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25th July 2022

Ms Anna Collyer
Chair
Australian Energy Market Commission
Energy Securities Board

Dear Ms Collyer,

Submission on the Capacity Mechanism High-Level Design Paper June 2022

Evergen Pty Limited (Evergen) welcomes the opportunity to give feedback on the Capacity Mechanism High Level Design Paper. Many thanks to the Energy Security Board (ESB) for the opportunity.

In this submission we would like to emphasise the need for close alignment between the design of the capacity market, Australia's goal of achieving net zero by 2050, and the recently published Integrated Systems Plan 2022 (ISP). Under the step-change scenario, the ISP projects a massive role for coordinated DER storage in providing dispatchable capacity in the National Electricity Market over the coming two decades.

Our submission also includes some additional responses to specific questions raised in the discussion paper.

Our focus as an industry should be on developing a flexible and resilient energy system that can support accelerated decarbonisation and electrification. The world is looking to Australia for leadership and innovation in this space.

Yours sincerely

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Overview

In this submission Evergen would like to emphasise the need for close alignment between the design of the capacity market, Australia's goal of achieving net zero by 2050, and the recently published Integrated Systems Plan 2022 (ISP). Under the step-change scenario, the ISP projects a massive role for coordinated DER storage in providing dispatchable capacity in the National Electricity Market over the coming two decades.

Achieving distributed storage uptake that is high enough to keep pace with the step change scenario will be non-trivial. But even more challenging will be ensuring that this DER storage is active in the market, and is coordinated and dispatchable to the degree projected by AEMO.

As a leading provider of services to facilitate DER coordination and aggregation, Evergen is strongly of the view that Australia can meet the technical task of coordinating DER to deliver dispatchable capacity. The challenge is bringing consumers - the owners of DER - into the market as active participants. Policy settings and market arrangements can significantly impact the willingness of end-users to join VPPs, or invest in DER at all. Failing to devote sufficient attention to the treatment of DER in the design of a capacity mechanism risks subduing the rollout of coordinated DER, leading to end-users who opt out of the external control required for active participation as dispatchable capacity.

If, as an industry, we are serious about fostering two-way markets with active participation from consumers, and if the projected key role of coordinated DER storage in providing dispatchable capacity is to be realised, the visionary plan laid out in the ISP step change scenario needs to be backed up with commitment and careful implementation.

Evergen recommends the ESB and industry must adopt a key principle that coordinated DER is not an 'also-ran' in the capacity mechanism design.

An aggregated fleet of DER may consist of many thousands of devices of varying technology, make and model, age, location, and operating conditions. The treatment of such fleets of coordinated DER under the capacity mechanism will be necessarily complex, particularly with regard to baselining, de-rating, monitoring and compliance. Nevertheless, we need to work together to develop a mechanism that treats coordinated DER as a first-class citizen, with well thought out rules and processes to ensure that coordinated, dispatchable DER are not penalised through omission, or because fair and appropriate treatment of coordinated DER under the capacity mechanism is put in the too-hard basket.

Our submission below includes some additional responses to specific questions raised in the discussion paper.

Our focus as an industry should be on developing a flexible and resilient energy system that can support accelerated decarbonisation and electrification. The world is looking to Australia for leadership and innovation in this space.

5.3.3 Q4: If there is a risk of the emergence of more than one at-risk period in the NEM how should that be addressed?

ESB suggests summer, 4-7pm as the at-risk period, a time that is partly a result of uncontrolled DER output (i.e., rooftop PV) hollowing out operational demand earlier in the afternoon. Evergen notes that DER storage, even if uncoordinated, will work to soak up daytime PV exports. At the volumes described in the ISP step change scenario, this will certainly impact the timing of the at-risk period. The at-risk period will likely change, and it would not be surprising if multiple at-risk periods emerged.

Evergen's view is that the complexity of multiple periods and calculating different de-rating factors as a result should not deter implementing multiple at-risk periods if doing so will be fairer and more accurate.

Market participants should be accustomed to optimising across multiple value streams (e.g., wholesale market, FCAS, network services, peak shaving), and should be left to manage the risks and make decisions even across multiple at-risk periods.

5.6 Q6: What approaches should be used to de-rate different technologies? Should different approaches apply to different technologies?

We believe that agreed principles for coordinated, dispatchable DER capacity are required. With those in place a more informed and focused discussion regarding de-rating at both the individual plant level and/or the aggregated portfolio level can take place.

It would be counterproductive if AEMO projects that a huge portion of dispatchable capacity will be provided by non-traditional technologies such as coordinated DER storage in the future, but such technologies are in practice deterred from participation in the capacity market as a result of blunt de-rating methodologies or simplistic handling of variability in at-risk periods. A capacity mechanism that cannot recognise a key contributor to dispatchable capacity will lead to oversupply of capacity, inefficiency and increased costs for consumers.

How will de-rating apply to a fleet of residential energy storage facilities if the individual assets are of varying capacity and power? Will de-rating methodologies be able to signal that west-facing PV that maximises generation during late-day at-risk periods is valuable, or will it be blind to such considerations? How would a fleet of V2G EVs that are non-stationary be de-rated? How will all of this change for QLD vs VIC, or regional versus urban settings? Will it be possible to develop multi-technology VPPs where technologies are selected based on complimentary de-rating attributes, thereby delivering a more favourable fleet-level de-rating?

There is complexity here, but it is Evergen's position that a reluctance to handle this complexity should not hamstring the uptake of coordinated DER dispatchable capacity.

In its position as a platform for monitoring, control and coordination of DER assets, Evergen is well placed to deliver the data and analysis that will help to inform de-rating methodologies and ultimately the control, orchestration and capacity availability of such assets in the market.

5.6 Q8: Should de-rating factors be determined at a technology class/region level or at a station level?

What are the principles that would inform a choice from these options? Simplicity and transparency of mechanism design may be a principle, and if it were that might suggest a simple de-rating methodology broadly applied at the technology class/region level. But this might prevent the creation of multi-technology VPPs composed of technologies with complimentary de-rating profiles across multiple at-risk periods. If it is a principle to ensure full participation from a diversity of coordinated DER VPPs, paving the way for realisation of the step-change scenario ISP projections, then more detailed de-rating factor calculations may be required. If de-rating factors vary too much, uncertainty may undermine new capacity development, while static de-rating factors may fail to align capacity providers with changes over time to at-risk periods. Without agreed principles to guide these decisions, a de-rating methodology may be contentious.

6.5.1 Q11: Should retailers have a role in a centralised capacity mechanism?

Yes. Retailers as well as other large energy users will be the organisations with the primary offtake agreements from generators. These agreements are often used to ensure the financial security of new projects. As they play a major enabling role for new capacity, retailers and large energy users should have a role to play in the capacity mechanism.

6.5.3 Q15: What are your views on how existing and new capacity should be treated in the auction process?

Again, decisions on handling of existing and new capacity under the auction process comes back to the principles that guide design of the capacity mechanism.

For example one of the principles may be preferential treatment for firmed renewables or otherwise low-emission capacity. This could open new use cases for VPPs. Evergen would like to encourage innovation bridging behind-the-meter and front-of-meter applications, such as a VPP providing firming services to a renewable asset.

Another principle may be to encourage rapid investment in new capacity, to mitigate the retirement of existing thermal capacity ahead of schedule.

Together, these principles may indicate that long-term contracts are available exclusively to new, low-emissions technologies, not existing fossil-fuel capacity.

7.1.3 Q3: Do you support the ESB's proposed performance model for consultation? If no, what other proposed model would be better and why?

Ideally compliance periods ('stress events') should be announced by AEMO at least 4 hours in advance, so DER fleets can be properly charged, and all assets across the value chain right up to power plants with longer ramp-up times have room to adapt. Otherwise, the risk of non-compliance due to unforeseen events will be internalised in all bids, leading to a less cost-effective mechanism for consumers and other participant assets.

7.3.2 Q29: To support revenue smoothing, should the ESB consider grouping events within the delivery year? If yes, what frequency (such as quarterly or monthly) is appropriate?

ESB seems to prefer payments to be distributed according to (i) year-round availability, and (ii) actual stress LOR2/LOR3 events. However, it could be more advantageous to participating assets for monthly payments covering 100% of the contracted revenues instead of the proposed methodology, as it would be more predictable and less burdensome for all stakeholders, including AEMO. Compliance would then be tested after stress events. In case of non-compliance for reasons within their control (i.e. excluding transmission constraints, unannounced stress events, etc.), asset owners should be subject to penalties.

7.3.4 Q31: Are there any other interactions with the existing energy only market that the ESB should consider when designing the capacity mechanism performance obligation?

Compliance with obligations should be achievable via (i) bidding in the wholesale market, (ii) bidding in the FCAS markets, and/or (iii) providing other services contracted by AEMO, State Governments or TSO.

7.3.4 Q32: Are there any other compliance issues the ESB should be mindful of in detailed design?

If an approach with penalties is adopted, penalties should be capped at the amount of annual revenues.

7.5.2 Q37: Do you think the MPC should be reduced if a capacity mechanism is introduced, and if so, by how much? What key issues should the ESB take into account when considering this issue?

We believe the interaction between energy and capacity prices should be minimised. Under the current market arrangements new entrant generators are incentivised by high spot prices at times of tight supply. Were these price signals to be reduced that may affect the viability of new entrants particularly batteries and pumped storage. Whilst substitute revenue will be available under the capacity mechanism, not all new entrants will be equally able to access that revenue. Furthermore, the Capacity Mechanism is itself a new initiative and until it has come into effect and then proved itself over some period of time uncertainty will persist as to what effect it will have on energy market prices with this acting to make investment decisions more uncertain for some new entrants.

8.3 Q38: Do you agree that costs should be passed on via retailers, rather than NSPs?

Yes costs should be recovered via retailers and large consumers.

Evergen notes that whether costs are passed on via retailers or NSPs, all consumers including small residential consumers, will ultimately bear these costs.

Given this, and given also that there is broad agreement for a push towards coordinated DER-based dispatchable capacity, Evergen proposes that cost allocation should create a strong price signal for consumers to not only install behind-the-meter energy storage, but also to encourage active participation. If consumers cannot be appropriately rewarded for sacrificing some autonomy over their own equipment in exchange for dispatchability, then there is little incentive to acquiesce to 3rd party coordination under a VPP.