11/03/2021

Mr Nino Ficca
Interim Chief Executive Officer
Australian Energy Market Operator

via email: mass.consultation@aemo.com.au

Dear Mr Ficca,

Market Ancillary Service Specification Consultation – DER Participation in FCAS Markets

Mondo welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO's) Market Ancillary Service Specification (MASS) Consultation. Our interest relates to the proposal to facilitate greater participation of Distributed Energy Resources (DER) in Contingency Frequency Control Ancillary Services (FCAS) markets.

Mondo provides a variety of energy services including the aggregation of DER. The aggregation of DER to provide services is rapidly developing and holds great promise for energy markets, networks and ultimately consumers.

Mondo supports the proposed amendment to the MASS to enable DER to more easily participate in FCAS Markets. AEMO's Virtual Power Plant Demonstration Program has demonstrated that aggregated DER can provide valuable ancillary services to the NEM. Unlocking DER to provide ancillary services should provide multiple benefits to energy users in coming years, including

- reduced costs of FCAS due to greater competition/supply;
- additional revenue streams to DER owners;
- improved efficiency of DER installation and deployment due to rewards for providing services that benefit the broader market.

We also commend the proposed timeline for finalising the new MASS (21 May 2021). As the market develops to include more DER, the impacts of changes on customers will increasingly need to be considered. AEMO's proposed timeline for this updated MASS will achieve positive customer outcomes by providing a continuation of customer involvement in active VPPs and customer engagement for planned VPPs.

In relation to Regulation FCAS, the proposed minimum bid size of 2MW is not supported. Inverter-based resources should be able to provide a bid size of 1MW, which would take advantage of the full capability of new generation plant.

The attachment provides detailed responses to AEMO's questions on DER MASS participation. We would be happy to respond to any questions raised by our submission. Please contact Adam White, Network Lead on ph. 9695 6423.

Jodie Hallam
General Manager, Energy Services
Mondo

Market Ancillary Service Specification Consultation – Mondo response to consultation questions for DER participation

1. Which option for the ongoing measurement requirements for DER described in Section 2.3 do you want AEMO to implement and why? Should any other options be considered?

Mondo supports Option 2, to embed the measurement requirements that were tested in the Virtual Power Plan (VPP) Demonstrations in the MASS, on the basis that this expands the supply of Contingency FCAS and creates important incentives for DER participation in the NEM. We believe this will facilitate VPP models and greater NEM transparency.

The VPP Demonstration trial conducted frequency injection testing for every different type of battery system. We would support a continuation of the intention of this approach, however we note that for larger systems of say 50kW-500kW there may be a degree of custom design and a range of technology combinations across a VPP. We would support the development of a frequency injection testing regime that achieved testing outcomes with the minimal number of tests. Such a regime may infer the results of different inverter battery combinations without testing every combination, where the controller and control type remain common.

While option 2 provides a good starting point, we note that FCAS were initially developed based, at least partially, on the capabilities of large-scale generation providing FCAS. Future versions of the MASS would be enhanced by also considering the capabilities of VPPs, and the inverter-based energy systems that underpin them.

2. Which option do you think is more consistent with the NEO, and why?

Option 2 is more consistent with the National Electricity Objective (NEO).

We note that the context for this MASS Review, and the option to enable greater participation of DER (Option 2) in the provision of FCAS, is the work carried out by AEMO through the VPP Demonstration Program. Our understanding is that this program was successful, with achievements including:

- Demonstrating the delivery of FCAS from aggregated small behind-the-meter storage;
- Providing an incentive for VPP operators to collect and share DER information with AEMO; and
- Improving the commercial basis for establishing VPPs and coordinating DER service delivery through the central market.

Given that the ability of DER to provide FCAS has been demonstrated, the proposed metering requirements provide an appropriate balance to maintain reliability, safety, and security of supply while lowering costs.

Option 2 reduces the fixed costs of smaller DER participating in the NEM. This approach significantly expands the number of devices which can actively participate in the NEM and therefore the size of the market.

Option 2 specifically supports the NEO by:

- Increasing competition for the provision for FCAS, which should lower the cost of FCAS over time, and its' contribution to electricity prices;
- Making participating DER more visible in the NEM; making the market easier to manage in the longer term;
- Providing an incentive for greater adoption of controllable DER, which have greater potential to provide valuable energy services than passive DER;

- Establishing a working commercial framework for VPPs which can be leveraged by other VPP related market innovations; and
- Providing a mechanism for customers to earn more from their DER.

3. Should AEMO consider any principles other than those described in Section 2.4 to guide its assessment?

The principles described in Section 2.4 are the appropriate ones for AEMOs assessment on the two options.

4. What is the difference in implementation costs, such as updating the communication links or installing additional equipment, for capturing data at a resolution of either 50 ms or 1 second for every NMI for different VPP facility types? Do you consider the cost difference to be prohibitive for participating in the Contingency FCAS markets? Please provide examples or analysis if possible.

Mondo considers that 50 ms data resolution is cost prohibitive to customers and, if mandated, would be a barrier to DER participation in Contingency FCAS markets.

In addition to the cost of the high-speed meters, the requirement could limit participation because some makes of battery and solar systems do not have the ability to provide data at this resolution. Storage used to capture data would also be more expensive or would have much shorter useful life and require more frequent replacement.

5. Do you think that either of the options presented will result in more or less competition in the Contingency FCAS markets?

Option 2 will provide more competition in the provision of Contingency FCAS. We anticipate that FCAS capacity provided by VPPs will grow to become more significant over time.

6. Are there any technical risks that you envisage if the Option 2 measurement requirements are allowed? How material do you consider those risks and how could they be efficiently mitigated?

VPPs will respond differently to large scale generation, however differences are unlikely to result in material risks over the short term.

Mondo supports ongoing monitoring of VPP performance with periodic risk assessments as VPP capacity grows. We note that while VPPs do represent new risks that differ from the traditional large-scale generation, the changes are not only 'one way', the decentralised nature of VPPs brings with it advantages and technology that can provide mitigations to these risks. It will be important to monitor the change in risk as capacity of VPP systems grows. We also note that the techniques required for managing risk across a range of small systems will be different to those for single large assets, and statistical approaches may be more appropriate.

7. Does the sampling rate of one second rather than 50 ms for Fast Contingency FCAS under Option 2 and the determination of the FCAS delivery at the inverter/controllable device level create market distortion or negatively impact the FCAS markets?

We are not aware of any market distortions created by option 2, however ongoing monitoring should assess if option 2 is being 'gamed'. A particular area for monitoring should be assessing whether participants are opting for multiple Option 2 installations instead of establishing larger installations.

8. **If Option 2 was adopted, should the changes to the measurement requirements of the MASS be limited to small-scale DER (under 1 MW per NMI), or should a different threshold apply, such as 5 MW? For example, what do you see as the risks and benefits of expanding these measurement requirements to other FCAS providers and in what circumstances might that be appropriate?**

Mondo supports the 1 MW threshold.