

MASS Amendment submission

Dreambox Co. Pty. Ltd.

Measurement time resolution for FCAS delivered by DER

It is clear from the analyses performed by AEMO and other groups that sampling power and frequency at a rate of 1 Hz introduces unacceptable amounts of error when verifying Fast FCAS responses. It is also worth noting that AEMO has expressed interest in the ability to assess DER behaviour more generally during other events of interest (grid voltage fluctuations, etc.), and sample rates of 1 Hz will greatly diminish this ability.

With the above in mind, we are supportive of the move to increase the required sample rates of power and frequency from those in place during the VPP Demonstration. However, we believe, as noted by AEMO in the consultation document, that sample rates of 10 Hz, as opposed to the 20 Hz sample rates proposed in the current MASS draft, represent a good compromise between accuracy and technical difficulty. In our experience, 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%. Given this low average error, we do not see the value of investing additional time and money into the development of measurement devices capable of 20 Hz sample rates.

Location of measurement point for FCAS delivered by DER

While we agree that metering at the connection point is the best solution for sites with multiple DERs, we do not believe this is necessary for sites with a single DER (sites with a battery but no solar, or sites with DC-coupled battery and solar connected to the grid via a single inverter, for example).

Allowing metering at the asset level for sites with only one DER, will decrease installation complexity and ultimately cost to consumer. Asset-level metering will also improve AEMO's visibility of DER behaviour during events of interest: rather than a summation of all power flows from each appliance at the site, the measurements will only be of the power flow of the asset.