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Dominic Adams
AEMC

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Dear Dominic

RE: Operating reserve market – Directions paper

Thank you for the opportunity to provide feedback on the directions paper for the operating reserve market rule change.

Enel X operates Australia's largest virtual power plant.[1] We work with commercial and industrial energy users to develop demand-side flexibility and offer it into the NEM's energy and ancillary services markets, the RERT mechanism, and to network businesses.

The need to address variability and uncertainty

We agree that forecast uncertainty and net demand variability are likely to increase as the penetration of VRE increases. Forecast uncertainty and net demand variability are also likely to be affected by the increased likelihood of extreme weather events caused by climate change.

It makes sense to progress the incremental improvement options set out in the paper, to the extent that they improve forecast accuracy and reduce uncertainty. However, they are unlikely to be a complete solution to the problem, particularly given the likelihood of unexpected events is expected to increase.

We agree that an operating reserve market will help to ensure grid reliability in the context of increasing variability and uncertainty as the power system transitions. We also agree that it would be more efficient to procure reserve services than rely on interventions. A well-designed operating reserve market will enable parties that are technically capable to compete to offer the service at lowest cost.

An operating reserve market is also likely to be simpler and more transparent to administer than interventions, which involve intervention pricing and complex judgements about compensation.

The role of demand side flexibility

Demand side flexibility must be able to participate in any operating reserve mechanism. There is little mention of demand response in the paper and the assumption underlying all market design options appears to be that the only providers will be generators. Demand response currently provides FCAS and RERT, and come October 2021 will provide wholesale demand response in the energy market.

The paper notes that one of the challenges in utilising demand response is the difficulty issuing energy market price signals to loads to incentivise the desired behaviour. But that is what the wholesale demand response mechanism will achieve. Further, paying demand side participants to be available, in return for a commitment to respond, is a proven way of incentivising the desired behaviour.

While recognising that Figure 5.2 in the directions paper is AEMO's, not the AEMC's, it should really include fast (sub-second) and slower demand response. Demand response is a dispatchable and flexible technology, and there is no reason to exclude it from participating in an operating reserve market.

[1] Bloomberg NEF, December 2019.

Options to address variability and uncertainty of net demand

It is difficult to compare the options when their objectives and the volume being procured differ. It would be helpful to workshop this with the AEMC so that the options can be more easily compared.

For all options, we seek clarification on the proposed response time – that is, in what time frame does the reserve provider need to deliver the reserve when called?

- For the co-optimised operating reserve market this is presumably within five minutes, in line with existing obligations when dispatched in the energy market.
- On the face of it, the co-optimised availability market would seem to support participation by reserve resources that need more notice to provide a response. However, given the obligation is to be *available* for dispatch in the interval 30 minutes ahead, and not actually dispatch, the response time is presumably also five minutes if cleared in the energy market in that interval.
- For the callable operating reserve market, the reserve is not dispatched as energy by NEMDE if it clears, but rather directly by AEMO in response to a reliability issue, so the response time could presumably be different.

The required response time will have an impact on the number and type of reserve providers eligible to participate, and therefore the competitiveness of any reserve market. Further, restricting participation to only those resources that can respond within five minutes may not be efficient if the problem to be addressed by the operating reserve doesn't arise that quickly.

We also seek clarification on dispatch duration under each of the options – that is, how long does the reserve provider need to deliver the reserve for when dispatched?

- Under the co-optimised operating reserve market and co-optimised availability market, reserves are dispatched when the MW enabled as operating reserve is "converted" to energy in the relevant dispatch interval. Whether the reserve is converted to energy depends on supply/demand conditions in that interval, and how the reserve was priced in the energy market. Therefore, in a five-minute market, the dispatch duration is presumably five minutes. Conceivably, different reserve providers could be dispatched in successive trading intervals to address an issue that spans multiple trading intervals, because the dispatch trigger is price.
- In the callable operating reserve market, the dispatch trigger is an AEMO instruction, not price. So, it may be a better option if the objective is to address issues that arise and play out over timeframes longer than five minutes.

As with response time, the required dispatch duration will have an impact on the number and type of reserve providers eligible to participate, and therefore the competitiveness of any reserve market.

Regarding the co-optimised operating reserve market and co-optimised availability market:

- We seek clarification on who would be eligible to offer reserves under these options. Could DRSPs and SGAs participate, provided they are technically capable?
- It is not clear whether these options will bring additional capacity to the energy market, or just shift volumes from the energy market to the operating reserve market. It would be helpful to workshop this to get greater clarity around the impact of each option on reserve volumes.
- It is not clear how the conversion of reserves to energy would work with participants' current forecasting and bidding obligations, i.e. where you can only shift volumes between price bands.

Regarding the co-optimised availability market:

- It's not clear how energy and FCAS can be co-optimised with a service to be provided in 30 minutes time.

Regarding the callable operating reserve market:

- Under this option, the paper states that reserve providers would be required to choose ahead of time whether to offer energy and/or FCAS, or reserve. Allowing participants to offer both under this option may drive an incentive to chase prices and pull capacity in and out of each market. However, it may not be efficient to prevent a participant from offering energy and/or FCAS if it does not clear in the reserve market. As above, it would be helpful to workshop this option with the AEMC to better understand its impact on incentives and potential reserve volumes.
- We support further exploration of the variation proposed in Box 2, including consideration of the required response time (described above) and whether a slower response time could be accommodated in NEMDE.

We do not support the ramping commitment market, on the basis that there does not appear to be a need for such a service, and that it seems to have been proposed with a particular type of service provider in mind.

I look forward to continued engagement with AEMC in the development of an operating reserve market. As noted above, we would support the AEMC holding a workshop with stakeholders to talk through some of the issues raised in this submission.

If you have any questions or would like to discuss this submission further, please do not hesitate to contact me.

Regards

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