ASSET MANAGEMENT PRACTICES

ADDITIONAL INFORMATION DISCLOSURE

2024

WAIPĀ NETWORKS

This document provides additional information required by the Electricity Distribution Information Disclosure Targeted Review 2024. It outlines our practices for managing load and injection constraints on our low-voltage network. It is due for submission by 31 August 2024.

17.2.2 monitoring load and injection constraints, including:

a. any challenges and progress towards collecting or procuring data required to inform the EDB of current and forecast constraints on its low voltage network, including historical consumption data; and

b. any analysis and modelling (including any assumptions and limitations) the EDB undertakes or intends to undertake, with the data described in clause 17.2.2(a).

17.4.5 the EDB's approach to sharing information on current and forecast constraints (load and injection) with potential new consumers. This must include any information on low voltage network constraints, including the constraint information the EDB derives from the data specified under clause 17.2.2(a) of Attachment A.

1. INTRODUCTION

Like other Electricity Distribution Businesses (EDBs) in New Zealand, we publish our Asset Management Plan (AMP) to inform stakeholders about our asset management practices. This gives assurance that our practices are fit for purpose, that we effectively manage network risk, that we are striking the right price-quality balance in our service delivery, and that we appropriately consider innovation opportunities to improve our practices.

Electricity Distribution Information Disclosure regulations specify the scope of information we include in the AMP. The Information Disclosure Targeted Review 2024[1] amendment of the information disclosure determination introduces new requirements that require us to provide qualitative information on monitoring load and injection constraints.

This information supplements our 10-year AMP, which we disclosed on 31 March 2024. The 10-year Asset Management Plan will cover these additional requirements for future years.

[1] *Electricity Distribution Information Disclosure (Targeted Review 2024) Amendment Determination 2024 4909465 https://comcom.govt.nz/regulated-industries/electricity-lines/projects/targeted-information-disclosure-review-for-electricity-distribution-businesses/*

2. MONITORING LOAD AND INJECTION CONSTRAINTS IN THE LV NETWORK[2]

Load and injection constraints determine how quickly we can respond to new load and connection requests and issues identified by ourselves or reported by customers.

2.1 Current practice

We monitor the extent to which network loading approaches or has the potential to breach equipment ratings. However, apart from the Maximum Demand Indicator installed in distribution transformers, we traditionally do not have permanent load monitoring for the low-voltage (LV) network. Our current practice is to respond to issues as they arise. We rely on:

- For load only, the Maximum Demand indicators are installed in our ground-mounted transformers. Our regular asset inspections note the maximum demand recorded via the Maximum Demand indicators on our ground-mounted distribution transformers. Any recording breaching the transformer capacity triggers a detailed investigation using portable data loggers.
- For load only, real-time transformer LV monitoring devices are trialled on a few select distribution transformer sites.
- For load and injection, reactive monitoring using portable LV loggers is based on new connection requests or customer feedback on power quality issues caused by load or injections.

2.2 Planned practice

- We'll use smart meter data to monitor load aggregation and voltage constraints. This will allow us to investigate LV issues faster with fewer data logger deployments.
- Using ICP-based transformer loading estimation, we'll reduce the need for ADMD assumption-based calculations and improve the connection application assessment process.
- Detect, Model and Account for DERs: Integrating data on DERs for improved forecasting and planning.

2.3 Progress

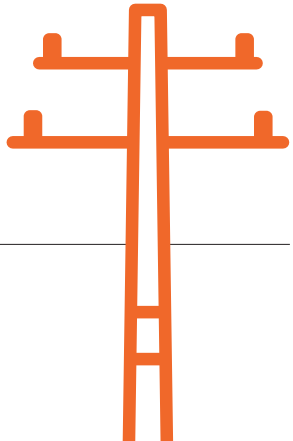
Progress towards collecting and procuring data that enable us to assess current and forecast constraints on our low voltage network includes:

- We have completed the Proof of Value trial of the GridSight platform, which provides visibility of the low-voltage network using data from smart revenue meters at customer premises. We are reviewing similar products from an alternative service provider to benchmark the functionality and commercials. Pending the final due-diligence checks, introducing the LV monitoring platform into the business will allow us to monitor our load and injection.
- We engaged retailers and metering equipment providers on our network to access smart meter data – historical consumption data – and they have supplied trial data to support the GridSight Proof of Value exercise.

2.4 Challenges

Challenges we face to access metering data that informs us of current and forecast constraints on our low voltage network include:

- Only 70-80% of ICPs have smart meters that can monitor voltage. The balance will rely on upgrading the assets of Metering Equipment Providers (MEP).
- Metering data costs are considerable.
- Unfavourable economics of extending monitoring capability to cover the entire low-voltage network and
- Technologies maturing include utilising existing smart meters to predict loading on the low-voltage network (for areas with low meter penetration rate).



[2] *Clause 17.2.2 of the ID determination*

2.5 Analysis and modelling

We have completed the LV visibility technology trials based on meter data. We currently do not perform analysis and modelling using meter data. We are evaluating the cost-benefit of an LV visibility platform. Based on insights from recent technology trials, a few proven use cases for visualising and predicting network performance from loading data and network models include:

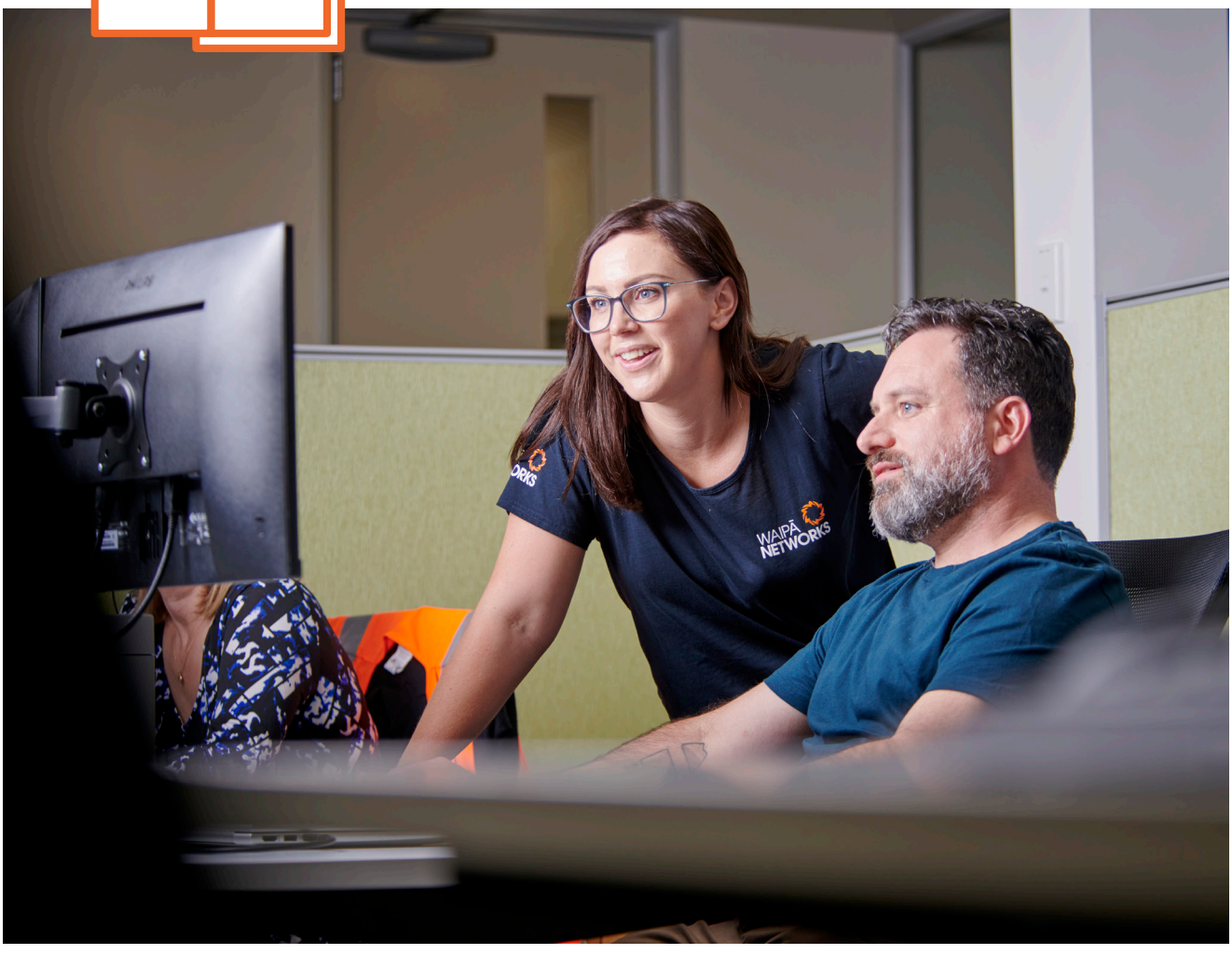
- Predicting developing faults and power quality issues allows us to respond proactively.
- Determine available capacity margins on the network (dynamic operating envelopes), providing insights for operational planning.

The modelling outputs can be shared with customers who can support the network needs by adjusting their network usage, either through injecting power or reducing their power offtake.

Limitations and assumptions

Customer participation–direct or via aggregators–is expected to improve the utilisation of existing network assets and reduce the need for network upgrades. This value of access to loading data and modelling capability is based on assumptions that:

- The cost of establishing requisite systems/platforms (to acquire loading data, model and analyse, and disseminate the results) will be more favourable than that of traditional network development.
- Modelling inputs will be available in time, modelling outputs communicated to customers in a timely manner and can be used to control the load directly.
- There will be adequate incentives for customers to participate in the programmes.
- Information from the limited metering available at every low-voltage feeder or distribution transformer can be extrapolated to provide a sufficiently accurate view of loading and/or injection at that point on the network.
- We will rely on limited estimation and/or use portable data loggers where there is low meter penetration.



3. COMMUNICATING LOAD AND INJECTION CONSTRAINTS[3]

Our Asset Management Plan is the main channel for communicating load and injection constraints for the 11kV distribution (MV) network. Another opportunity is when a developer or existing customer engages us to connect the new load, and we communicate any constraints relevant to their target connection point.

For the LV network, we communicate with customers at the time of application any constraints that affect their proposed connection (either load or injection).

[3] *Clause 11.12.3 of the ID determination*

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