7 May 2021

The House Standing Committee on the Environment and Energy
PO Box 6021
Parliament House
Canberra ACT 2600

Re: Inquiry into the current circumstances, and the future need and potential for dispatchable energy generation and storage capability in Australia

CitiPower, Powercor and United Energy welcome the opportunity to respond to the House Standing Committee on the Environment and Energy's inquiry into the current circumstances, and the future need and potential for dispatchable energy generation and storage capability in Australia.

Together, we are the largest group of distributors in Victoria and these subjects are relevant to how our networks are facilitating new ways of generating, using and transporting electricity—to enable homes and businesses to maximise the benefits of low emissions opportunities and technologies. Our role in the National Electricity Market (NEM) is evolving from a one-sided flow to enabling a two-sided market that provides our customers with a reliable supply of electricity as well as the ability to export excess electricity, or directly participate in the network or wholesale services. Ultimately, we see our role evolving to a distributed system operator (DSO) that is managing the balance of consumption and distributed energy resources (DER) on our network.

Of particular interest is the growing opportunities in low voltage (LV) grid-scale energy storage on the low voltage network (i.e. 'community' scale batteries or pole top batteries). We support multiple initiatives across the country that are trialling new energy storage models, including various ownership and operation models. LV grid-scale batteries have significant potential to unlock multiple benefits for participating and non-participating customers in their vicinities (addressed further in sections below).

We consider this type of storage will play a critical role in the future of Australia's energy system as DER penetration grows and more localised solutions become economically competitive compared to large scale solutions. Distributors will be an integral part of the transition to more community energy solutions and enabling the realisation of benefit stacking of energy storage and similar innovative technologies.

It is crucial distributors are not precluded from delivering and enabling these solutions where there are demonstrated benefits to customers and the wider community, through restrictive regulatory barriers such as the existing Australian Energy Regulator's (AER) ring-fencing guidelines. We support the current AER review of the ring-fencing guidelines[1] and consider it paramount the regulatory framework is updated to reflect opportunities for distributors to deliver customer and community benefits at least cost, without the administrative impost of regulatory waivers that cost time and money.

We expand on our key messages below.

1.1 We support ANU's findings that community scale batteries deliver benefits

We support the Australian National University's (ANU) findings that community-scale batteries have the potential to play an integral role in Australia's transition to a decentralised grid.[2]

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1 https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/electricity-ring-fencing-guideline-review

2 ANU, Implementing community-scale batteries, December 2020

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As the ANU studies show, the batteries connected on the low-voltage network can be used to defer, or avoid, network augmentation and increase solar hosting capacity. Additionally, as more solar connects on the network, the batteries will be key in addressing minimum demand on the low voltage network, addressing the need at the source whilst minimising the impact on the remainder of the distribution network. Unlike distribution transformers, which can only provide more energy into the network to support increasing load, batteries can increase consumption at times of minimum demand and increase supply at the time of increasing load.

The most important value community batteries provide, that is difficult to extract from other network assets or batteries behind the meter, is provision of storage services for customers who may not have the ability to obtain their own energy storage. As a key facilitator of future possibilities of energy trading among neighbours—which has long been a service customers and communities have been asking for; our customer research shows around two thirds of customers are interested in peer-to-peer trading. As such, the trialling of community batteries is an important step towards empowering consumers in the energy transition and enabling new services that meet customers' expectations.

1.2 Distributors are well placed to unlock the full value stack of community batteries

While the primary intent of community batteries is to enable local energy storage, the most valuable investments will come from value stacking batteries where they can also provide network support services in areas of network constraint, improve customer outcomes and leverage other revenue streams (e.g. wholesale market benefits through aggregators or retailers). This could be areas of constraint due to minimum demand, maximum demand or voltage rises from solar exports.

Optimising network benefits from a community battery requires specialised knowledge of:

- localised LV network constraints, including maximum and minimum demand and power quality constraints. This includes multiple streams of constraint information from tens of thousands of distribution transformers and connected customers
- a deep understanding of the condition of tens of thousands of distribution assets across the network. The condition of the asset is an important factor in determining both the future use of the asset and its ability to work in conjunction with the new technologies introduced on the network
- understanding of the type and sizes of batteries that are best designed for network services (as opposed to services such as fast frequency response, which can shorten the life of the battery).

In addition, it requires an understanding of the rigorous safety and reliability standards under which distributors operate, as well as, the acceptance of duty to deliver to the same standard.

We believe distributors are best placed to determine the most appropriate location and size of the battery that will optimise provision of network services and enable community energy storage. This is important to minimise installations of batteries that may provide a market service but unable to provide meaningful network support.

In cases where distributors own and operate the battery, they are well placed to maintain, repair, and replace the batteries as part of their ‘business as usual’ processes. Alternatively, the onus of battery maintenance falls on community organisations that may not have practical experience to operate and maintain electricity assets.

1.3 The current regulatory framework is limiting and should be made more flexible to enable a faster transition to community storage

The current regulatory framework prevents distributors from owning and operating a community battery while extracting its full value through secondary markets. Distributors are prevented from directly providing services into the NEM (such as energy and frequency control ancillary services markets), in addition to being prohibited from indirectly facilitating the batteries to compete for competitive services by leasing out spare capacity.

As the ANU paper highlights, distributors would be required to seek an exemption from the current regulatory framework (a ring-fencing waiver) to trial an ownership structure where any part of the asset is owned by the distributor (even if gifted by a community or third party) and the battery is used for anything other than network services at any point in time.[3] This is a significant limitation of the current regulatory framework, and in direct contrast to expectations from our customers and communities that have continuously expressed a desire for distributors to be part of the ownership model.

The AER recognises the energy storage is a new technology for which the current regulatory framework was not designed and is currently reviewing the ring-fencing guidelines to ensure the framework is updated to best capture the future of grid-scale batteries. In our own experience, we have already sought a ring-fencing waiver for a trial of pole-top batteries in our United Energy network, which was successfully approved by the AER in an act of support for distributors owning and operating grid-scale batteries.

However, the process of obtaining a wavier application, review and approval stretched for more than 12 months, included significant resources from the business and the AER, and provided little certainty for the project until the very last moment. We consider the waiver process to be major burden and one that would delay and frustrate customers and communities should it be required for each trial.

Similarly to what we recommended to the AER as part of its ring-fencing review, we consider it paramount the regulatory framework be updated to reflect opportunities for distributors to deliver customer and community benefits at least cost, without the administrative impost of regulatory waivers that cost time and money. Alternatively, customers and communities will miss out on opportunities to benefit from the investment in the grid infrastructure and will ultimately be forced to pay more for network services and DER enablement in the long-run.

Should you have any queries about this submission please do not hesitate to contact [redacted]

Yours sincerely,

[redacted]

Renate Vogt
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[3] ANU, Implementing community-scale batteries, Final report, December 2020, p.2.