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Ms Anna Collyer
Chair – Australian Energy Market Commission
PO Box A2449
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Dear Ms Collyer,

Operating reserve market – directions paper 2023

The Australian Energy Regulator (**AER**) welcomes the opportunity to comment on the Australian Energy Market Commission's (**AEMC's**) recent directions paper on the proposed operating reserve market.

The operating reserve market was originally proposed in 2020, as one of several rule change requests directed towards reforming the Essential System Services framework. The operating reserve market was proposed as a measure to improve security, by creating a mechanism which would provide a market signal for participants to hold and provide reserves of dispatchable capacity. These reserves could cover any shortfall of supply in operational timeframes which could arise from uncertainty in supply or demand forecasts.

In 2021, the AEMC published a directions paper, and convened a Technical Working Group, at which several stakeholders expressed a view that the proposal would not have net benefits relative to existing arrangements. The AEMC has affirmed this point of view in this second directions paper and has recommended against implementing the market.

The AER supports the AEMC's decision not to implement an operating reserve market. The operating reserve market was intended to improve security and reliability by ensuring that the increased variability of supply and demand in the NEM could be balanced by adequate reserves of capacity. However, to many stakeholders, the benefits of the proposed design did not appear to be sufficient to justify the costs of design, implementation and participation in that market, a position the AER broadly agrees with.

The AEMC has identified several areas where the proposed mechanism has the potential for negative consequences. The AER notes that the introduction of 5-minute settlements should help to drive short term signals for fast response resources such as fast start dispatchable generation and battery storage. Given this, it is unclear why a separate market is needed for operating reserves at this time. Indeed, the creation of such a separately priced market may dilute the signals established through 5-minute settlement which rely on direct financial incentives to deliver sufficient battery and generation in short term time frames.

As such, the AER agrees that the operating reserve market is not likely to be in the long-term interest of energy consumers. The AER is supportive of the AEMC's continued efforts to support long-term system security, and to inform decisions around the impacts of increased forecast uncertainty. We appreciate the AEMC's suggestion of two potential incremental improvements. Our views on these potential improvements are as follows.

Incremental improvement 1 – publication of information

The AER broadly supports the intent of incremental improvement 1. If market participants are granted greater visibility over the current level of storage capacity in the system, this additional information has the potential to complement energy price information, allowing participants to make better decisions, especially around discharging and recharging energy storage. This could allow for wholesale market outcomes that are more efficient in the long term.

However, care is needed to ensure that the outcome does not have negative impacts on market competition. As the AEMC notes, there can be risks to competition when sensitive information is published. If competing market participants have access to too much information about each other, it could allow businesses to engage in anti-competitive strategies, which would lead to uneconomic outcomes that damage the interests of consumers.

These risks could be managed by allowing only aggregated data to become public, without publishing detailed information about individual participants. The AEMC will need to assess whether this aggregation will need to be done at the whole of system level, or can be broken down further, by jurisdiction, for example.

Incremental improvement 2 – regional FCAS procurement

As renewable energy zones (REZs) come online, it is expected that weather-driven variability in generation output will increase in magnitude, potentially requiring larger safety margins on network constraints to account for this uncertainty, which reduces the capacity of regional interconnectors and transmission corridors within regions. The AEMC has suggested incremental improvement 2 in response to these conditions.

Incremental improvement 2 proposes to modify the procurement of regulation frequency control ancillary service (FCAS) so that it is procured on a regional level, to manage uncertainty in regional supply-demand balance. Regulation FCAS is currently provided nationally¹ and manages small imbalances (real-time, within the 5-minute dispatch interval) by detecting the variation in frequency across the NEM and controlling the output of FCAS providers to rebalance NEM-wide supply and demand.

The AER agrees there is value in managing regional-level imbalance. However, we consider that procuring FCAS on a regional level may be ineffective. For example, if one region has an unexpected increase in generation and another region has a similar decrease in generation, frequency will be stable as there is no NEM-wide imbalance and no FCAS will be provided. However, interconnector flows into these regions will increase and decrease respectively – potentially exceeding the available “headroom”.

In order to manage this unexpected imbalance, the flows on individual interconnectors (or other key transmission pathways) need to be monitored and adjusted to rebalance them. This interconnector balancing is analogous to regulation FCAS because both require central real-time measurement and control (by AEMO). AEMO would measure flows across the interconnector (or key transmission pathway) every, say 4 seconds (as with regulation FCAS). If the flow is different from expectations, it would “correct” the flow by increasing (or decreasing as required) the output of generators in that region that are procured to deliver this service. The key difference is that this action would be triggered by observation of the transmission flows rather than frequency.

¹ All regions that are connected by synchronous interconnectors (that is all apart from Tasmania and SA if it is not connected via Heywood) experience the same frequency, and therefore the same frequency variations when the supply and demand vary across these regions in combination.

This “service” could be procured to manage variability in a region manifesting across an interconnector, or it could be procured to manage variability in a REZ (or other sub-region) by monitoring flows on connecting transmission pathways. The service could be tailored to the specifics of the region or sub-region. Additionally, the provision of this new service could be precisely optimised with the hosting capacity of REZ infrastructure, bringing benefits in the design of the network, with resulting cost efficiencies. As such, it is likely that a structured procurement approach may be the most effective way of providing this service, for instance through contracts which could be re-assessed on a regular, e.g. annual, basis to ensure needs are met efficiently.

If FCAS is indeed procured on a regional basis (in place of a mechanism to modify interconnector flows), it is important that any potential risks to competition be addressed. In the AER’s Wholesale Electricity Market Performance Report 2020² we explored the impact of local FCAS requirements in South Australia.

In October 2015, planned outages of the Heywood Interconnector led AEMO to determine there were risks to power system security in SA. To address these risks, AEMO introduced a pre-contingent requirement for 35 MW of Regulation FCAS to be provided locally in SA. This requirement contributed to increased FCAS prices to consumers, due to the highly concentrated local market for FCAS. Our report found that “once AEMO introduced the local requirement, participants drew on knowledge of their competitors previous availability to structure bids so there was collectively less than 35 MW available at low prices”.

This example demonstrates the need to consider market competition when introducing local requirements. By their nature, local requirements restrict the number of participants that can provide a market service, so if they are to be considered, impacts on competition should be investigated and addressed.

The AER would welcome further engagement with the AEMC on these issues.

We thank the Commission for the opportunity to provide input to this consultation. If you have any questions about our submission, please contact Stephen Watson on 02 9102 4039.

Yours sincerely,



Mark Feather
General Manager, Strategic Policy and Energy Systems Innovation
Australian Energy Regulator

² <https://www.aer.gov.au/wholesale-markets/performance-reporting/wholesale-electricity-market-performance-report-2020>