

16 July 2026

To: Electricity Authority

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

Improving information on high-voltage network capacity — cross-submission

To whom it may concern,

Thank you for the opportunity to comment on the consultation "Improving information on high-voltage network capacity". We appreciate the Authority accepting this late submission.

Zeale is a renewables marketplace that provides power purchase agreement (PPA) brokerage and advisory services. Our advisory work includes market-based grid studies using vSPD to help generation developers and offtakers to understand what drives current grid capacity, test future scenarios, and assess the likelihood and impact of capacity constraints. We therefore understand the network information that our clients ("access seekers") need to compare projects in different locations and make sound investment decisions.

We support the Authority's high-voltage-first approach. We also agree with GridQube and Deakin University that network visibility should extend beyond static, point-in-time disclosure toward information that is dynamic — what Deakin usefully frames as system observability rather than mere transparency¹. We endorse Deakin's point that the technical specifications must be sufficiently standardised to promote system observability and comparability — a point we develop on below.

The Authority's proposal requires distributors to publish "remaining capacity" estimates and to disclose the methodology and confidence level behind these estimates². Firstly, as noted by GridQube and Deakin, it is an over-simplification to express "remaining capacity" as a single, static value. Remaining capacity is often expressed using a series of 'load duration curves' (also called 'probability of exceedance curves') because capacity depends on system conditions at any point in time. Secondly, unless the methodology is standardised, remaining capacity of 5 MW on one network and 5 MW on another network are not comparable. Thirdly, Powerco's comment that the specifications should be limited to outputs means that remaining capacity estimates will be an opaque, quickly out-dated view.

A simple solution to these issues is a publicly available, open-source reference model using a standard methodology — software that takes each distributor's network data, published in a standardised format, and produces standardised outputs. Distributors could continue to run proprietary models, provided they demonstrate their results align to the reference model.

¹ [Submission on Improving information on high-voltage network capacity](#), Deakin University

² Proposed clauses 6.3(2)(dg) and 6.3(2)(dh)

This is not a new idea. In 2023, Powerco identified the need for cross-industry standardisation in determining network congestion values, and stated a vision of sharing its base network model³. Three years on, cross-industry standardisation has not emerged. The Authority's own assessment is that progress on the industry-led Network Transformation Roadmap has been "uneven and limited", and that the ENA cannot require individual distributors to implement actions.

This idea has a direct precedent in New Zealand. vSPD — a mathematical replica of Transpower's Scheduling, Pricing and Dispatch (SPD) model — is an open, publicly available reference model of the national grid that allows users to reproduce market outcomes and test alternative scenarios. We believe the same approach is appropriate for distribution networks.

The Commerce Commission's IAEngg review of distributor Asset Management Plans further supports our proposed approach. IAEngg found it could "not assess the reasonableness" of distributor forecasts because the underlying models, inputs and assumptions were not published consistently or transparently⁴. Requiring publication of models and their inputs, on a standardised basis, will help to address the gap identified by IAEngg and the Authority's objectives.

We believe implementation would be relatively low cost, particularly if distributors already using open-source tools — e.g. Pandapower or Open DSS — shared their base model as a starting point. GridCube, which has deployed comparable tools with Australian distribution networks, commented that costs for high-voltage visibility are manageable and can be contained by leveraging existing data and automating assessments⁵. A reference model can also reduce costs, particularly for distributors that wish to avoid using proprietary models.

Overall, our reference model approach, based on a standardised technical specification, is likely to produce a significant net benefit by improving system observability and investment decisions. Consequently, this will advance the Authority's objectives of increased competition, reliable supply and efficient operation of the electricity industry.

Please feel free to contact us if you have any questions.

Sincerely,

Paul Coster
Founder, Zeale

³ [Submission on Updating the Regulatory Settings for Distribution Networks](#), Powerco

⁴ [NZ EDB 2023 AMP Review - Forecasting and Planning Assessment Report](#), IAEngg

⁵ [Submission on Improving information on high-voltage network capacity](#), GridCube