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Re: ERC0237 - National Electricity Amendment (Enhancement to the Reliability and Emergency Reserve Trader) Rule 2018 Options Paper

Dear Sarah

Thank you for the opportunity to comment on the Australian Energy Market Commission's (AEMC) *Enhancement to the Reliability and Emergency Reserve Trader Options Paper* (referred to as the 'Options Paper') that was released on 18 October 2018.

This submission sets out the Energy Efficiency Council's (EEC) response to the questions in the Options Paper. While the EEC supports the AEMC prioritising modest changes to improve the operation of the Reliability and Emergency Reserve Trader (RERT), we also believe that more extensive debate is required in the future on the use of demand-response for various forms of 'emergency' capacity.

What is 'emergency capacity'?

For the purpose of clarity, it's worth naming the different potential functions of the RERT as 'temporary capacity' and 'strategic reserve'. These definitions are set out below.

- **Temporary Capacity:** Currently, the Australian Energy Market Operator (AEMO) can use the RERT to procure temporary capacity in the event that the market appears to be providing insufficient capacity to meet the reliability standard - a maximum expected unserved energy (USE) of 0.02 per cent within a region of the NEM. The USE was projected to exceed 0.02 in 2017-18, and could exceed 0.02 in future years if large generators close in advance of the development of sufficient new capacity.
- **Strategic Reserve:** The RERT could also be used to provide AEMO with standing capacity to deal with a range of low-probability but high-impact events, such as the loss of multiple generators or transmission lines in a storm. The wholesale electricity market won't provide an incentive for either the development or deployment of emergency capacity for the simple reason that it's not designed to value the benefits that this kind of capacity delivers (e.g. prevention of a system black). The benefits of emergency capacity extend beyond the wholesale energy market, including benefits to networks that have flow-on social and economic benefits to all energy users.

Most energy-only markets, including Texas, Germany and Nordic countries, have some form strategic reserve provided by a mechanism similar to RERT. Often, these emergency systems don't aim to provide full functionality, but instead are low-cost mechanisms that provide partial services (e.g. energy for priority needs) and avoid involuntary load-shedding and system blacks.

It would be prohibitively expensive (if not impossible) to set up a system to run optimally under all circumstances, and so emergency systems are set up to minimise the impacts of low probability events. As a simple analogy, most off-grid households have battery-powered torches to provide a critical service (light) during system failures. While the household may never use the torch, at \$20 it is a worthwhile form of insurance.

A strategic reserve could provide a similar form of insurance for the electricity system. The NEM already relies on a number of mechanisms, including involuntary load-shedding and *System Restart Ancillary Services* to minimise the impact of unplanned supply outages. A strategic reserve could add to these existing mechanisms by enabling the system operator to deploy 'emergency capacity' that, while normally undesirable to deploy due to its cost or impact, is preferable to involuntary load-shedding or a system black. For example, if several generators shut down during a heatwave, household air conditioning could still stay operational if factories shut off non-critical equipment.

This means that the resources in the strategic reserve are ideally very rarely called on, and should comprise resources with a relatively low set-up cost, but likely a high deployment cost. Due to the high deployment cost, these resources would normally be unwilling to participate in the wholesale market where prices are capped at \$14,000 MWh. This suggests that the majority of an effective strategic reserve is likely to be composed of certain types of demand response (e.g. shutting off a factory line) as this would be much cheaper to set-up than building generation, but have high deployment costs.

In practice, there is an overlap between the kinds of resources required in a strategic reserve and temporary capacity under the RERT. Both resources that would ideally rarely (if ever) be called, but resources in 'temporary capacity' would be more likely to be called than resources in a strategic reserve. However, many demand response resources that would be well suited to participating in the RERT as either temporary capacity or a strategic reserve would not be well suited to the wholesale energy market. Demand response that is suitable for the wholesale energy market should be willing to be dispatched on a regular basis, as without being dispatched it won't receive any reward. This means that, if the RERT is set up correctly, the risk of cannibalisation between the RERT and the wholesale market is limited.

It is not yet clear if there is a need to set up a strategic reserve in the NEM, but the EEC believes that this issue needs to be properly investigated. In the meantime, the rest of this submission focuses on the issues that should be considered in terms of improving the RERT as a form of temporary capacity.

Procurement trigger and procurement volume

The EEC believes that AEMO should be required to develop and publish robust methodologies to determine both:

- Whether it should procure capacity under the RERT, and
- The volumes of capacity that it should purchase under the RERT.

Due to the complexity of these methodologies and the need to regularly update these methodologies, they should not be placed in the National Electricity Law or regulations - instead AEMO should have full discretion over these methodologies.

The EEC does not have a position on whether these methodologies should be formally linked to the Reliability Standard or a broader risk-assessment framework. However, we note that, even if the procurement trigger is formally linked to the Reliability Standard, AEMO must by necessity have discretion with the methodologies that it established to operationalize the Reliability Standard.

Procurement process, reserve product, contract design and payment design

The EEC believes that issues relating to the procurement process, reserve product, contract design and payment will potentially have a far greater impact on the cost and effectiveness of the RERT than formally linking the procurement trigger and procurement volume to the Reliability Standard.

AEMO set up one of the first major procurements of capacity under the RERT in 2017-18, which meant that it was dealing with novel and *ad hoc* processes in a relatively immature market. We believe that the cost of securing capacity under the RERT should fall substantially in the future due to the maturation of the market for capacity, as long as AEMO increases the competitiveness of the market for capacity through greater transparency and standardisation of products.

For many capacity products, payment should consist of:

- An availability payment that at least covers the cost of set up and provides a modest margin, since the capacity ideally won't be dispatched.
- A pre-dispatch payment; and
- A dispatch payment.

Capacity-providers could submit bids into a transparent auction that includes prices for availability, pre-dispatch and dispatch. This would allow AEMO to rank these bids using a probability-weighted estimate of their respective costs e.g. if the likelihood of dispatch over summer is estimated at just 5%, AEMO would assign a much higher weight to the availability payment than the dispatch payment in assessing the likely cost and benefits of procuring a particular resource.

However, the EEC believes that some capacity providers should be rewarded on a very different basis. For example, electricity networks are monopolies providing an essential service, and should be expected to provide emergency capacity as part of their contract.

Contract length

There is often a significant upfront cost in identifying and setting up demand response capacity. This means that, for some sites, the cost of an availability payment for three years would be only marginally higher than the cost of an availability payment for one year. While AEMO should not require providers to provide contracts for longer than one summer, the auction process should consider the length of availability that is offered by a provider.

For example, if AEMO is provided two identical offers for 1MW of capacity, but one provider is able to provide three-years of availability at \$8,000 /MW and another site offers one year of availability for \$7,500/MW, AEMO should weight those offers to consider the benefits of a longer contract.

The EEC looks forward to continuing to work with the AEMC on this matter. For further information please contact me on rob.murray-leach@eec.org.au or 0414 065 556.

Yours sincerely



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