Asset management practices- additional information disclosure requirements

This document describes some of our asset management practices satisfying additional information disclosure requirements specified in the Electricity-Distribution-Information-Disclosure-Targeted-review-Tranche-1-Amendment-Determination-2022. The disclosure requirements specify qualitative information in narrative form for the identified practices that we need to disclose by 30 June 2023.

1. Contents

1. Introduction

We, like other EDBs in New Zealand, publish our Asset Management Plan (AMP) to inform stakeholders of our asset management practices giving assurance that our practices are fit for purpose, that we effectively manage network risk, are making the right price-quality balance in our service delivery, and appropriately consider innovation opportunities to improve our practices.

Electricity Distribution Information Disclosure regulations specify the scope of information we include in the AMP. The Targeted Review Tranche-1 2022[1] amendment of the information disclosure determination introduces new information disclosure requirements that require us to provide qualitative information on:

- Notice of planned and unplanned interruptions
- Voltage quality
- Customer service practices
- Practices for connecting new consumers and altering existing connections
- Assessing the impact of growth drivers
- Innovation practices

The information is supplementary to our 10-year AMP we disclosed on 18 April 2023. The ten-year Asset Management Plan will cover these additional requirements for future years. The following sections provide descriptions of our practices for the specified areas.

2. Notice of interruptions

2.1. Planned interruptions notification

Consumers are currently notified of planned interruptions using the following methods:

1. An email to impacted consumers' retailers providing a minimum of ten working days' notice, who then notify consumers directly.
2. Website notification before planned interruptions aligned with notifications to retailers of ten working days. An additional notification on the day of the outage as the outage reaches 'active' statuses via the Waipā Networks website.
3. A letterbox card is also distributed to customers where a planned interruption is required within ten working days for retailer notification.

2.2. Unplanned interruptions

Consumers are notified of unplanned interruptions using the following methods:

1. An email of the impacted area is sent to all retailers, the Waipā Networks customer and call centres (including after hours). This email is sent via the outage notification communication system and is manually generated. Retailers are then able to notify of the unplanned outage to consumers.
2. Website notification at the time of the unplanned interruption on the Waipā Networks website.

[1] Electricity Distribution Information Disclosure (Targeted Review Tranche 1) Amendment Determination 2022 https://comcom.govt.nz/__data/assets/pdf_file/0036/299439/5B20225D-NZCC-36-Electricity-Distribution-Information-Disclosure-Targeted-review-Tranche-1-Amendment-Determination-2022-red-lined-version-25-November-2022.pdf

2.3. Changes to processes and communications

Waipā Networks will shortly be transitioning to a new platform to manage several services, including notification of planned and unplanned interruptions to retailers. Once transitioned, this notification will automatically be system-generated for planned interruptions rather than manual and will be aligned with the minimum ten working day timeframe. Unplanned interruptions will also be generated from the new platform to retailers once an interruption is logged.

3. Voltage quality

3.1. Voltage monitoring

Voltage is a critical parameter on our network as we have long 11kV distribution feeders. For the 11kV (HV) feeders, we have remotely controllable devices connected to our SCADA system, such as reclosers and voltage regulators, providing real-time voltage measurement.

However, we traditionally have not had permanent voltage monitoring for low-voltage networks and rely on customer feedback, after which we install portable dataloggers to confirm any issues. We now have transformer LV monitoring devices on a few select distribution transformers. We recently initiated a project that provides visibility of the low voltage network via the GridSight platform (still at the proof of value stage) using data from smart revenue meters at customer premises.

3.2. Addressing non-compliance

As the load on the network increases, feeder loading can exceed what the initial design allowed, potentially resulting in voltage non-compliance. Regular feeder quality performance reviews through field monitoring and network modelling confirm potential voltage issues. We address voltage non-compliance at both HV and LV levels through:

- HV:
    - Installing automatic voltage regulators,
    - Installing capacitor banks,
    - upgrading conductor and/or
    - reconfiguring the feeders.
- LV:
    - reconfiguration of the LV network,
    - transformer upgrades,
    - upgrading conductor and/or
    - adjusting transformer tap changers.

3.3. Responding to low voltage issues raised by stakeholders

When customers notify us of voltage issues, we respond to it as a fault, at the same level as a ‘no power’ report, and we follow these steps:

- Technical verification that includes engineering assessment of network layout for the affected stakeholder(s), field verification of the desktop assessment through data logging, transformer tap position check, verifying installed conductors and possible alternate LV arrangements.

This step identifies possible reasons for the non-compliance and confirms whether the issue is on the network or customer side.

- Where the issue is due to the network, our engineering teams determine an appropriate solution, and the field services team deploys the solution.
- Verifying the solution's effectiveness through onsite measurements and with the affected stakeholder.
- If there is a repeat notice from the same customer, we classify it as a complaint and raise the priority for resolution.

3.4. Communication with affected customers

We keep the customer informed of progress throughout the resolution process and aim to resolve customer complaints within 20 working days. Should there be a requirement to exceed this timeframe, we will communicate this and the reasons to the customer and work to resolve the complaint as soon as possible.

3.5. Improvement initiatives

Initiatives that will improve our practices and network voltage performance include:

- network architecture changes such as introducing subtransmission, driven mainly by capacity needs, improve network voltage performance by shortening distribution feeders and introducing another stage for voltage control.
- our voltage management programme considers forecast load at the distribution feeder level and proactively deploys voltage management solutions, such as voltage regulators, capacitors, and conductor upgrades. Our current practice for the low-voltage network is to respond to issues as they arise.
- updating our design standards to allow for the change in customer density and usage profiles.
- extending the coverage of LV monitoring using the GridSight tool will enable us to improve voltage performance at low voltage levels proactively.

4. Customer service practices

4.1. Customer engagement

We survey our customers annually and regularly engage with key customers and community organisations. Several EDBs in the industry undertake the annual survey, which serves as a basis for benchmarking. Key measures, including value for money, reliability, communication, image, and reputation, are measured across rural, urban, commercial, and industrial customer groups.

4.2. Resolving complaints

Our process for managing complaints is detailed here Customer Complaints - Waipā Networks.
We provide several different methods for contacting us to make a complaint, including an online form that allows customers to provide detailed information and upload documents or images if relevant. We aim to resolve complaints within 20 working days and will maintain contact with the customer throughout this process.

5. Connecting new consumers and altering existing connections

5.1. Our approach

Our practice for connecting new customers and customer-initiated network alterations follows a process that includes the following:

- Assessing the proposed load's impact on the network – capacity and voltage. The level of detail depends on the connection size; the engineering team assesses larger connections to determine if upstream upgrades are needed before the design team confirms the installation arrangements, access requirements and customer contribution.
- Common issues include:
    - timing to align equipment sourcing with long lead times from suppliers and the iterative process involving initial customer enquiry. Waipā responds with connection requirements when the customer confirms their needs. To overcome the challenges, we ensure that our equipment stock is at a level that covers these uncertainties.
    - Data availability, where needed to confirm existing loading, can sometimes impact the time to complete the assessment of new connections. We expect this will largely be resolved as we adopt new technologies for LV network visibility.
- With the requirements confirmed, we create the ICP for new connections and carry out the physical connection (our in-house field service team does the construction to complete the requested connection/network alteration), then forward the information to the customer's retailer.

5.2. Minimising costs to consumers

Using standard design and construction ensures the network will maintain acceptable reliability and safety with the extensions and alterations; and helps minimise customer costs.

Where we can, we install equipment, ensuring that the configuration allows for future upgrades/alterations considering the area growth profile, ensuring work common to different projects is done once.

We consider the quotation fee part of the customer contribution and apply it to offset some project costs.

5.3. Planning and managing communication with customers

We maintain a web portal that allows customers or their representatives to submit applications for new connections or alterations to existing connections. Our interaction with the customer starts from acknowledging receipt of the application and confirming customer requirements to continual updates on the progress. The updates include when we expect the customer input to proceed with the application, such as when they need to pay connection fees. We also engage with customers through workshops, community events, and local agencies. These additional initiatives allow us to discuss broader changes to our processes and pricing and support customers with their requirements.

6. Impact of growth drivers

6.1. Overview

To manage the risk posed by changes in capacity requirements from new demand, generation, or storage, we have a network development strategy that covers the following:

- planning processes and technical and engineering standards,
- guides for modelling future demand, and
- investment selection and approval process.

6.2. Assessing the scale of new demand, generation, and storage

Our demand forecasting process assesses new demand, generation, and storage scale. Inputs to the process include historical demand on the network and regional growth information from local councils, property developers and major industrial customers. These inputs represent the traditional demand growth drivers. Projecting the historical growth trends into the future with adjustments for regional growth information produces forecast demand showing an estimate of the impact of these inputs on future demand.

New drivers of demand include electrification of transport and industrial process heat to achieve decarbonisation targets, and we expect these to introduce significant load growth on our network. Technological advances are making distributed generation and storage more accessible, impacting demand by reducing peak or raising demand for generation export capacity depending on location.

The scale of the demand brought by the new drivers depends on the level of adoption of electric vehicles and the other new drivers within our network area and the use patterns, which are yet to be determined and therefore have no trends to build on. Given these uncertainties, we use demand growth scenarios to determine the scale given these uncertainties to produce a range for the forecast demand.

6.3. Assessing impact

Demand growth from new developments leads to the need for network extension, while demand growth from existing connections can lead to the demand exceeding the capacity of the existing network in terms of thermal and voltage capacity. Changes in demand profiles/network use patterns can potentially change asset criticality, impacting how we manage the affected assets.

Using the forecast demand, existing network configuration and our planning criteria, we review the expected load against the existing network to assess the impact on the network and determine potential constraints. We assess the impact at different levels–LV reticulation, HV distribution, subtransmission, and GXP level–by applying the forecast demand to the network model and simulating the network performance for each year of the planning period. The outcome of this assessment informs the network development solutions we choose.

6.4. Other factors

The location of new loads influences our network development path; for example, a proposal to connect a new generator or large industrial load to the remote parts of the network may drive

significant changes to the network configuration. We engage the customers early to ensure they understand the cost implications and access requirements we may have to connect the new load.

Distributed generation, storage, and flexibility services provide opportunities to reduce peak demand and can challenge how we operate the network as it affects network use patterns. In addition, distributed generation and storage have safety implications as they can cause circuits to remain energised when the primary network supply is isolated. This requires us to adjust our safety and operating practices.

6.5. Dealing with uncertainty

The ideal starting point for providing new capacity is to build "just enough, just in time" and then add incrementally over time, avoiding uncertainties due to new loads' timing. However, as network assets typically have long lifespans, this approach will not be viable. For the network development plan, we base the development path on the likely growth trajectory from our demand scenarios. We select flexible options that can be scaled to cover the range in the demand scenarios, providing a path of least regrets.

We select solution options that can be implemented in stages, with each early stage setting the foundation for the next. For example, the early stages could be non-network solutions, such as utilising flexible demand and distributed generation, that allow us to meet immediate needs while allowing us room to monitor and evaluate the impact of new growth drivers. A medium-term stage could be installing a 33kV cable and then operating at 11kV to serve the early stages of the new load. Then when the more significant load is confirmed, develop the network to operate at 33kV for higher capacity.

6.6. Investment selection and delivery

The solutions identification stage explores the range of options to meet the need. It is also an opportunity to explore innovative ideas, including emerging technologies and new approaches for delivery and operation. Options categories include:

- Non-network solutions that enable our network to deliver more services and/or improve existing services without augmenting our network,
- Upgrade to existing assets and establishing new assets.

7. Innovation practices

Our innovation includes options to improve network visibility, extend the use of existing ICP data, and build a platform for flexibility services. Since AMP 2022, we have:

7.1. LV network visibility

Proof of the value of the GridSight platform. (GridSight is an Australian-based company that won the Ara Ake decarbonisation challenge.) The platform aggregates and analyses smart meter data from metering service providers, helping us to:

- identify LV power quality issues (voltage and impedance),
- confirm distribution transformer utilisation, including phase balancing,
- detect solar PV distributed generation, network-connected batteries, and
- EV charger installations on our network.

The desired outcome is the ability to visualise the LV network through aggregating consumption data to help understand distribution transformer and circuit loading better, which supports future flexibility services. This work is being supported by Ara Ake, New Zealand's future energy centre, as part of their work to develop solutions to help decarbonisation via electrification.

7.2. Vegetation encroachment detection

we have commissioned a project to implement proof of concept using satellite imagery and AI algorithm to identify areas of vegetation encroachment.

The desired outcome is the ability to determine the risk of vegetation on the overhead assets to inform proactive intervention, improving network reliability.

7.3. Decisions on innovations and measurement of success

Innovation brings change to our practices, so to ensure effective adoption, we follow these stages to discover and explore innovation opportunities:

1. Discovery: activities that enable discovering innovation opportunities and available options. These include participation in industry fora such as the Ara Ake, EEA, ENA, EDB peer-group interactions, Government agency events, vendor presentations, etc., which inform our innovation decisions.
2. Persuasion: ascertaining the potential value of adopting innovation and achieving buy-in. At this stage, we carry out trials as proof of concept and proof of value to confirm features that the innovation offers, including the data we can collect, how to interpret findings, and identifying critical risks and how to act on them.
3. Decision: determining whether we will adopt the innovation or not. Informed by the observations from the persuasion stage: successful proof of concept including deliverability and cost-benefit.
4. Implementation: putting the innovation into practice
   Our general approach is staged implementation (small steps), as there can still be a degree of uncertainty surrounding the outcomes of the innovation and whether to keep it as opposed to reverting to old practices. This stage includes training to ensure the effective embedding of the innovation.
5. Confirmation: evaluation to verify whether expected benefits are being realised based on:
   - Strategic Alignment: strategic fit and impact, synergy with existing knowledge/systems/practices, proprietary position, and the potential for wider application (even commercialisation).
   - Financial Impact: return on investment (can be difficult to measure for innovation), time to implement.
   - Technical Feasibility: resource availability, external support, complexity.
   - Value Proposition: impact on stakeholders, business service transformation.

7.4. Dependence on others and collaboration

our innovation strategy is to be fast followers instead of early adopters; therefore, the pace at which we adopt innovation relies in part on the progress and lessons learnt from others, including the progress of industry working groups.

8. Appendix: Electricity Distribution Information Disclosure Determination Reference Table

Information disclosure requirement	Section
Notice of planned and unplanned interruptions	
17.1 a description of how the EDB provides notice to and communicates with consumers regarding planned interruptions and unplanned interruptions, including any changes to the EDB's processes and communications in respect of planned interruptions and unplanned interruptions;	*2.1 – 2.3*
Voltage quality	
17.2 a description of the EDB's practices for monitoring voltage, including:	*3.1*
17.2.1 the EDB's practices for monitoring voltage quality on its low voltage network;	*3.2*
17.2.2 work the EDB is doing on its low voltage network to address any known non-compliance with the applicable voltage requirements of the Electricity (Safety) Regulations 2010;	*3.3*
17.2.3 how the EDB responds to and reports on voltage quality issues when the EDB identifies them, or when they are raised by a stakeholder;	*3.4*
17.2.4 how the EDB communicates with affected consumers regarding the voltage quality work it is carrying out on its low voltage network; and	*3.5*
17.2.5 any plans for improvements to any of the practices outlined at clauses 17.2.1-17.2.4 above;	
Customer service practices	
17.3 a description of the EDB's customer service practices, including:	
17.3.1 the EDB's customer engagement protocols and customer service measures – including customer satisfaction with the EDB's supply of electricity distribution services;	*4.1*
17.3.2 the EDB's approach to planning and managing customer complaint resolution;	*4.2*
Practices for connecting new consumers and altering existing connections.	
17.4 a description of the EDB's practices for connecting consumers, including:	
17.4.1 the EDB's approach to planning and management of- (a) connecting new consumers (offtake and injection connections), and overcoming commonly encountered issues; and (b) alterations to existing connections (offtake and injection connections);	*5.1*
17.4.2 how the EDB is seeking to minimise the cost to consumers of new or altered connections;	*5.2*
17.4.3 the EDB's approach to planning and managing communication with consumers about new or altered connections; and	*5.3*
	5.1

17.4.4 commonly encountered delays and potential timeframes for different connections.	
New connections likely to have a significant impact on network operations or asset management priorities 17.5 A description of the following: 17.5.1 how the EDB assesses the impact that new demand, generation, or storage capacity will have on the EDB's network, including: (a) how the EDB measures the scale and impact of new demand, generation, or storage capacity; (b) how the EDB takes the timing and uncertainty of new demand, generation, or storage capacity into account; (c) how the EDB takes other factors into account, eg, the network location of new demand, generation, or storage capacity; and 17.5.2 how the EDB assesses and manages the risk to the network posed by uncertainty regarding new demand, generation, or storage capacity;	*6.1* *6.3* *6.2* *6.4* *6.5*
Innovation practices 17.6 a description of the following: 17.6.1 any innovation practices the EDB has planned or undertaken since the last AMP or AMP update was publicly disclosed, including case studies and trials; 17.6.2 the EDB's desired outcomes of any innovation practices, and how they may improve outcomes for consumers; 17.6.3 how the EDB measures success and makes decisions regarding any innovation practices, including how the EDB decides whether to commence, commercially adopt, or discontinue these practices; 17.6.4 how the EDB's decision-making and innovation practices depend on the work of other companies, including other EDBs and providers of non-network solutions; and 17.6.5 the types of information the EDB uses to inform or enable any innovation practices, and the EDB's approach to seeking that information.	*7.1, 7.2* *7.1* *7.3* *7.3* *7.4*