is a need for more and faster frequency reserves and has already increased its procurement of contingency FCAS volumes due to changes in load relief.

As increased volumes are needed to compensate for changing power system conditions, a substantial proportion of replacement and new capacity will most likely need to come from batteries, VPPs and demand response. Although there is a healthy pipeline of announced utility-scale batteries, other potential sources such as aggregated DER also will be important to ensure a competitive and diverse market. DER have the advantages of becoming ever more ubiquitous and being geographically distributed, which is important where regional FCAS is required.

Greater uptake of distributed battery storage can assist the minimum demand challenge in South Australia; however, the economics of battery storage is a key challenge, especially for residential consumers. Through the Home Battery Scheme (HBS), the South Australian Government is assisting households to invest in VPP-capable battery systems by providing upfront subsidies, with around 15,000 systems installed or awaiting installation to date. VPPs can help provide a better pay-back by rewarding consumers for access to their batteries, with their ability to do so linked to access to markets and other revenue streams. FCAS markets have the potential to be a significant value stream for VPPs allowing more value to be shared with consumers and, in turn, improving the investment case.

The Division notes that some VPPs and DER already do, or expect to be able to, meet the requirements of the current MASS. Notwithstanding this, we consider AEMO should continue to investigate service specification requirements for DER to ensure the barriers to entry in contingency FCAS markets are as low as possible to maximise participation and promote greater competition.

The draft determination indicates AEMO intends to establish arrangements for further industry consultation about the development of market ancillary services, including to determine how to progress DER participation in the FCAS markets. We welcome this commitment and encourage AEMO to provide more detail about the proposed process, including a timetable and indicative work program based on priority issues raised in this review, with its final determination.

Several stakeholders made suggestions for alternative technical solutions, with many pointing to the possible suitability of 100 ms or 200 ms sampling rates, noting the potential for alignment with AS/NZS 4777.2:2020, which commences later this year. The draft determination indicates AEMO is not confident that a reliable evidence base exists to support adoption of technical solutions other than the two options presented. We note that some submissions have queried whether the existing 50 ms requirement itself should be reviewed. Given the degree of convergence around 100/200 ms sampling rate offering a potential pathway, it would seem opportune for this to be further investigated as a priority in a DER FCAS work program or trial.



The Division therefore also supports continued provision in the MASS for trials of new technologies. This current consultation process has highlighted the VPP Demonstrations have not sufficiently resolved questions to support the long-term integration of its alternative measurement requirements. As new technologies and solutions emerge, together with the imminent requirement to develop new the specification for the new 'very fast' service, it is reasonable to expect the need for trials could be greater in coming years than in the past.

The provisions for the conduct of trials would benefit from greater clarity of requirements and conditions under which any new trials might proceed. The current MASS (v6.0) contains minimal but important statements about possible boundaries for trials, including being time-limited and subject to conditions such as caps on capacity. It is not clear that these create any "artificial barriers" to the commencement of trials, as evidenced by the VPP Demonstrations Program. We consider that these are important basic terms to retain in the reformatted MASS and recommend re-instating and enhancing the existing provisions, with discretion continuing to rest with AEMO to authorise a trial and to identify the particulars on a case-by-case basis.

This consultation process has also highlighted the need for investigations to be in close collaboration with industry participants, to build wider understanding of DER capabilities and any changes to MASS requirements. A criticism received through this process related to the lack of visibility of the data and detailed technical results of the VPP Demonstrations VPPs for stakeholders to provide an informed assessment of Option 2. Consideration therefore might be given to how to improve transparency around the initial design of trials and other investigations, as well as wider sharing technical performance, data, and other results with market participants. This would support improved stakeholder confidence in any future MASS amendment processes.

In the next 18 months, AEMO will be required to revise the MASS to specify two new 'very fast' FCAS, as per the recent determination by the Australian Energy Market Commission. These services will be specified for the first time and the development process potentially could offer the opportunity for further investigation of many of the issues raised in this consultation.

Should you wish to discuss this submission, please contact Sally Gartelmann, Principal Policy Officer, Energy and Technical Regulation Division, on (08) 8429 3296.

Yours sincerely



Vince Duffy

**EXECUTIVE DIRECTOR, ENERGY AND TECHNICAL REGULATION**

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