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Energy Policy WA
Department of Mines, Industry Regulation and Safety

Submitted by email: energymarkets@dmirs.wa.gov.au

2 Nov 2023

Dear Energy Policy WA

**RE: Review of the participation of demand side response in the wholesale electricity market – Consultation paper**

Thank you for the opportunity to provide feedback on the *Review of the participation of demand side response in the wholesale electricity market* consultation paper (Consultation Paper).

Enel X works with commercial and industrial energy users to develop demand-side flexibility and offer it into wholesale capacity, energy and ancillary services markets worldwide, as well as to network businesses. In Western Australia, Enel X helps energy users minimise their capacity charges through the IRCR mechanism. We also built a 22 MW portfolio of supplementary reserve capacity for 2022-23 and have recently been contracted to supply 120 MW of flexible demand capacity under the NCESS framework for 2024-26.

We strongly support many of the proposals set out in the Consultation Paper. Demand response has a crucial role to play as we transition to a renewable energy future. Enabling and incentivising participation by demand response helps drive competition by introducing new capacity into the market, and reduces the need for expensive peaking infrastructure.

The proposals in the Consultation Paper provide important improvements to the framework for demand side response. In particular, moving to a dynamic baselining approach will greatly improve incentives to participate in the RCM as a DSP. This is because a dynamic baseline more accurately reflects a load's counterfactual demand, and therefore provides a reward for curtailing load that is more aligned with a customer's actual response. Below we provide further details on how we consider a dynamic baseline could best be implemented.

We also strongly support amendments to reduce barriers to the demand side providing essential system services, specifically FCESS. However, as noted below, we consider the two key barriers – telemetry and the 400ms response time – can be addressed via changes to AEMO's procedures, rather than rule changes. Generally, we also support the other proposals set out in the Consultation Paper, or in some instances do not have a view.

We look forward to continuing to work with Energy Policy WA on these issues. 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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**Proposal 4: A dynamic baseline for DSR participation**

Enel X strongly supports Energy Policy WA's proposed approach to baselining. That is, a dynamic baseline based on an X of Y methodology incorporating a day of adjustment that is capped for upward adjustment and uncapped for downward adjustment. Further, while there is little incentive and little opportunity to game under such a baseline, we are supportive of ex-post examination of data as an additional mitigation measure.

*Dynamic versus static baseline*

Under the current WEM rules, a static baseline is used to measure counterfactual demand when a DSP is dispatched. Enel X supports baselines that are determined on a dynamic basis because they take into account a load's variability, and so allow the baseline to increase or decrease depending on actual demand. As such, they provide a much more accurate reflection of a DSP's counterfactual demand when dispatched.

*Form of dynamic baseline*

There are many ways in which a dynamic baseline can be implemented. The most commonly used in demand response programmes around the world is an "X of Y" approach, as proposed by Energy Policy WA. We support this general approach, as it is well accepted and well tested.

A CAISO 10 of 10 methodology, where all 10 of the 10 most recent eligible days are used in the baseline calculation, is a sensible starting point. This approach is used in all existing demand response programmes in Australia, specifically:

- the supplementary reserve capacity mechanism in the WEM
- the NCESS mechanism in the WEM
- the RERT (emergency reserve) mechanism in the NEM
- the wholesale demand response mechanism in the NEM.

Analysis conducted by ARENA and Oakley Greenwood in 2019 found that, on average the 10 of 10 baseline was more accurate and less biased than other methodologies examined.[1] This approach is well understood, and strikes and appropriate balance between accuracy, simplicity and integrity.

A 10/10 baseline will also take into account any load curtailment done by the customer for the purposes of reducing its IRCR. Under a 10/10 baseline, all the previous 10 eligible days are included in the baseline calculation. Where a customer has curtailed load for the purposes of IRCR within that 10-day period, the customer's raw baseline and thus the value that it can receive through the RCM will be reduced.

As noted above, a CAISO 10 of 10 methodology is an appropriate baseline to start with. However, it's important to build flexibility into the rules to allow the inclusion of other baseline methodologies. Most mature DR markets have a suite of baseline methodologies to accommodate different load types.

*Adjustment window*

Where "X of Y" baseline methodologies are used, it is best practice to apply day-of adjustments to the raw baseline. Day-of adjustments apply so that the baseline more accurately reflects the load conditions of the event day. We therefore support EPWA's proposal to include a day-of-adjustment.

The NEM's wholesale demand response mechanism uses an adjustment window of three hours ending one hour before the first trading interval of a dispatch and when the dispatch instruction is received (T-4

[1] https://arena.gov.au/assets/2019/09/baselining-arena-aemo-demand-response-rert-trial.pdf

to T-1). The RERT mechanism uses the same window (T-4 to T-1), with one hour's notice of dispatch. In the WEM, the SRC mechanism also uses a T-4 to T-1 adjustment window for demand side resources.

For demand side programmes in the RCM, where there is a two-hour notice of dispatch, we propose that the adjustment window be a two-hour window ending at the dispatch notification (i.e. T-4 to T-2). Under such an approach there is very little incentive to game, because a customer would have to increase its demand across the whole adjustment window, at considerable cost, with no guarantee that it will be dispatched.

*Adjustment cap*

We support a cap on day-of positive adjustments for the WEM and propose a cap of 20%. The design of the adjustment window means there is very limited incentive or opportunity to game the baseline by artificially increasing consumption. However, a cap will nevertheless limit any potential gaming to 20% of the already established load profile. We consider 20% strikes a good balance between mitigating any gaming potential and enabling participants to increase the accuracy of their baseline.

We also support having no cap on negative adjustments. This means that the baseline will be lowered in accordance with any reduction in the load's demand during the adjustment window. For example, if a load happened to shut down entirely for maintenance on a dispatch day, and this was reflected in the adjustment window data, its baseline would be reduced to zero and it would not get any credit for a DSP dispatch later that day.

*Ex-post examination of load data*

Our view is that, in practice, the above measures will rule out any potential gaming. However, there is still a theoretical possibility that a customer could ramp up its demand during the adjustment window to artificially increase its baseline. While any increases would be subject to the 20% cap, a customer may still decide to take a risk and ramp up based on extreme weather/load forecasts or price conditions. If the customer did get dispatched, it would be paid for demand response that was not genuine.

Instances of this occurring are reasonably easy to detect by examining actual load data. Temperature-dependent loads would be expected to have higher consumption on hot days. However, once temperature is accounted for, load analysis after a DSP dispatch should be able to show instances where demand levels increased in a way that was not normal for that load. Where evidence of this behaviour is found, penalties could apply.

Post-examination of load data is a relatively low-cost means to provide an additional level of comfort that gaming is not occurring. For this reason, Enel X supports this measure.

**Response to other proposals**

The table below sets out Enel X's response to other proposals in the consultation paper.

| Proposal | | Enel X response |
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| **2** | Participation of hybrid facilities | **Support**. We support the proposal to clarify the circumstances in which hybrid facilities with load and ESR will be required to be scheduled, and to allow flexibility for such sites to be registered as a DSP. Greater flexibility here will bolster DSP participation and improve competition. |

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| **3** | Metering and settlement | **Support**. Enel X supports the proposal for enabling greater flexibility in the use of sub-metering. This is required to facilitate the implementation of other options, such as proposal 2. |
| **5** | Supplementary Reserve Capacity mechanism | **Support**. Enel X participated in the SRC review, and we consider that the amendments represent significant improvement on the previous arrangements. As such, we agree that there is no need to revisit DR participation in the SRC at this stage. |
| **7** | Short term energy market | **Support**. Enel X supports any amendments that help reduce barriers to demand response participating in markets. As noted above, enabling greater participation by demand response can improve competition, resulting in better outcomes for consumers. |
| **8** | DSP participation in real-time market | It's not clear that changes to DSP participation in the real time market are required at this point in time and within the context of the existing framework. |
| **9** | DSR participation in real-time market | As a general rule, Enel X supports removing barriers to demand side participation wherever possible. DSR currently faces challenges participating in the real-time market as a scheduled resource, due to the need to accurately forecast their load, and comply with dispatch requirements. This can be costly and challenging. However, as for DSP participation in the real-time market, we consider that at this stage there are other, simpler reforms that can be implemented that will have greater impact in enabling and incentivising participation by the demand side. |
| **11** | Essential System Services | **Support**.<br>We support a review of the batteries to DSR providing essential system services.<br><br>Enel X has identified two barriers to the participation of DSR in the ESS markets:<br><br>1. The current FCESS framework requires loads to respond within 400ms. If they cannot respond within this timeframe, they are ineligible to participate in the contingency FCESS market. While a fair proportion of loads can respond within 400ms, this is quite strict and thus rules out many others.<br>We propose a scaled approach, similar to that which we understand applies to generator/ battery providers of contingency FCESS – that is, you can receive full value if you can respond within 400ms, and less for slower responses, but while still being able to participate in the market.<br>2. The current FCESS framework applies real time telemetry obligations to an aggregation of loads providing contingency FCESS. We do not believe that real time telemetry should be a requirement for participation in the contingency FCESS markets. Real time telemetry is not required for the NEM's contingency FCAS markets or NZ's interruptible load market. We propose that AEMO remove telemetry obligations for contingency FCESS |

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| | | providers, or alternatively look at supporting low cost ways for providers to share key information with AEMO.<br><br>Our view is that both of these issues could – and should – be resolved through amendments to AEMO's FCESS accreditation procedure and the communications and control systems procedure. |
| **12** | Intermittent loads | **Support**. Enel X agrees that intermittent loads should be able to value stack. Being able to value stack and obtain revenue from providing multiple services supports the business case for customers to invest in the necessary equipment and accept interruptions to their operations required to provide demand response. |