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Submissions
Electricity Authority

By email: distribution.feedback@ea.govt.nz

Exploring network visibility

Meridian appreciates the opportunity to provide feedback on the Authority's discussion paper exploring network visibility.

Meridian is a significant access seeker that frequently connects new public EV charging to distribution networks. Meridian operates the Zero¹ EV charging network with over 350 charge points available in our nationwide charging network, making it the second largest in Aotearoa. Meridian has ambitious plans regarding the rollout of public EV charging and support for businesses to design and deploy business EV chargers. We are committed to accelerating the transition to low-emissions transport and supporting the Government's goal of 10,000 public EV chargers by 2030.

Meridian's retail strategy also seeks to deliver value to customers for their flexible resources. Over the past financial year Meridian launched Smart Hot Water, Smart EV Charging, and a Four Hours Free Plan to incentivise the reduction of energy use at peak demand times. To the extent such options can be tailored to also help relieve network capacity constraints, that should enable increased value to be stacked and delivered to consumers.

In Meridian's opinion, improving network visibility will deliver significant efficiency gains and lead to benefits to consumers in the long term. Increasing the efficiency of distribution

¹ <https://zero.meridianenergy.co.nz/>

networks is consistent with the recent findings of the Government review of the electricity sector, led by Frontier Economics. While Frontier ultimately recommended amalgamation of distribution businesses, the report also noted the lack of standardisation of policies, terms and conditions for connecting new customers, that has created unnecessary complexity and transaction costs for new load customers wishing to connect. According to Frontier, this incentivises new customers to make connection choices to minimise their transaction costs, rather than connecting efficiently to locations with spare grid capacity.² This finding is consistent with Meridian's experiences as a network access seeker and with earlier findings in the Baringa report³.

Network visibility can significantly reduce the transactions costs Meridian faces when connecting public EV charging. The current state in many networks is a lack of easily accessible information about network topology and constraints. The information currently provided in Asset Management Plans or in information disclosures to the Commerce Commission is not designed with network users in mind and does not contain user-friendly information that will increase the efficiency of new load connections or flexibility investments. As a result, Meridian (and other access seekers) are often forced to be 'tyre kickers' making multiple enquiries regarding distribution network capacity and connection costs at various locations in a protracted effort to identify suitable connection locations. In 2023, Drive Electric reported on the time taken for an EV charge point operator to receive quotes for connections.⁴ The average time was 72 days and the longest response time over 200 days. Meridian expects improved network visibility would significantly reduce those timeframes between initial enquiries and quotes.

Some distribution networks are ahead of the pack. For example, PowerCo, Network Waitaki, and Vector each has GIS tools available to help access seekers and flexibility providers identify the best locations for their investments. Meridian supports the Authority's consideration of regulation to require more widespread adoption of such tools to ensure key information is published in a readily accessible format. Ideally, such a mandate would require:

²<https://www.mbie.govt.nz/dmsdocument/31228-review-of-electricity-market-performance-by-frontier-economics> at section 8.1.

³ <https://www.mbie.govt.nz/assets/baringa-ev-international-case-studies-report.pdf>

⁴https://www.ea.govt.nz/documents/3549/Drive_Electric_-_Targeted_Reform_of_Distribution_Pricing_-_Submission_Aug_2023.pdf

- use of a centralised GIS tool or format to enable users to easily compare locational options nationally and across arbitrary distribution network boundaries;⁵
- information on:
 - network topology;
 - available network capacity by location⁶; and
 - other useful information (e.g. reliability); and
- regular updates of the information (initially annual updates may be sufficient).

Regarding the granularity of capacity information, Meridian supports the inclusion of information at both the transformer level and 11kV feeder level on:

- rated capacity (kVA);
- estimated maximum historical load (kVA); and
- indicative available capacity (kVA).

Information about existing transformers enables access seekers to identify the least cost locations where load can be connected without the need for a new transformer, and how much load can be connected before capacity limits are exceeded. Readily available capacity information about 11kV feeders by location would enable access seekers to identify the most efficient locations where their investment would require the commissioning of a new transformer. Having information available about both, would enable access seekers to make price quality trade-offs. For instance, whether to accept a lower capacity at a lower cost through utilisation of an existing shared transformer, or to invest in a new transformer at higher cost do enable a higher capacity connection. Such trade-offs cannot be made today without significant delays while information is sourced for a limited number of locations through one-off requests and subsequent data logging, which could take a month or two before identifying any suitable options.

Meridian understands that some pragmatism may help to reduce implementation costs for distributors. Some distributors are better resourced, have existing tools and processes, and have better access to the necessary data. Some staging of implementation could be considered with a longer lead time for smaller distributors to enable them to learn from the experience of others. The initial requirement could also mandate information about high-voltage network assets, while setting a longer timeframe for expansion to include information about low-voltage network assets. Similarly, the initial requirement could be for annual

⁵ There may be opportunities for ENA to take a lead role in delivery of a shared tool or format. There may also be opportunities for further efficiencies by considering interoperability of network capacity data and EECA's EV Charging Dashboard data (including the EV Roam dataset).

⁶ We have seen some networks implement heat maps and consider these less useful for access seekers than specific locations of assets and capacity of those assets.

updates to the underlying data (aligned with the annual physical inspections of transformers and manual readings on maximum historic load that we understand are already commonplace). In the longer term, more regular data updates could be considered along with increased granularity regarding the timing of peak capacity utilisation. If access seekers know capacity is available except for (say) a few occasions per year, they can consider flexibility arrangements such as an agreed reduction in maximum EV charging rate for selected periods to enable lower cost connections that better utilise existing capacity and deliver least-cost solutions for consumers.

In Meridian's opinion, a staged approach should still provide hard deadlines within which information must be made available using set methods, with a best practice end state the clear outcome (as opposed to a weaker end state designed to avoid implementation costs but which would also fail to deliver many of the efficiency benefits to consumers). This is aligned with Option C in the consultation paper – “developing regulatory standards and timeframes for improving network visibility”. Sufficient lead time would still enable a collaborative industry approach to implement the regulatory standards. In our experience, non-regulatory approaches have to date largely been unsuccessful in driving timely behavioural changes and efficiencies across distributors collectively. While we have not attempted to quantify the costs and benefits for consumers in the long term, Meridian expects that the benefits of increased network visibility will easily exceed the implementation costs.

Please contact me if you have any queries regarding this submission.

Nāku noa, nā

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