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Jessica Curtis
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Submitted via AEMC website

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Dear Ms Curtis

RE: Unlocking CER benefits through flexible trading – Consultation paper

Thank you for the opportunity to provide feedback on the *Unlocking CER benefits through flexible trading* consultation paper.

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 National Electricity Market's energy and ancillary services markets, the reliability and emergency reserve trader mechanism, and to network businesses.

This submission sets out our feedback on the consultation paper. The key points are:

- Enel X would support a simple and low-cost approach to unlocking additional benefits from consumers' energy resources for C&I customers – as well as for residential customers – from using their energy resources that complements existing mechanisms and provides additional choice for consumers to sell their flexibility into the markets.
- There are several features of existing frameworks that we consider are critical to the successful delivery of flexibility services. These features must be incorporated into any new framework if it is to deliver value to consumers.
- We do not support prohibiting any existing mechanism that is already successfully delivering demand flexibility to the market. This would simply reduce customer choice and introduce a new barrier for providing flexibility.
- The implementation challenges associated with small customers are very different from C&I customers, e.g., the need for consumer protections, and therefore require separate consideration.

We look forward to working with the AEMC on these issues to ensure that any new framework is fit for purpose and will meet the needs and preferences of all customers. If you have any questions or would like to discuss this submission further, please do not hesitate to contact Elisabeth Ross at elisabeth@elisabethrossconsulting.com.au.

Regards

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¹ Per AEMO Registrations

Enel X supports additional pathways to enabling flexibility

In principle, Enel X supports additional pathways to enable customers to maximise the value from their consumer energy resources (CER) provided those pathways are simple and low cost for consumers, and so encourage participation. Potential benefits to consumers from reducing barriers to offering flexibility include:

- increased choice and a wider range of services through increased competition,
- the ability to access additional revenue streams to offset high energy costs,
- additional means to address reliability and security issues through demand side flexibility e.g. by participating in frequency control ancillary services (FCAS) markets and the reliability and emergency reserve trader mechanism (RERT), and
- a means to reduce the high costs of network augmentation where demand flexibility can offset the need for additional investment.

Consumers will play an increasingly important role as the industry transitions to lower carbon and becomes dominated by variable renewable energy. As the Australian Energy Market Operator (AEMO) notes in its 2022 Integrated System Plan (ISP):

“Wholesale demand response and other flexible loads will ... help manage peak loads and troughs, reducing reliance on more capital-intensive investments while firming renewables.”²

and

“Flexible demand response for EVs and other electric appliances ... may assist with flattening the shape of operational demand, helping to reduce the need for new firming capacity.”³

AEMO notes that additional market reforms may be required to enable this to happen.⁴ We agree. The introduction of the wholesale demand response mechanism (WDRM) was an important development that enables a sub-section of consumers to provide demand response in the wholesale market. However, we agree that more can be done to extend flexibility services to a wider set of customers. WDRM is not appropriate for all potential providers of flexible demand due to the relatively onerous obligations for participating in central dispatch, and an existing suite of baselines that does not suit all customers. Further, small customers are currently excluded from participating in WDRM.

Enel X is currently exploring opportunities to widen the applicability of WDRM, including a rule change request (ERC0345) that would [allow sites with multiple national meter identifiers \(NMI\) to participate](#) and working with AEMO to introduce additional baseline methodologies via AEMO’s [baseline methodology register](#). Irrespective of the outcome of AEMO’s rule change request to unlock the benefits of CER, we consider these options should be implemented to facilitate greater participation in WDRM and help support the outcomes envisaged by AEMO in its ISP.

There is latent customer demand for new flexibility services. Enel X has been helping C&I consumers extract value from their CER in Australia for over 10 years using flexible capability including from back-up generators, pumps, chillers and compressors. Enel X currently has a portfolio of 65 MW participating

² AEMO, 2022 *Integrated System Plan, June 2022*, p.48

³ *Ibid*, p.52

⁴ *Ibid*, p.52

in WDRM and 40 MW offering flexibility through embedded network arrangements. We have an additional 230 MW providing FCAS and over 100 MW providing RERT. This demonstrates an appetite on our customers' behalf to work with specialised businesses – other than their retailer – to earn additional revenue and contribute to grid security and reliability.

The incentives for businesses to offer this flexibility will increase as aggregators and customers are able to value stack across multiple markets. With the energy transition and current high electricity costs, we have seen increasing interest from business executives in utilising flexibility to decrease their exposure to energy costs and support their decarbonisation goals. However, to encourage participation, schemes must be low cost (including initial set-up costs), provide predictable revenues and be simple.

The ability to use CER flexibly and earn revenue from doing so may also encourage further investment in CER. Given the scale of investment required to navigate the transition away from fossil fuel generation, this could bring valuable additional resources into the system at a relatively low cost.

Essential features of a successful flexible trading arrangement

Based on our experience in enabling customers to offer demand flexibility into a variety of markets, we have identified several features that we consider critical for flexible trading arrangements to be successful in encouraging consumers to participate and to deliver benefits.

1. Allow multiple FRMPs

To add value, the arrangements must allow customers to engage multiple financially responsible market participants (FRMPs). It is not clear what the value of a rule change would be without this feature. Retailers, as the single FRMP, are currently able to offer customers a full suite of services, separating out flexible and non-flexible loads and enabling consumers to participate in the wholesale market and FCAS markets via VPPs. However, while some retailers have trialled these services, retailers do not have a natural incentive to offer demand response products to their customers. The value in this rule change is therefore in enabling additional players with specialist skill sets to enter the market and offer different services.

We agree with the benefits identified by AEMO and the AEMC of permitting multiple FRMPs. In particular, allowing multiple FRMPs would expand the range of providers and the types of services being offered to consumers. As well as facilitating greater competition and innovation, contracting with more than one FRMP allows consumers to choose suppliers that have products and services that suit them for their different types of loads. If customers continue to be tied to a single provider, they could be required to compromise on the services they are able to access.

We also note that customers in the UK have been able to engage multiple FRMPs to enable greater participation of flexible load in their Balancing Mechanism, similar to WDRM in Australia, since 2019.⁵ Independent aggregators are able to use embedded generation or demand side resources to deliver

⁵ A "Virtual Lead Party" (VLP), essentially an aggregator, is able to offer a site's flexibility into the Balancing Market by adding it to a "Secondary Balancing Mechanism Unit" (BMU). The site retains its relationship with its usual retailer via its (primary) BMU, but when the Secondary BMU is dispatched, the VLP is responsible for the delivery of the deviation from the "Final Physical Notification" (the equivalent of the baseline under WDRM), and the retailer is responsible just for the baseline. See Modification 344, available [here](#). Under the recently implemented Modification 375, available [here](#), the deviation can be measured using a sub-meter, potentially embedded in a device.

additional capacity, independently of the electricity retailer. Further, the additional FRMP does not need to be a retailer, but can simply provide an aggregation service for the flexibility offered.

2. The FRMP at the secondary settlement point doesn't have to be a retailer

The delivery of flexibility services should be separated from the delivery of retail services. That is, the party offering flexibility from a demand-side resource should not have to be the retailer supplying energy to that resource. This was a driver behind, and is a key feature of, WDRM. Separating retail services from other services allows specialist flexibility providers to develop more targeted products, with customers benefiting from access to a wider suite of services, greater competition and additional revenue streams. In the first year of operation, Enel X has acquired a portfolio of 65 MW of demand response and was dispatched for the first time within 3 months of WDRM commencing.

As an additional example, the box below highlights the benefits that resulted from opening up FCAS markets to non-retailer demand flexibility providers.

Example: Benefits of separating retail services from provision of FCAS services

In 2016, the AEMC made a rule allowing a new type of market participant to offer customers' loads into the FCAS markets, without having to be the customer's retailer.⁶ One of the reasons cited for unbundling the provision of FCAS from the sale of energy was that "While aggregation of loads for the purpose of ancillary service provision is possible, most retailers do not have the capacity to effectively and efficiently offer these services to customers".⁷ Enel X (formerly EnerNOC) entered the FCAS markets in October 2017.

By the end of Q1 2018, demand response was delivering approximately 10% of raise FCAS. In its Quarterly Energy Dynamics report from Q1 2018 AEMO observed:⁸

- Additional supply from demand response was one of the contributors to lower FCAS prices in Q1 2018 compared to Q4 2017.
- Combined with the Hornsdale Power Reserve, demand response displaced higher-priced supply from existing technologies (mostly coal).
- Increased competition, including from demand response, coincided with a reduction in the price of offers from some existing providers.

Within one year of Enel X entering the market, demand response was supplying 16% of raise FCAS markets.⁹

This example demonstrates the benefits that can be derived from sensibly unbundling the provision of retail services from other services, removing unnecessary barriers to specialist providers entering the market.

⁶ AEMC, *Final Rule Determination: Demand Response Mechanism and Ancillary Services Unbundling*, November 2016.

⁷ AEMC, *Final Rule Determination: Demand Response Mechanism and Ancillary Services Unbundling*, November 2016, p.23.

⁸ AEMO, [Quarterly Energy Dynamics](#) Q1 2018, p.13.

⁹ AEMO, [Quarterly Energy Dynamics](#) Q3 2018, p.16.

It is not that aggregators cannot or do not want to register as a retailer. Rather, aggregators should not have to be the customer's retailer. This is for two reasons:

- An aggregator setting up as a new-entrant retailer will struggle to get a significant share of the retail market, and thus is unlikely to drive effective competition for flexibility services.
- Offering flexibility services is a long-term business, due to the significant upfront costs associated with recruiting and enrolling customers, and then installing the required software and hardware on-site to enable them to provide flexibility. This does not align well with the short-term retail contracts that are typical in a competitive retail market.

If flexible trading arrangements are adopted, the arrangements must therefore be carefully designed to ensure independent aggregators are able to participate. The arrangements must not inadvertently exclude provision of aggregation services by anyone but the customer's retailer due to the nature of the obligations or requirements, or because critical barriers are not removed.

3. Low cost

To encourage customers to provide flexibility, the cost to install the necessary hardware and the ongoing participation costs must be low. We consider that this requirement rules out several of the options put forward in the consultation paper for facilitating multiple FRMPs, primarily because they would require significant rewiring of the customer's premises. This includes:

- parallel metering, multi element metering and a second connection point, and
- AEMO's proposal that metering installations at secondary settlement points include configuration requirements to ensure back-up energy flows during a grid outage are not able to flow through the secondary settlement point.

On the other hand, we agree with AEMO's assessment that subtractive metering provides a low-cost means to facilitate settlement under their proposed rule change.

In respect of the cost of establishing a second connection point, we note the Energeia report commissioned by the AEMC in 2020 that found that the upfront cost of a second connection point for a large customer could be around \$60,000.¹⁰ Energeia also noted additional barriers to establishing a second connection point, including the length of time for the connection application and planning process (4-12 months) and the time taken for construction and commissioning (1-2 years), as well as the ongoing costs of additional fixed network charges (\$3,653 per year).

In addition to the barriers cited by Energeia, we note that a second connection point:

- requires dedicated wiring from the boundary to the device, which can be deep within the customer's site, creating additional costs associated with re-wiring not only to connect the device to the boundary but also potentially to bring the site up to the latest electricity wiring standards,
- can be highly disruptive to the customer as in many cases the supply to the whole site will need to be switched off, and
- can be problematic where existing switchboards cannot accommodate a second meter and where jurisdictional wiring rules are overly prescriptive about where meters can be located.

¹⁰ Energeia, [Expert Advice on the Cost of Establishing a Second Connection Point](#), October 2020, p.5.

Requiring demand flexibility providers to establish a second connection point will also potentially require the aggregator to obtain a retail license in order to supply the flexible load. As noted above, we consider this would be a limiting feature of the arrangement.

Don't unnecessarily limit paths to markets

AEMO proposes prohibiting the use of embedded networks to enable customers to offer flexibility. AEMO considers this approach is a “misapplication of the embedded network framework” and raises several potential consumer protection issues.¹¹

1. Embedded networks provide a proven path for flexible trading

Prohibiting an existing, proven path to enable customers to offer flexibility will unnecessarily limit customers' options, restrict choice and limit competition. If a new flexible trading arrangement provides a simpler and lower cost path to offering flexibility, customers will gravitate to that option – there is no need to prohibit an existing path. If FTAs is more complex or costly for consumers, or does not work for all existing use cases, it does not make sense to cut off an existing path that has lower barriers to entry, particularly not at early stages before FTA is proven as a path that is attractive to those customers currently offering flexibility via embedded networks.

2. Using embedded networks to provide flexibility is not a “misapplication” of the framework

Enel X disagrees with AEMO's characterisation of the embedded network approach to flexibility as a “misapplication” of the framework. Enel X has been using this approach to enable customers to derive value from their CER for over 10 years, with flow-on benefits to the wider market in the form of increased competition in the wholesale market.

Our approach to using embedded networks in this way was discussed extensively with the Australian Energy Regulator (AER), and ultimately approved by them,¹² before it was implemented for the first time. Further, the AER's draft Network Exemptions Guideline (Version 7) explicitly caters for this type of arrangement. The AER's draft Network Exemptions Guideline has clarified the application of its deemed exemption category NRO2 to apply to small generation aggregators (SGAs) that operate in an embedded network as follows:¹³

Exempt persons operating an embedded network to which generation units or load installations are connected for use by the customer behind their child connection point or to provide services to NEM wholesale energy and/or ancillary services markets can register under NRO2. The customer may appoint an SGA (or a Market Customers or Demand Response Service Provider) to provide these market services on their behalf.

3. No harms to C&I customers have been identified from applying the framework in this way

The potential harms that AEMO cites with this approach only relate to customer protections for small customers. AEMO has not identified any harms for C&I customers, with whom Enel X exclusively works. Further, we are not aware of any providers using this approach for small customers.

¹¹ See AEMO *Flexible Trading Arrangements (Model 2) and Minor Energy Flow Metering*, May 2022, Appendix B: High Level Design, p.13-15.

¹² See, for example, the formal network exemption application and AER approval for the [Western Suburbs League Club \(Campbelltown\) Ltd](#) in 2010, noting that the application was from Enel X's predecessor, Energy Response.

¹³ AER, [Notice of Draft, Network Exemptions Guideline \(Version 7\)](#), October 2022, p.13.

In contrast, removing this approach would result in significant harms to existing and potential customers who can no longer derive revenues from offering flexibility in this way, and remove this source of competition from the wholesale market. There are therefore clear harms and no benefits from prohibiting this approach.

Further, the harms identified by AEMO appear to apply more generally to small customers in embedded networks. The AEMC has already recommended a package of law and rule changes to improve customer protections in this area.

Finally, AEMO notes that the embedded networks approach “presents problems in NEM settlement processes”.¹⁴ AEMO does not explain what those problems are, nor is there any consideration of whether there may be alternative means to resolve those problems other than prohibiting the approach. There is also no discussion of whether the benefits of allowing customers to offer demand flexibility in this way outweighs any costs associated with the settlement problems.

If the arrangements were to fundamentally change, careful consideration of the impact on customers already utilising these arrangements would be required, including the need for grandfathering existing sites.

Recognise differences between large and small customers

The implementation challenges associated with small customers are very different from C&I customers. It is not clear that a framework designed to support entry by small customers will necessarily be appropriate for C&I customers. We are not suggesting that multiple frameworks are required, but that in designing an appropriate framework for small customers, it is important not to impose inappropriate restrictions on C&I customers due to the need for additional customer protections etc.

Additional observations

This section provides observations on several other issues. We note a range of other questions were raised in the consultation paper that we have not explicitly addressed. We look forward to working with the AEMC on these more detailed issues as the rule change process progresses.

Assessment criteria

Enel X broadly agrees with the proposed assessment framework. In addition, we suggest including a criterion that relates to efficient investment in CER by consumers. As noted above, consumers are expected to play an increasing role as we transition to a market dominated by variable renewable energy. Customers are more likely to invest in the necessary technology to enable them to participate, such as batteries and automated management systems, if the cost of that investment is offset by low-cost and simple options to earn revenue by offering their flexibility. Getting the incentives and signals right will be critical.

Network charges

Enel X agrees with AEMO’s proposal that network charges continue to be charged at the primary settlement point on the basis that all costs are ultimately borne by the customer and any other option will introduce unnecessary complexity. A simple solution would be to include a separate line item on

¹⁴ AEMC, *Unlocking CER benefits, Consultation paper*, December 2022, p.43.

customers' bills to separately account for network charges. However, we acknowledge that this would require a change to retailers' billing systems, which we understand to be costly.

Market and competition issues

We agree that the competition and market issues raised by the AEMC are complex, particularly concerns around allowing consumers (or their provider) to switch between settlement points to arbitrage tariffs. Consumers may see tariff arbitrage as a means to optimise the benefits from their CER. However, there are no wider benefits to the system or other consumers from this behaviour as it does not involve any change in demand.

Ultimately, a single entity must have control over when the customer's load is switched between settlement points. However, this introduces costs and risk for other FRMPs, if the controlling FRMP essentially has a veto over when the switch is activated. At worst, this could lead to primary FRMPs imposing contractual terms and conditions that prevent a customer from engaging another FRMP, essentially rendering the arrangements unworkable.

Enel X considers that any new arrangements should be designed to reward genuine flexibility, i.e. actual changes in net demand in response to dispatch instructions or price signals.

Potential for limitations at the secondary settlement point

Any limitations on what can be connected to a secondary settlement point must be carefully considered so that customer participation is not unnecessarily limited. Further, any limitations need to be flexible to cater for customers with different load sizes. We note the examples and options presented in the rule change request appear to relate to residential customers and would impose limits that are not appropriate for C&I customers.

Implementation issues for secondary settlement points

If the secondary settlement approach was adopted, Enel X agrees with AEMO's proposal that subtractive settlement be used. This is lower cost than the other options presented as it does not require significant and costly rewiring.

Enel X does not support AEMO's proposed approach to settlement for periods of grid isolation.

First, it is not clear why AEMO considers there is a risk to settlement. When the premises is isolated from the grid, settlement should still proceed correctly. If the customer's load is supplied from on-site generation or storage behind a sub-meter for a secondary settlement point, then, since there will be no flow through the boundary meter, the energy supplied by the FRMP for the secondary settlement point will exactly balance that consumed by the FRMP for the primary settlement point. There is nothing anomalous about this. This already happens on SGA sites, and does not cause a problem. AEMO suggests that there is some issue with settling "off-market energy," but this concept does not seem to exist in the national electricity rules or national energy retail rules.

Second, isolation from the grid may be a technical necessity where customers are providing demand flexibility to the wholesale market by replacing their grid demand with back-up generation that cannot operate continuously in parallel with the grid, or is not allowed to by the distribution network service provider. Customers would not provide demand flexibility in this way without the financial reward from

earning wholesale market revenue. Therefore, the arrangements would need to be able to distinguish between periods of grid isolation due to back-up generation being used to provide demand flexibility, and periods of grid isolation due to system failure.

Finally, if the AEMC concludes that this issue needs to be addressed (contrary to our view), it is not clear why two solutions are necessary. Further, the “physical” solution proposed would require expensive rewiring of existing sites. It would be extremely onerous. The software solution, requiring separate identification of off-market energy flows, would be a much lower cost approach that would achieve exactly the same outcome.