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Electricity Authority

PO Box 10041

Wellington 6143

By email: fsr@ea.govt.nz

Vector Limited

110 Carlton Gore Road

PO Box 99882

Newmarket

Auckland 1149

+64 9 978 7788 / vector.co.nz

Vector's submission on *A regulatory roadmap for battery energy storage systems*

1. This is Vector's submission on *A regulatory roadmap for battery energy storage systems*, proposed by the Electricity Authority (the Authority) in Aotearoa, New Zealand.
2. No part of this submission is confidential, and we are happy for it to be shared publicly.
3. Vector owns and operates the electricity distribution network within the wider Auckland region. This consists of more than 19,000 km of electricity lines and over 22,500 distribution transformers, delivering power to over 624,000 homes and businesses.
4. Vector's strategy for our electricity distribution business is to efficiently and effectively orchestrate distributed energy resources, such as commercial loads, manageable electric vehicle (EV) charging and hot water, to reduce the need for additional spend on infrastructure. This strategy reduces the traditional approach of constructing physical infrastructure, such as distribution transformers, to meet increasing peak demand.
5. We agree that battery energy storage systems (BESS) are likely to play a significant role in the future energy system, and that BESS could deliver benefits to consumers both directly and indirectly. These could be at many different scales (including EV charging with injection capability), and at various points in the network. Accordingly, there are many ways in which BESS can be deployed and managed to efficiently deliver those benefits.
6. The roadmap in this consultation outlines a series of future regulatory decisions around BESS in the electricity system that do not appear to be based on monitoring market impacts or other BESS indicators but rather on a perception that regulation is necessary to ensure efficient market outcomes. As we stated in our response to the consultation on *Updates to scarcity pricing settings* in 2024, we have not seen a clear problem statement providing the underlying indicators, evidence and metrics that would confirm the perceived risks from distributors managing load, or in this case owning and operating BESS.
7. The view that there are perceived risks to distributor involvement in demand management also underpins the guidance for distributor involvement in flexibility services markets. We noted in our response to that guidance that there is not clarity on what 'success' looks like

or if there are measurable outcomes to know whether regulation is necessary or has been effective at achieving those outcomes:

However, we believe the Authority needs to develop a sharper problem definition, backed by evidence, to support this intervention. The link between this guidance, increased expenditure on processes by EDBs, and overall benefits to consumers, must be more explicit. To support this, there are a number of questions the sector would benefit from understanding the Authority's views on:

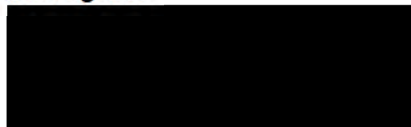
- *How will this practically benefit consumers?*
- *What does the end state look like?*
- *What kinds of arrangements does the Authority imagine will be in place?*
- *What does a day in the life of an EDB look like in this future state?*

8. The roadmap suggests that distributors should contract with third parties to make use of services from BESS. It is important to note that distributors have to meet strict power-quality and reliability targets, governed by the Commerce Commission. Penalties for non-compliance are significant, and EDBs cannot contract out of these obligations. In order for EDBs to have confidence that providers of NWAs, such as BESS, can assist EDBs in meeting those targets, and indeed do not cause us to breach those targets, contracts for service must mirror those obligations and penalties for non-performance through to their counterparties. We note that the sector is in a transition period, where BESS and other resources are still being deployed. We are concerned that distributors would still be perceived to be stifling innovation and market participation if we include such performance obligations in our contracts for services to third parties.
9. The roadmap also suggests that “*small-scale BESS could be aggregated to form virtual power plants. This allows customers to participate in the wholesale electricity market*”. We have previously noted a gap in the regulatory framework requiring parties managing load on distribution networks, regardless of whether they are offering services to distributors, to follow ‘good electricity industry practice’. Aggregators creating VPPs, as contemplated in the roadmap, have no such obligations. At a minimum, expectations on these parties need to include that they enter into and comply with a load management protocol with their host distributors and that they operate these distributed resources in ways aligned with the long-term benefit of all consumers (i.e. in accordance with market trading conduct expectations). Both these things are absent from the Code, currently and should be a consideration in the roadmap.
10. Additionally, the treatment of BESS in decisions on the Part 6 connection processes define BESS as generation where incremental costs rule apply. All other load customers pay for line charges and capacity charges whereas those charging a grid scale BESS would appear no different in terms of network utilisation when compared with any other load customer. While uptake of BESS is low, the cross-subsidy from pure load customers to customers with BESS will be low but that would change with higher adoption levels. We have also seen this issue materialise in the recent Authority consultation on *Evolving multiple retailing and switching*, as prohibitions there on charging generation traders more

than the incremental costs of their connection (in an MTR situation) would have the same effect. In terms of whether BESS should be treated as load or generation, this is noted as an issue, but there doesn't appear to be anything in the roadmap that addresses it.

11. Reviews of the distributed generation pricing principles and the incremental cost principles should be included within the BESS roadmap and should ensure both transmission and distribution network pricing impacts are considered at each stage of the roadmap.
12. Engagement across electricity sector regulators will ensure a consistent cost benefit analysis for BESS usage; that the rules governing the distribution sector enable the recovery of any additional costs to distributors to enable the future state that regulators desire; and that the benefits to consumers are sufficient to offset any increased costs.
13. We are happy to arrange additional conversations with our staff if we can assist with any further questions or clarifications to support the development of the BESS roadmap. Please contact Matt Smith (Policy Advisor) at [REDACTED] in the first instance.

Kind regards



Matt Smith

Policy Advisor, Strategic Planning and Technology Integration