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Joel Aulbury
Australian Energy Market Commission

20 September 2021

Dear Mr Aulbury

RE: Integrating energy storage systems into the NEM, draft determination

Thank you for the opportunity to provide feedback on the draft determination for the *Integrating energy storage systems into the NEM* 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.

This submission sets out Enel X's views on the draft determination. It focuses on the proposed changes to small generation aggregator (SGA) framework and the flow on implications for the recovery of non-energy costs. The key points are:

- We are comfortable with the removal of the SGA registration provided that the new rules continue to provide flexibility for SGAs to offer services to customers with behind-the-meter batteries and generation in embedded network configurations, or any future configurations that may be developed as part of the ESB's flexible trader model work.
- We support the proposal to allow SGAs to offer ancillary services and believe this change could be implemented sooner.
- We support the proposal to merge the terms *ancillary services generating unit* and *ancillary services load* and believe that this change could be implemented sooner.
- We do not support the proposal to include DRSPs as *cost recovery market participants*.
- We do not support the proposal to recover non-energy costs from IRPs registered at child connection points.

I look forward to continued engagement with AEMC in the development of this rule change. 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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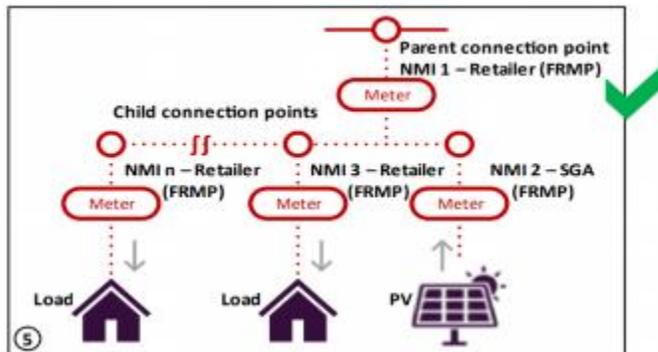
¹ Bloomberg NEF, December 2019.

Removal of SGA category

It is not yet clear to Enel X how significant the benefits of the removal of the SGA category and the creation of the small generating unit and small integrated resource unit classifications are. And, while clarifications are helpful, the regulatory framework is already clear that SGAs can use battery storage. That said, we are comfortable with the change provided that there is no negative impact on the SGA framework as a result of the transition to the IRP registration category.

As discussed with the AEMC, Enel X’s primary concern with the changes is their potential impact on current and future SGAs that operate using generating units/ storage located behind the connection point – that is, at a child connection point in an embedded network configuration. This configuration, depicted in the diagram below from AEMO’s SGA fact sheet,² is one of two permitted SGA configurations and is used by several SGAs today.

Embedded network



To give effect to this configuration, the SGA will establish an embedded network and be assigned as the SGA at any child connection points behind which the small generating units / batteries are connected. The customer who owns the generating unit / battery retains its relationship with the retailer at the parent connection point and (contrary to what the above diagram implies) there is generally only one customer within the embedded network – the owner of the battery/generator.

This configuration is a relatively simple way to enable demand side participation in the NEM. It is commonly used by SGAs offering demand flexibility services to commercial and industrial customers with batteries or backup generators. The only alternative, as reflected in AEMO’s fact sheet, is for the customer to establish a second grid connection point for the generating unit / battery. However, as the ESB’s latest paper on the Post-2025 project notes and the accompanying Enegeia report confirms,³ the costs of establishing a separate connection point pose a material barrier to the use of this model, particularly for existing customer sites. Further, the benefits of a customer-owned generating unit / battery are maximised when it is co-located with the load, not electrically separated from it. Thus the embedded network model is the only viable means by which SGAs and their customers can access the wholesale market with small generating and storage units located behind the meter.

² See: https://aemo.com.au/-/media/files/electricity/nem/participant_information/registration/small-generation-aggregator/small-generator-aggregator-fact-sheet.pdf?la=en

³ See: <https://esb-post2025-market-design.aemc.gov.au/32572/1611022920-enegeia-expert-advice-on-the-cost-of-establishing-a-second-connection-point-v2.pdf>

We seek the AEMC’s confirmation that the rule will continue to provide flexibility for SGAs (IRPs) to offer services to customers using the embedded network configuration, or any future configuration that may be developed as part of the ESB’s consideration of flexible trader models. If that is the case, we are broadly comfortable with the proposed changes to the SGA registration arrangements. As set out in our submission to the ESB’s Post 2025 market design options paper, the separation of flexibility from retail supply is essential to greater levels of demand side participation, and is what has driven the success of the SGA, MASP and DRSP frameworks.⁴

We also support the decision to place no additional scheduling or central dispatch participation obligations on aggregators of small generation and storage units. The attraction of the SGA framework is that it does not require scheduling. It is therefore a good participation framework to enable demand flexibility by small generators / batteries and those that participate in the NEM infrequently.

Allowing SGAs to offer FCAS

We support the AEMC’s draft decision to remove the restriction on SGAs offering market ancillary services. Given this rule appears to have strong support and was recommended by the AEMC back in 2018, there does not appear to be any reason to wait until April 2023 to implement it. The rule to give effect to this change is not dependent on the broader changes being made. We therefore recommend that the AEMC bring forward the implementation of this change to the date that the final rule is made. Doing so would allow current and prospective SGAs to participate in the FCAS markets and drive competition and lower prices by doing so. Any changes required to the MASS to enable this change could be rolled into AEMO’s current review of the MASS (which has been extended) or its subsequent review to reflect the fast frequency response rule change.

Merging of ancillary services generating unit and load terms

We support the proposal to merge the terms *ancillary services generating unit* and *ancillary services load*. This change will better recognise that many load connection points have generation onsite that can be used to support the provision of an FCAS service. This change is already largely given effect in AEMO’s draft changes to the MASS, which uses the term *ancillary services facility* to refer to either an *ancillary service generating unit* or *ancillary service load*.⁵

The rule to give effect to this change does not appear to be dependent on the broader changes being made. We therefore recommend that the AEMC bring forward the implementation of this change to the date that the final rule is made. Doing so would allow AEMO to align the intent and terminology of the final rule in its current MASS review (which has been delayed) or the subsequent review to reflect the fast frequency response rule change.

Cost recovery participants

The draft rule defines DRSPs as *cost recovery market participants*. The text in the draft determination suggests that they are not. DRSPs should not be cost recovery market participants. This is because DRSPs are registered at the same connection point as the customer’s retailer (Market Customer), using the

⁴ See:

<https://energyministers.gov.au/sites/prod.energycouncil/files/publications/documents/31.%20Enel%20X%20Response%20to%20P2025%20Market%20Design%20Consultation%20Paper.pdf>

⁵ See: <https://aemo.com.au/en/consultations/current-and-closed-consultations/mass-consultation>

same NMI and same metering. Including DRSPs as cost recovery market participants would mean that the customer would be charged twice for the same impact on the grid – once via the Market Customer and again via the DRSP. This approach is inconsistent with the causer pays principle and will discourage customers from taking up opportunities to offer wholesale demand response. Further, the final rule on the *Wholesale demand response* rule change determined that DRSPs would not be liable for FCAS costs.

Recovery of non-energy costs from IRPs at child connection points

The draft rule would appear to apply non-energy costs to market participants registered behind the connection point, e.g. IRPs registered in relation to generating / storage units that are co-located with a commercial or industrial load in the embedded network configuration described further above. Our concern is that this approach is inconsistent with the causer pays principle and will disincentivise customers from providing behind the meter services with generation and, in particular, batteries.

Two examples:

1. An SGA (IRP) is registered in relation to a battery storage unit at a child connection point. The battery charges from the grid in the relevant interval. The NMI at the child connection point measures that energy consumption, as does the NMI at the parent connection point. Under the draft rule, the IRP at the child connection point would be charged for non-energy services (e.g. contingency lower) based on consumed energy during that interval, as would the Market Customer at the parent connection point. This essentially double counts and double charges the customer for a single quantity of energy demand, when their impact on the grid / need for non-energy services has not doubled.
2. An SGA (IRP) is registered in relation to a battery storage unit or generating unit at a child connection point. The generator/battery exports from the child connection point in the relevant interval. The NMI at the child connection point measures that export, but the purpose of the export is to displace site load such that energy consumption at the parent connection point is reduced. This is a common method of demand response used to support the provision of FCAS, energy and demand response from behind the meter assets under the MASP, SGA and DRSP and RERT frameworks. Under the draft rule, the IRP at the child connection point would be charged for non-energy services (e.g. contingency raise) based on sent out energy during that interval, and the Market Customer at the parent connection point would be charged on any remaining demand. In this scenario, the customer's total liability for non-energy costs remains unchanged even though their impact on the grid / need for non-energy services is significantly reduced by the behind-the-meter activity.

The AEMC notes in its draft determination that the cost of services to support the power system should be funded by those who benefit from or cause the need for them, and we agree. It is suggested that the draft rule will incentivise more efficient behaviour as a customer's costs will reflect how they benefit from the provision of non-energy services. If these incentives are to be effective, a customer's liability for non-energy costs must be measured and applied only at the grid (parent) connection point. The grid connection point is where a customer's impact on the grid and need for non-energy services is accurately determined.

Market participants (and their customers) should not be penalised for activities that take place behind the grid connection point to provide valuable system services or reduce their liability for non-energy and other energy costs. Recovering non-energy costs from market participants registered in relation to assets behind the meter is inconsistent with the causer pays principle and will disincentivise customers from providing valuable behind the meter services with generation and batteries, despite the SGA and other frameworks being set up for this purpose. The impact of this is likely to be more significant for customers with batteries, as a behind the meter battery will tend to operate (export and import) more regularly than a customer's backup generator.

We therefore recommend that the draft rule be amended to exclude the recovery of non-energy costs from market participants registered at child connection points. Clarification on this matter through this rule change will be an important first step in the design of future flexible trading relationship models.