Network Waitaki

ASSET MANAGEMENT PLAN 2026-2036

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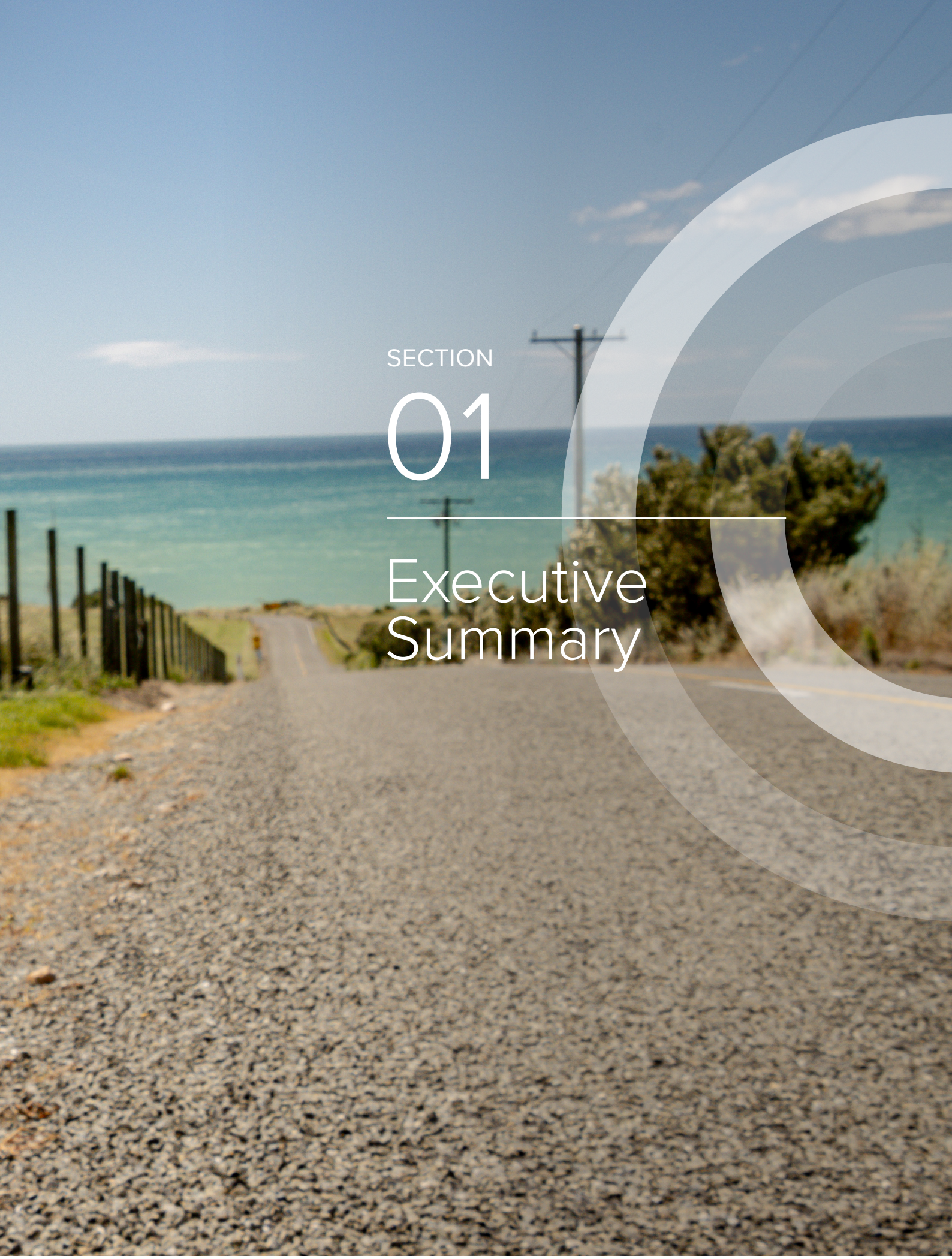

SECTION

01

Executive Summary

01

Executive Summary

Welcome to our Asset Management Plan (AMP) for the planning period 1st April 2026 to 31st March 2036.

1.1 Asset Management Plan Overview

Network Waitaki (NWL) is a consumer owned electricity distribution business responsible for delivering safe and reliable electricity services to the Waitaki District and surrounding areas.

This Asset Management Plan (AMP) sets out how NWL intends to manage its network and supporting assets over the ten year period from 1 April 2026 to 31 March 2036. It provides a structured framework for how assets will be operated, maintained, renewed, and developed in a manner consistent with NWL's Asset Management Policy, Strategic Asset Management Plan (SAMP), and Asset Management Objectives (AMOs).

The AMP is prepared using the best information available at the time, based on a snapshot of the network on 31 March 2025 and is updated annually to reflect changes in circumstances, risks, and information.

Customer feedback consistently highlights outcomes that matter most to customers — reliable supply, safety, value for money, and clear communication. The key themes below describe the internal focus areas we have adopted to respond to those expectations.

1.2 Key Achievements since last AMP

The key achievements outlined below reflect progress up to 31 March 2025. These achievements demonstrate delivery against the priorities and approach set out in this AMP, rather than representing a complete end of year performance summary.

- Progressed planning for a new Grid Exit Point as the preferred strategic option to address long standing regional transmission capacity and security constraints
- Completed an engagement programme with large energy users to improve understanding of future demand profiles, development pathways, and investment drivers
- Updated regional energy growth scenarios to reflect current economic conditions, electrification pathways, and customer behaviour
- Completed design for the Te Awamako to GXP sub transmission line to support integration of the preferred solution into the wider network.

1.2.1 Enhancing Innovation and Continuous Improvement

NWL delivered targeted improvements to planning, operational, and customer facing tools to improve efficiency and decision making capability.

- Organisation wide adoption of GIS as the primary source of network asset information
- Streamlined GIS based planning tools to improve efficiency and consistency in network analysis
- Enabled field accessible data maps to support safe and efficient work practices
- Expanded digital collection of field data to improve timeliness and accuracy
- Enhanced customer outage information processes
- Delivered self service network capacity maps for customers and developers.

1.2.2 Improving Data Governance

NWL strengthened data governance arrangements to improve the accuracy, consistency, and usability of asset information.

- Transitioned GIS to the ESRI Utility Networks platform
- Formalised digital asset models
- Improved accuracy of asset data through validation and quality controls
- Implemented automated error detection and validation of data entry
- Improved GIS connectivity model

Created a semi automated link between GIS and the Network Planning Model.

1.2.3 Managing Network and Safety Risks

NWL continued to manage asset condition and safety risks through planned maintenance, renewal, and assurance activities.

- Delivered planned replacement and maintenance programmes across the network
- Completed replacement of the Otematata transformer and enhanced feeder protection
- Successfully completed public safety and ISO 45001 health and safety surveillance audits.

1.2.4 Managing Environmental Impacts

NWL strengthened environmental compliance and emergency preparedness.

- Secured new global resource consents to support business as usual network operations
- Updated crisis management arrangements to align with Common Incident Management Systems and successfully tested them
- Completed a review of High Impact Events affecting network assets to inform resilience planning and risk management.

1.3 Key themes of this year's AMP

Over the ten year planning period, the 2026 Asset Management Plan is focused on maintaining the long term health and performance of network assets, ensuring safety and reliability are sustained over the full asset lifecycle while positioning the network to respond to future change in a disciplined and well managed manner.

Delivery of this AMP is monitored through existing management and governance business processes, including regular reporting on performance, delivery progress, and emerging issues. Planning assumptions and priorities are reviewed considering actual delivery experience, asset performance, and system behaviour, with insights used to adjust programmes, refine approaches, and inform future planning.

The following sections set out how this focus is reflected across the key themes addressed in the AMP.

1.3.1 Enabling Regional Growth

The AMP provides a structured framework for responding to regional growth and electrification in a way that balances long term strategic direction with short term delivery discipline. For longer range planning, NWL uses demand scenarios to explore a range of plausible futures, understand potential system pressures, and test network development pathways. These scenarios provide direction under uncertainty rather than predictions of a single outcome.

As the planning horizon shortens, our future energy scenarios are progressively refined using actual customer demand experienced, updated information from customer engagement, and improved understanding of development timing and scale. This ensures that investment decisions are grounded in current evidence while remaining consistent with long term planning intent.

Independent reviews have confirmed that a new Grid Exit Point represents the preferred strategic option to address long standing transmission capacity and security constraints in the region. The AMP reflects this conclusion by progressing the preferred solution to an appropriate level of definition to support informed decision making, while retaining appropriate management discipline over commitment and delivery.

1.3.2 Enhancing Innovation and Continuous Improvement

The AMP focuses on improving decision quality and delivery capability through targeted innovation and continuous improvement. This includes strengthening planning tools, improving access to information, and reducing reliance on manual or fragmented processes.

These improvements are intended to support timely, evidence based decisions, improve responsiveness to changing conditions, and enable safe, efficient delivery of capex and opex programs across the network.

1.3.3 Improving Data Governance

High quality, well governed data underpins all aspects of asset management decision making. The AMP therefore places strong emphasis on improving data accuracy, consistency, cyber security and accessibility across the business.

These improvements will position Network Waitaki to realise emerging efficiencies, including those enabled by the use of artificial intelligence. Scenario modelling for customer demand, asset risk assessment, and renewal planning are progressively updated as new data becomes available, including condition information, operational performance, and demand trends. This ensures that both long term planning and short term investment decisions are informed by the best available information at the time.

1.3.4 Managing Network and Safety Risks

Safety

The AMP applies a risk based approach to managing network and safety risks across both planning and delivery horizons. Safety is always the highest priority, with all planning and delivery decisions focused on protecting the public, workforce, and contractors

Asset Lifecycle and Asset Health

Asset age and projected asset health are used together at a fleet level to inform long term renewal planning, with the objective of maintaining asset health at steady levels over time. As delivery approaches, this planning is refined using recent asset inspections and updated asset health assessments to identify individual assets requiring renewal or replacement, ensuring resources are targeted on a risk basis.

Reliability and Security of Supply

While overall network reliability performance remains strong, the AMP recognises that network wide averages such as SAIDI and SAIFI can mask localised variation in reliability experienced by customers, as well as underlying security of supply risks that may not be reflected in recent fault statistics.

To understand and manage this risk, network planning and security of supply gap analysis are undertaken, informed by customer feedback and operational experience, to identify opportunities where targeted interventions may be warranted.

Where opportunities are identified, they are reflected in the AMP based on preliminary analysis of risk, benefits, and cost over the planning horizon.

Before committing to a project, options are assessed in greater detail, including consideration of current non network or flexible solutions and submitted for approval consistent with our business project approval processes. Initiatives that proceed are prioritised through our business delivery processes.

For regulatory reporting purposes, initiatives are categorised based on their primary investment driver. In practice, individual projects may contribute to reducing risk across multiple dimensions, including security of supply, reliability, resilience, and asset replacement and renewal.

1.3.5 Managing Environmental Impacts

Network Waitaki acknowledges that climate change presents long term risks, which are addressed through risk based asset management approaches.

Environmental and climate related risks are treated as material considerations in both long term planning and near term decision making. Climate and hazard scenarios are used to understand potential future impacts on asset performance and service continuity, while recognising uncertainty in the scale and timing of those impacts.

As information improves, environmental risk assessments are updated and progressively embedded into asset risk models, design standards, inspection regimes, and renewal planning. This approach supports incremental improvement in resilience while avoiding assumptions of certainty.

The remainder of this AMP sets out customer needs and service expectations, asset management approach, maintenance and renewal strategies, future network planning, non network assets, expenditure forecasts, and key sources of uncertainty.

1.3.6 Summary of Expenditure Forecast

Over the ten year planning period from FY27 to FY36, the AMP forecasts total network expenditure of $41.5M in operating expenditure and $140.5M in capital expenditure. Compared with the previous AMP, forecast operating expenditure has increased to reflect increased spend on network operational systems, higher input costs and maintenance requirements, while forecast capital expenditure has reduced, reflecting a softer economic outlook and the deferral of elements of the sub transmission development programme.

Investment certainty is highest in the early years of the planning period. For later years, expenditure profiles are subject to refinement as customer demand, economic conditions, and regulatory settings evolve.

Table 1 - Summary of Expenditure Forecast

Network Capital Expenditure	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Capex	**11,321**	**17,024**	**17,216**	**17,726**	**11,513**	**12,615**	**12,549**	**13,298**	**13,357**	**13,937**
System growth	790	5,320	6,283	6,633	1,050	1,800	1,900	2,400	2,550	3,050
Reliability, Safety & Environment - Quality of Supply	994	420	676	873	615	690	594	610	640	610
Asset Replacement & Renewal	7,726	9,473	8,446	8,410	8,037	8,314	8,244	8,476	8,355	8,465
Consumer Connection	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811
Opex	**4,705**	**4,107**	**4,053**	**4,155**	**4,053**	**4,094**	**4,053**	**4,094**	**4,053**	**4,094**
Asset Replacement & Renewal	235	230	230	230	230	230	230	230	230	230
Routine & Corrective Maintenance and Inspections	1,698	1,704	1,650	1,752	1,650	1,690	1,650	1,690	1,650	1,690
System operations and network support	1,232	632	632	632	632	632	632	632	632	632
Service Interuptions & Emergencies	694	694	694	694	694	694	694	694	694	694
Vegetation Management	**847**	**847**	**847**	**847**	**847**	**847**	**847**	**847**	**847**	**723**
Grand Total	**16,026**	**21,132**	**21,269**	**21,882**	**15,567**	**16,709**	**16,603**	**17,392**	**17,410**	**18,031**

Further detail on expenditure forecasts, assumptions, and supporting analysis is provided in Chapter 9.

The following sections of the Asset Management Plan set out the detailed frameworks, assumptions, and plans that support the approach summarised in the Executive Summary, providing greater depth on how strategic priorities are translated into planning, investment, and lifecycle management decisions across the network.


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SECTION

02

Introduction

02

Introduction

This Asset Management Plan (AMP) sets out how Network Waitaki Limited (NWL) intends to manage its electricity distribution assets over the ten-year planning period from 1 April 2026 to 31 March 2036.

As an electricity distribution business providing an essential service, NWL must balance safety, reliability, affordability, and long-term asset stewardship while responding to evolving customer needs, emerging technologies, and changes in how electricity is produced and consumed. The AMP provides the primary framework for planning and justifying network investment and operational decisions over the planning horizon.

This chapter introduces the AMP and orients the reader to who we are, the purpose and scope of the AMP, how it fits within NWL's asset management and governance framework, and how the document is organised.

2.1 Purpose

The purpose of this AMP is to align the management of NWL's assets with our corporate objectives and our mission of promoting regional growth and wellbeing through the provision of innovative and sustainable energy solutions for our customers.

The AMP forms a key component of NWL's broader planning and governance framework, alongside the Statement of Corporate Intent (SCI), Asset Management Policy, Strategic Asset Management Plan, annual business plans and budgets, monthly Board reporting, and emergency preparedness documentation.

The objectives of this AMP are to:

- Link asset management processes to customer and stakeholder preferences for price, supply reliability, and health and safety outcomes.
- Ensure lifecycle activities, plans, and associated costs are systematically planned with a long-term view towards value for money.
- Support a sustainable financial future by understanding required resources and timing to deliver capital and operational work programmes.
- Ensure physical, commercial, and regulatory risks are appropriately managed and understood throughout the life of the assets.

2.2 Scope

The scope of this AMP includes all areas of planning that relate to NWL's regulated electricity distribution services as an EDB. This does not include business streams outside the core EDB business such as electrical and vegetation contracting, EV charging, generation, fibre optic networks, or private electricity networks.

2.3 Intended Audience

The AMP is published on our website and is aimed at the following readership:

- Trustees, Directors, and management
- Staff
- Customers
- Other stakeholders
- Interested members of the public
- The Commerce Commission
- Other EDBs.

2.4 How to Read This AMP

This AMP is structured to move from context and strategy through to planning assumptions, network development, and detailed asset lifecycle activities.

The document is organised into a series of chapters that reflect this progression:

1. **Executive Summary** – an overview of the AMP, key themes, and investment priorities
2. **Introduction** – setting out the purpose, scope, planning period, and structure of the AMP
3. **Customer Needs and Engagement** – outlining customer expectations, engagement approaches, and how these inform planning decisions
4. **Service Levels** – describing service level targets and performance
5. **Approach to Asset Management** – detailing the asset management framework, governance, and decision-making processes
6. **Maintenance and Renewal Plan** – setting out asset fleet strategies and planned maintenance and renewal activities
7. **Our Future Network Plan** – presenting our planning assumptions, future network development needs, options, and long-term investment priorities
8. **Non-Network Assets and Systems** – covering supporting assets such as property, fleet, systems, and data
9. **Summary of Expenditure Forecasts** – summarising forecast capital and operational expenditure
10. **Appendices** – providing supporting material, including compliance schedules, capacity and security of supply analysis, and supplementary information on planned projects.

This structure enables readers to engage with the AMP at different levels of detail, depending on their interests and needs.

2.5 Our Company

Network Waitaki Limited is a consumer trust-owned electricity distribution business (EDB). We have a single shareholder, the Waitaki Power Trust (the Trust), which holds the shares of NWL on behalf of connected customers. The Trust comprises five elected Trustees and appoints Directors to the Board to carry out the governance function of the business.

NWL owns and operates a predominantly rural electricity distribution network supplying North Otago, Hakataramea, and Ahuriri, including the town of Ōamaru and a number of smaller townships.

Figure 1 provides an overview of NWL's area of supply.

2.6 Our Vision

"Powering a Vibrant Waitaki"

2.7 Our Strategy

"Utilise our core assets, operating expertise, reputation and financial strength to develop growth opportunities for a sustainable future"

2.8 Alignment with Asset Management Framework

In 2023, NWL refreshed its ten-year strategic plan and Statement of Corporate Intent to guide the business in delivering its vision and responding to a changing energy environment.

NWL's Asset Management Policy and Strategic Asset Management Plan (SAMP) define how asset management supports this strategic direction. Asset Management Objectives (AMOs) translate this framework into measurable outcomes for safety, reliability, affordability, and long-term value.

This AMP gives effect to the Asset Management Policy, SAMP, and AMOs by setting out the asset management activities and investment decisions required to deliver those objectives over the planning period.

2.9 Asset Management Responsibilities

Asset management responsibilities are allocated to senior staff as follows:

Chief Executive – accountable to the Board for delivery of the strategic objectives of the Board and the Trust.

Chief Financial Officer – responsible for the Company's financial activities. These include preparation of annual budgets for operating and capital expenditure with input from all areas of the business, and providing reports to monitor financial performance of works programmes against budgeted costs.

General Manager Network – responsible for leadership, coordination, and oversight to all aspects of the network, including asset management, network development, and operations. This role coordinates resources across teams to deliver the outcomes of the AMP and drives continual improvement of our asset management practices.

Network Asset Strategy Manager – responsible for improving asset management practises and maturity.

Head of Future Networks and Assets – responsible for ensuring asset fleet and network development plans are developed and delivered.

Network Operations and Delivery Manager – responsible for operation of the network and the efficient delivery of the annual capital and maintenance work programmes.

Network Information Manager – responsible for ensuring the stewardship of the network information systems and associated data that is utilised across the business. This includes the integration and visualisation of data across business systems.

Regulatory Manager – responsible for preparation of regulatory disclosures, compliance, and pricing.

Communications and Customer Service Coordinator – responsible for leading our customer services function and developing and maintaining the interface between the company and consumers/community.

General Manager People and Safety Manager – responsible for leading strategic implementation of our company and staff resourcing and health and wellbeing programmes, and safety management systems. They support the business managers to enable a high performing work environment. Also included is the responsibility for setting performance initiatives to measure and monitor the effectiveness of critical controls and ensuring risk owners are regularly reviewing and updating their risks.

General Manager Contracting and Operations – responsible for the provision of construction and maintenance staff and equipment to complete the annual works plan provided by our in-house contracting team. This person role is also responsible for seeking out and managing any work outside our network for other network companies or private customers.

2.10 Our Stakeholders

Stakeholders are the people and organisations that can affect, be affected by, or perceive themselves to be affected by our decisions or activities. Stakeholder requirements are an important driver for our performance, and we place considerable focus on identifying and meeting stakeholder expectations. Our stakeholders are described in Table 2 below, along with their requirements, how those requirements are identified and how they are incorporated into our asset management practices.

Table 2 - Network Waitaki stakeholders

Stakeholder	Requirements	Identification of requirements	Requirements incorporated into asset management practices
Customers	Health and safety; reliability; value for money; effective communication, particularly during emergencies and faults; emergency and lifeline preparedness.	Bi-annual customer surveys; regular meetings with major customers; VOC survey sent after work is completed, feedback sought after major outages; public safety performance measures.	Maintaining audited Public Safety Management System and other safety initiatives; price/quality trade off; network development plans; investment planning; asset lifecycle management. Recognise energy affordability issues and regional development opportunities.
Staff and other workers	Healthy, safe and enjoyable work environment; job satisfaction; assurance of work continuity; visibility of forward workload requirements; work/ life balance; career development opportunities; fair remuneration; effective support.	Staff feedback; regular staff briefings and communications; staff input into decisions affecting work environment and methods.	Health and safety initiatives and reporting; integration of risk management into all business processes; forward planning of work.
Public, and landowners	Health and safety; emergency and lifeline preparedness; protection of property and amenity values; effective communication regarding access and maintenance.	Meetings; feedback; consultations.	Health and safety initiatives; emergency preparedness planning; service levels.
Board of Directors	Governance; risk management; health and safety performance; business direction and sustainability; Performance of Chief Executive; statutory and regulatory compliance.	Regular board meetings and directives; performance measures.	Integration of risk management into all business processes; regular reporting.
Waitaki Power Trust	Fair and reasonable rate of return on equity; incentives to invest and innovate; good governance; risk management; business sustainability; good reputation with the community; effective asset management.	Trustee meetings; performance measures.	Network development planning; investment planning; asset lifecycle management; organisation and governance structures; integration of risk management into all business processes; quarterly and annual reporting.
Councils	Alignment with district and regional requirements; statutory compliance.	Meetings; consultations on regional and district plans.	Network development planning for system and demand growth.
Iwi/Runanga	Ensure participation to enable responsible stewardship of the environment.	Understand and respect the importance of equity and build relationships with local Iwi and Runanga.	Ensure processes adequately cater for recognition of cultural and governance of our impact on local land and resources.

Stakeholder	Requirements	Identification of requirements	Requirements incorporated into asset management practices
Electricity generators and retailers	Safety, reliability, effective communication; statutory and regulatory compliance; fair contractual arrangements; transparency; effective delivery of business-to-business services.	Industry forums, conferences, and seminars; regular consultation, statutory and regulatory requirements; contractual arrangements.	Network development planning; service levels.
Regulators and Governmental Agencies	Statutory and regulatory compliance; ensure our connected customers receive a reliable supply of electricity accounting for price/quality trade off; compliance with health and safety requirements.	Statutory and regulatory requirements; consultations; industry forums, conferences, and seminars.	Network development planning; service levels; risk management; governance arrangements; inclusion of safety-by-design principles.
Transpower (as grid owner and System Operator)	Security of supply; new grid investment and planning provisions; effective and timely communication; statutory and regulatory requirements; sustainable earnings from connected and interconnected assets.	Operational standards and procedures; regular meetings.	Network development planning; investment planning; asset lifecycle management; risk management.
Neighbouring EDBs	Coordinated investigation into shared transmission constraints, opportunities for sharing common operating standards and practices.	Meetings/participation in working groups to discuss and undertake collaboration opportunities.	Decisions will be incorporated in future AMPs, Network Design and Operating standards and Practices.
Suppliers and Contractors	Ensure cost effective supply of products and services to enable ongoing sustainable management of the business.	Clear specifications / scope of work, fair and reasonable terms of trade, and as required delivery.	Effective delivery of the asset management plan. Asset management systems have appropriate standards and business practises.

2.11 Overview of our network

We operate a predominantly overhead rural network supplying the North Otago, Hakataramea, and Ahuriri regions as shown below. We supply Oamaru urban area, and several smaller townships.

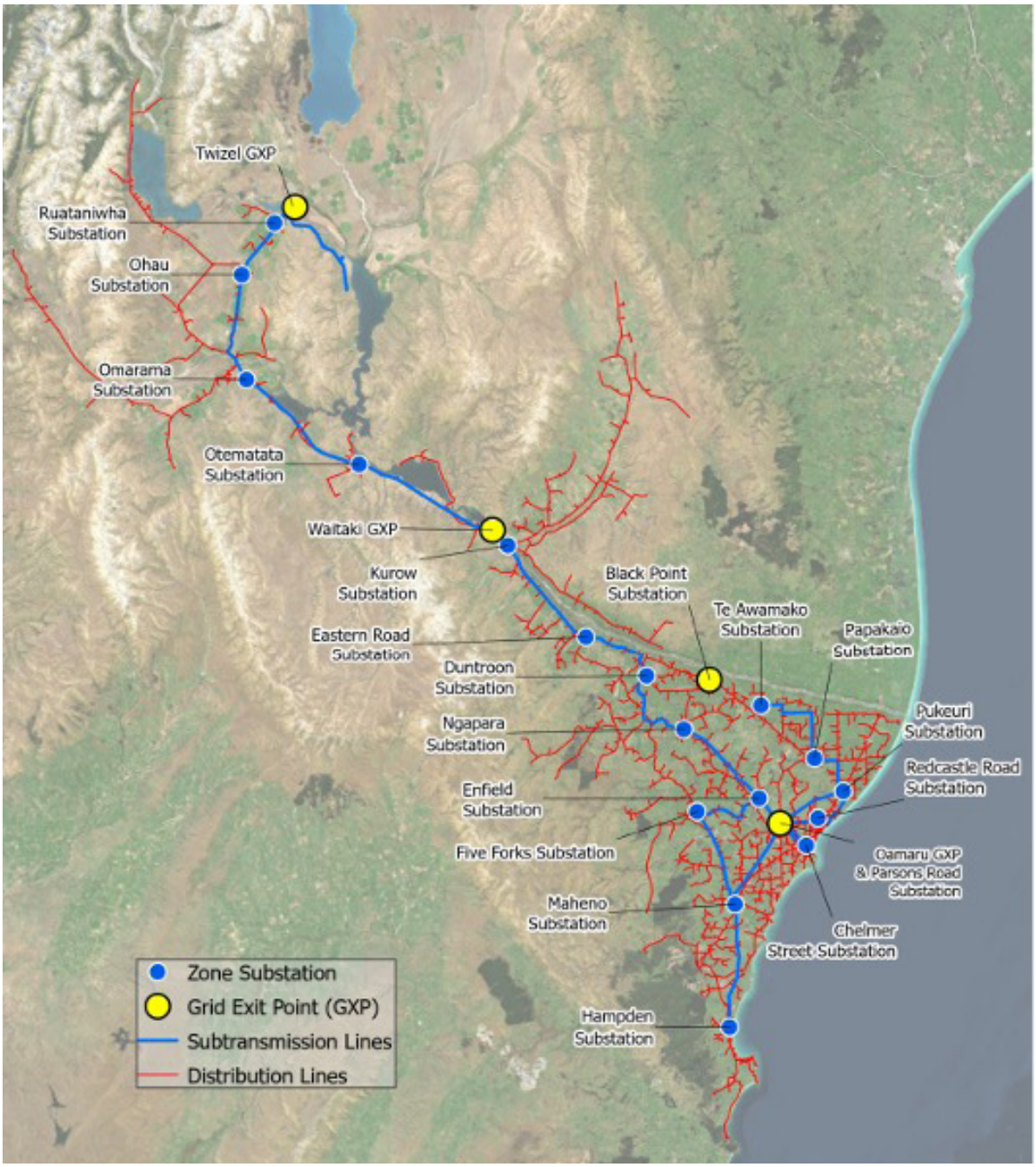


Figure 2 - Map of NWL area of supply and network extent

Bulk electricity supply is taken from Transpower's network (the national grid) at our four grid exit points (GXPs). This energy is transported via our sub-transmission network at 33,000 volts (33 kV) to the zone substations. Power transformers at the zone substations convert the 33 kV supply to a lower distribution voltage of 11,000 volts (11 kV). This is supplied to some customers directly (generally large commercial and industrial customers) but is more commonly stepped down via distribution transformers to our low voltage system (400 volt, three phase/230 volt single phase), which supplies most of our customers.

Table 3 - Key features of NWL network

Parameter	Value
Number of poles	22,069
Length of 33 kV lines and cables	254 km
Length of 11 kV lines and cables	1,370 km
Length of LV lines and cables	331 km
Number of zone substations	19
Number of connected customers	13,894
Coincident max demand	67 MW
Annual energy delivered to customers	282 GWh

These assets are discussed in more detail in **Section 6 - Renewals and Maintenance.**

2.12 Communication and Participation

NWL uses a range of communication and participation channels to understand customer and stakeholder needs and to support planning and decision-making. This includes customer surveys, direct engagement with key customers, community engagement activities, and participation in industry forums and consultations.

Further detail on customer needs, engagement activities, and how customer and stakeholder feedback informs planning is provided in Section 3 – Customer Needs and Engagement.

2.13 Use of Constant Dollar Values

Capital and operational expenditure values in this AMP are presented in constant price New Zealand dollars, unless stated otherwise.

2.14 Approval Date

The 2026–2036 AMP was approved by the Network Waitaki Board of Directors on 31 March 2026. A copy of the signed Certificate of Approval is provided in Appendix G.

SECTION

03

Customer Needs and Engagement

03

Customer Needs and Engagement

This Chapter provides an overview of our customers, their needs and expectations, and what Network Waitaki (NWL) is doing to improve customer service outcomes. We have split our customer focus into two streams: our customers and their actual needs and experiences; and the transactional customer service we provide. This chapter focuses on the former.

Throughout this section we outline our customer service strategy and our roadmap for improvement which has two areas of focus:

1. Engaging Customers in our Investment Journey

2. Our Customer Service Experience

customer service

/drēm/ *noun*

Providng support for customers through a service, information, assistance, building relationships and creating a trusting environment.

3.1 Overview

At NWL we place our customers' needs and expectations at the heart of everything we do. We strive to understand our customers and deliver a service that meets their diverse needs.

We anticipate significant changes to how electricity will be used in the future as customers adopt new technologies and decarbonise their businesses and transport. As the energy landscape evolves, our customers' needs and expectations will also evolve. We recognise that there's no one-size-fits-all solution and we're committed to enabling our customers' future energy needs while balancing affordability and security and remaining accountable to our community owners.

We seek and value our customers' input to help shape our decisions, particularly as we plan for future major investments. We continue to engage primarily through surveys, face-to-face meetings, social/digital media, attendance at public events (such as the North Otago A&P Show), expos, industry forums and conferences, and participating in industry consultations about statutory and regulatory changes and Regional and District Plans.

3.2 Engaging Customers in our Investment Journey

Our Stakeholder Engagement Framework includes a Customer Service Level Strategy which we use to guide and support our planning. Historically, we have used network-centric standards to measure customer service levels, but these measures haven't fully captured our customers' individual experiences and expectations.

To help align our future customer service improvement plan, we refer to our Customer Service Level Strategy shown below. This provides a framework that:

- Provides us with a strategic way to seek our community's views
- Establishes customer expectations and priorities
- Guides future planning
- Ensures our customers feel seen and heard
- Helps us enhance customer satisfaction
- Helps us improve the efficiency of our business processes and systems
- Highlights any concerns that need to be addressed.

OUR CUSTOMER SERVICE LEVEL STRATEGY

OUR STRATEGY

"to provide outstanding customer service by understanding and meeting our customers' reliability, security, and resilience needs from their electricity supply."

OUR STRATEGIC CONTEXT

01

Historically, we've measured reliability as an average across all of our customers and applied a network-centric security of supply standard. This does not allow us to understand the reliability levels our customers experience.

02

We currently survey our customers every two years and find in general they are satisfied with the balance of reliability and cost but there are areas to work on (notably communication and demonstrating value for money).

03

Our customers' service and reliability expectations will increase as they rely more on electricity for their energy needs. Their resilience needs will increase as climate change induced events increase.

04

Our customer service processes and transactions are not supported by modern, fit for purpose, business systems.

05

Our customer service experience is generally good but is inconsistent and depends on a range of factors.

OUR STRATEGIC PRIORITIES

Engage with our customers

We will consult with our customers to understand their existing and future reliability and resilience needs and incorporate these into our customer service level targets and Network Development Plan processes.

Develop customer service level targets

We will develop targets for:
- Customer supply service levels (e.g. reliability security/ resiliency)
- Customer transactional service levels (e.g. connection work, communication, complaints handling)

and use data to understand our performance against these targets.

Develop plans to close gaps

Our first priority is to understand where we do not meet our customers' reliability, security, or resiliency needs and to develop plans to meet these.

A further priority is to develop an improvement plan to close customer transactional service gaps.

Improve our business processes and systems

We will review our business processes and systems and develop an improvement plan to bring these up to standard.

3.2.1 Customer Engagement

In line with our strategic priority to "Engage with our customers," we have changed our approach to customer engagement to better reflect current investment priorities and community needs while remaining open and transparent.

We initially designed a framework for Community and Stakeholder Engagement Workshops focused on reliability, resilience, and future planning. As our investment programme evolved, we saw an opportunity to adapt our approach. Rather than proceeding with the original plan, we have embraced a more targeted and flexible engagement model that:

- Engages directly with key customers through one-on-one meetings to discuss upcoming investments, share how we have come to this decision, and explore the impact on lines charges
- Develops a communications strategy and action plan across multiple channels to ensure consistent communication with our customers about future plans.

3.3 Our Customer Service Experience

3.3.1 Understanding our Customers

It is important that we understand who our customers are. NWL distributes electricity to over 13,500 customer connections across a network of more than 2,000km of power lines, traversing both residential urban and remote rural land. Our customers are as diverse as the landscape we traverse, and no one solution will meet all their expectations for a safe and reliable electricity supply.

- **Residential and small commercial/business**

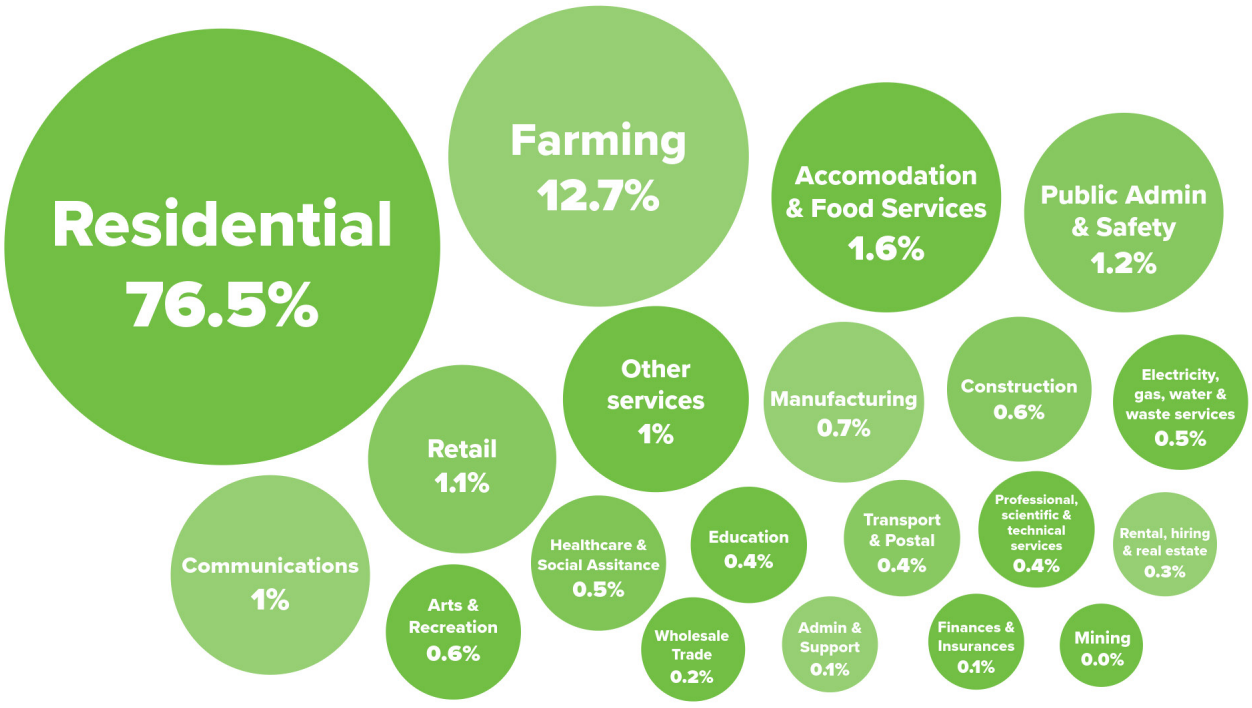
  Most of our customers are residential and small-to-medium businesses such as builders, contractors, health providers, electricians, farmers, retail operators, hospitality, utilities, public facilities, and education providers.
- **Farming accounts for 11.7% of our customers**

  This includes small-medium businesses as well as some major customers.
- **Major customers**

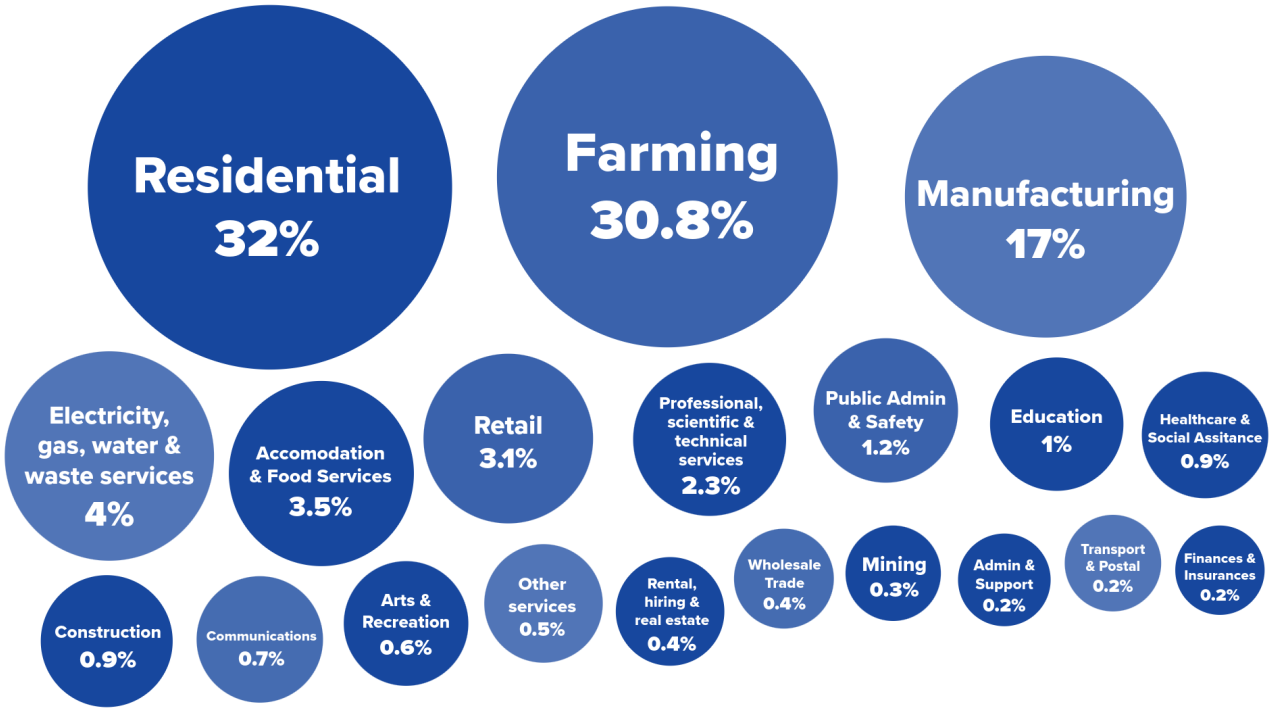
  Our major customers are predominantly large agricultural and associated service industries, including meat processing, wool spinning, and irrigation schemes. A smaller but material component of demand is associated with industrial customers, and local government.

Our Customers

Based on number of ICPs on the Network, based on 2024-2025 kWh and 2025 ICP numbers.



Based on % of total kWh, based on 2024-2025 kWh and 2025 ICP numbers.



While we are one of New Zealand's smaller EDBs, we serve a large geographical area. Most of our population is in Ōamaru township, branching out into small towns and remote rural areas. In line with our strategic priority to "Develop plans and close gaps", we continue to develop processes to help us understand where we are not meeting customers' reliability, security or resiliency needs, and how we can improve.

All our customers need a safe, reliable, resilient and economically effective/efficient network, particularly as they take up new technologies and look to decarbonise. They have told us they want a reliable power supply with minimal outages. When outages do occur, they want us to respond quickly and restore power as soon as possible. They want us to communicate with them effectively, to be forward planning, and to invest in growth and development to continue improving their service.

3.3.2 Customer Feedback and Insights

Feedback is important to us as we continue to improve our customer experience. It is critical that we understand:

- What is important to our customers?
- How do they feel when they interact with us?
- Are we meeting their needs and expectations?
- How can we improve their experience with us?

Customer feedback helps us to make improvements in the right areas and to achieve our Business Strategy. We gather feedback from our bi-annual survey, our Voice of Customer survey, and in-person customer engagement.

3.3.3 Biennial Survey and Customer Service Benchmarking

We conduct a customer survey every two years, with our most recent survey being completed during April 2025.

In 2025 a total of 575 urban and rural customers responded to our online survey over the 19 days it was open. All surveys were conducted using a standardised set of questions to ensure comparability, enabling us to benchmark our performance relative to other EDBs and measure ongoing performance and improvement.

The survey is intended to include all aspects of the customer experience, including awareness and recognition of NWL, quality of service, delivery, price, and quality of interaction with NWL. This helps us understand areas of focus within all our strategic priorities. The objective of this research is to understand:

- Awareness and perceptions of NWL, including price/quality trade-off
- Satisfaction with the services provided by NWL
- The key drivers of these perceptions
- Priority areas for improving customer satisfaction.

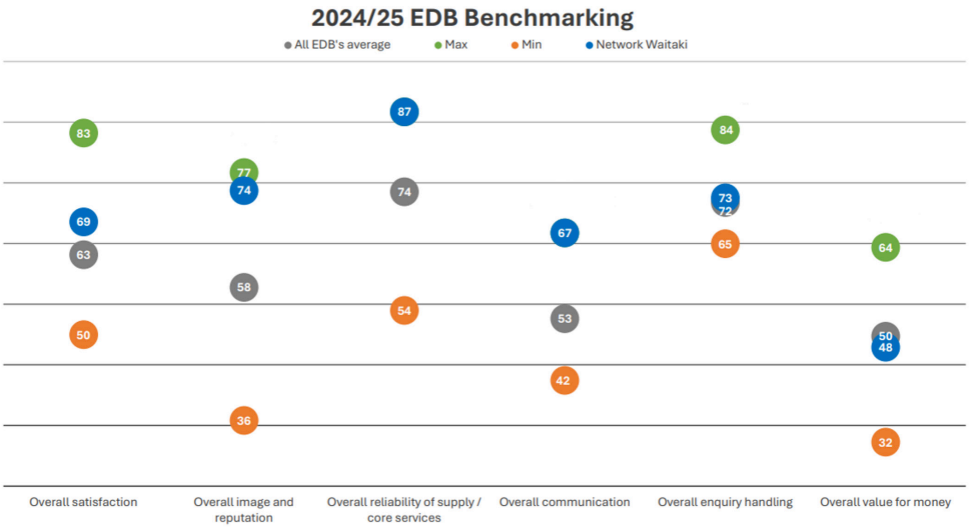
The key relevant contextual changes to note for the 2025 survey are:

- High levels of reliability (SAIDI/SAIFI)
- Average price increase of 19%
- Major unplanned Transpower outage.

A major unplanned Transpower outage occurred on 26 April 2025, lasting 3 hours and affecting around 11,000 connections. The survey was open during this time, and 69 respondents completed it after the outage. Their responses, especially for key variables, were generally lower than those who responded earlier, affecting the overall results.

A series of comprehensive reports were compiled by Key Research, identifying industry trends and clear priorities to enhance the customer experience. The results are included in an Industry Benchmark Report that compares key performance indicators against several other EDBs. This helps us understand customer satisfaction with the services provided by the electricity distribution industry.

Figure 3 – 2024/2025 EDB Benchmarking Results



3.3.4 What our Customers are Telling Us

Overall, the customer satisfaction survey indicated that NWL performs well, particularly when benchmarked next to other EDBs, with customers satisfied with NWL, particularly with supply reliability.

The survey has highlighted opportunities for us to improve customer satisfaction, and we will use the results to guide planning and decision-making. This includes reviewing and refining our processes and systems to enhance our customers' experience. Some of our key focus areas include:

Reliability remains a top priority

We will continue to maintain a safe and reliable power supply, minimise outages, and enhance our customers' overall experience.

Demonstrating value for money is important

We will focus on clearly communicating how customers' lines charges are used to help them understand how their contributions support the reliable and safe power supply that they consistently rate highly. Improving our 'value for money' score is a key goal for the next survey.

Communication is key

While we benchmarked well against other EDBs, communication is a key area that we are focused on improving for our customers. We will review our internal systems and communications plan, share more relevant and engaging updates to keep our customers informed, and make our online forms and information easier for customers to navigate.

3.4 Customer Complaints and Dispute Resolution

The satisfaction of our customers is important to us, and we appreciate the time they take to raise any concerns with us, whether directly or via Utilities Disputes (UDL). We are committed to working with our customers to reach a positive resolution to their concerns.

Our Complaints Resolution Process

We aim to resolve all complaints within 20 working days, however, this may be increased up to 40 working days if there is good reason. In this event, we will notify the complainent in writing at least 2 days prior to the extension and will provide the reason for it. Please note that on occasion it can take longer than the 40 workings days to investigate and reach a resolution. If this is likely to happen we will discuss this with the customer.

In the event a complaint is not able to be resolved within 20 working days (or 40 working days where notified), then the complaint is considered to have reached deadlock. Network Waitaki is a member of the Utilities Disputes Energy Complaints Scheme, which offers a free, fair, and independent service to help customers resolve issues with their utility providers. Customers may contact Utilities Disputes at any time if they feel their concerns remain unresolved.

We also provide information about UDL across multiple channels including our website, social media, letterheads, email signatures, and incoming phone messages to ensure customers always know where to find support.


SOCKET
Lynn Street

SECTION

04

Service Levels

04

Service Levels

This Chapter provides an overview of our service level targets and performance to these targets for the previous regulatory year.

4.1 Overview

Service level targets in this AMP are informed by the expectations and requirements set out in our Statement of Corporate Intent (SCI), our Asset Management Policy, and feedback received from customers, iwi, community representatives, and key partners.

At this stage, service level targets are limited to reliability measures where targets have been formally established. These targets align with applicable regulatory obligations, including the Commerce Commission's Information Disclosure Determination and associated performance and reporting requirements, and translate strategic direction into measurable commitments that guide planning, investment, and operational decisions.

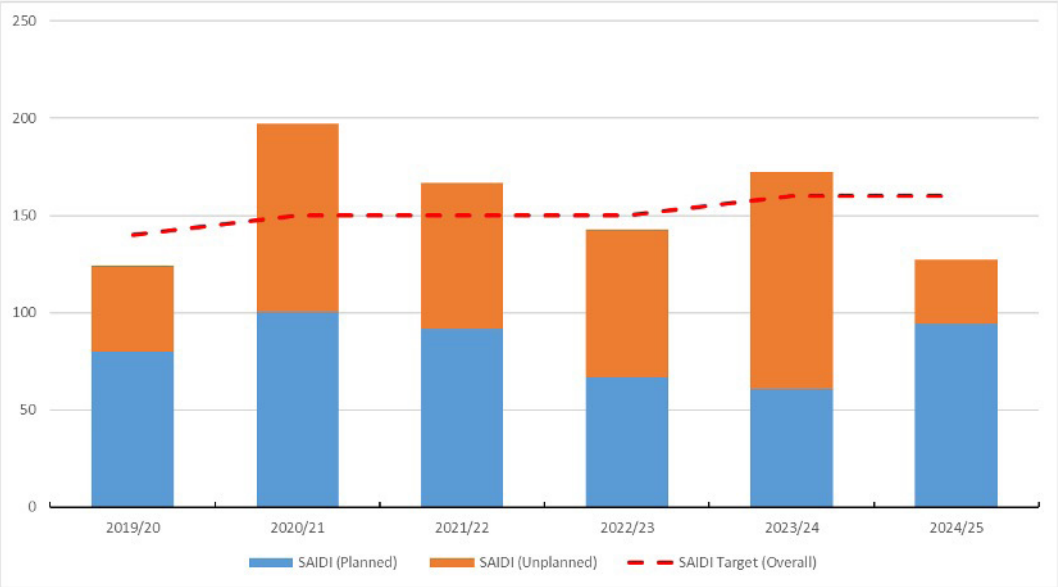
By presenting service targets within this framework, we demonstrate how agreed stakeholder expectations and regulatory requirements are embedded in our asset management approach, and how planned activities over the AMP period are focused on maintaining and improving reliability outcomes for customers.

In previous AMPs, a broader range of performance measures were presented as service levels. In this AMP, the term service level is used more narrowly to refer to measures with formally approved targets, consistent with the SCI and regulatory disclosure requirements. Other performance measures and objectives continue to be addressed throughout the AMP, but are not presented as service levels until targets are formally established.

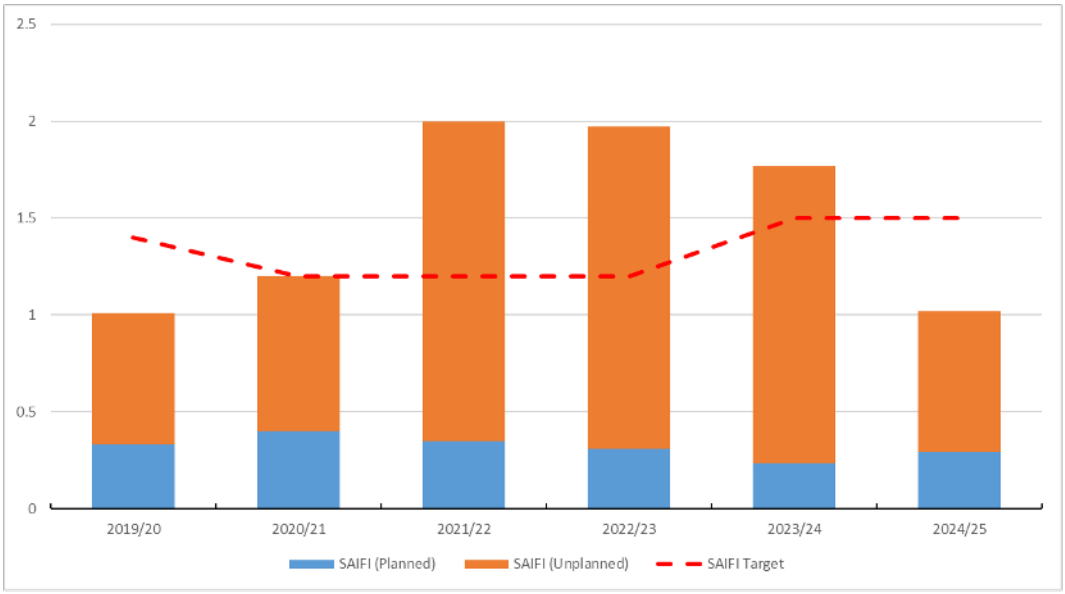
4.2 Reliability

Performance Indicator	Annual Target (FY25-FY36)	Measurement Method	FY25 result
Unplanned SAIDI	≤55	Regulatory disclosures	32.8✓
Planned SAIDI	≤105	Regulatory disclosures	94.3✓
Unplanned SAIFI	≤1.3	Regulatory disclosures	0.73✓
Planned SAIFI	≤0.5	Regulatory disclosures	0.30✓

4.2.2 SAIDI Historical Performance to Target



4.2.3 SAIFI Historical Performance to Target



4.2.4 Commentary

- FY25 year end performance was favourable relative to SCI targets for both SAIDI and SAIFI.
- The number of major events was low, largely due to relatively benign weather conditions.
- A reduction in subtransmission faults contributed to improved reliability outcomes. Planned protection enhancement projects over the next few years are expected to further strengthen performance.
- Wildlife related faults increased in frequency, with possum related events remaining a key contributor. Mitigation of wildlife risk continues to be addressed through targeted replacement and renewal programmes.

SECTION

05

Approach to Asset Management

05

Approach to Asset Management

This chapter outlines our approach to managing our network assets. It provides an outline of the key parts of the planning and delivery areas of this discipline and describes individually, and the linkages between:

- Strategic Context
- Strategies and Policies
- Systems and Processes
- Risk Management
- Resilience
- Asset Management Maturity

5.1 Overview

NWL's vision is ***"Powering a Vibrant Waitaki".***

We do this by utilising our core assets, operating expertise, reputation and financial strength to develop growth opportunities for a sustainable future.

NWL is a consumer owned EDB. Our customers are also our owners and are represented by elected Trustees. The Trustees then appoint Directors to provide corporate governance.

We supply a relatively sparsely populated area with many farms located on an alluvial valley. The major centre is Oamaru (population 15,000) in which over half of all our connected customers live. Our region's economy relies on primary and associated service industries, with tourism playing a smaller role. These sectors are shifting to carbon-free energy for process heat, transport, and supply chains. The expected change may be subject to external factors, and the rate of change may vary from other markets, but it is still expected to be significant within the life of most of our assets.

Our objectives are to:

- Meet customer needs
- Be fit for the future
- Demonstrate efficiency
- Be financially sustainable.

This section outlines our approach to managing our network assets. An overview of how we view asset management as a process and how key elements fit the process is below.

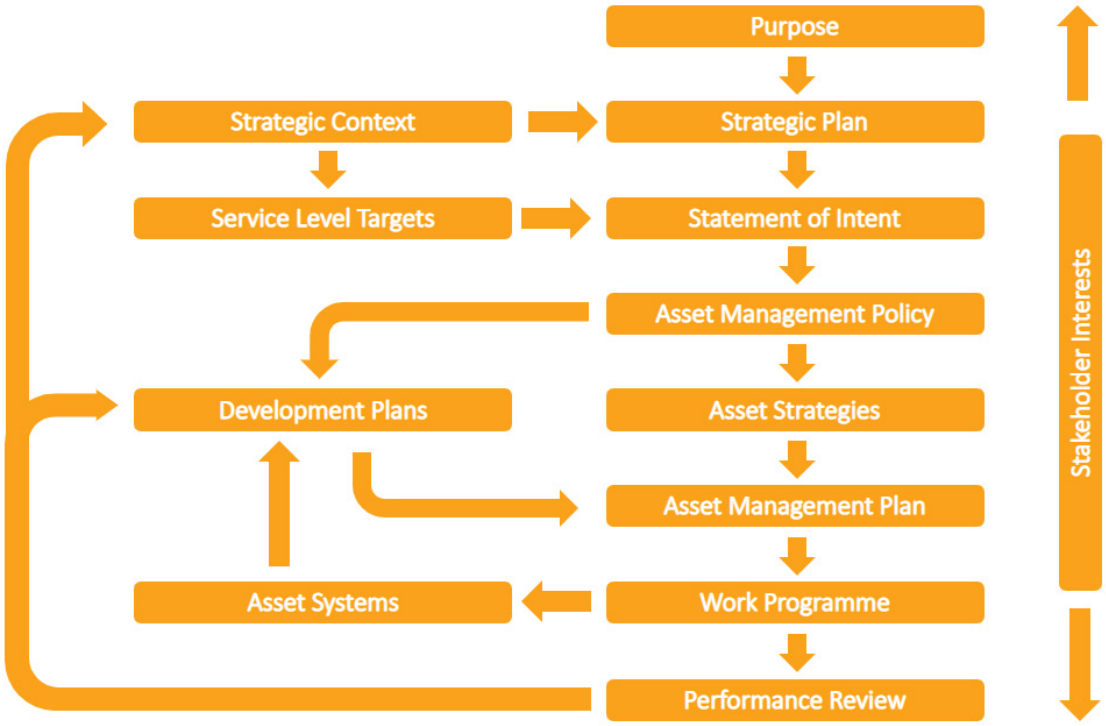


Figure 4 – NWL asset management process

5.2 Strategies and Policies

In 2023 we developed and launched a strategic plan to ensure our entire business was aligned to deliver on our vision of ***"Powering a vibrant Waitaki"*** and our mission for the business of ***"Promoting regional growth and wellbeing through the provision of innovative and sustainable energy solutions for our customers"***. This was reviewed and updated in 2025.

The following key assumptions provide the context for our strategic plan:

01

Traditional distribution infrastructure and assets will continue to remain important. integrated with emerging technologies

02

The market for electricity distribution construction and maintenance services will be volatile due to regulatory reset and skillset requirements.

03

Customers will demand more flexibility and choice, seeking improved Experiences. Collaboration will support the transition

04

Renewable energy technologies will become prevalent, becoming more available and affordable

05

Mass energy storage will become cheaper to purchase, build and manage

06

Electrification will continue to see demand grow and customer preference change

07

Energy services will evolve away from unidirectional flow and into multidirectional flows

The key strategic priorities in delivering this AMP are:

- Deliver our services with the safety of public, staff and contractors foremost in mind
- Balance reliability and cost sustainably over the full asset lifecycle
- Understand customer needs
- Balance timing and need
- Ensure investments are future focused
- Continuous improvement.

5.3 Asset Management Strategy

Our Asset Management Strategy is to ensure that our asset management practices sustainably deliver agreed service levels at minimum long-term cost.

The components that comprise our asset management process are described below.

5.4 Asset Management Policy

The purpose of our Asset Management Policy is to ensure that our asset management activities occur within a structured and systematic framework. This framework focuses on delivering a safe, reliable, secure, resilient, and cost-effective supply of electricity that meets customers' performance expectations, while complying with relevant New Zealand laws, regulations, and codes of practice. Specifically, our Asset Management Policy states:

"It is NWL's policy that the electricity network is designed, constructed, operated, and maintained in a safe and efficient manner aligned to good industry practice, and follows the following principles:

1. Safety is the highest priority. We are committed to instilling a strong safety culture and capability throughout the company. We strive for zero harm to employees, contractors and members of the public.
2. We will plan our activities to sustainably meet the price and service quality expectations of our customers. We will do this by engaging with our customers and stakeholders for consideration with other strategic, economic and regulatory drivers.
3. Our investments will be clearly aligned with delivering our service level targets, effectively managing risk and optimising lifecycle cost. We will consider non network, demand side and flexibility options when we seek to optimise our investment.

4. We will continuously improve our asset management practices to align with nationally and internationally recognised asset management standards.
5. We will develop and retain talented, competent, and motivated people to maintain and improve our asset management capability.
6. We will respect iwi values for how natural resources should be managed and the impact Network Waitaki has on the environment, by honouring the Te Tiriti o Waitangi/the Treaty of Waitangi.
7. We will include factors such as decarbonisation, climate change, sustainability, and social responsibility in our asset management activities.
8. We will comply with all environmental, security and other relevant statutory and regulatory requirements."

5.5 Strategic Asset Management Plan

5.3.1 Understanding our Customers

The Strategic Asset Management Plan links our various Corporate polices and goals with our Asset Management Objectives. The Asset Management Objectives guide our lifecycle management, performance, risk management, and investment decisions to maximise value from our Asset Management System. Each of these components exist in their own environment but their inclusion in a Strategic Asset Management Plan demonstrates the linkages more obviously.

A summary of the key relationships from the Strategic Asset Management Plan is in the table below.

Statement of Corporate Intent	Asset Management Policy	Asset Management Objectives
Health and Safety Ensure that no harm comes to our people or members of the public as a result of our operations and assets To maintain safe plant, equipment and systems of work to keep our people safe	Safety is the highest priority. We strive for zero harm to employees, contractors and members of the public.	Ensure safety of our people, contractors, customers and communities through a diligent focus on safety across all areas of the business Maintain a certified public safety management system in accordance with NZS7901;
Customers and Community Provide electricity consumers with a safe, efficient and reliable electricity distribution system Be supportive of activities that provide economic growth and wellbeing in our network area Consider and communicate price impacts to customers in line with Electricity Authority customer care guidance	We will plan our activities to sustainably meet the price and service quality expectations of our customers. We will engage with our customers and stakeholders for consideration with other strategic, economic and regulatory drivers We will respect iwi values for how natural resources should be managed and the impact Network Waitaki has on the environment, by honouring Te Tiriti o Waitangi/the Treaty of Waitangi.	Network asset performance supports required service outcome for customers
Sustainability Operate the business in a commercially sustainable manner and use company resources in an efficient manner Preserve and grow the value of the business for the long-term benefit of consumers Provide dividends, discounts and community support activities reflecting our trust ownership	We will consider non network, demand side and flexibility options when we seek to optimise our investment. We will include factors such as decarbonisation, climate change, sustainability, and social responsibility in our asset management activities.	Decisions taken in the management of assets are evidence based and data driven to optimise value from our assets in balancing performance, risk and cost across the asset lifecycle

5.6 Decarbonisation, Climate Change, and Sustainability

Decarbonisation and climate change considerations are embedded within Network Waitaki's business as usual asset management practices, rather than being addressed through standalone programmes. These factors are integrated into planning, design, maintenance, and investment decision making across the AMP, reflecting their ongoing and long term nature.

Electrification of transport, process heat, and other end uses is expected to drive changes in load profiles and network utilisation over time. Asset management decisions therefore consider future demand uncertainty, flexibility in asset configuration, and the timing of investment to ensure the network can accommodate decarbonisation outcomes efficiently and safely. This includes making provision for increased capacity, changing power flows, and evolving customer connection requirements, consistent with the demand scenarios and development plans described elsewhere in this AMP.

Climate change adaptation is addressed through a focus on network resilience, design standards, and lifecycle management. Asset renewal and replacement activities consider increased exposure to extreme weather events, changing environmental conditions, and updated design criteria, with adaptation measures incorporated where appropriate. These considerations are embedded within asset configuration, maintenance practices, and renewal decisions, and are complemented by the resilience initiatives described in Section 5.13

Sustainability considerations are also incorporated through whole of life asset management, including optimisation of asset life, avoidance of premature replacement, and consideration of end of life treatment and disposal. By integrating decarbonisation, climate change, and sustainability into asset management decision making, Network Waitaki ensures these factors are addressed in a proportionate and enduring manner, aligned with customer value, regulatory expectations, and long term network stewardship.

5.7 Network Development Plans

We have developed plans to accommodate the conversion to electricity of process heat, transportation and domestic heating and cooling from other fuel sources.

Several large customers have already converted to electricity. This is expected to continue although the rate of conversion has slowed recently due to economic uncertainty.

New Zealand's light vehicle fleet is expected to be mostly electric by 2050, in line with our national climate change policy, although we expect uptake in our region will lag due to lower incomes and farming vehicles. EV use by visitors to the area is also increasing.

Domestic heating and cooling is also expected to lag for similar reasons to EVs.

We are seeing a steady increase in domestic rooftop solar and expect to see this growth continue to accelerate. We are also seeing more enquiries and applications for utility scale solar connections above 1 MW.

Ultimately, our evolving customer needs will significantly boost electricity demand over the expected lifespan of our assets. As an EDB, we play a crucial role in facilitating this transition, meaning:

- We take a long-term view of asset requirements, noting that customers ultimately benefit from well-planned investments
- When building new assets or rebuilding existing ones, we ensure the capability to meet future needs is built in, where practicable.

5.8 Asset Strategies

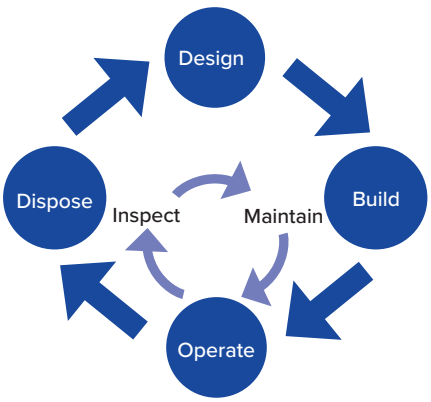
The key strategies applied to resourcing for our company are:

5.8.1 Asset Lifecycle Management

An overview of the typical lifecycle of a network asset is shown in Figure 5:

Further details including individual fleet strategies are included in Chapter 9.

Figure 5- Typical network asset lifecycle



5.8.2 Asset Management Plan

This Asset Management Plan (AMP) is intended to give stakeholders a view of our asset management practices and communicate our plans for the next 10 years of network operation and development.

In particular, the objectives of this AMP are to:

- Link the asset management processes to customer and stakeholder preferences for prices, supply reliability, and public safety
- Demonstrate that all asset lifecycle activities, plans, and associated costs are systematically planned with a long-term view towards minimising lifecycle costs, which promotes productivity and efficiency
- Demonstrate that physical, commercial, and regulatory risks are correctly managed throughout the life of our assets.

5.8.3 Investment Decision Framework

Major investment in the network, such as new lines or zone substations, are often triggered by a constraint or security gap in the operation of the existing equipment. Before deciding on a major investment on our network, consideration is given to the following options:

1. Accept the risk

The risk may only exist for a few hours in a year or during a narrow set of circumstances, and we may decide to accept the risk of the constraint, especially if the remediation cost is high. This option is unlikely to be implemented permanently, but it may be used where longer-term solutions cannot meet the required timeframes or where the costs of other options significantly outweigh the benefits. The risks of operating in this mode must be quantified and assessed as acceptable to stakeholders.

2. Optimise the network

Examples of this option include altering the configuration of 11 kV feeders to shift load from a heavily loaded to a lightly loaded feeder or installing a voltage regulator on a feeder to avoid a conductor upgrade.

Consequences such as increasing system losses or a reduction in security of supply will be included in the cost-benefit analysis.

3.Demand management

This option involves NWL and/or customers reducing demand while a constraint is present.

If new load is likely to exceed a constraint limit, conditions may be agreed that allow demand to be reduced during constraint periods. These conditions may be removed if the network is upgraded to remove the constraint.

Demand that may be controlled includes demand that is traditionally available for interruption, such as water heaters, and demand that is specified as controllable in our Security of Supply Standard (e.g., irrigation demand).

4. Non-network solutions

This option may be used to augment or even replace parts of our network. In some cases, a remote power system (typically a system combining solar and diesel generation with battery storage) may be more cost effective than a traditional power line. The comparative lifecycle costs of non-network solutions are examined where new lines, capacity upgrades or replacements are being considered. There is more detail on our approach to non-network solutions in **Chapter 7 – Our Future Network Plan.**

5. Modify or re-rate existing assets

This option could involve a design review to increase conductor maximum temperatures or using dynamic rating on a line or cable to increase capacity. Cooling fans could be added to a transformer to increase capacity.

6. Install new assets

This involves either building new network or upgrading existing assets.

Where increases in customer demand are signalled at short notice (less than 12 months), we may use options 1 to 3 in the short term, followed by a longer-term response following detailed analysis of all appropriate options.

For low-cost options, we use deterministic rules from our design and Security of Supply standards, which may result in evaluating only a subset of these options.

Options selected for detailed study are evaluated for cost and benefit (including costs of energy losses and value of lost load, where appropriate) and considered for alignment with:

- Our strategic plan (which includes health and safety, environment, and sustainability requirements)
- Statutory requirements (e.g., voltage, power quality limits)
- NWL Security of Supply Guidelines
- Forecast network capacity requirements
- Customer reliability requirements.

Options are scored across these categories and ranked according to their scores. The option (or options) with the best score is submitted for business justification.

Business justification is carried out in accordance with our delegated authority policy. The level of detail provided for each justification is proportionate, with higher value or higher risk investment requiring correspondingly greater analysis to support informed approval decisions.

5.8.4 Resourcing

The key strategies applied to resourcing for our company are:

- We will identify the required skill sets needed for effective asset management and have a well-developed recruitment and training plan in place
- We will ensure that our contracting business has a well-developed recruitment/training plan – an ageing workforce means we need to prepare workers to deliver on the strategy during the planning period
- We will continue to use external contractors to maintain our specialist systems such as communications and SCADA networks. We will continue to maintain our engineering skill set by hiring qualified engineers and supporting the growth of trained engineers through scholarships for local engineering students
- As technology and systems advance, we will actively identify gaps in skillsets so we use the best tools and train our staff or recruit to fill those deficiencies
- We will continue to engage suitable consultants for specialist work, including civil design, protection, and regulatory advice.

Recruiting and retaining specialist technical capability remains an ongoing consideration across the electricity distribution sector. Network Waitaki responds to this by investing in workforce development, structured training pathways, and fit for purpose role design, ensuring work is undertaken by appropriately skilled personnel while maintaining safety and quality outcomes.

5.9 Work Programme

Where practical, our engineering staff start designing major projects in the years before the works programme for which the project is scheduled. Budgets are developed to provide funds for this pre-work, where possible. This smooths out the planning and delivery process and allows for consents, long lead-time procurement and resourcing scheduling.

It also provides opportunities to pre-order long lead-time material items, so they arrive earlier in the financial year, providing more flexibility for works delivery and resulting in a smoother workflow. A project may be moved forwards or backwards in the plan to take advantage of an opportunity, provided this does not introduce undue risk.

Progress against the works programme is monitored by the management team throughout the year, with attention paid to resourcing and prioritisation of work. The timing of a job may be brought forward or deferred depending on the priority. For example, low priority maintenance such as painting an asset may be moved back to free up resource for safety-related work that has arisen through routine inspections since the original works programme was created.

5.10 Performance Reporting

Asset management for our network should be implemented in an open and transparent manner. We employ the key formal reporting mechanisms shown below.

Reporting line	Reporting mechanisms and content
The Company to customers and stake-holders	The company website includes the AMP, company annual report, and other disclosure documents. Company annual report includes Chairman and Chief Executive statements and audited accounts. Annual information disclosure.
The Board to the Trust	Quarterly presentation includes financial and operational performance.
Chief Executive to the Board	Monthly board report includes network performance updates, risk management activities, and progress on works programme delivery. Out-of-cycle reporting on significant developments.
Management Team to Chief Executive and the Board	Annual reports on budget, AMP delivery and network performance benchmarking. Monthly reports include network performance and progress against budget. Individual reports on major projects. Daily updates on areas of concern.

5.11 Risk Management Framework

Our business faces a wide range of risks. Some relate specifically to our network assets and the physical environment in which they are located, while others include more generic risks that all businesses face. Risk management is a fundamental part of good management practice and corporate governance, and effective stewardship of our assets.

Our approach to risk management strengthens our asset management decision making and practices. We apply risk management across all our business activities, including network planning, policy development, business planning and change management. We adopt a systematic risk management process based on the international standard *AS/NZS ISO 31000:2009 – Risk management – Principles and guidelines.*

Figure 22 below illustrates the systematic application of risk management according to the standard:

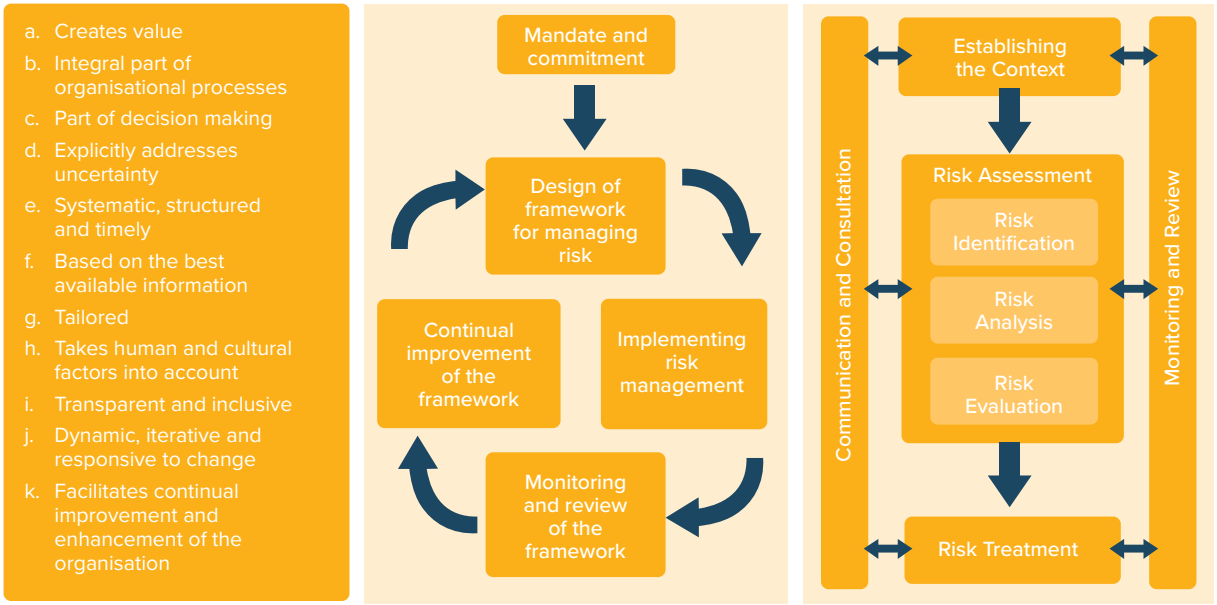


Figure 6 - From ISO31000:2009

Our risk management system consists of the following components:

- Risk management policy
- NWL risk management framework
- Risk management process
- Risk management plans
- Risk registers
- Risk reporting.

5.11.1 Risk Management Policy

Our Risk Management Policy is updated regularly and applies to all business operations of NWL. It presents our risk management objectives, provides guidance for establishing risk appetite and lays out staff responsibilities. It is intended to support and drive:

- Protection of people, the community, our network, the environment, and the business through effective risk management
- A flexible and evolving risk management framework aligned to the AS/NZS ISO 31000 Risk Management Standard
- Effective systems and tools for managing risk
- Regular review of existing risks and assessment of emerging risks
- Understanding how robust risk management supports good decision making
- A culture of risk management awareness across all aspects of the business.

5.11.2 Risk Management Framework

Our Risk Management Framework outlines our processes for ensuring appropriate management of risk across the business. It ensures that risk management is integrated into all aspects of our business including governance, strategic planning, operational (day to day) planning, and reporting.

These activities are evaluated from the following aspects:

- Health and Safety (public and personnel)
- Environmental
- Legal and regulatory compliance
- Reputation and stakeholder confidence
- Customer service levels including supply reliability
- Financial
- Business disruption.

5.11.3 Risk Management Process

Our risk management process ensures risks are identified, understood, and managed consistently across all levels of our business. We assess and track risks based on the level of likelihood and consequence outcomes.

Our risk management process involves the following steps:

1. Establishing the context in which the risks exist

This involves understanding our business objectives and values, defining the internal and external environment in which we operate, and setting the scope and risk criteria. We consider many factors, including accessibility of our assets by the public, asset age, and location.

2. Risk identification is identifying, recognising, and describing our risks, and their effects

Risks are identified through regular operational reviews, safety-in-design processes, and lessons learnt from other businesses. Risks are recorded in risk registers so we can track and monitor them and the effectiveness of our controls.

3. Risk analysis

Risks are analysed using qualitative and quantitative measures to identify the likelihood and potential consequences they present to the business.

4. Risk evaluation

All identified risks are evaluated against our risk criteria. This helps us to determine which risks need treatment, the priority for implementing treatment, and the appropriate level of investment for the risk.

5. Risk treatment

We treat a risk depending on the outcome of the analysis and evaluation stage. Risk treatment involves selecting one or more options for modifying risks. Options may include:

- Avoiding the risk by not starting or continuing the activity
- Removing the risk source by doing the activity in a different way
- Changing the likelihood of the risk occurring
- Changing the consequences if the risk does eventuate
- Sharing the risk with another party or parties (e.g., contracts and insurance)
- Accepting the risk by informed decision.

6. Post treatment risk evaluation

The risks are reassessed to verify that the post-treatment level of risk is known and accepted by the company.

7. Ongoing review of risks

Once a risk is recorded in the system it is regularly reviewed, as the likelihood and consequence of its occurring can change. Software risk registers are used to record and manage risks, including scheduling reviews and reporting on outstanding risks.

5.11.4 Risk Management Plans

For complex activities such as major projects or where a new type of work is being introduced, we develop complete risk management plans covering health and safety, financial, environmental, and operating risks for an activity. These plans are developed and approved by key stakeholders of the activity in question, such as engineers, managers, and field staff.

5.11.5 Risk Reporting and Monitoring

The risk register includes mechanisms for reporting and monitoring risks and their treatments. This includes automated reviews at set periods, dashboards to track the effectiveness of risk mitigation, and the risk profile of the business. We are confident that monitoring and reporting processes in this area are robust and complete, with monthly reporting on risks going to the Board.

Some lower-level risks, such as project level performance and commercial risks, are monitored by the staff managing the project. They are reported to management on an exception basis if the risk becomes a real threat.

5.11.6 Risk Registers

Information from the risk management process is recorded, reported, and monitored using our risk registers. These cover:

- Public Safety Management System
- Health and Safety risks
- Business risks
- Asset risks
- Individual project risks
- Physical risks for specific sites.

It is important that all risks can be tracked and managed in one system to provide visibility of the total risk the business faces.

5.12 Public Safety Management System (PSMS)

As an electricity network operator, we strive to manage our assets in a way that reduces risk to our people, members of the public, and property to the lowest reasonably practical level. Under the Electricity (Safety) Regulations 2010, NWL must maintain a public safety management system to manage all known hazards and risks to the public or their property caused by the operation of our business. It records the actions to be taken (or that have been taken) to resolve those risks. Public safety risks are identified through operational processes such as documentation by field staff, and team and project meetings. This information is also reported to the Board monthly and in annual reports.

Our PSMS is certified to NZS7901 and is audited annually by an external auditor (Telarc). Internal auditors also work to provide assurance that the system is working effectively. In March 2024, we received confirmation that our PSMS again achieved certification to NZS7901:2008 and NZS7901:2014, and that the certification would be valid for another three years.

5.12.1 Health and Safety Critical Risks

We maintain a special focus on what we consider to be critical risks associated with operating an electricity network. These risks have been identified and assessed in collaboration with staff through an ongoing workshop process, using bowtie analysis. The critical risks of focus include:

- Health and wellbeing (mental health and fatigue)
- Traffic management
- Asset integrity
- Electricity
- Mobile plant and equipment
- Driving
- Working at height
- Dropped objects.

The treatment of these risks includes focus on training and the development of safe standard work practices, as well as regular monitoring of the risk profile and our performance in these areas.

5.13 Resilience

Electricity distribution is a critical component of modern society. Businesses depend on electricity for production processes, IT operations and lighting. The general population depends on electricity for basic functions such as lighting, cooking, heating and, increasingly, transport. Critical infrastructure such as potable and wastewater treatment plants, hospitals, communications sites and emergency assembly centres require electricity to function. Many of these will have their own backup energy sources, but they are not typically designed for long term use.

There are several types of events that could significantly disrupt our ability to deliver electricity. A major event could damage key components of our network, causing business systems to fail or to operate at reduced capacity, affecting the availability of resources to operate the network, or disrupting our supply chain. Examples include:

- Earthquakes on the South Island's alpine fault or within the district
- Tsunami
- Pandemics
- Weather events such as snowstorms, windstorms or heavy rainfall causing flooding or subsidence
- Sustained loss of supply from Transpower's transmission system
- Cyber attack or other forms of sabotage.

Our resilience strategy focuses on critical assets and their vulnerabilities using the '4 R's' approach to risk management:

- Reduction: Identify and analyse long-term risk to the network. Reduce the impact of long-term risk by improving asset design and security of supply
- Readiness: Develop systems, review, and maintain critical spares, the Business Continuity Plan (BCP) and the Security of Supply Participant Rolling Outage Plan
- Response: Immediate actions following a disaster event with major event exercises performed annually
- Recovery: Reinstatement of the network to its pre-event service levels though partnership and mutual support arrangements with other service providers.

Asset criticality can depend on several factors including:

- Number of customers affected
- Functionality
- Rarity (number in use and sourcing)
- Location.

Improvement of our resilience planning continues to be a focus. Assessing the impact of other major events on our critical components and developing our risk treatment plans is an ongoing process.

5.13.1 Reduction

The optimal opportunity to reduce risk is at the specification/design phase. We have also anticipated more extreme climate events in our design standards using NIWA modelling forecasts to the year 2100 (the maximum practical life expectancy of assets currently being installed).

Critical existing assets such as substation buildings have been reinforced to meet current new building requirements, where practicable. This strengthening will extend to include corporate offices, depots and storage facilities.

Sites that contain other critical assets have been risk assessed using data from various sources (mostly Regional Councils). These risks are mitigated using various controls with a general hierarchy of:

- Design and construction to the latest standards including projected environmental effects to 2090
- Spares and replacements including alternative components for critical or long lead items such as Transformers, Circuit Breakers, Protection Relays, Ripple System Controllers as well as minimum stock levels of everyday items to support immediate restoration requirements
- Contingency plans and support arrangements with other utilities. Our contingency plans are regularly tested as part of or Civil Defence and Emergency Management commitments and are a requirement for the ongoing certification of our Public Safety Management System.

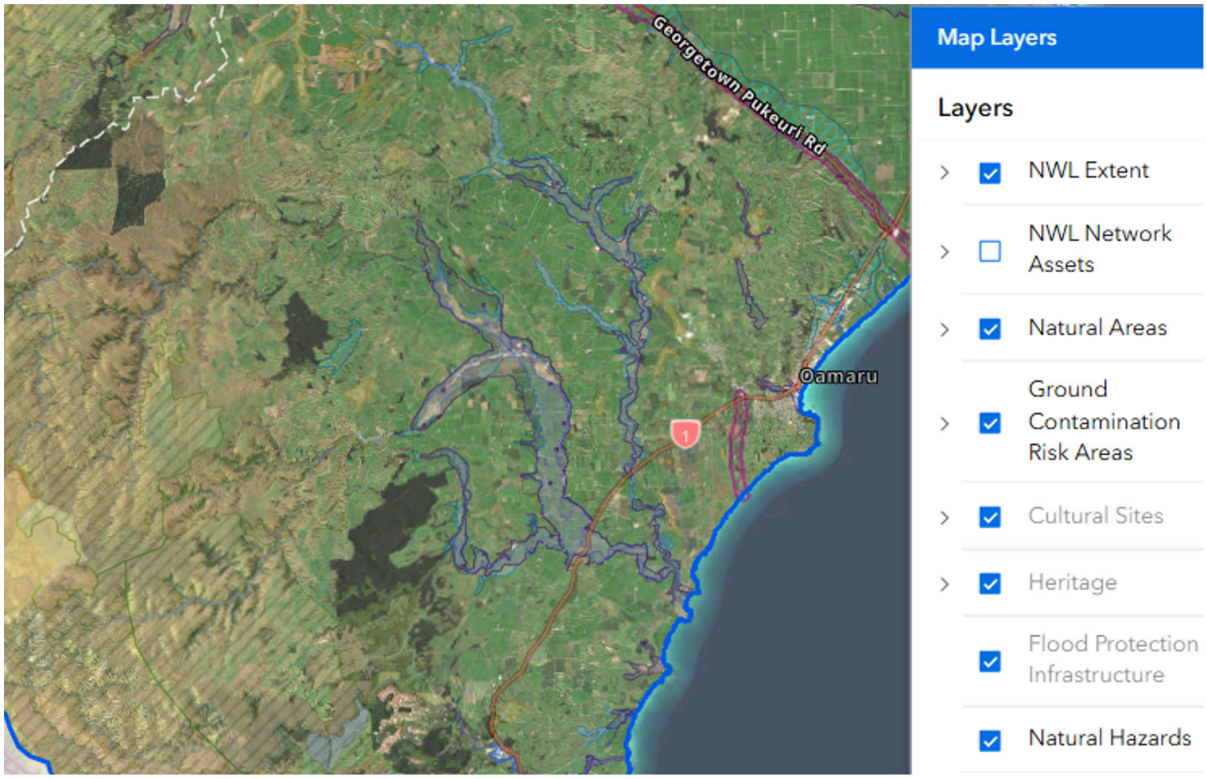


Figure 7: Example of Hazard Mapping from GIS

5.13.2 Readiness

As the provider of a lifeline utility, we have a duty to plan and prepare for major events. The Civil Defence Emergency Management Act 2002 requires lifeline utilities such as NWL to participate and plan for major events affecting the environment by:

- Functioning to the fullest extent during and after an emergency
- Establishing and maintaining plans to enable this functioning
- Participating in CDEM planning at a regional and national level, as required
- Providing technical advice and information to CDEM authorities, where required.

Due to our network's location in the North Otago and South Canterbury regions, we are a member of both the Otago and Canterbury Lifeline groups. This provides us with information at regional and national levels into hazard and risk assessment, mitigation options, and business practices. It also establishes relationships with other lifeline utilities and agencies. We actively learn from other EDBs and communities that have been impacted by High Impact Low Probability (HILP) events. This learning occurs by:

- Attending industry conferences such as EEA asset management forums
- Being involved in regional peer industry groups such as the Combined Network Operations Group (CNOG)
- Participating in Civil Defence workshops and exercises
- Working with experienced consultants to carry out specific reviews of vulnerabilities in our assets and operations and develop remediation plans.

In the 100 years our network has been operating, we have regularly been exposed to major flooding and snowstorms. The knowledge and experience gained from responding to these disruptions have informed and been incorporated into our Security of Supply Operation Plans, Strategic and Operational Spares holdings, design standards and procurement standards to make our business more resilient.

The Lifelines group also allows us to respond to a variety of situations. Cooperation with other South Island EDBs regarding standardisation and materials along with escalation plans and mutual aid agreements facilitate the Response and Recovery aspects for larger events.

5.13.3 Response

We have also been working to improve our ability to ride through an abnormal event such as a large earthquake, and to operate effectively in the aftermath of such an event. This has included working with experts in different fields to ensure our electrical network and business infrastructure can perform as expected after a disruptive event. Our goal is to ensure that during and after a HILP event our network and business systems can:

- Provide a safe environment for staff, contractors, and the community
- Reduce potential damage to assets where this is economically viable
- Enable timely restoration of power supply as far as practicable
- Allow us to effectively communicate with the public, CDEM, our staff, and other stakeholders
- Return to "business as usual" as quickly and efficiently as practicable.

The Covid-19 pandemic and ongoing lockdowns proved an opportunity to trial the performance of many of our remote business systems and processes, with staff successfully working from home to keep our business functional.

We also carry out regular exercises, as participants in the Lifelines group along with the standalone exercises required for our certified Public Safety Management System. The latter are also subject to regular review and external auditing.

Owning and managing our own Contracting and Stores teams allows us to have dedicated resources for a rapid first response.

5.13.4 Recovery

The deployment of common equipment not only facilitates support from other service providers, it also eases the recovery process. Equipment is readily available from suppliers and can be installed by service providers who are already familiar with it. As a relatively small EDB we do not deploy equipment in volumes that would place a strain on or disrupt the existing market.

5.13.5 Resilience Management Maturity

In 2023 NWL commissioned an external review of its resilience management activities. These were assessed against the EEA Guidelines and an improvement plan was developed.

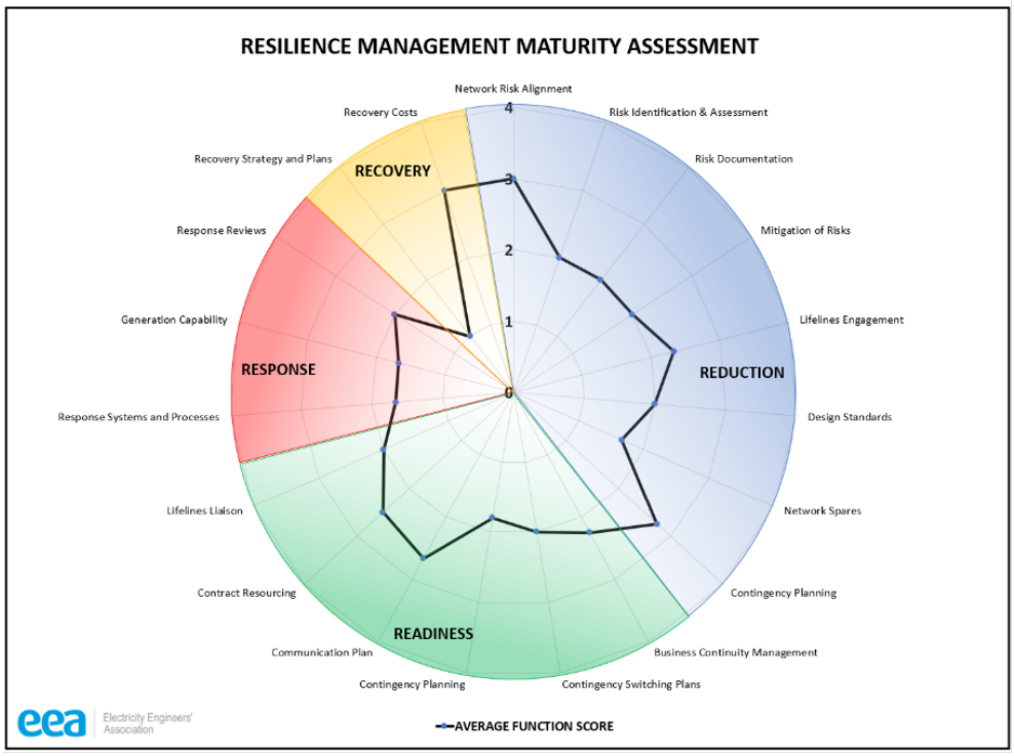


Figure 8 - RMMAT results summary 2024

The key areas for improvement and their status are summarised below:

Reporting line	Reporting mechanisms and content	Status
Resilience Summary Document	Develop a Resilience Summary document to capture approach to resilience for NWL	Complete, but needs to be managed within the controlled documentation system
Asset Management Plan	Strengthen the role of resilience in the AMP	Complete, additional sections added to the Asset Management Plan
Set Resilience Targets	Select appropriate target scores for the RMMAT	Complete
Critical Assets	Develop criticality rating thresholds for vulnerability assessments	Completed. Methodology documented and results included in the Asset Risk Models
Hazard Information	Be clear about hazard information used in vulnerability assessments	Completed in GIS. Mapped information and links are published within NWL intranet. Hazard data is sourced from both Canterbury and Otago regions
Vulnerability Assessment	Systematically assess asset vulnerabilities, summarise and communicate the results to decision-makers	Underway. Assessment has been completed and is available through the hazard mapping. A summary document has not been completed and communicated to the Risk Committee
Lifelines Group Involvement	Continue to be active within the Otago and Canterbury Lifelines groups to improve regional resilience	Ongoing. Designated attendees and alternates continue to attend Lifelines meetings and participate in activities
Network Spares	Continue to develop a spare parts strategy and plan to manage stock levels and improve resilience	Underway. Key asset components identified and process for managing them is in development
Crisis Management Plan	Keep the Crisis Management Plan up to date and share content with staff on a regular basis	Ongoing. Crisis Management Plan reviewed and updated in November 2025
Recovery Planning	Develop a Recovery Management Plan	To be started (expected 2026)

A further external review is planned for 2026.

5.14 Asset Management Maturity

Since 2021 we have engaged an independent assessor to review our Asset Management practices against good practice, using the Commerce Commission's Asset Management Maturity Assessment Tool (AMMAT). This tool is a series of self-assessment questions based on the principles of the ISO55000 suite of standards for Asset Management. The questions cover specific facets of good asset management practice and answers are scored from 0-4. The results reflect our organisation's maturity and help identify gaps in our asset management systems. We are not currently seeking ISO55001 certification but will look to align our systems with the principles of those standards as part of the improvement plan following the review.

5.14.1 Summary AMMAT Assessment

The latest assessment of our asset management practices against the AMMAT is attached in the Appendices. We have addressed the substantial gaps identified in 2021 and are using our continual improvement process to identify and address any remaining gaps.

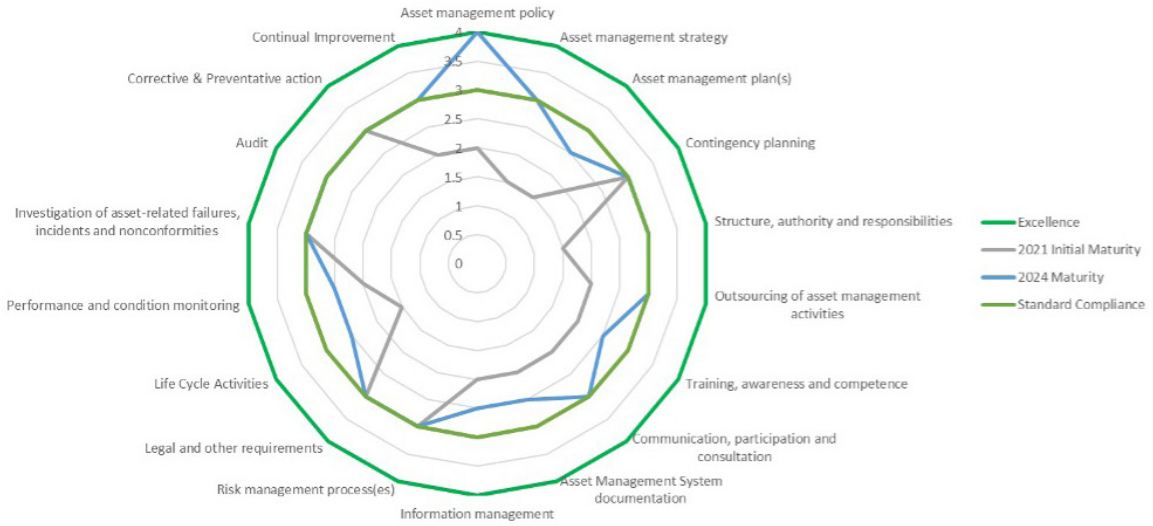


Figure 9 - AMMAT results summary including 2024 Progress Check

5.14.2 Asset Management Maturity Development Plan

From the original AMMAT assessment point, we have been addressing all areas where significant weaknesses were identified. The improvements are now being embedded within our standard practices and continual improvement process.

A key component for achieving ISO 55001 alignment and improving our asset management capability has been an independent expert review of our capabilities, strategies, systems, and processes. The outcome of this review enabled the creation of a strategic roadmap to guide development of our asset management practices and systems, and to identify initiatives for focus. These initiatives have been described in previous plans with current ones summarised below:

Improvement	Priority	Status	Target Year
Complete the asset information review	1	Underway	20261
Develop a resourcing strategy and plan to proactively identify the organisation's current and projected future requirements	2	Underway	20262
Develop a more comprehensive asset information strategy that links asset information systems to corporate and asset management objectives	2	Not Started	20263
Identify system elements for which improvement will provide cost effective benefits and include in an asset management improvement plan	2	Underway	2026
Review the approach to procurement of major plant items, ideally aligning with design standard choices and fleet asset strategies	2	Underway	2026

ISO 55001 – International Standard for Asset Management - Management Systems

Improvement	Priority	Status	Target Year
Develop a Pricing Book to assist with budgeting and performance measurement	2	Not Started	2026
Complete the development of the document framework that is currently underway and issue as a formal document	2	Complete	2026
Develop methods for assessing value for money for work completed internally	3	Underway	2026
Implement a more formal documented contractor management process for external contracts to include criteria for qualification, selection, management, and compliance	3	Underway	2027
Fully implement the critical spares policy to ensure that spares are available	3	Underway	2027
Implement an internal audit plan to periodically review the asset management system	3	Not Started	2027
Implement a computerised maintenance management system for planning and scheduling maintenance and recording and reporting history	2	Not Started	2028

[1]The Asset Information Review was originally scheduled for completion in 2023 and is currently in draft form awaiting sign-off. Completion was delayed due to key resources being reprioritised for other Information System implementations.

[2]The Resourcing Strategy was planned for completion in 2024 but has been delayed due to key resources being reprioritised for other Information System implementations.

[3]Completing a more comprehensive asset strategy is dependent on completion of the Asset Information Review

5.15 Routine Asset Management

Lifecycle management of all assets are documented in Fleet Strategy Plans that record good practice activities for all our asset classes. These include inspection and maintenance schedules, long term renewal strategies and any manufacturer or model issue treatment plans. The plans are now being reviewed class-by-class as part of an ongoing improvement programme.

Ongoing updates to our risk management processes have included adoption of better software tools for recording and analysing risk. Critical risks are undergoing bowtie analysis, and the integration of good practice risk management throughout the business is well underway.

A key strategic action in 2025 was automating our continual improvement register and reporting system. Having the system track progress and record evidence of improvements will help the overall business, reduce duplication of effort and ease auditability.

We are improving the accuracy of project and work identification through to delivery, both in terms of cost and time. Our current initiatives focus on the continuous improvement of our existing management systems. However, we ultimately plan to invest in a suitable integrated asset management system, likely within the next 24–36 months (FY28). We will also ensure suitable experienced/independent reviews of higher risk projects.

5.15.1 Integration of Asset Management Data

We operate several systems to manage asset data, including some that are paper based, and some on old software platforms that are becoming difficult to support. We realise this is inefficient, and ongoing work aims to integrate this data across our business in digital form. The scope of this work includes data in our GIS, works planning and management, fault recording, and defect management systems, as well as others. This will improve understanding and awareness of network and asset performance and risks and provide for more effective operation of the business.

Success with this project will allow staff to access asset data in the field, and to input information from the field directly into our asset records, rather than capturing it on paper for later transcription into our systems. These systems have been trialled in the field with good success and have been placed into production with the broader workforce. The establishment of our in-house vegetation management crews in the last 12 months has been based on the use of field capture and reporting tools.

Our vegetation management process has successfully been put into production in an online, end-to-end digital system. This allows vegetation management crews to easily capture and share inspection and mitigation data on tree hazards on and near the network. Moving from a paper-based system has improved visibility of performance and issues, the efficiency of planning work, and communication with tree owners and other stakeholders.

We are working closely with peer EDBs and other organisations with similar systems and requirements to share knowledge and learn good practice. The goal is to ensure a tightly integrated system across the following areas:

- Works planning
- Maintenance scheduling
- Condition monitoring and analysis
- Financial management
- Timesheet integration for plant and staff
- Defects recording and location
- Management of controlled documents such as standards and policies
- Fleet management of plant
- Asset registers, operational, financial, and regulatory
- Stores and procurement
- SCADA data.

5.15.2 Improvement of Asset Data

Many areas of our asset data are complete and accurate, but there are still some deficiencies. This workstream will be ongoing for the next few years and will involve the digitisation of old paper-based records, field surveys and using personal knowledge of the network to close any gaps. The improved systems integration outlined in Chapter 1 will help in the discovery of these knowledge gaps.

Certain classes of asset have traditionally been managed with the age or type of the asset used as a marker for replacement decisions. We are continually reviewing the collection and analysis of condition data for asset classes so we can identify and establish critical measures and data to build a works programme based on condition and risk factors.

An example of success in this area is the recent adoption of better inspection techniques and inspector training for pole condition assessment. These initiatives have improved the quality, consistency and reliability of pole condition data returned from inspections and allowed us to develop long term expected rates of renewal that provide better insight into future investment options and the risks associated with them.

5.15.3 Understanding Asset Criticality

A focus of the early part of the planning period is the analysis of the true criticality of assets in the network. Although the criticality of some major components and sections of the network is well understood from an operational point of view, we lack a formal criticality analysis for all assets. Having this rating will assist in planning the most effective execution of work, and assist in improving network resilience, as we will be able to focus resources on the parts of the network where they will give the greatest benefit.

5.15.4 Quantifying Risk

Developing a planned set of interventions such as inspection, testing and/or maintenance not only reduces the likelihood of catastrophic failure, it also enables a better understanding of asset condition and rate of deterioration.

Once the asset condition is understood, the level of intervention can be optimised, allowing more effective allocation of resources such as staff and funding, as well as reducing disruption and improving reliability.

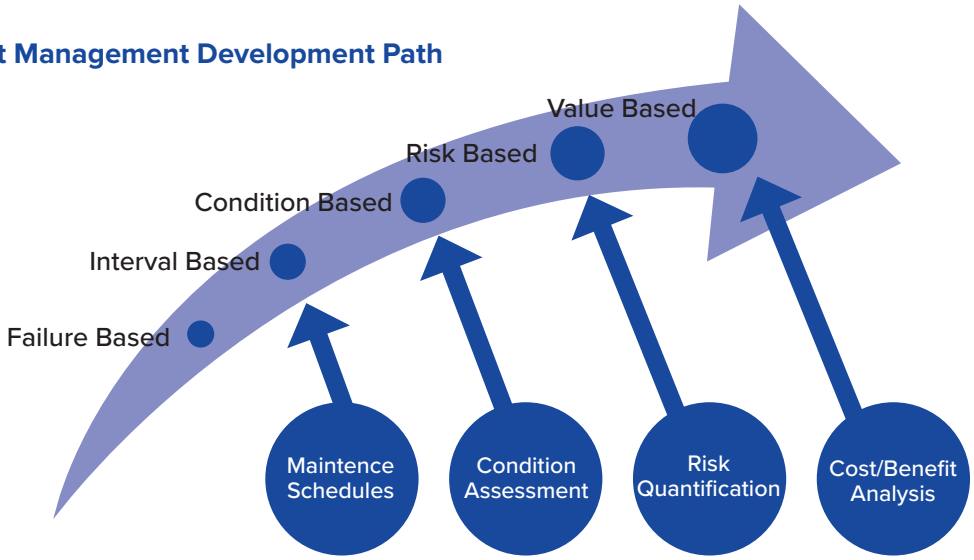
Combining asset condition with criticality through the lens of our Risk Framework allows us to understand the overall risk to be managed and lets us identify the highest risks across all asset classes and the wider business.

5.15.5 Obtaining Value

Prioritising our resources to the biggest specific risks is not necessarily the most effective form of management. We also need to understand the cost (money, resources, disruption) to mitigate a risk along with acknowledging and evaluate the risk that will remain once that mitigation is carried out. Once these are accounted for the result is value propositions that can be understood within the wider business sense.

Figure: 10

Asset Management Development Path



NWL's assets are currently managed with varying degrees of maturity depending on their criticality and the cost/benefit of the relevant asset management regimen. Most assets use a risk-based approach informing their management strategy while some less critical assets are still managed using condition as the basis for decisions. More assets will have value quantification applied in future as this will allow us to achieve the best long-term outcome for all stakeholders.

SECTION

06

Maintenance and Renewal Plan

06

Maintenance and Renewal Plan

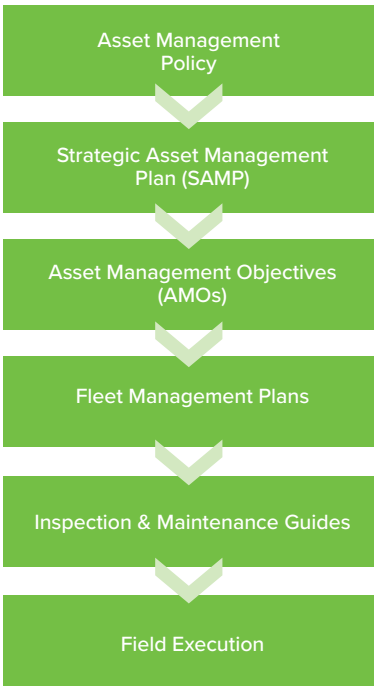
In this Chapter we:

- Summarise our lifecycle management approach
- Describe our assets and their purpose within the system
- Profile their age and current health
- Identify and describe key risks associated with each class
- Describe our processes for inspection and maintenance
- Describe our Renewal and Replacement criteria and plans.

6.1 Our Lifecycle Management Approach

NWL manages its assets through their full lifecycle from design and procurement to operation, maintenance, renewal, and end of life to deliver safe, reliable, and sustainable electricity services. Lifecycle strategies are established through the Strategic Asset Management Plan (SAMP) and guided by our Asset Management Objectives (AMOs), which set the organisation wide intent for safety, reliability, sustainability, and value.

Our approach follows a clear hierarchy:



Each stage of this hierarchy provides increasing operational detail while maintaining direct alignment with corporate objectives and the principles of ISO 55000: value, leadership, alignment, and assurance.

6.2 Design and Procurement

Design and procurement are where asset performance and service life are most influenced. Our fleet management plans set design standards, preferred materials, and supplier expectations to ensure long-term safety, reliability, and maintainability.

Following good engineering practice and engaging reputable suppliers helps control the quality of assets entering service. Integration with long-term works programmes enables early procurement and resource planning, minimising logistical risks and ensuring project delivery efficiency.

All new equipment passes through a rigorous change-management process that confirms it can be safely installed, operated, and maintained, and that staff are trained accordingly. This supports the AMOs for Safety and Wellbeing, Investment and Financial Performance, and Asset Management Maturity.

6.3 Installation and Commissioning

Installation and commissioning ensure that new assets perform as designed. Trained personnel use approved techniques and manufacturer specifications to verify that assets are safe, compliant, and functional before entering service.

Our process integrates with change-management controls to confirm that new technology or configurations can be supported through their life. This step reinforces AMOs for Safety, Capability Development, and Asset Health, embedding quality and reliability from the outset.

6.4 Operation, Inspection, and Preventative Maintenance

Operational strategies are risk-based and defined in each fleet management plan. Maintenance is structured into four categories:

- **Preventative maintenance:** routine inspections, servicing, and condition monitoring
- **Corrective maintenance:** defect correction and minor renewals
- **Reactive maintenance**: fault response and supply restoration
- **Vegetation maintenance**: inspection and control of trees and other vegetation around overhead assets in accordance with the Electricity *(Hazards from Trees)* Regulations 2003 and good practice.

Preventative maintenance intervals are based on asset type, criticality, and environment. These inspections confirm that assets continue to operate safely and reliably and identify any emerging risks.

Data from inspections, fault reports, and condition monitoring feeds into the defect and renewal processes. Vegetation control is managed as a dedicated fleet with its own patrol cycles, clearance standards, and contractor KPIs.

These combined activities deliver the AMOs for Safety and Wellbeing, Reliability, Environmental and Decarbonisation, and Innovation, Continuous Improvement, and Digital Enablement.

6.5 Defect Identification and Management

Defects are captured in NWL's defect management database and assessed for potential impacts on safety, environment, and network reliability.

High-risk issues are prioritised for immediate action, while lower-risk items are monitored. This ensures efficient allocation of resources and consistent risk mitigation.

The defect process provides key input into renewal decisions and supports AMOs for Investment and Financial Performance, Reliability, and Innovation, Continuous Improvement, and Digital Enablement, consistent with ISO 55001's *Plan-Do-Check-Act* model.

6.6 Renewal and Replacement Planning

Renewal and replacement planning sustains long-term safety, reliability, and performance. Each fleet management plan defines decision criteria for repair, renewal, replacement, or run-to-failure strategies.

Economic and risk-based assessments determine the most effective intervention, considering capacity needs (including decarbonisation and demand growth), functionality (customer expectations and technology change), standards compliance, resilience to climate risks, and end-of-life disposal.

Where condition data is incomplete, age-based and model-based proxies are applied conservatively. These processes deliver the AMOs for Investment and Financial Performance, Asset Maintenance and Health, and Resilience, supporting sound "no-regrets" investment decisions.

6.7 Data and Digital Improvement

Accurate and accessible asset data underpins evidence-based lifecycle decisions. NWL continues to improve the quality of its digital asset data across:

- Fixed attributes (manufacturer, model, capacity)
- Operational data (demand, loading, and condition)
- Spatial and relational data (GIS connectivity, SCADA, ADMS).

Field data capture and integration initiatives are reducing reliance on paper-based processes, improving analytics, and enabling better alignment between field and office systems.

These improvements underpin AMOs for Innovation, Continuous Improvement, and Digital Enablement, Asset Maintenance and Health, and demonstrate ISO 55000's principles of alignment and assurance.

6.8 End of Life and Learning

At the end of service life, assets are evaluated for reuse, recycling, or disposal in line with environmental and safety standards. Lessons learned from failures, renewals, and decommissioning are fed back into fleet management plans and design standards to strengthen safety, reliability, and sustainability outcomes.

This continuous improvement cycle supports AMOs for Environmental and Decarbonisation, Innovation, Continuous Improvement, and Digital Enablement, and Asset Management Maturity.

6.9 Summary

NWL's lifecycle management framework connects strategy to execution through a structured hierarchy of objectives, fleet management plans, and operational procedures. Each stage is risk-based, data-driven, and aligned with ISO 55000 principles.

This integrated approach ensures that every activity from design and procurement to end-of-life learning delivers safe, reliable, and sustainable energy services for our customers and communities.

6.10 Asset Summary

The assets in our network are summarised below:
Table 4 - Summary of network assets by category

Asset category	Unit	Quantity
Concrete poles	No.	9,272
Wood poles	No.	12,797
Sub-transmission OH up to 66 kV conductor	km	249
Sub-transmission underground cable	km	5
33 kV pole mounted switches	No.	81
33 kV CB – indoor	No.	11
33 kV CB – outdoor	No.	60
11 kV CB - ground mounted	No.	92
11 kV CB - pole mounted	No.	4
Zone substation – buildings	No.	20
Zone substation – transformers	No.	25
Distribution overhead conductor	km	1,276
Distribution underground XLPE or PVC cable	km	77
Distribution underground PILC cable	km	17
11 kV CB - pole mounted - reclosers and sectionalisers	No.	60
11 kV air break switches and fuses - pole mounted	No.	4,135
11 kV RMU - individual switches	No.	146
Transformers - pole mounted	No.	2,425
Transformers - ground mounted	No.	599
Voltage regulators	No.	36
Low voltage overhead conductor	km	222
Low voltage underground cable	km	108
Low voltage switchgear (distribution cabinets)	No.	313

6.11 Zone Substation Fleet

6.11.1 Overview of Zone Substations

Zone substation power transformers convert electricity from 33 kV—used for efficient bulk energy transfer—to 11 kV, enabling the cost-effective distribution of electricity to end users.

Each substation includes switchboards and associated switchgear that facilitate the safe and reliable connection of supply to multiple areas via 11 kV feeders. These feeders are monitored by protection relays, which rapidly isolate faults to maintain network stability and minimise disruption.

Our zone substations are summarised in the following table. In addition, we own assets at two Transpower Grid Exit Points (GXPs), which are managed under the same maintenance and renewal framework as our zone substations.

Table 5 - Summary of NWL zone substations

Zone Substation	GXP	Capacity (MVA)	Number of Customers	Security Level	Year Built	Number of Feeders	Transformer Year of Manufacture	Switchgear Year of Manufacture
Ōhau	Twizel	3	178	N	2006	3	1959	1997
Ōmārama	Twizel	3	482	N	1984	3	1960 & 1963	1985
Ruataniwha	Twizel	2	18	N	2015	1	1971	None
Otematata	Waitaki	3	537	N	1973	2	1961	2017
Kurow	Waitaki	12.5	756	N-1	1991	5	1966 & 1979	2015
Eastern Road	Waitaki	7	124	N	2020	3	2005	2018
Duntroon	Waitaki	7	215	N	2010	3	2010	2024
Ngapara	Ōamaru	7	358	N	1970	4	2005	1972
Papakaio	Ōamaru	7	266	N	2006	4	2012	2006
Enfield	Ōamaru	7	326	N	2006	3	2005	2006
Five Forks	Ōamaru	7	174	N	2017	3	2005	2016
Parsons Road	Ōamaru	10	1,119	N	1970	4	1966	2018
Weston	Ōamaru	-	0	N-1	2005	-	-	2005
Pukeuri	Ōamaru	12.5	445	N-1	1971	5	1966 & 1966	2017
Chelmer Street	Ōamaru	28	4,133	N-1	1967	8	2009 & 2009	2009
Redcastle	Oamaru	15	2,390	N-1	1967	6	2014 & 2014	2008
Maheno	Ōamaru	5	1,036	N	1967	4	1965	2019
Hampden	Ōamaru	7	839	N	2010	2	2012	2023
Te Awamako	Oamaru	10	142	N	2024	2	2023	2023
Waitaki GXP	Waitaki	24	10	N	2013	1	2014	2013

Note: The security grade refers to the security of supply based on the equipment at the substation and does not factor in the ability for load to be switched to surrounding substations during an outage.

6.11.2 Management Approach

Our zone substation assets are critical assets, as a component failure can have a significant impact on system reliability and many customers.

Our objectives for the maintenance of zone substations assets are:

- Keep our people and members of the public safe
- Maintain the reliable supply of electricity to our distribution network and minimise supply interruptions
- Ensure that zone substations are operable in a post disaster scenario
- Maintain the value of our investments and prevent negative effects on the neighbourhood.

6.11.3 Zone Substation Buildings, Fences, Switchyards and Grounds

Our zone substation buildings are specifically designed for their location and criticality. They are mostly constructed with reinforced, concrete-filled blocks. We continue to invest in strengthening them based on the experience gained by other infrastructure businesses.

Age Profile and Population Data

We expect zone substation buildings to have an average life of 70 years. The age/health profile shown in the following graph is based on the establishment date of the substation. In several cases the buildings, switchyards and fences have been partially rebuilt in the intervening years.

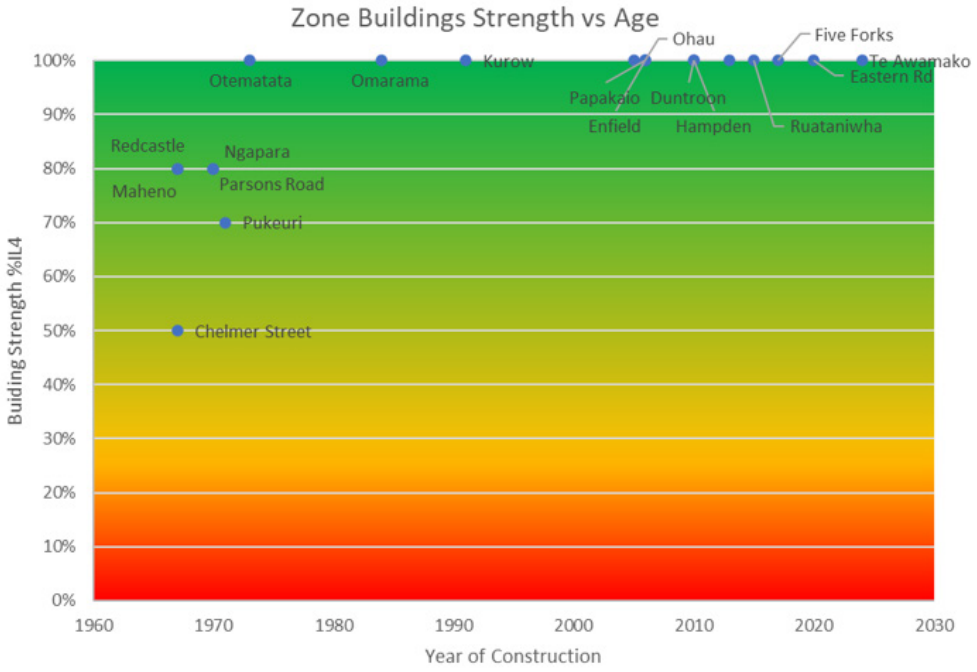


Figure 11 - Age and strength profile for zone substation buildings

Asset Risks

Specific risks and issues associated with this asset group include:

- Security breach due to fence condition, failure of locks, etc
- Damage due to animal ingress into yard (e.g., possums) or into switch room equipment (e.g., mice)
- Water/weather ingress into switch room
- Work hazards due to condition of switchyard surfaces, including surface levelling, weeds, etc
- Failure of lighting, heaters, and other secondary equipment
- Electrical hazards from rubbish, straw, and other foreign materials inside switchyards
- Condition of firefighting equipment, oil spill equipment, etc.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Routine visual inspections	All equipment at substation. Check for defects, weeds, issues with weather tightness, housekeeping, pest control, etc. Special attention to site security, fences, etc.	3 months
Detailed inspection	Detailed condition assessment of fencing, building envelope, bus structures, etc.	5 yearly
Earthing system test	Specialist test of the performance of the substation earth mat	5 yearly

Renewal and Refurbishment Programme

In line with our commitments to prepare for High Impact Low Probability (HILP) events, our substations need to be able to operate immediately after an earthquake or other disaster and are therefore required to meet importance level 4 (IL4) under the New Zealand Building Code. In 2019 we assessed the seismic capacity of our substations against the new building standard for IL4 (% NBS IL4). A remediation plan was developed and is now complete.

6.11.4 Zone Substation Transformers

Power transformers are installed at zone substations to transform sub-transmission voltages to a distribution voltage of 11kV. They are fitted with on-load tap changers and electronic management systems to maintain the required delivery voltage on the network.

Age Profiles and Health Data

We expect power transformers to have an average service life of 60 years. The age used in the following graph is the date of manufacture of the transformers and the health index is based on the Electricity Engineers Association Asset Health Indicator Guide.

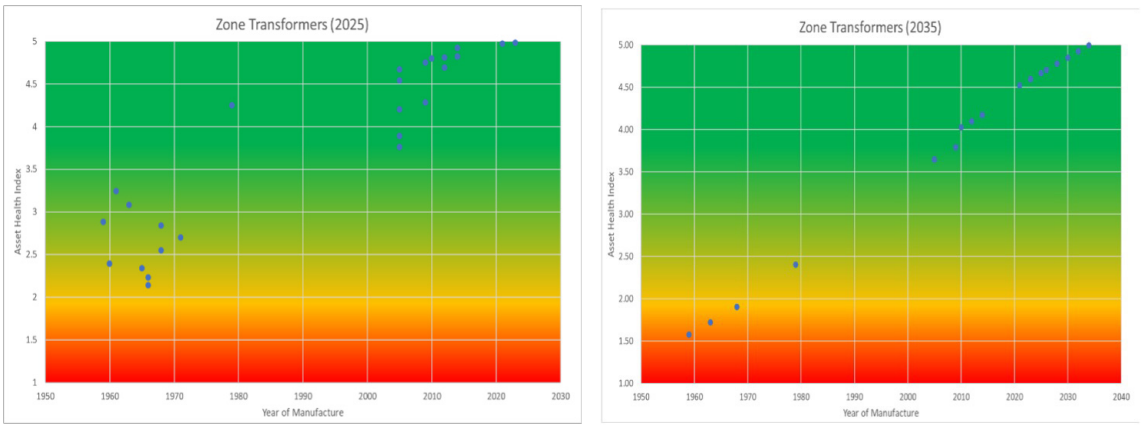


Figure 12 - Zone transformers age and health profile 2025 and 2035 (forecast)

Asset Risks

Risks and issues commonly associated with zone substation transformers include:

- Degradation of paper insulation resulting in damage during faults
- Reduction in life due to oil degradation
- Catastrophic failure due to internal electrical fault
- Online tap changer failure
- Reduction in capacity due to cooling system (radiators and fans) failure
- Environmental damage due to oil leaks
- Electrical failure due to cracked or damaged bushings
- Moisture ingress into transformer due to dehydrating breather system malfunction
- Reduction in life due to corrosion
- Damage in an earthquake due to failure of seismic hold-down equipment

Inspection and Maintenance Programme

Activity	Summary	Frequency
Routine visual inspection	As part of regular sub inspections.	3 months
Partial discharge tests	As part of substation PD testing.	12 months
Transformer detailed inspection	Detailed inspection. Includes expert inspection, thermal imagery, DGA and oil testing.	12 months
Transformer tap changer maintenance	Servicing of tap changer and associated equipment. SFRA and other offline testing carried out during work.	Oil filled 3 yearly, or 10,000 operations
		Vacuum 7 yearly, or 300,000 operations

Renewal and Refurbishment Programme

Zone substation transformers are a long lead time item, in that procurement of replacements can take 18 months or more. For this reason, we aim to maintain these assets in good condition, and to predict end of life with sufficient notice to secure replacements. In the case of an unforeseen failure, contingency arrangements are in place for all transformers based on the criticality of the site and utilising a hierarchy of controls, including:

- Energised spare on site (N-1)
- Transferral of load to adjacent sites (N-1 Switched)
- De-energised spare on site
- Compatible energised spares at other sites.

Transformer on-load tap changers are maintained every four years or 10,000 operations for older oil filled units, every seven years or 100,000 operations for newer oil filled units, or 300,000 operations for vacuum units, whichever comes first for each type.

Maintenance activities such as oil treatment or streamlining are triggered by trends detected during DGA testing.

Minor defects such as a damaged breather or cracked bushing are remedied soon after they are detected, as the repair work is relatively simple. Major refurbishment of transformers is based initially on age (mid-life) and then condition and operation characteristics (late-life). An older transformer that shows good results for oil and paper condition in routine testing (such as DGA tests) can be a good candidate for late-life refurbishment, which will generally involve core de-tanking for dry out and tightening, as well as refurbishment of the tank, replacement of fans, radiators and auxiliary systems
as required.

Replacement decisions for transformers are based on the assessment of factors such as having outdated major systems (e.g., tap changers) that cannot be adequately supported, incompatible vector group for normal operation or the condition of insulating paper as determined by DGA testing.

We follow international good practice to ensure our transformer condition assessment processes are delivering good outcomes. As can be seen from the age profile, several of our transformers will reach or surpass the standard asset life within the planning period, with ten units currently more than 50 years old. Annual DGA and inspections indicate that most of our fleet are in good condition for their age and are likely to continue to operate safely and reliably. We will look to extend the life of these transformers if it is economic to maintain them in operation, or until reinforcement or capacity upgrades force their retirement.

The following transformer replacement and renewal projects are included in this AMP as planned, high value interventions to manage end of life risk and maintain security of supply at critical zone substations. These projects have been deliberately sequenced across the planning period to reflect asset condition, site criticality, long procurement lead times, and the need to coordinate outages and installation activities. Together, they represent the primary renewal response for this asset group during the AMP period.

- **Ōmārama Zone Substation – Transformer 1:** planned replacement in the early AMP period, addressing increasing end-of-life risk at a critical supply point.
- **Kurow Zone Substation – Transformer 1:**planned replacement in the mid-AMP period, informed by condition trends and security of supply requirements.
- **Maheno Zone Substation – Transformer 1:** planned replacement in the mid-AMP period, aligned with fleet risk management and long-term network configuration.

- **Ruataniwha Zone Substation – Transformer 1:** planned replacement in the later AMP period, reflecting asset condition, site criticality, and sequencing of high-value investments.
- **Parsons Zone Substation – Transformer 1**: planned replacement in the later AMP period, coordinated with broader network planning considerations.

6.11.5 Zone Substation Switchgear

Zone substation switchgear allows the control of the individual high voltage circuits that radiate out from the substations. The switchgear provides a safe and convenient way to energise and de-energise sections of the sub-transmission and distribution networks for clearance of faults, or to carry out work.

Age Profile and Asset Data

We expect zone substation outdoor switchgear to have an average service life of 40 years, and indoor switchgear 45 years.

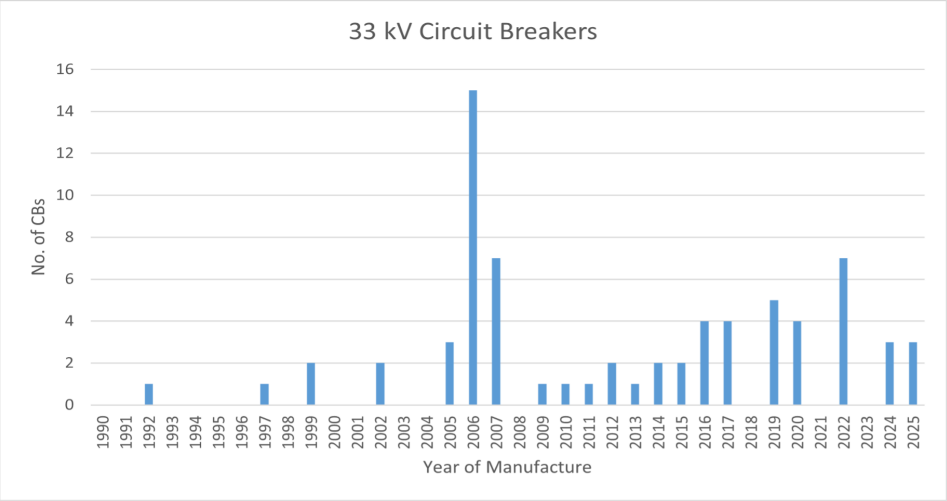


Figure 13 - 33 kV circuit breaker age profile

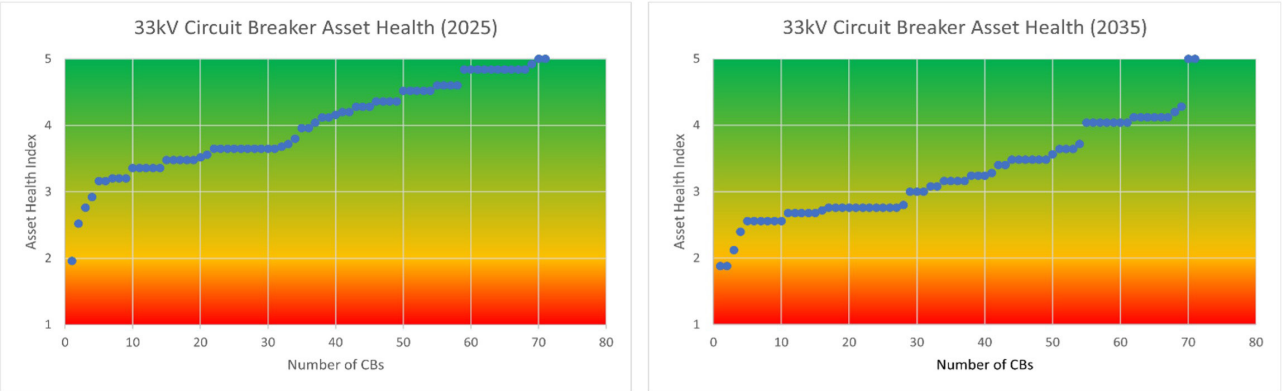


Figure 14 - 33 kV circuit breaker Asset Health 2025 (Current) and 2035 (Forecast)

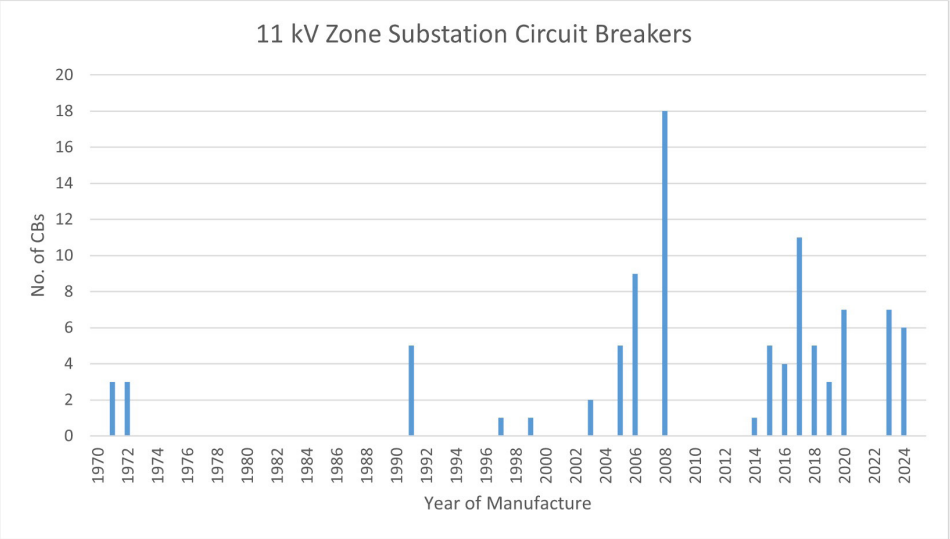


Figure 15 - 11 kV Zone Substation circuit breaker age profile

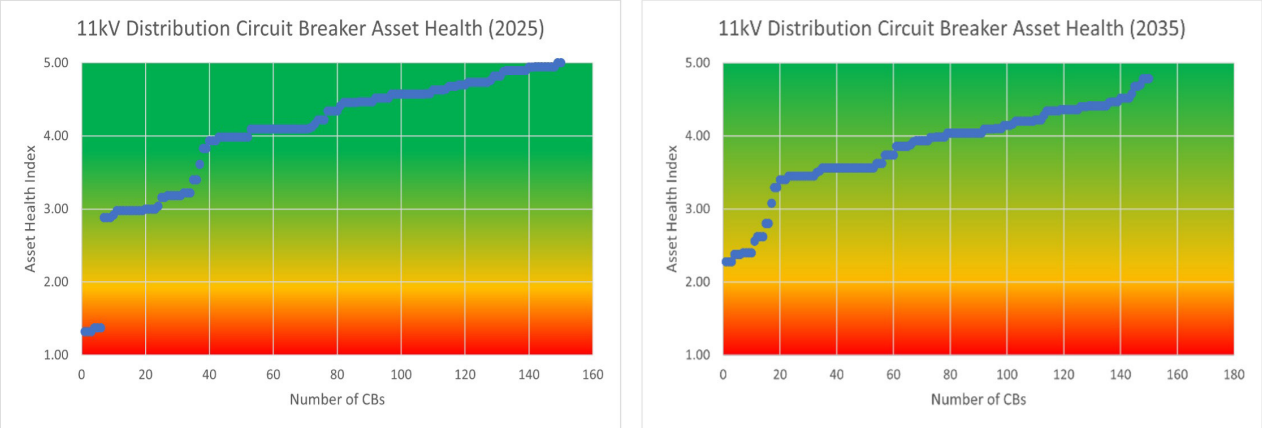


Figure 16 - 11 kV distribution circuit breaker Asset Health 2025 (Current) and 2035 (Forecast)

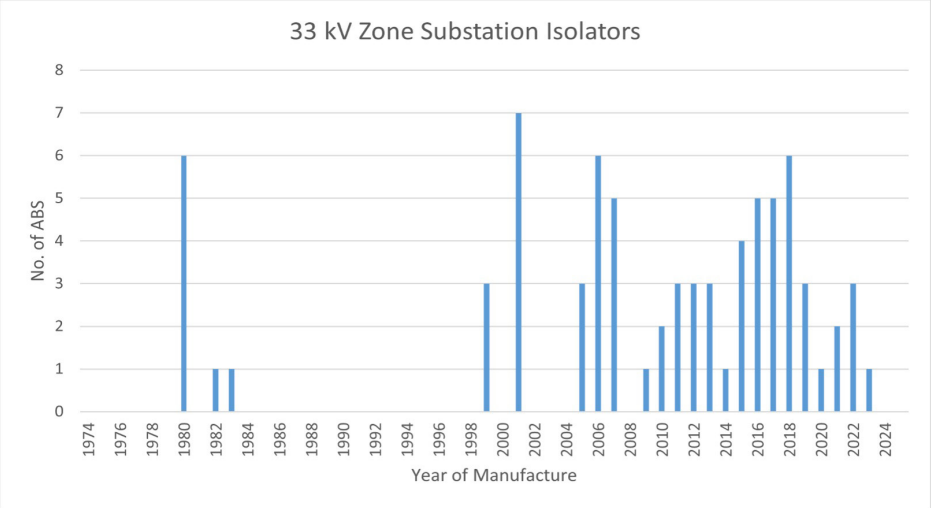


Figure 17 - Zone substation isolator age profile

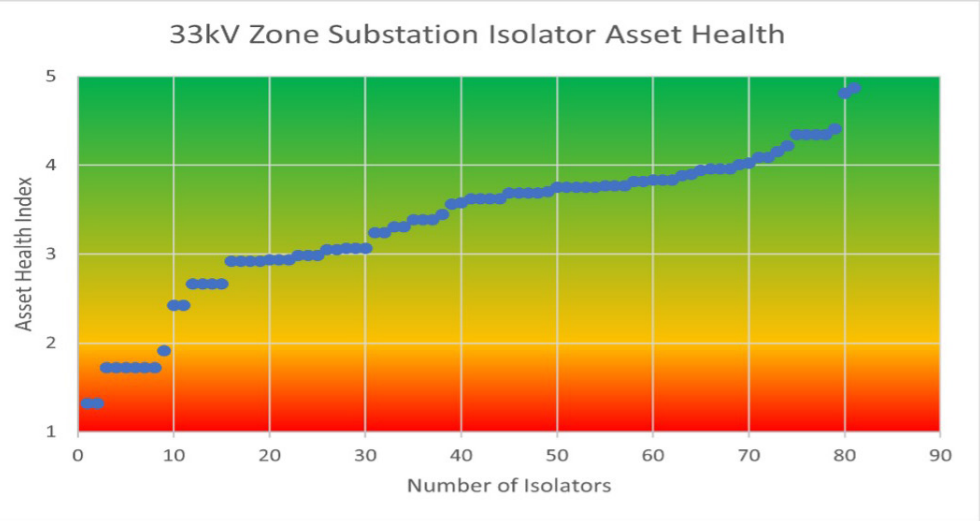


Figure 18 - Zone substation isolator asset health

The health profiles in the following graphs are based on the Electricity Engineers Association Asset Health Indicator Guide. The units with the lowest health ratings are in the Ngapara substation and are scheduled for replacement in the next year.

Asset Risks

Common issues and risks associated with this asset group include:

- Degradation of oil insulation in older switchgear
- Mechanisms binding and slowing down
- Overheating conductors (busbar, joints, terminations)
- Partial discharge (cable terminations, busbar chambers)
- Arc flash hazard to operators due to switchgear design and type
- Isolator contact damage
- Cracking porcelain insulators.

Activity	Summary	Frequency
Visual external inspections	As part of regular inspection	3 monthly
Detailed switchboard inspection (non-invasive)	Partial discharge testing, thermal imaging of boards, CBs, cable terminations etc.	12 months
110kV or 33kV gas insulated CB maintenance	Insulation, contact resistance and operational tests.	5 yearly
33kV or 11kV vacuum insulated CB switchboard maintenance	Insulation, contact resistance and operational tests.	5 yearly
11kV oil filled CB switchboard maintenance	Service of oil CBs. Insulation, contact resistance and operational tests.	3 yearly/3 high current fault operations

Renewal and Refurbishment Programme

- A programme is underway to replace older (pre-1990) oil insulated switchboards with modern, arc-fault-rated switchboards fitted with vacuum-insulated circuit breakers. One switchboard remains to be replaced, which supplies a meat processor from the Pukeuri Zone Substation.
- We are retrofitting arc-fault-rated doors and arc flash detection systems to the more modern switchgear in our zone substations. Installations are scheduled based on fault level and other work that is being completed on switchgear.
- Outdoor switchgear (33 kV and 11 kV vacuum/gas-insulated circuit breakers and air break switches (ABS)) are replaced based on condition assessment or as they become obsolete and the management of spares becomes problematic. We expect to replace two examples of this switchgear in the planning period.
- There is a known problem with a particular brand of 33 kV ABS where the porcelain insulators crack and fail. We carry out detailed inspection of these ABS at twice yearly intervals to check on signs of cracking and will be replacing all of this type of insulator during the early part of the planning period.
- Substation cables are replaced or re-terminated based on the results of condition assessment (such as PD inspection) or based on age and type (e.g., old paper lead insulated cables) when replacement of associated equipment occurs, such as switchgear or power transformers.

6.11.6 Zone Substation DC Systems

DC systems at substations include the battery chargers and batteries. These systems are considered critical to the network, as they enable the operation of network equipment such as protection relays and circuit breakers in the event of the loss of mains power.

Age Profile and Population Data

We expect zone substation DC supplies to have an average service life of 20 years, with the batteries having an expected serviceable life of 10 years. A profile showing the asset age of the main DC systems is below.

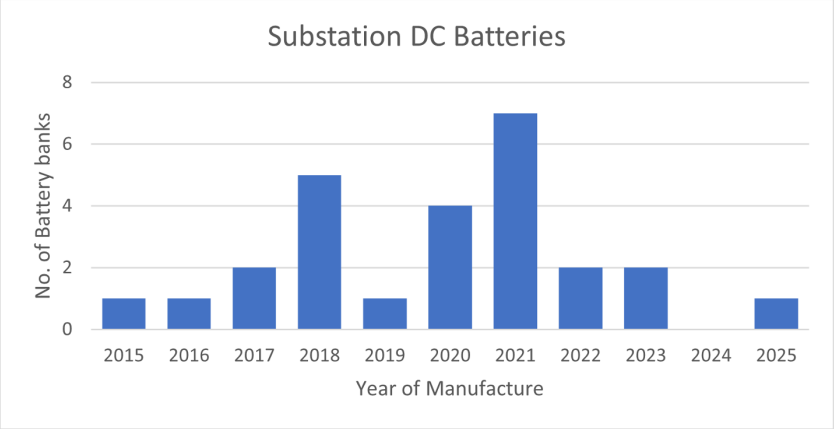


Figure 19 - Age profile data for zone substation battery banks

Asset Risks

Specific risks in this asset group include:

- Corrosion on battery terminals
- Loss of battery capacity
- Internal failure of batteries
- Failure of battery charger
- Damage to equipment during seismic event.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Visual inspection	As part of regular sub inspections	3 months
Battery testing	Routine testing of battery bank	12 months
Discharge testing	Discharge testing of battery banks	2 yearly

Renewal and Refurbishment Programme

Substation batteries are critical to the ongoing operation of the network. We currently plan to replace complete battery banks after no more than 10 years of life, to ensure they will be fully capable of operating when required. Individual cells or entire banks may be replaced depending on the results of discharge testing before then. We will be monitoring the performance of more modern batteries to see whether modern charging management is increasing this useful life. We expect to replace up to five battery banks per annum. A stocktake and review of existing systems was completed in FY21 to close the information gaps around the age of some of the battery banks.

Battery chargers and associated switchgear are replaced based on age (if obsolete) and operating performance. These systems are generally up to date and in good condition. As we replace older systems, we are installing smart chargers that provide detailed operational information through the SCADA system and will review DC system functionality and capacity during any upgrades.

6.11.7 Zone Substation Projection Relays

Protection relays detect faults on the network and signal the circuit breakers to open and remove the supply to the affected assets. The key attributes of this equipment are that it is sensitive and reliable, so that public safety and network performance is maintained.

All protection systems at our substations are of the modern digital type and performing satisfactorily. All substation protection relays are connected to our SCADA systems and are remotely controllable.

Age Profile and Population Data

We expect protection relays to have an average service life of 40 years, although technological development and changing operational requirements may mean that the relays are upgraded before this. A profile showing the asset age of the relays is below.

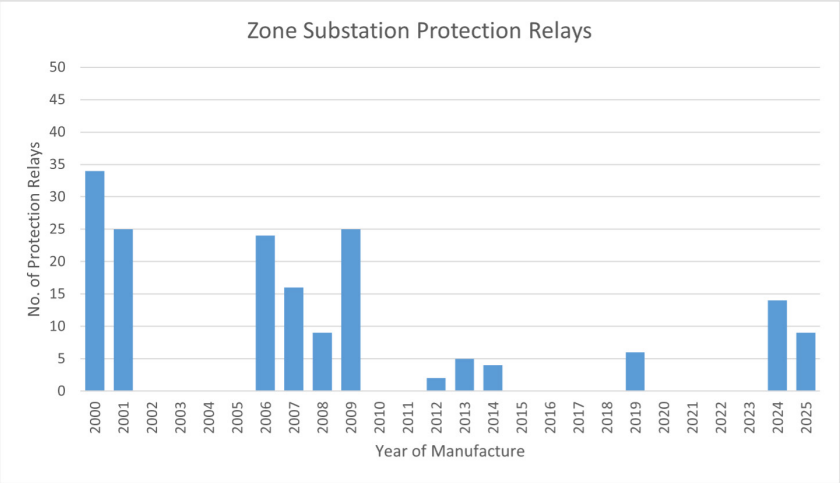


Figure 20 - Age profile data for protection relays

Asset Risks

Specific risks in this asset group include:

- Failure of a protection device to operate, putting staff or the public in danger
- Obsolescence of protection device leading to improper operation in the network.

Inspection and Maintenance Programme

Modern (post 1995) relays are microprocessor based and have inbuilt self-monitoring checks and alarms. These are linked to the Network Waitaki Operations Centre via the communications network. Additional direct monitoring and testing is described in the table below.

Activity	Summary	Frequency
Visual inspection	As part of regular sub inspections	3 months
Detailed protection relay assessment	Confirm settings and test operation, check, and replace onboard batteries, check terminals and wiring.	5 yearly

Renewal and Refurbishment Programme

We are working through a programme to replace some early microprocessor-based protection relays (SEL 551 type) with more advanced designs that offer better operational flexibility.

We actively seek opportunities to enhance the reliability and performance of our protection relay network, such as implementing differential protection on sections of the 33 kV sub-transmission network. These improvements are typically integrated into broader projects, including switchboard or transformer replacements.

Currently, there are no specific condition-based replacement programs for protection relays, and the existing fleet does not present any immediate obsolescence concerns. However, we have allocated an ongoing budget for the proactive replacement of relays that have been in service for more than 20 years. While these assets may continue to function beyond this point, industry experience suggests that the likelihood of failures increases with age. This approach ensures continued network reliability and minimizes the risk of unplanned outages.

6.11.8 Zone Substation Ripple Control Transmitters

Our Load Management (Ripple) System controls electrical loads predominantly by injecting frequency signals over the electricity network. The primary purpose is to defer energy consumption and minimise peak load. This is achieved in two ways: 1) Customer demand management load reduction and/or generation, and 2) by distributor-controlled load management through hot-water cylinders and other interruptible loads. A secondary purpose of the system is to allow coordinated management of common load types such as streetlighting.

NWL owns and operates Landis & Gyr solid state 33 kV Ripple Injection Plants at the Ōamaru and Twizel GXPs. An indoor Landis & Gyr solid state 11 kV injection unit is installed at the Kurow Zone Substation and services the demand connected to the Waitaki GXP. We own the ripple control relays installed at customers' premises.

Age Profile and Population Data

We expect ripple transmitters and their associated equipment to have an average service life of 40 years. Transmitters are located at the following sites:

Table 6 - Ripple control transmitters by installation date

Zone substation	GXP(s) served	Year Installed
Kurow	Waitaki	1999
Twizel	Twizel	2005
Parsons Rd	Oamaru	2013

Asset Risks

Specific risks for ripple control transmitters include:

- Failure of power electronics in transmitter
- Failure of coupling cell component.

6.11.9 Zone Substation Fleet - Maintenance and Renewal Expenditure

Our ripple control transmitters are still within their expected lifespan, but they are a highly critical piece of equipment, and the system configuration does not allow for mutual support between all units in the event of the failure of one. For this reason, we hold critical spares for these plants.

The next unit is due for replacement in 2039. As a result, we are not forecasting any replacement of ripple plant in the planning period.

Zone Substations ($000)	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY34
Service Interruptions & Emergencies	0	0	0	0	0	0	0	0	0	0
Routine & Corrective Maintenance and Inspections	489	491	444	444	444	444	444	444	444	444
Replacement & Renewal (Ōmārama Transformer 1)	0	1,292	1,309	137	0	0	0	0	0	0
Replacement & Renewal (Kurow Transformer 1)	0	0	0	1,292	1,309	137	0	0	0	0
Replacement & Renewal (Maheno Transformer 1)	0	0	0	0	0	1,292	1,309	137	0	0
Replacement & Renewal (Ruataniwha Transformer 1)	0	0	0	0	0	0	420	2,181	137	0
Replacement & Renewal (Parsons Transformer 1)	0	0	0	0	0	0	0	0	0	1,292
Replace Power Transformer – Pukeuri T1	285	1,027	227	0	0	0	0	0	0	0
Replace Power Transformer – Pukeuri T1	285	0	0	0	0	0	0	0	0	0
Replace Power Transformer – Pukeuri T2	285	0	0	0	0	0	0	0	0	0
Replacement & Renewal (Other)	375	375	375	375	375	375	375	375	375	364
Total	1,434	3,185	2,354	2,248	2,127	2,248	2,127	2,248	2,127	2,237

6.12 Sub-Transmission Network

6.12.1 Overview of the sub-transmission network

The sub-transmission network connects the supply of electricity from Transpower GXPs to our zone substations. The zone substations connect to our distribution network to supply the local community.

Supplies to zone substations are generally configured so they have an alternative supply from another sub-transmission circuit. This also makes the sub-transmission assets relatively easy to remove from service to carry out inspections, maintenance and repairs.

Our sub-transmission system currently operates at 33 kV only. New and rebuilt sections are designed to operate at 110kV to provide optionality for the future.

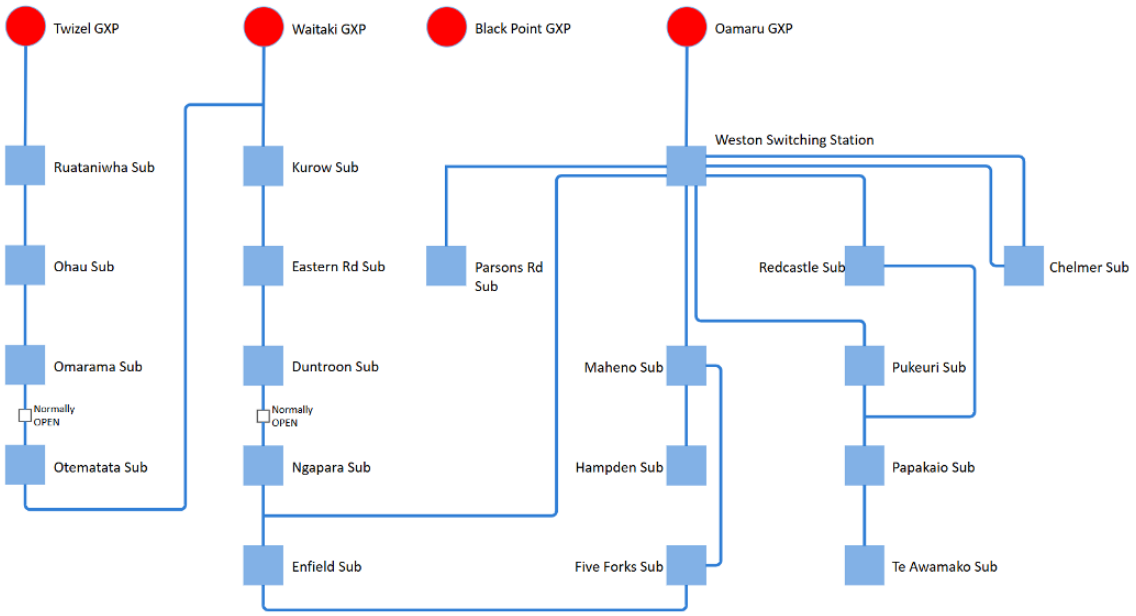


Figure 21 - Sub-transmission system configuration

6.12.2 Management Approach

The 33 kV sub-transmission network is mostly overhead construction, apart from some short lengths of cable, generally between the feeder CBs and line terminations, and on the Redcastle to Pukeuri feeder.

Our objectives for the maintenance of our sub-transmission assets are to:

- Keep members of the public safe
- Maintain the reliable supply of electricity to our zone substations and minimise supply interruptions.

A failure on the sub-transmission system can affect several zone substations, and hence many customers. The construction maintenance and inspection requirements for these high criticality assets is accordingly to a higher standard than the general distribution system.

6.12.3 Sub-transmission lines

Our sub-transmission overhead circuits total 249km in length and are a mixture of ACSR, AAC and AAAC conductors:

ACSR is a stranded aluminium conductor reinforced with steel strands at its core. It is chosen for its high strength and reasonable conductivity. It performs well under snow, wind and ice but can be vulnerable to corrosion in coastal and other areas with high air pollution.

AAC is a stranded All Aluminium Conductor. It has historically been chosen for its good conductivity and corrosion resistance, but it lacks the mechanical properties of ACSR. It performs well in coastal environments and in urban areas where its limited strength is not a liability, as the spans between poles are shorter.

AAAC is a stranded All Aluminium Alloy Conductor. It has good conductivity and corrosion resistance and better strength characteristics than AAC, though not quite as good as ACSR. It performs well in all environments and is the default conductor of choice on the sub-transmission network unless local conditions (e.g., higher altitude) require the use of ACSR.

Table 7 - Summary of sub-transmission line types

Installation Location	Total
ACSR	106 km
AAC	77 km
AAAC	66 km

Age Health and Profile data

The average life expectancy we apply to our sub-transmission lines is 60 years and the health profile of these assets is shown below. Sub-transmission lines are often installed and replaced in large sections with the same material subject to similar environmental conditions. This is reflected in the “stepped” nature of the profile.

Asset Risks

Major risks to the sub-transmission lines include:

- Extreme weather events such as heavy snow or high winds resulting in contact with trees or windborne debris
- External equipment – pivot irrigators moving into, spraying, or contacting lines
- Degradation of strength due to age-related issues such as corrosion
- Thermal fatigue or damage to connections due to cyclic loading or through fault currents.

Inspection and Maintenance Program

Activity	Summary	Frequency
Ground patrol	Ground based visual inspection for clearances, uneven sagging and damage such as broken strands Thermal inspection of joints and terminations. Vegetation-related defects are recorded to be managed in accordance with the Electricity (Hazards from Trees) Regulations 2003	Annual
Climbing patrol	Standard ground inspection plus pole top accessed via ladder or EPV in order to tighten fittings, repair loose binders, examine conductor condition, etc	At least 5 yearly
Conductor sample testing	Special targeted testing of conductor to check for issues on older lines	As required
Aerial inspection	Inspection of overhead lines and equipment using either helicopters or drones – may include visual inspection, Corona camera inspection, thermal imaging, and LiDAR data capture	As required

Renewal and Refurbishment Programme

Sometimes the overall age and condition of a particular stretch of overhead line will require a complete rebuild. Some sub-transmission circuits that were installed in the 1960s are scheduled for rebuilding during the planning period, including the Weston to Maheno 33kV circuit (due to conductor condition caused by vibration over time).

During renewals we may also improve the reliability of the sub-transmission network by replacing overhead circuits with underground, or by physically separating circuits to increase route diversity, when it is economic to do so.

6.12.4 Sub-transmission support structures

The sub-transmission lines are supported by a mixture of wooden (hardwood and softwood) and concrete (pre-stressed and mass reinforced) poles.

Hardwood poles are usually sourced from Australia. They are suitable in all conditions and can be used under all loading conditions.

Softwood poles were locally sourced. These are no longer used on our subtransmission networks.

Pre-stressed poles are usually locally sourced. They are suitable in most conditions but are vulnerable in low temperature and age faster in high pollution environments. Their shape (width-to-breadth ratio) means they are not suited to all loading situations. They are lighter than wood and mass reinforced concrete poles for a given strength but are vulnerable to shock loads such as from contact machinery and vehicles.

Mass reinforced poles were usually locally sourced but are no longer available. They are suitable in most conditions but are vulnerable in low temperature and age faster in high pollution environments. Their shape (width-to-breadth ratio) means that they are not suited to all loading situations, but they are less vulnerable to shock loads than pre-stressed poles.

A summary of the different pole types in use on the sub-transmission system is provided in the table below:

Asset Type	Number
Hardwood poles	2,144
Softwood poles	364
Pre-stressed concrete	238
Mass reinforced concrete	218

Table 8 – Pole types in use on the sub-transmission system

Age and Health Profile Data

The average life expectancy we apply to our poles is 40 years for softwood poles and 60 years for all other types. An age profile for them is shown below. Softwood poles were installed on sub-transmission lines between 2000 and 2010.

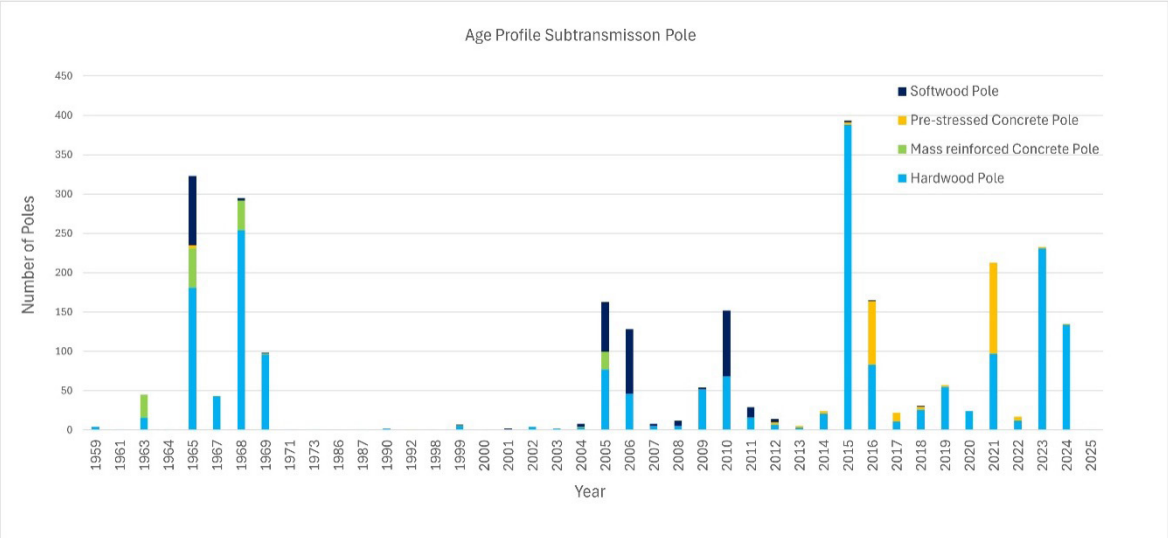
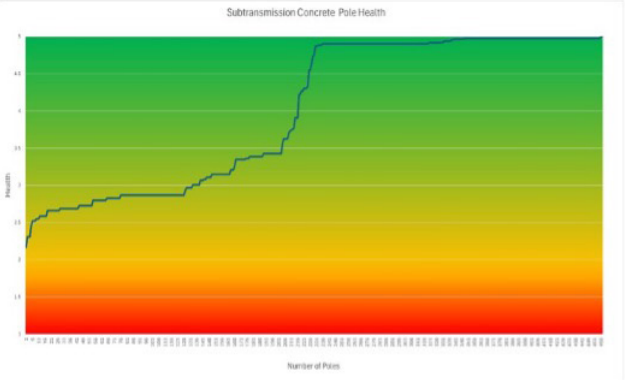


Figure 22 - Age profile for sub-transmission poles

Concrete and wood poles have different condition assessment criteria but are graded using a common index. The asset health of the concrete and wood pole fleets are shown below.



Asset Risks

Major risks to the sub-transmission poles include:

- Vehicle impact – much of the network is built adjacent to public roads
- Erosion of land around foundations
- Extreme weather events such as high winds or heavy snow
- Degradation of structural strength due to age related issues such as pole decay.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Ground based visual inspection of pole top, cross arms, and pole top hardware Testing of pole structural condition Thermal inspection of joints and cable terminations Vegetation related defects are recorded to be managed in accordance with the Electricity (Hazards from Trees) Regulations 2003	Annual
Climbing patrol	Standard ground inspection plus pole top accessed via ladder or EPV to tighten fittings, repair loose binders, examine conductor condition, etc	5 yearly
Aerial inspection	Inspection of overhead lines and equipment using helicopters or drones – may include visual inspection, Corona camera inspection, thermal imaging, and LiDAR data capture	As required

Renewal and Refurbishment Programme

Renewals in the sub-transmission network are largely repairs and replacements to structures based on the results of line patrols. Individual poles are generally earmarked for replacement due to condition and changed in a suitable shutdown period. The renewal budget for pole and hardware replacement is based on defect rates developed from recent analysis of line patrols.

Sometimes the overall age and condition of a particular stretch of overhead line will require a complete rebuild. Some sub-transmission circuits installed in the 1960s are forecast for such rebuilding during the planning period, including the Weston to Maheno 33kV circuit (due to conductor condition caused by age and vibration).

In the case of a complete rebuild, we take the opportunity to review the suitability of the existing line route, line construction type, and rating to ensure the line is fit for purpose.

6.12.5 Sub-transmission Cables

We have a small amount of (4.7 km) of underground cable on our sub-transmission network, all of it modern (post-1985) XLPE type.

XLPE (Cross Linked Polyethylene) enhances the temperature properties of the insulation, allowing strength and chemical stability to be maintained at higher operating temperatures (and loads). Impact and tensile strength, scratch resistance, and resistance to brittle fracture are also enhanced over other insulation types.

Age and Health Profile Data

The average life expectancy we apply to our modern XLPE cables is 55 years. An age profile for the various sections is in Figure 23.

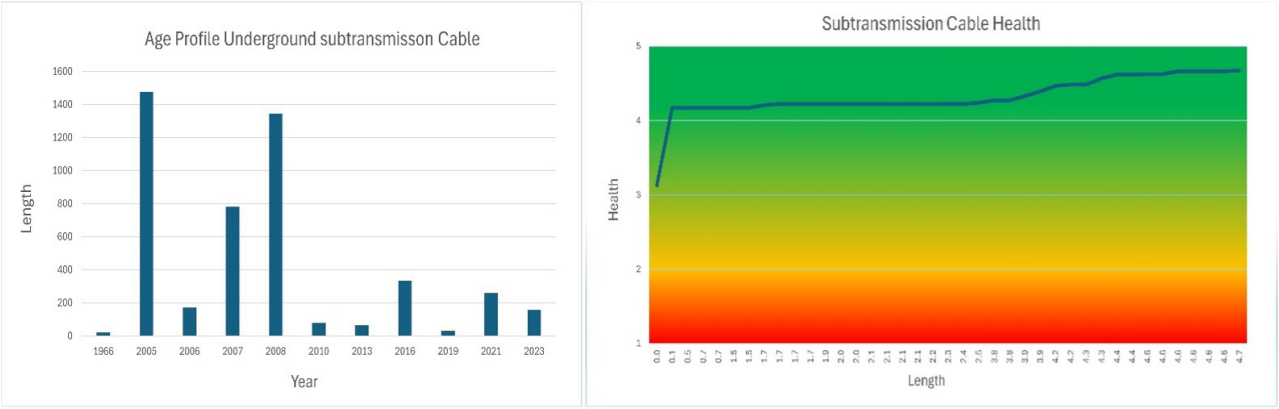


Figure 23 - Age profile of sub-transmission underground cables

Asset Risks

Major risks to the sub-transmission cables include:

Earthquake and other land movement around cables

- Damage by excavation and other works in the vicinity
- Material degradation of the insulation.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Patrol of cable routes to identify land damage and any excavation work in the vicinity	Annual
Partial Discharge Monitoring	Sub-transmission cable terminations as part of zone substation partial discharge monitoring	Annual

Renewal and Refurbishment programme

Given the asset type, age and condition, there are no renewal or refurbishment plans for NWL's sub-transmission cables within the planning period.

6.12.6 Sub-transmission Switchgear

Sub-transmission switchgear is used to control and redirect the flow of electricity between our zone substations. They are differentiated by function into subcategories (circuit breakers, reclosers, sectionalisers and isolators).

Circuit breakers are designed to operate and safely interrupt supply even under fault conditions where there are significant amounts of energy to be contained. They are normally located within zone substations.

Reclosers perform a similar function to circuit breakers but are usually rated to lower energy levels. Reclosers will automatically restore supply (re-close) in a transient fault situation. Often the only difference between a circuit breaker and a recloser is its control mechanism and operational configuration.

Sectionalisers are used to isolate (sometimes automatically) sections of the network and can be operated under load, but not when a fault is present.

Isolators (also known as air break switches (ABS)) are like sectionalisers but can only be operated when there is no load flowing through them.

We utilise vacuum and SF6 insulated switchgear circuit breakers, reclosers and sectionalisers in our sub-transmission network. Isolators are air insulated. Most of this equipment is of recent manufacture, although there is a handful of older items.

Age and Health Profile Data

The average life expectancy we apply to our sub-transmission switchgear is 45 years and age profiles for the various types are shown in Figure 46.

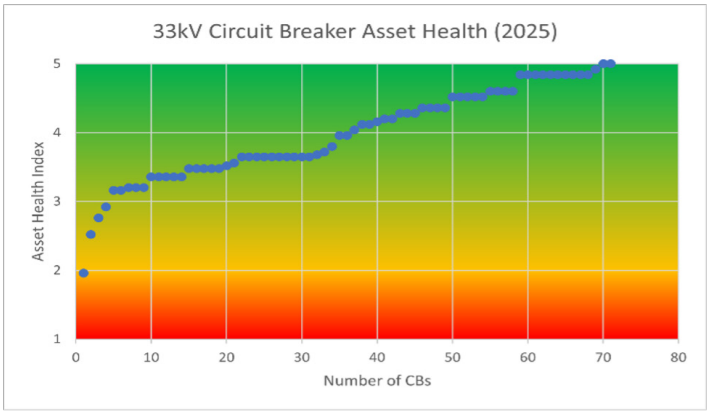


Figure 24 – Age profile of sub-transmission circuit breakers

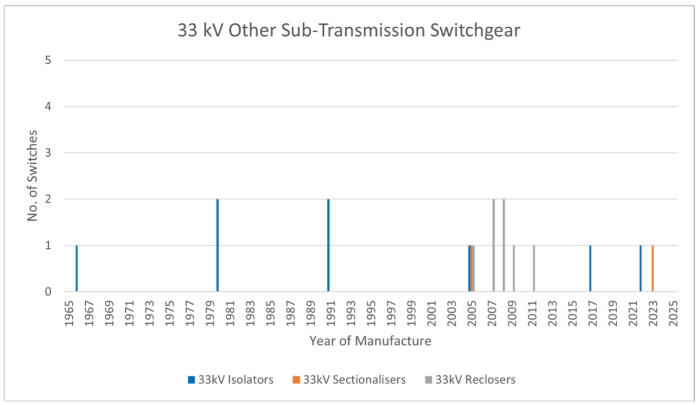


Figure 47 – Age profile of other sub-transmission switchgear

The practicable life of circuit breakers and reclosers is often determined by other factors such as operational functional requirements, number of operations and magnitude of fault interruption. Asset condition is therefore a more accurate indicator of remaining life than age.

The asset health of 33kV circuit breakers (including reclosers and sectionalisers) and isolators are shown below:

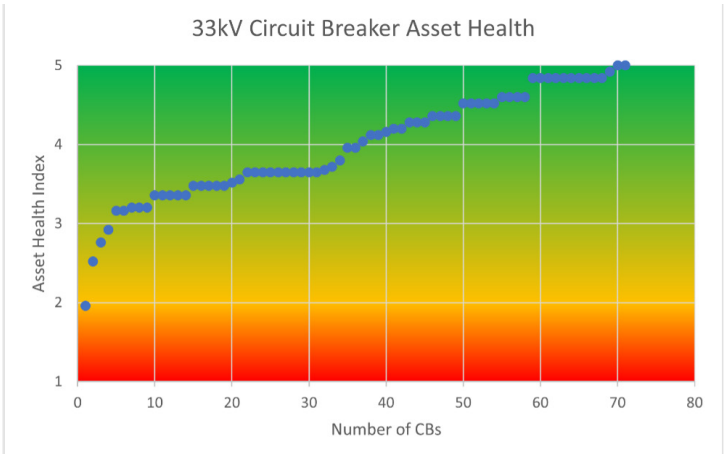


Figure 25 – Asset health profile of sub-transmission isolators, transmission circuit breakers, reclosers and sectionalisers

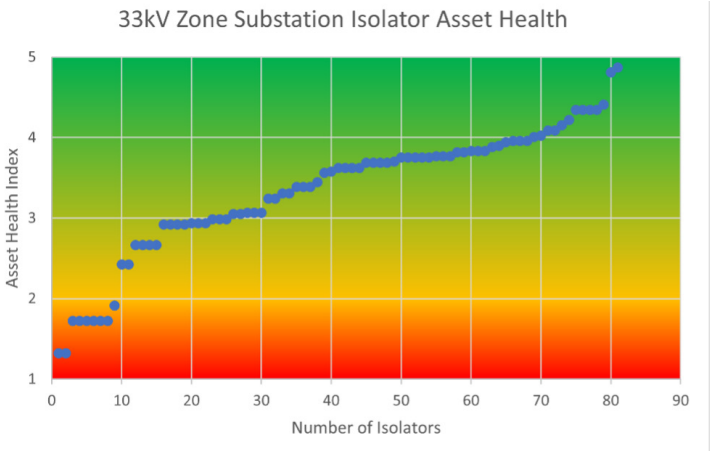


Figure 26 – Asset health profile of sub-transmission isolators

Asset Risks

Risks commonly associated with our sub-transmission switchgear include:

- Loss of insulating gas or vacuum
- Failure of porcelain insulator through cracking or age
- Failure due to terminations overheating.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Thermal inspection of switchgear and terminations	Annual
Climbing patrol	Physical check of terminations, fittings, etc	5 yearly
Operational checks	Verification of settings and trip testing Battery replacement	5 yearly

Renewal and Refurbishment Programme

Switchgear in this category is replaced based on condition assessment or as it becomes obsolete and the management of spares becomes problematic. We expect to replace two reclosers in this planning period for these reasons.

There is a known problem with a particular brand of 33 kV ABS where the porcelain insulators crack and fail. We will be replacing all examples of this type of ABS in the early years of the planning period.

6.12.7 Sub-transmission Fleet - Maintenance and Renewal Expenditure

Sub-transmission ($000)	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Service Interruptions & Emergencies	18	18	18	18	18	18	18	18	18	18
Routine & Corrective Maintenance and Inspections	229	193	229	290	229	229	229	229	229	229
Asset Replacement & Renewal(Weston-Maheno)	326	0	0	0	0	0	0	0	0	0
Asset Replacement & Renewal (Weston-Maheno)	311	0	0	0	0	0	0	0	0	0
Asset Replacement & Renewal (Other)	418	707	650	650	388	388	388	388	388	388
Asset Relocations	0	0	0	0	0	0	0	0	0	0
Total	990	917	896	957	634	634	634	634	634	634

6.13 Distribution Network

6.14.1 Overview of the Distribution Network

Our distribution network operates at 11 kV. The distribution network reaches out from our zone substations to supply the majority of our customers using distribution transformers to convert the 11 kV supply down to 400/230 V for connection to customer loads.

There are fifty-nine 11 kV distribution feeder lines supplied from our 33/11 kV zone substations. Supply restoration in the event of an outage is often possible by connecting neighbouring feeders. To assist in quicker supply restoration, we are installing automated open points on 11 kV interconnection between substations.

There are 1,276 km of overhead lines and 93 km of 11 kV cables on our distribution network.

6.13.2 Management Approach

We maintain our distribution network with the aim of keeping it safe for our workers and the public, and minimising outages. Our approach is predominately driven from defects found during regular inspection cycles, or generated from other work such as customer connections, or attendance at faults. When a part of the network is particularly affected by a major event (e.g., a snowstorm) we will instigate a special line patrol post event.

Where 11 kV feeders interconnect, they are normally configured as open points using remote controlled switches. This allows us to swiftly reconfigure the network to support load in the event of an outage. NWL's loadings are such that security provisions are generally focused on switching to restore supply quickly rather than targeting zero interruptions.

This approach, backed by an interconnected distribution network, means that outage figures are kept below our targets without over investment on the distribution network.

Our distribution network covers a large area, with assets in diverse locations ranging from busy urban streets to isolated mountainsides. The closer individual components are to the load, the fewer customers they connect, down to the level of an individual installation. Accordingly, we aim to balance our maintenance and renewals with the risk and service level associated with each asset.

Key objectives for management of our distribution network include:

- Keeping the public safe
- Keeping our workers safe
- Maintaining the reliability of our network
- No unassisted failures of poles and conductors in normal operating conditions
- Reduce the number of third-party contact incidents on our distribution network
- No incidents of unauthorised access to our ground mounted distribution assets
- Maintain the visual condition of our assets in neighbourhood areas.

6.13.3 Distribution Lines

Our distribution lines are 1,276km in total length and operate at 11kV, connecting our zone substations to distribution transformers. Most of the equipment is located in publicly accessible areas, such as alongside public roads or within the roperty they service, so any failures can be disruptive to our customers and the public at large. We use a mixture of HD Cu, GS, ACSR, AAC and AAAC conductors:

HD Cu is a stranded copper conductor treated to ensure it retains its shape over time. It performs well under all environmental conditions and has excellent electrical properties. However, cost increases in the late 1960s mean it is rarely used in new builds today

GS (galvanised steel) has been used where mechanical strength needs to dominate over electrical requirements. This conductor has extremely high strength but poor reasonable conductivity. It performs well under snow, wind and ice but can be vulnerable to corrosion in coastal and other areas with high air pollution

ACSR is a stranded aluminium conductor reinforced with steel strands at its core. It is chosen for its high strength and reasonable conductivity. It performs well under snow, wind and ice but can be vulnerable to corrosion in coastal and other areas with high air pollution

AAC is a stranded all aluminium conductor. It has historically been chosen for its good conductivity and corrosion resistance, but it lacks the mechanical properties of ACSR. It performs well in coastal environments and in urban areas where its limited strength is not a liability, as the spans between poles are shorter

AAAC is a stranded all aluminium alloy conductor. It has good conductivity and corrosion resistance and better strength characteristics than AAC, though not quite as good as ACSR. It performs well in all environments and is the conductor of choice on the sub-transmission network unless local conditions (e.g., higher altitude) require the use of ACSR.

A summary of the line conductor types on our 11kV distributions system is provided in the table below.

Conductor type	Length
HD Cu	85 km
GS	63 km
ACSR	953 km
AAC	109 km
AAAC	48 km
Unknown	18 km

Table 9 - Summary of distribution line types

Age and Health Profile Data

The average life expectancy we apply to our distribution lines is 55 years and an age profile is shown below:

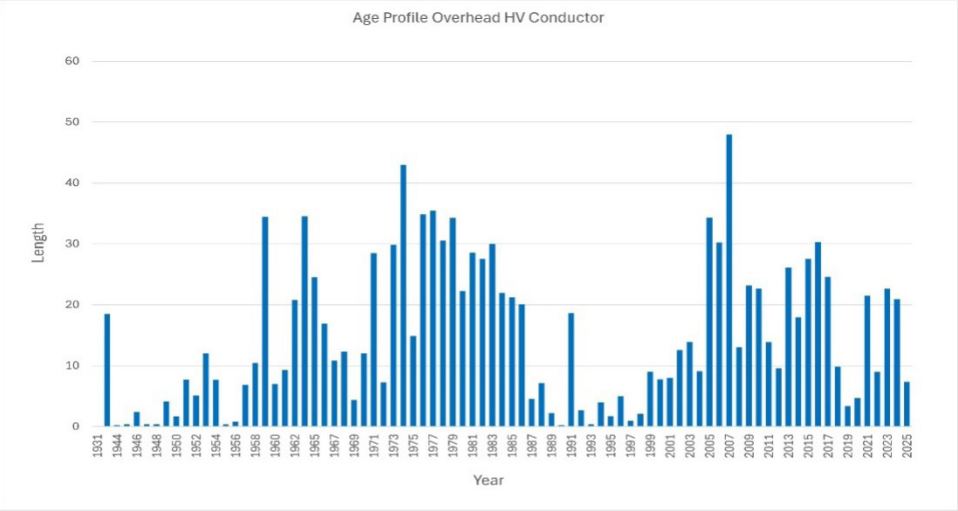


Figure 27 - Age profile of 11 kV overhead lines

The asset health profile of these assets is shown below.

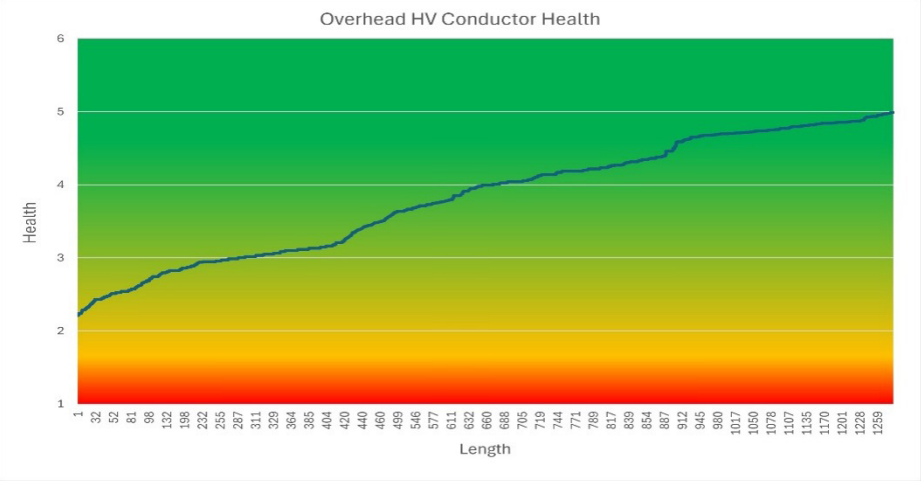


Figure 28 - Health profile of 11 kV overhead lines

Asset Risks

Major risks to the distribution lines include:

- Extreme weather events such as heavy snow or high winds, resulting in contact with trees or windborne debris
- External equipment – pivot irrigators moving into, spraying, or contacting lines
- Degradation of strength due to age-related issues such as corrosion
- Thermal fatigue or damage to connections due to cyclic loading or through fault currents.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Ground based visual inspection for clearances, uneven sagging, and damage such as broken strands Thermal inspection of joints and terminations Vegetation-related defects are recorded to be managed in accordance with the Electricity (Hazards from Trees) Regulations 2003	5 yearly
Vegetation patrol	Overhead lines on main feeder routes are inspected by our specialist vegetation team to maintain safety and reliability	5 yearly
Climbing patrol	Standard ground inspection plus pole top accessed via ladder or EPV to tighten fittings, repair loose binders, examine conductor condition, etc	15 yearly
Conductor sample testing	Special targeted testing of conductor to check for issues on older lines	As required
Aerial inspection	Inspection of overhead lines and equipment using either helicopters or drones – may include visual inspection, Corona camera inspection, thermal imaging, and LiDAR data capture	As required

Renewal and Refurbishment Programme

Conductor replacements are primarily determined with condition as the highest weighted factor, followed by maintainability and age, if required. Sometimes localised load increases will mean a conductor is replaced for capacity or voltage support reasons before it reaches the end of its practical life. In that case, the replacement will be included in the Future Networks section. Using Asset Health modelling, the conductor fleet will be replaced using the following priorities:

- All single wire steel conductors will be replaced in the financial year following their next scheduled inspection (i.e., FY27-FY30)
- All other steel wired conductors that are within the enmeshed network or supplying more than two transformers on a radial branch will be replaced in the financial year following their next scheduled inspection (i.e., FY27-FY31)
- All other steel wired conductors that supply two or fewer transformers on a radial branch will be replaced in the year following their scheduled inspections (i.e., FY30-FY35)
- All 7/.064 Copper conductors that are within the enmeshed network or supplying more than two transformers on a radial branch will be replaced in the financial year following their next scheduled inspection (i.e., FY27-FY31).
- All 7/.064 Copper wired conductors that supply two or fewer transformers on a radial branch and any remaining 7 stranded Copper Conductors will be replaced in the year following their scheduled inspections (i.e., FY30-FY35).

This will result in the removal of all steel conductors from the network by 2033 and the replacement of all 7-stranded copper conductors on the network by 2035.

6.13.4 LV Lines

Our LV lines connect distribution transformers which are usually next to the local street to customers' properties. They operate at 400V, total 222km in length and are a mixture of bare and covered HD Cu and AAC conductors:

HD Cu is a stranded copper conductor treated to ensure it retains its shape over time. It performs well under all environmental conditions and has excellent electrical properties. However, cost increases in the late 1960s mean it is rarely used in new builds today.

AAC is a stranded all aluminium conductor. It has historically been chosen for its good conductivity and corrosion resistance, but it lacks the mechanical properties of ACSR. It performs well in coastal environments and in urban areas where its limited strength is not a liability as the spans between poles are shorter.

A summary of the line conductor types on our LV system is provided in the table below.

Conductor type	Length
HD Cu	35 km
AAC	30
Unknown	157

Age and Health Profile Data

The average life expectancy we apply to our LV lines is 55 years and an age profile for is shown below

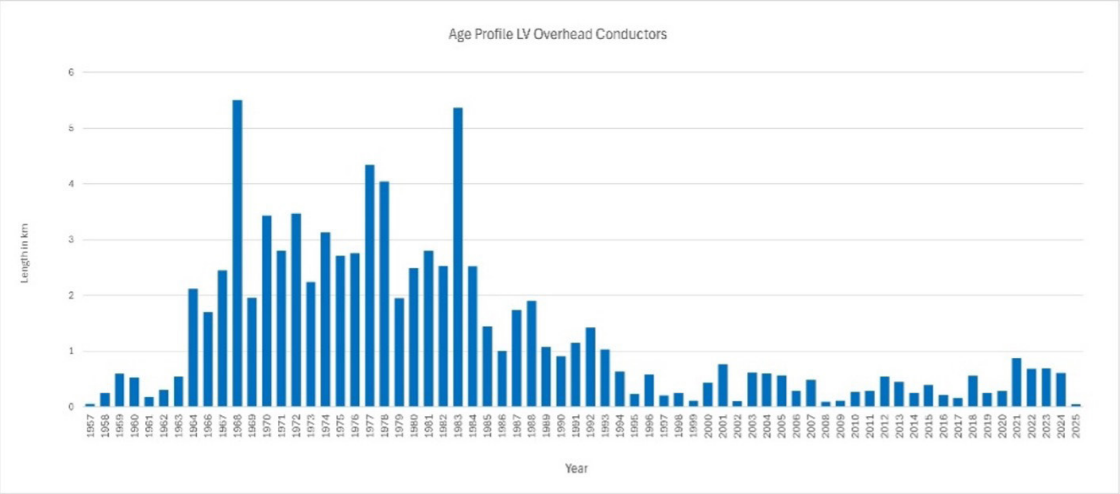
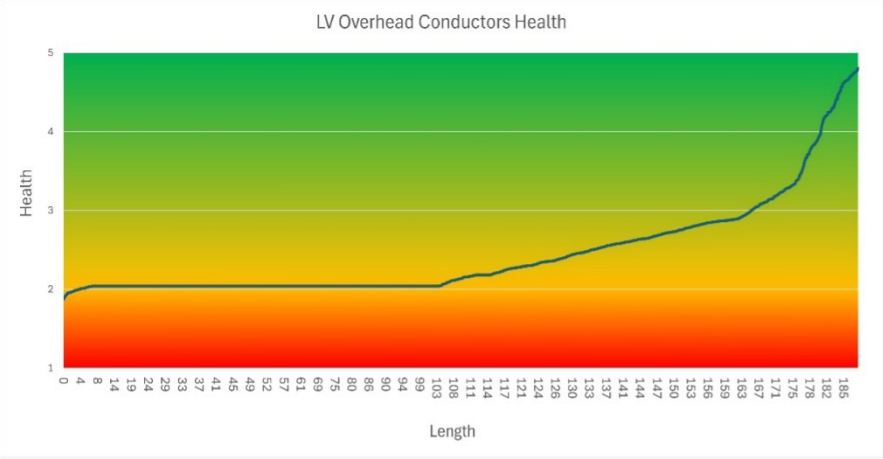


Figure 29 - Age profile of LV lines

The asset health profile of these assets is shown below.



Asset Risks

- Major risks to the LV lines include:
- Extreme weather events such as heavy snow or high winds, resulting in contact with trees or windborne debris
- External equipment – farming equipment and irrigators moving into, spraying, or contacting lines
- Degradation of strength due to age-related issues such as corrosion
- Insufficient clearance above ground or between the conductors and structures.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Ground based visual inspection for clearances, uneven sagging, and damage such as broken strands Thermal inspection of joints and terminations Vegetation-related defects are recorded to be managed in accordance with the Electricity (Hazards from Trees) Regulations 2003	5 yearly
Conductor sample testing	Special targeted testing of conductor to check for issues on older lines	As required
Aerial inspection	Inspection of overhead lines and equipment using either helicopters or drones – may include visual inspection, Corona camera inspection, thermal imaging, and LiDAR data capture	As required

Renewal and Refurbishment Programme

While nominal asset lives are used for modelling, inspection data and operational experience show that many conductors are performing reliably well beyond these assumptions. Replacement decisions are driven by condition outcomes from routine inspections, supported by asset health assessment and defect data, rather than age alone. This approach smooths renewal activity over time and avoids clustering of end-of-life replacements.

Real time monitoring is now in place across many LV feeders, providing data to support early identification of emerging performance issues and constraints.

Some conductors may also be upgraded as part of network reinforcement where customer load growth drives system investment. These upgrades are planned separately from condition-based renewal, and a consistent annual ARR conductor budget provides sufficient capacity to address condition-driven risk as it emerges.

6.13.5 Distribution Support Structures

Distribution lines are supported by 19,218 poles of which 2,884 support LV lines only, with the balance supporting 11kV lines or a combination of both voltages. They are a mixture of wooden (hardwood and softwood) and concrete (pre-stressed and mass reinforced):

Hardwood poles are usually sourced from Australia. They are suitable in all conditions and can be used under all loading conditions.

Softwood poles are usually locally sourced. They are suitable in all conditions and can be used under all loading conditions but have a lower strength-to-size ratio than hardwood poles and they also age faster. Since 2010, we have not specified softwood poles for new distribution network builds.

Pre-stressed concrete poles are usually locally sourced. They are suitable in most conditions but are vulnerable in low temperature and age faster in high pollution environments. Their shape (width-to-breadth ratio) means they are not suited to all loading situations. They are lighter than wood and mass reinforced concrete poles for a given strength but are vulnerable to shock loads such as from contact machinery and vehicles.

Mass reinforced concrete poles were usually locally sourced but are no longer available. They are suitable in most conditions but are vulnerable in low temperatures and age faster in high pollution environments. Their shape (width-to-breadth ratio) means they are not suited to all loading situations, but they are less vulnerable to shock loads than pre-stressed poles.

Some distribution lines are co-located on poles owned by other asset owners. There are about 2,000 poles supporting high voltage (HV) distribution lines that supply customers on private property. NWL will be engaging with property owners and end customers to agree a long-term solution for the ongoing management of these lines and support structures.

A summary of the different pole types in use on the distribution system is in the table below:

Asset type	All Distribution	LV Only
Hardwood poles	7,554	1,252
Softwood poles	2,777	392
Pre-stressed concrete poles	1,606	261
Mass reinforced concrete poles	7,284	982

Table 10 – Pole types in use on the distribution system

Age Profiles and Population Data

The average life expectancy we apply to our poles is 40 years for softwood poles and 60 years for all other types. An age profile for them is shown below.

Of the nearly 22,000 poles on our network, about 30% are of unknown or uncertain age. Data collection using the new field collection platform will provide estimated ages as part of the inspection process, supported by condition data for each pole. This should close this age information gap within five years.

For this reason, we have been enhancing our inspection techniques to ensure that our condition-based replacement regime is not degraded by the unknown age data.

Any probable installation dates that are developed during this exercise will also be verified against the details of nearby assets using our GIS systems. In this way, we expect to improve our confidence in the age profile of our network poles.

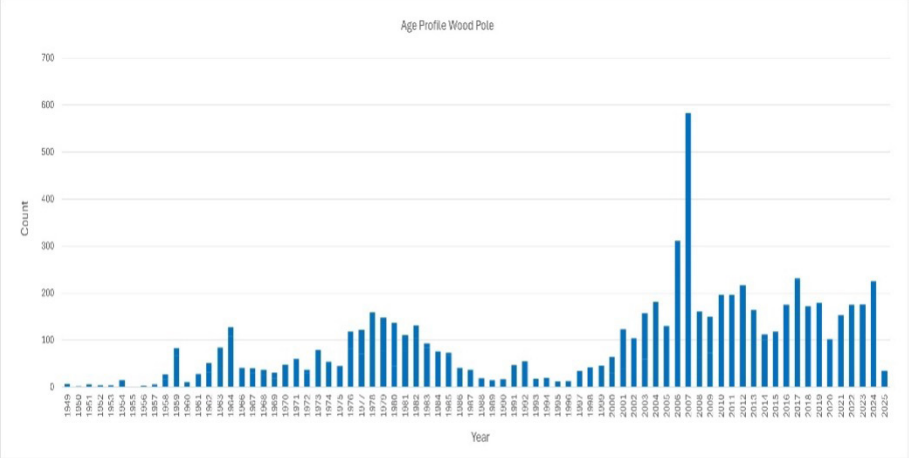
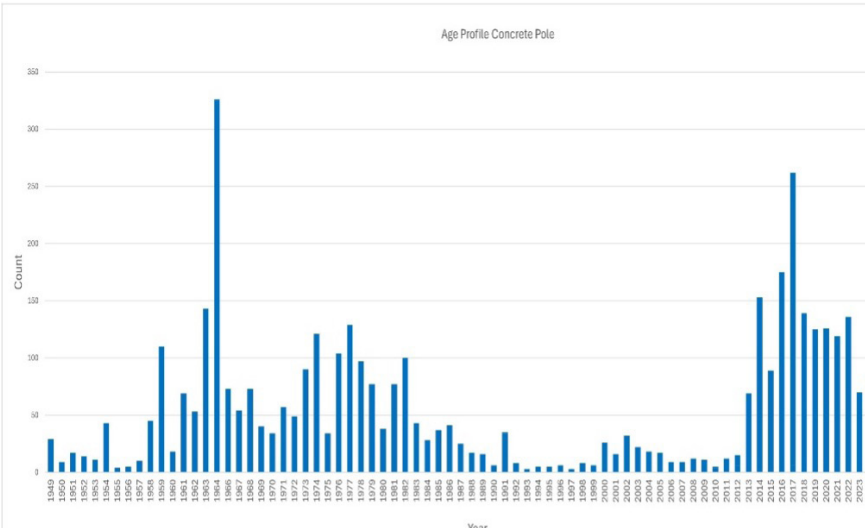


Figure 30 - Age profile of wooden poles



Concrete and wood poles have different condition assessment criteria but are graded using a common index. The asset health of the distribution poles by type are shown below:

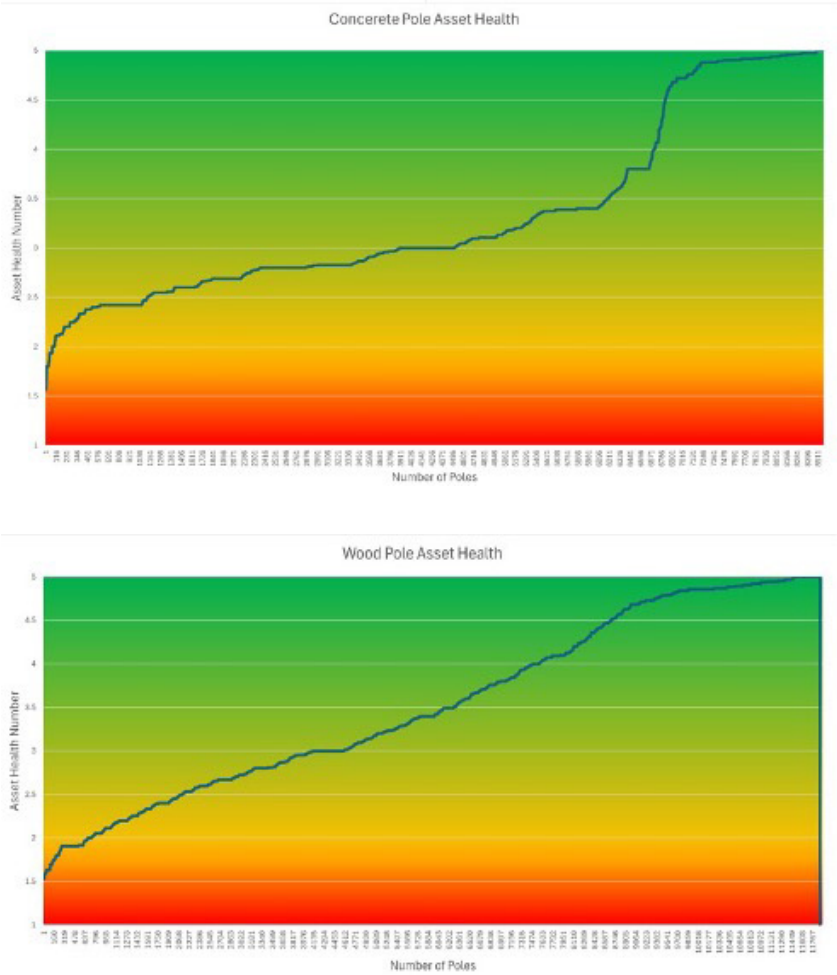


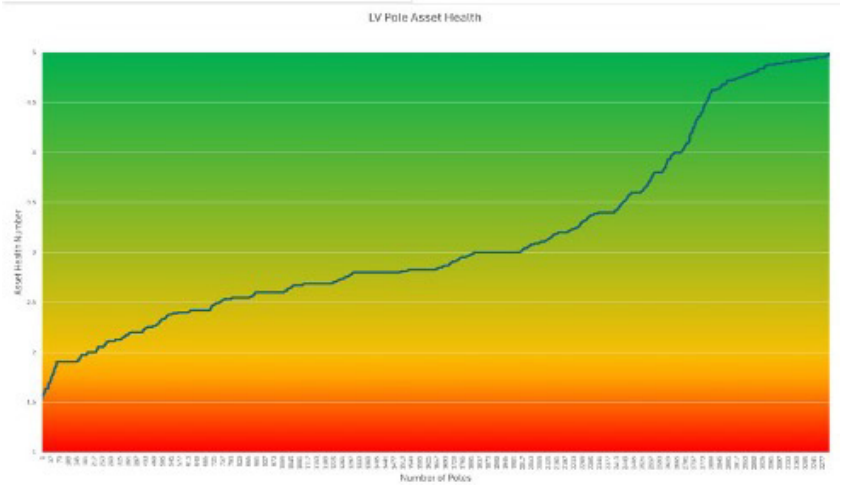
Figure 31 – Asset health profiles for distribution poles

Asset Risks

Major risks to the distribution poles include:

- Vehicle impact – much of the network is built adjacent to public roads
- Erosion of land around foundations
- Extreme weather events such as high winds or heavy snow
- Degradation of structural strength due to age-related issues such as pole decay.

Applying criticality factors with our Asset Health indices can identify the total risk associated with each structure. Likelihood of Failure correlates with Asset Health, and Consequence of Failure correlates with Asset Criticality. Likelihood of Failure correlates with Asset Health, and Consequence of Failure correlates with Asset Criticality.



Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Ground based visual inspection of pole top, cross arms, and pole top hardware Testing of pole structural condition Thermal inspection of joints and cable terminations Vegetation-related defects are recorded to be managed in accordance with the Electricity (Hazards from Trees) Regulations 2003	5 yearly
Vegetation patrol	Overhead lines are inspected by our specialist vegetation team to maintain safety and reliability	5 yearly
Aerial inspection	Inspection of overhead lines and equipment using either helicopters or drones – may include visual inspection, Corona camera inspection, thermal imaging, and LiDAR data capture	As required

Renewal and Refurbishment Programme

Renewals in the distribution network are largely repairs and replacements to structures based on the results of line patrols. Individual poles are generally earmarked for removal due to condition and changed in a suitable shutdown period. The renewal budget for pole and hardware replacement is based on defect rates developed from recent analysis of line patrols. Sometimes, the overall age and condition of a particular stretch of overhead line will require a complete rebuild.

During renewals we may also improve the reliability of the network by replacing overhead circuits with underground, or by physically separating circuits to increase route diversity, when it is economic to do so.

6.13.6 Distribution Lines

Distribution cables operate at 11kV and perform the same function as distribution lines in that they connect the zone substation to distribution transformers. They are mainly installed in urban areas and usually in publicly accessible areas such as along public roads or within the property they service, so any failures can be disruptive to our customers and the public. NWL has 93km of distribution cables across the network and they are a mixture of copper and aluminium conductors insulated with PILC or XLPE:

PILC (Paper Insulated Lead Covered) cables are manufactured by using layers of paper impregnated with a compound mineral oil as insulating medium, both as individual core and overall insulation. They are a long lasting and proven technology with some cables remaining in service for over 100 years. They offer less flexibility during installation and usually allow a lower load rating for any given size than XLPE, as they have a lower maximum operating temperature. Jointing and connecting them usually requires a higher skillset

XLPE (Cross Linked Polyethylene) cables enhance the temperature properties of the insulation, allowing strength and chemical stability to be maintained at higher operating temperatures (and loads). Impact and tensile strength, scratch resistance, and resistance to brittle fracture are also enhanced over other insulation types. Early production (pre-1985) XLPE cables were found to be vulnerable to “treeing”, which results in accelerated breakdown of the insulation.

A summary of the cable types on our 11kV distribution system is provided in the table below.

Conductor type	Length
Cu PILC	9km
Cu XLPE	1 km
Al PILC	8 km
Al XLPE	73 km
Unknown	3 km

Table 11 - Summary of 11kV distribution cable types

Age Profiles and Population Data

The average life expectancy we apply to PILC cables is 70 years, modern XLPE cables is 55 years, while first generation XLPE is 45 years. An age profile for the various sections is shown below.

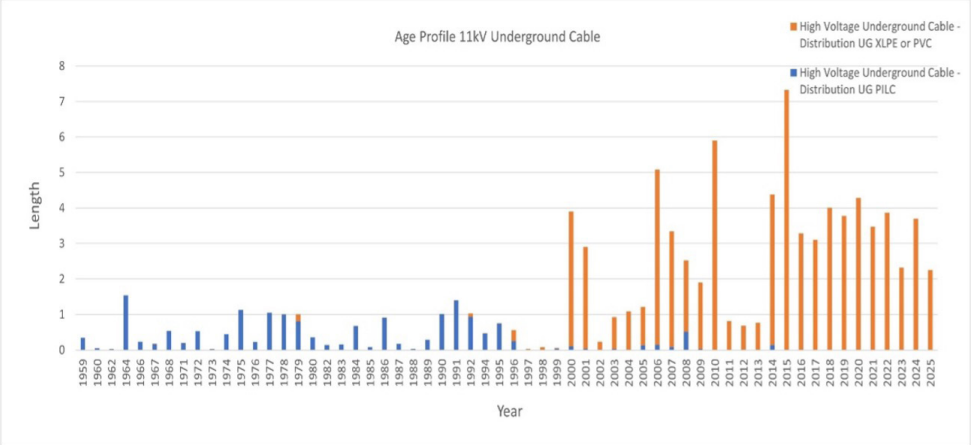
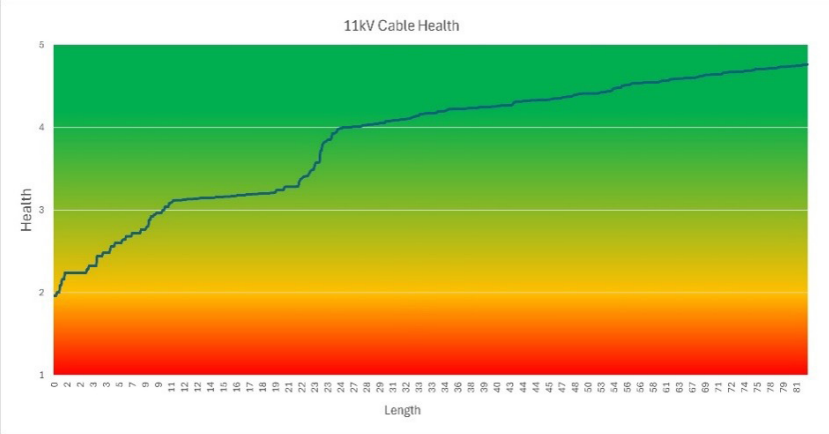


Figure 32 - Age profile of 11 kV cables

The asset health profile of these assets is shown below.



Asset Risks

Major risks to the distribution cables include:

- Earthquake and other land movement around cables
- Damage by excavation and other works in the vicinity
- Material degradation of the insulation
- Sudden failure of pitch filled terminations.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Partial Discharge Monitoring	Distribution cable terminations as part of substation partial discharge monitoring	Annual

Renewal and Refurbishment Programme

Given the asset type, age and condition, there are no renewal or refurbishment plans for NWL's distribution cables within the planning period unless they are part of a greater project.

The outdoor pitch-filled terminations are scheduled for replacement during the planning period.

6.13.7 LV Cables

Our LV cables connect distribution transformers which are usually next to public roads and along local streets to customers' properties. They operate at 400V, total 109km in length and are a mix of copper and aluminium conductors predominantly within urban areas:

- **Copper cables** are generally used to supply smaller groups of customers (fewer than 10) and are usually installed in short sections along accessways or across roads

Aluminium cables are used for the main sections of the 400V distribution network and are usually installed along public roads, along the frontage of the properties they service.

A summary of the cable types on our LV system is in the table below

Conductor type	Length
Copper	30 km
Aluminium	51 km
Unknown	28 km

Table 12 - Summary of LV line types

Age Profiles and Population Data

The average life expectancy we apply to LV cables is 70 years. An age profile for the various sections is shown below.

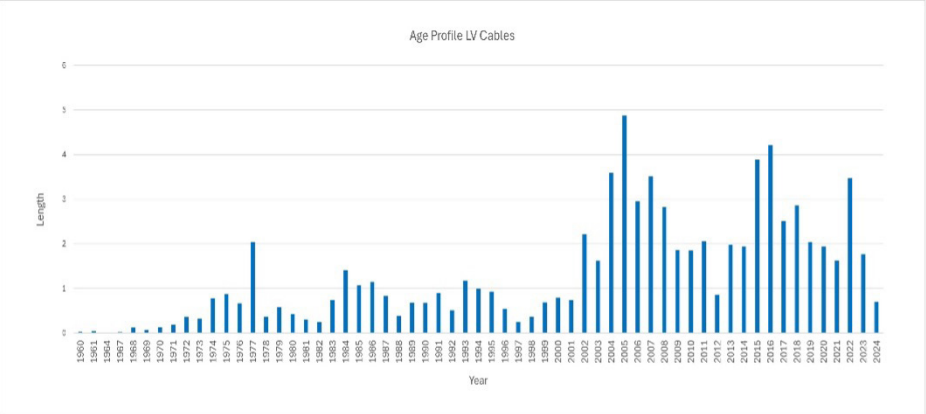


Figure 33 - Age profile of LV cables

The asset health profile of these assets is shown below:

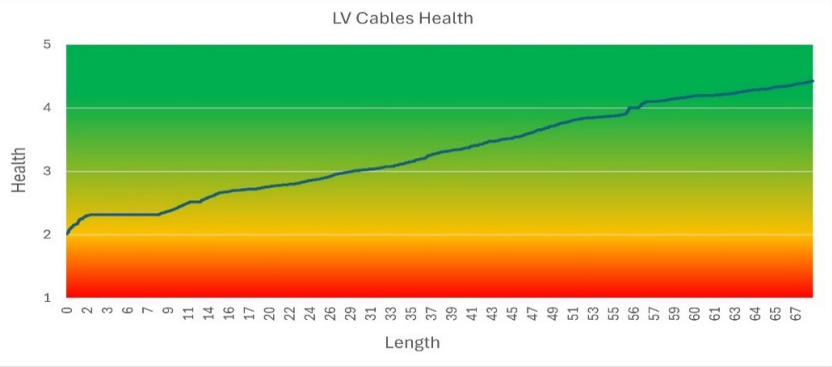


Figure 34 - Health profile of LV cables Asset Risks

Major risks to the LV cables include:

- Earthquake and other land movement around cables
- Damage by excavation and other works in the vicinity
- Material degradation of the insulation
- Overheating of joints and terminations.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Ground patrol	Ground based visual inspection for any damage, such as broken strands Thermal inspection of joints and terminations Part of the distribution transformer inspection programme	Annual
Partial Discharge Monitoring	Distribution cable terminations as part of distribution substation partial discharge monitoring	Annual

Renewal and Refurbishment Programme

The LV cable fleet is generally in good health, with fault rates remaining consistently low.

No targeted LV cable renewal programme is proposed during the AMP period. Risk is being actively managed through enhanced network visibility. Real time monitoring is now in place across most urban LV feeders, providing data to allow early identification of emerging issues and constraints. This supports timely understanding of risk, with the data supporting analysis of the best-value investment options which may include optimising the network, using non-network solutions, or traditional upgrades, especially as we start to see EV growth on our networks.

We will continue to refine our LV cable fleet strategy as we learn more from ongoing LV feeder monitoring.

6.13.8 Distribution Cable Enclosures

We have 2,886 distribution cable enclosures that allow staff access to key parts of the cabling system, including fusing and isolation points, while preventing the public from accessing energised network equipment. The enclosures are differentiated by purpose:

- **Distribution cabinets** house network switching equipment and isolating points. They allow the system to be reconfigured if each radial feeder is capable of supplying or can be supplied from the feeder next to it. There are two material types used for this sort of enclosure - steel and polycarbonate
- **Service fuse boxes** house the equipment that isolates customer's installations from the network. They are generally installed on alternate boundaries on both sides of the street. Several types of distribution box are in service, with most having a steel cover on a steel base frame. Modern types are entirely made from an insulated polymeric material with additives that reduce UV degradation.

The enclosures are made from coated steel, concrete, polymer plastics or polycarbonates:

- **Coated steel enclosures** were the default type of enclosure on the network until 2008. They are structurally strong but are vulnerable to corrosion due to ground water acidity/alkalinity and can be conductive if a fault occurs with the equipment inside them
- **Polymer enclosures** are the most used modern type of service fuse box. They are not as structurally strong as steel but are not vulnerable to corrosion from ground water acidity/alkalinity. They are made of an insulated material which cannot conduct electricity if a fault occurs, but as they are less heat resistant than steel, they can be damaged from the heating effect of an internal equipment fault
- **Polycarbonate enclosures** are the most used modern type of distribution cabinet. They are not as strong as steel but are stronger than Polymer enclosures though more vulnerable to impact. They are not vulnerable to corrosion due to ground water acidity/alkalinity like polymers and are made of an insulated material which can't conduct electricity if a fault occurs. They are less heat resistant than steel but more resistant than polymer enclosures.

About 10% of assets do not have an identified material type. This issue will be resolved as our new inspection programme captures this and other information.

A summary of the enclosure types on our LV system is provided in the table below.

Enclosure Material	Total
Coated steel	737
Polymer	1,660
Polycarbonate	310
Unrecorded	179

Table 13 - Summary of LV box types

Age and Health Profile Data

The average life expectancy we apply to enclosures is 45 years. The age and health profiles of the assets is shown below.

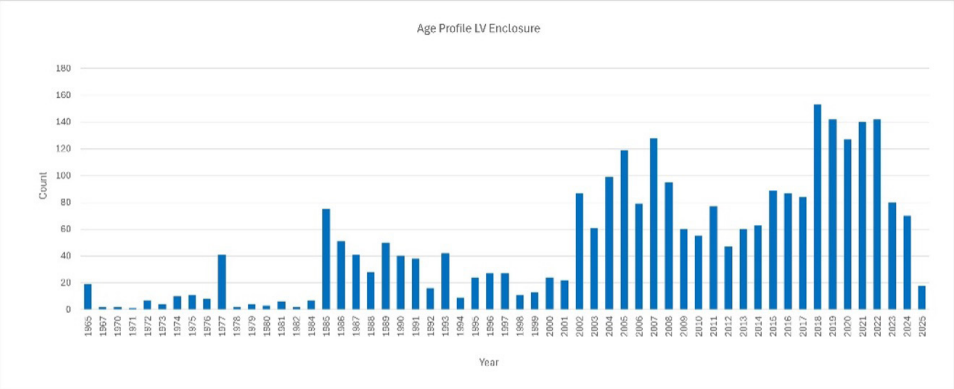


Figure 35 - Age profile of enclosures

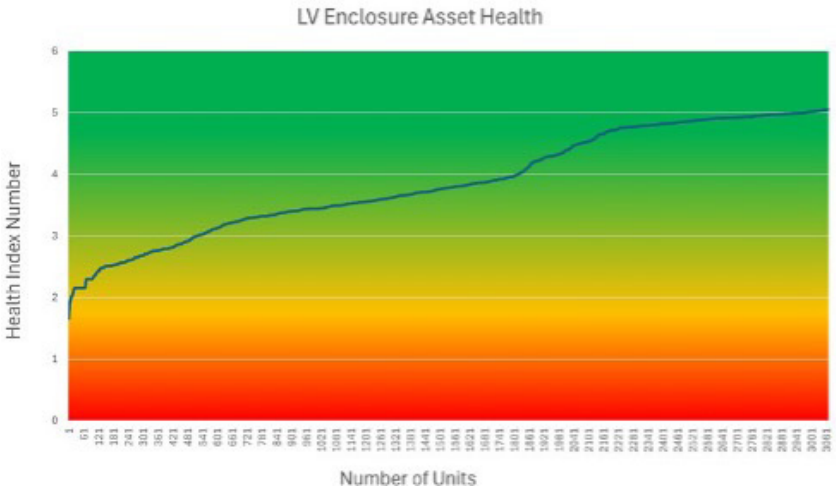


Figure 36 - Health profile of enclosures

Asset Risks

Major risks to the cable enclosures include:

- Vehicle impact – many enclosures are built adjacent to public roads and private accessways
- Erosion of land around foundations
- Material degradation of the asset such as corrosion or UV damage
- Overheating of joints and terminations.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Condition and security checks	Visual inspection of enclosures to identify any public safety risks	5 yearly
Partial Discharge Testing	Cable terminations as part of visual inspection	5 yearly

Renewal and Refurbishment Programme

Our policy is to replace enclosures when they cannot remain in service until the next scheduled inspection. We believe this is the correct approach for managing the end of life of enclosures, as it reduces risk by not leaving them in service if they are in a marginal condition.

6.13.9 Distribution Switchgear

We use 11 kV reclosers and sectionalisers extensively in rural areas to automatically clear transient faults, and to minimise the areas affected by fault outages. Most of these devices are linked to the SCADA system and can be remotely monitored and operated.

11 kV oil-filled ground mount switchgear (individual fused switches and ring main units) have been commonly installed since 1990, as part of the major urban undergrounding programmes that began then, and the more recent network reinforcement programmes.

Distribution spur lines and individual 11 kV service lines to customer premises are often connected to the main feeder via drop out type fuses or manually operated ABSs. These provide a control point for disconnecting the spur line during a fault or planned outage, and the fuses provide a level of discrimination for faults on the fringes of our network, minimising the effect of faults on remote parts of the network. Other such switches are used as manual sectionalising points during fault response or to minimise outages during planned work.

LV switchgear is classified into two groups:

- **Enclosed switchgear** includes vertical, fully shrouded switchgear, such as the Weber Verti-group unit. These have been installed from the early 1990s until now. There are 160 of these on the network.
- **J-Type switchgear** has a variety of types. These were installed on our network between 1964 and 1997. There are 100 of these units on the network.

Age and Health Profiles

Life expectancy for these assets is 35 years for High Voltage (HV) overhead equipment, 40 years for HV ground sited equipment and 45 years for LV switchgear. Age profiles for the various sub-types are provided below.

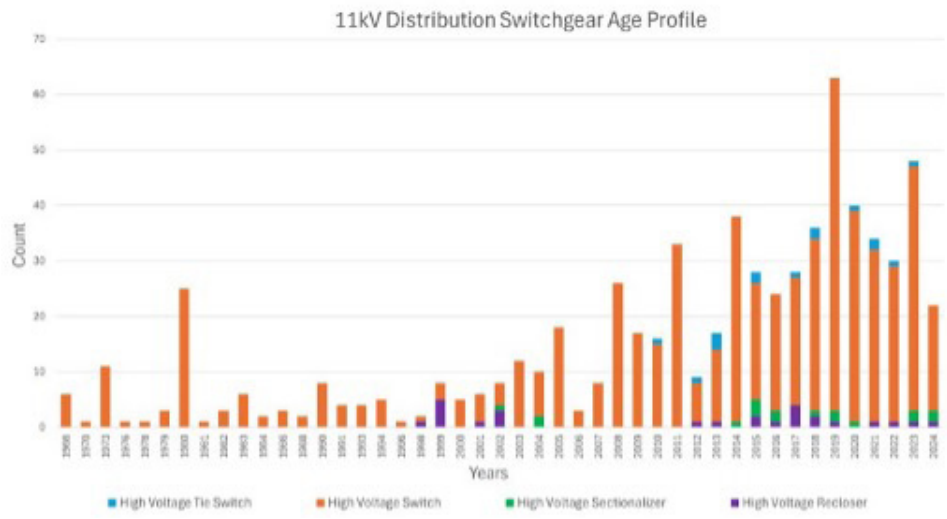


Figure 37 - Age profile of feeder tie switches, HV switches, sectionalisers, and reclosers

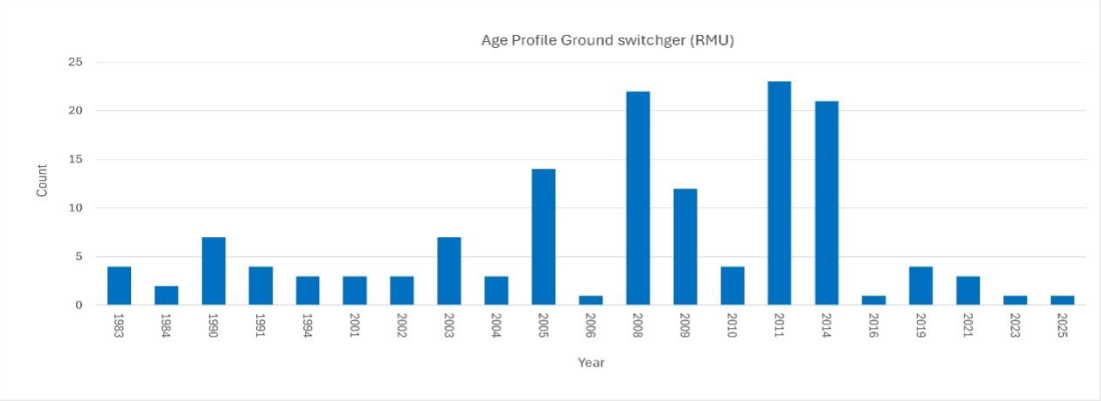


Figure 38 - Age profile of ground sited switchgear (including RMUs)

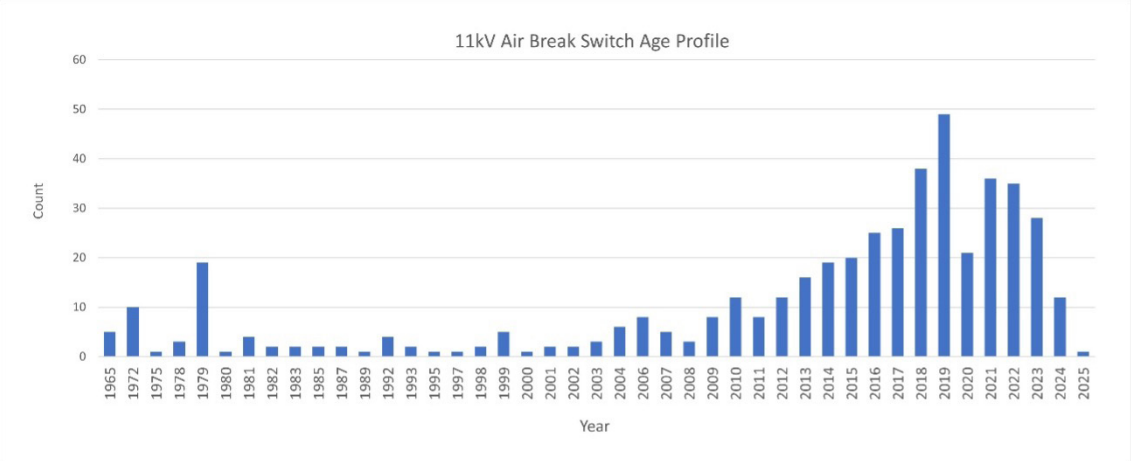


Figure 39 - Age profile of air break switches (ABS)

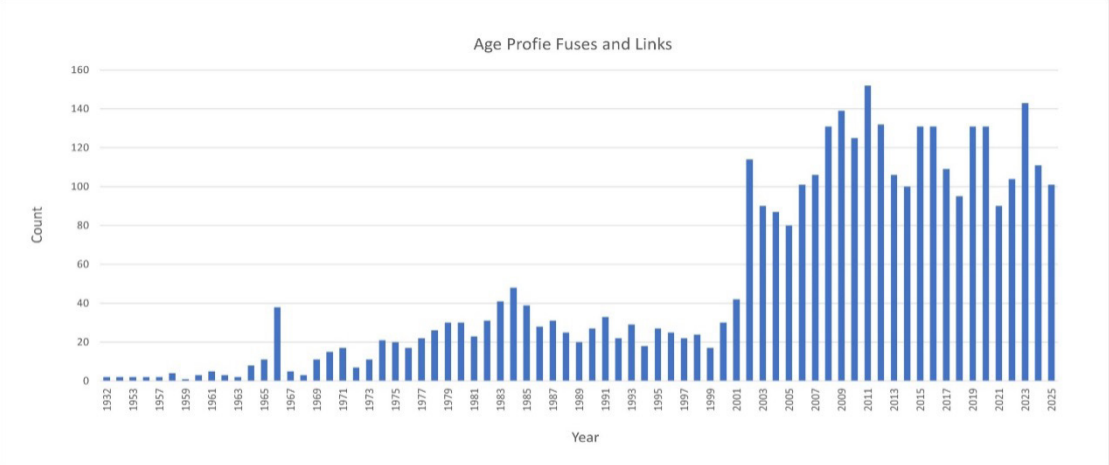


Figure 40 - Age profile of HV fuses

We will often manage distribution switchgear based on the design or age of the equipment, as common failure points become obvious in a particular design. The health profiles of 11 kV distribution switchgear are shown in the following figures:

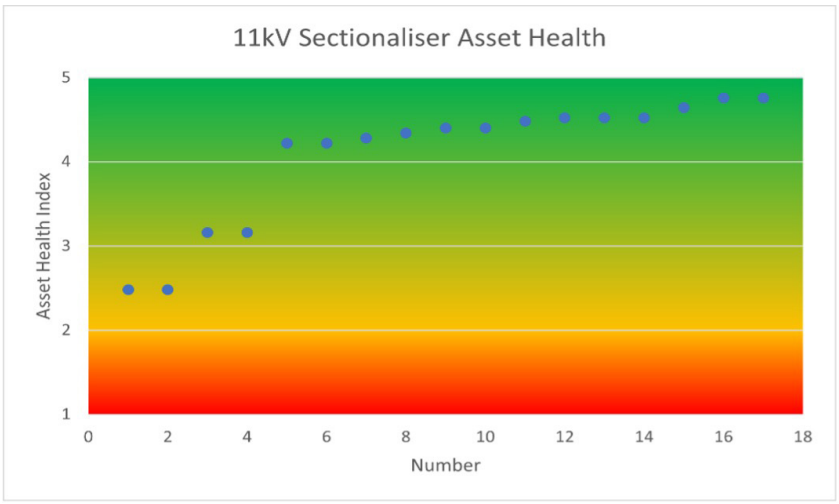


Figure 41 – Health profile of distribution sectionalisers

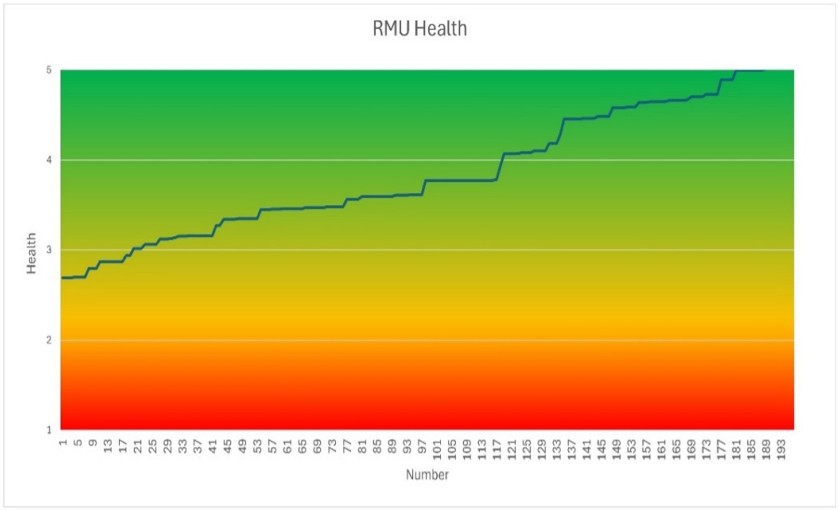


Figure 42 – Health profile of ground mounted distribution switchgear

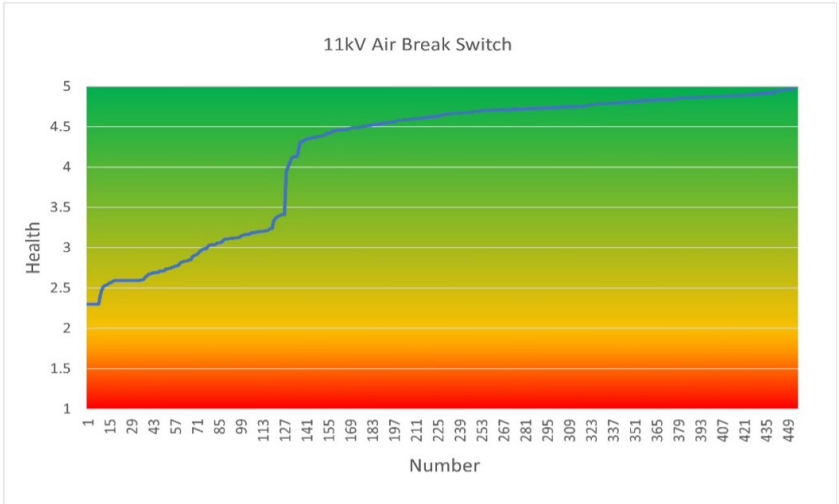


Figure 432 – Health profile of pole mounted air break switches (ABS)

Asset Risks

Major risks for the asset class include:

- Pole mounted ABSs, reclosers, sectionalisers, pole mounted fuses:
- Lightning – although surge arresters are widely used, a direct strike may be destructive
- Animal contacts, such as possums and birds
- Cracking of porcelain insulators during operation
- Overheating and failure of older fuse gear during service
- Ground mounted switchgear:
- Cabinets and casings degrading or becoming unsecure
- Vehicle incidents, as many are located in the road reserve
- Failure due to dirty insulating oil
- Failure of cable terminations on the unit
- Failure of mechanism during switching.

The operational risk associated with the failure of distribution switchgear depends on location and use. In-service failure of a sectionaliser or recloser on a major feeder could either lead to the loss of more customers than necessary during a fault (because upstream protection must clear the fault) or prevent a planned alternate feed being used to restore lost load during an outage. By comparison, an ABS or fuse on a spur line or a LV fuse supplying one house has lower operational risk.

Safety-related risks are generally lower for pole mounted equipment but can be more important for ground mounted equipment, where operators are standing nearby during switching.

Recent experience in New Zealand and overseas has shown that some older oil-filled switchgear can fail during operation in a way that is dangerous to the operator. Following this, we have stopped manual operation of these units and instead use a remote actuator. In practice, these operational restrictions are increasing switching complexity and outage times on the network. We have reviewed and changed our maintenance practices to reduce this risk.

The majority of the oil filled ring main units on our network are Andelect/ABB SD types. These units are no longer manufactured and in some cases are not supported by the manufacturer. We are replacing them at a rate of around three per year with modern vacuum switch ring main units, often with remote SCADA operation. These will be installed in locations selected to enhance our resilience to faults. This will support future “smart grid” features, such as ring feeders with automatic fault isolation and detection. Removal of the oil filled switchgear will provide an ongoing stock of spares for the remaining units in service.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Line patrol	Visual and thermal inspection of HV and LV switchgear and terminations, ground mount and pole mount	5 yearly
Condition and security checks	Visual inspection of ground mounted HV equipment in high traffic urban areas to identify any public safety risks	2 yearly
Partial Discharge Testing	11 kV distribution switchgear discharge testing	5 yearly
RMU Maintenance	Cleaning, operational testing, oil replacement	5 yearly
ABS maintenance	Cleaning, lubrication, checking operation	5 yearly
Recloser and sectionaliser operational checks	Operational tests and checks. Replace batteries	5 yearly

Renewal and Refurbishment Programme

The renewal and refurbishment programme for the planning period includes:

- Replace some ABSs with sectionalisers in rural feeders to minimise outage areas during faults
- Replacement of 11 kV ABSs based on condition assessment, or ABS has signs of damaged, cracked or chipped insulators.
- Replace other switchgear based on condition assessment from scheduled inspections
- Continue to replace oil filled ring main based on assessment with SCADA operable RMUs of the vacuum circuit breaker type to improve operational performance of the network
- Continuing to replace older J-type LV switchgear with more modern enclosed switchgear that is safer to operate.

6.13.10 Distribution Transformers

The 11 kV distribution network supplies approximately 3,024 distribution transformers, ranging from small pole mounted units supplying individual rural customers through to larger ground mounted transformers supplying urban LV networks. These assets play a critical role in converting 11 kV supply to 400/230 V and enabling the reliable delivery of electricity to customers across a diverse geographic area.

In urban areas, distribution transformers are operated within an interconnected LV network where practicable, allowing neighbouring transformers and feeders to support supply restoration during outages. This configuration improves resilience and reduces the customer impact from planned and unplanned outages.

Network Waitaki manages distribution transformer capacity and performance using our real time low voltage monitoring system. Monitoring is targeted to locations with higher customer density, higher load uncertainty, known constraints, or emerging risks associated with electrification, electric vehicles, and changing customer behaviour. This approach provides continuous visibility of transformer loading, phase balance, voltage performance, and power quality, enabling earlier identification of emerging issues and more informed, timely intervention.

Larger customer supplies may be served by dedicated transformers and LV circuits where required to manage operational risk and service requirements. Rural customers are predominantly supplied by smaller, pole mounted transformers configured to reflect lower customer density and radial supply arrangements.

Voltage regulators are installed at selected locations on the 11 kV distribution network to manage voltage performance on long or heavily loaded feeders. These assets are typically used as interim or targeted solutions where local voltage regulation is required, particularly in areas affected by irrigation load or feeder length constraints. Network Waitaki currently operates 14 voltage regulators across the network.

Age Profiles and Population Data

The average life expectancy that we apply is 45 years for distribution transformers and 25 years for voltage regulators. The age profile of our ground and pole mounted transformers is shown below

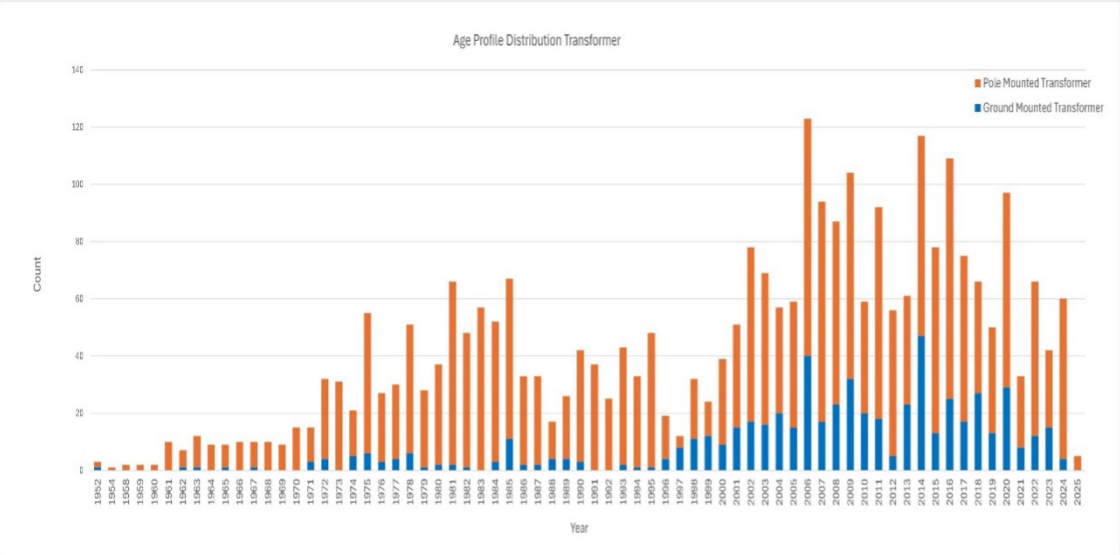


Figure 44 – Age profile of distribution transformers Health profiles for distribution transforms are shown below.

Health profiles for distribution transforms are shown below.

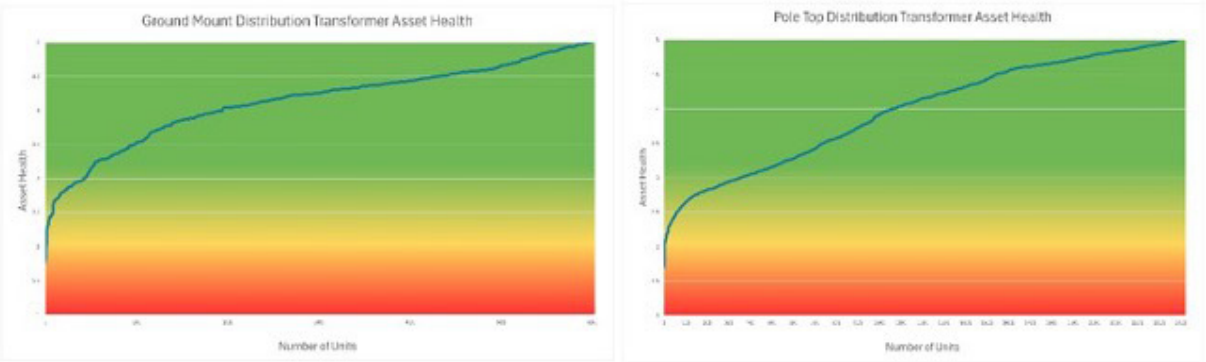


Figure 45 - Health profiles for distribution transformers

Asset Risks

The main risks to this equipment class include:

- Oil leaks into the environment
- For pole mount transformers – animal contacts, such as possums and rats
- For ground mount transformers – vehicle incidents (many are located in the road reserve)
- Overloading of CBD transformers due to offloading of adjacent transformers during faults or planned outages
- Corrosion that may cause issues with security of cabinets and doors.

Inspection and Maintenance Programme

Activity	Summary	Frequency
Line patrol	Visual and thermal inspection of transformers	5 yearly
Condition and security checks	Visual inspection of transformers in high traffic urban areas to identify any public safety risks	2 yearly
Earth Testing	Test earth continuity and values	5 yearly

Renewal and Refurbishment Programme

The renewal and refurbishment programme for the planning period includes:

- General condition-based refurbishment work such as painting cabinets, fixing doors, or any safety-related issues
- Condition based replacements, based on overall condition, or where a transformer is particularly old and is showing signs of end-of-life conditions
- Overhaul regulator transformers based on manufacturer's recommendations.

Our distribution transformer fleet is generally reliable and robust with low levels of failures. We aim to maximise the utilisation of our transformers without overloading them during normal operation, although we will apply a managed approach to short term overloading in the event of a fault.

We have installed LV monitoring covering 80% of our urban distribution transformers. This system provides realtime monitoring of feeder (to individual phase level) and transformer loading and voltages, allowing much greater information on how our assets are being used, and gives visibility of any overloaded assets, so we can reduce loading before life is compromised.

We plan for a steady number of transformer replacements throughout the planning period to maintain the average age of the fleet at a reasonable figure. Replacements will often naturally synchronise with other works such as capacity or configuration upgrades.

6.13.11 Distribution Network - Maintenance and Renewal Expenditure

Distribution ($000)	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Service Interruptions & Emergencies	327	327	327	327	327	327	327	327	327	327
Routine & Corrective Maintenance and Inspections	902	942	900	940	900	940	900	940	900	940
Asset Replacement & Renewal (Conductors)	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231	1,231
Asset Replacement & Renewal (Poles)	2,750	2,788	2,788	2,788	2,788	2,788	2,788	2,788	2,788	2,788
Asset Replacement & Renewal (Other Assets)	2,290	1,982	2,096	2,166	2,176	2,332	2,383	2,494	2,494	2,494
Asset Relocations	0	0	0	0	0	0	0	0	0	0
Vegetation Management	847	847	847	847	847	847	847	847	847	847
Total	8,408	8,179	8,251	8,361	8,330	8,527	8,538	8,689	8,649	8,689

6.14 Secondary and Support Systems

6.14.1 Overview of Secondary and Support Systems

Secondary and support systems - including SCADA, communications, and protection devices - are essential for the safe and efficient operation of our primary network assets. While much of the hardware is co-located with network assets, core system elements are centrally managed.

6.14.2 Management Approach

We manage these systems in partnership with manufacturers and suppliers, leveraging their expertise for advanced maintenance and support. Recognizing the increasing risks of obsolescence, cyber threats, and limited data capabilities, we completed a strategic review of our communications and OT platforms. This has led to the development of an Operational Technology (OT) Roadmap, which guides our investment and modernisation priorities.

6.14.3 SCADA

Our SCADA system provides real-time digital oversight and control of the sub-transmission, zone substations, and HV distribution network. It is fundamental to safe, reliable operations, enabling remote management, advanced protection schemes, and rapid response to network events. The system connects to all zone substations and most field devices, supporting remote control, monitoring, and alarm functions.

Age Profiles and Population Data

The current SCADA platform is approximately 15 years old, aligning with its expected asset life. While currently supported it lacks a development pathway and the proprietary hardware will not be manufactured beyond 2027. Technical support may continue using “best endeavours” from 2028 until 2032.

Planning is underway to select and implement a replacement system before this date, with main options being various new platforms as standalone or shared solutions with other utilities.

Asset Risks

The principal risk to our SCADA system is obsolescence. As the platform approaches end of life, the risk from hardware failure increases due to age profiles, and spare parts availability. This risks impacting our ability to maintain effective network operations, integrate new technologies, and respond to evolving cyber security threats. Redundancy measures, such as master and backup computers and an offsite control room, help mitigate operational impacts at present, but will not be sufficient to address the increasing risk of system obsolescence.

Inspection and Maintenance Practices

Monitoring, testing, and maintenance of the SCADA system are provided through a support contract with the system provider until 2028 when the system will become unsupported.

Renewal and Refurbishment Programme

SCADA renewal is a key focus of our OT Roadmap. We intend to decide on a replacement option by 2026, ensuring continuity of advanced protection, safety, and operational capabilities. Options include replacement with a new system, or in collaboration with another EDB, using an implemented system as a service.

Presently RTUs are replaced upon failure or during major site upgrades, with spares held in stock. At this stage, there is no indication of an increasing trend in failure rates.

6.14.4 Communications

Our communications network comprises a range of voice and data systems that are essential for the safe and effective operation of our distribution network. These systems enable reliable contact between the Control Room and field staff, as well as remote monitoring and control of network equipment - minimising the impact of faults and supporting efficient deployment of resources.

The network includes:

- **VHF analogue radio** for mobile and portable communications, operating via linked hilltop repeaters
- **UHF radio data** for transmitting network device status to the Control Centre
- **Public cellular networks** for non-operational communications and as a backup for VHF radio
- **Owned or leased dark fibre optic cables** connecting automation devices at zone substations
- **Radio repeaters** at Cape Wanbrow, Station Peak, and Cloud Hill, shared by UHF data and VHF radio systems.

Age Profiles and Population Data

The typical life expectancy we allow for these assets is 15 years.

Asset Risks

Our communications and OT systems face significant risks from aging and obsolescence, as identified in our OT Roadmap. These risks threaten our ability to maintain reliable network operations, integrate new technologies, and respond to evolving cyber security challenges. While redundancy and alternative communication methods exist, reliance on third-party providers for backup systems introduces additional operational risk.

The radio network is particularly vulnerable to extreme weather events, as the remote locations of repeater sites can hinder timely access and repairs.

Further detail on specific communications enhancement projects and future network initiatives is provided in Section 7.8.

Inspection and Maintenance Programme

Communication systems are maintained through annual site checks of radio equipment.

Renewal and Refurbishment Programme

Communication system components are replaced upon failure, with spares held in stock. A program of enhancement projects is underway to address ongoing risks, as detailed in Section 7.8.

6.14.5 Power Quality Monitoring

We now have units monitoring LV feeders, supplying over 80% of our urban customers. The units are installed at ground mount locations in LV distribution switchboards inside transformer cabinets or inside distribution box cabinets, or to pole mount locations. The units measure voltage and current over three phases and up to six LV feeders per unit. The measured data is sent via mobile network to an online hosting service, and is then used to calculate current imbalance, neutral current, congestion, total harmonic distortion, and PV injection.

The ground mount unit housing is made from polycarbonate, and the pole mount unit housing is made of a UV stable polycarbonate for use in outdoor environments. The units are IP 65 rated and are compact enough to fit into smaller DB cabinets.

A summary of the installation location types on our LV system is in the table below:

Installation Location	Total
Ground mount – transformer cabinet or DB cabinet	140
Pole mount	39

Table 14 – Installation types of LV monitors

Age Profiles and Population Data

The typical life expectancy of this equipment is 15 years. All units were installed between 2023 and 2025.

Asset Risks

- Vehicle impact – most units will be located in or on assets adjacent to public roads
- Overheating or failure of electrical components and communication components
- Water/weather ingress in transformer or DB cabinet
- Corrosion on fuse terminals
- Failure of power leads, Rogowski coils and other secondary equipment.

Inspection and Maintenance Programme

Continuous monitoring of the LV monitoring units is undertaken by the vendors platform under a support agreement. Any abnormalities automatically trigger an alarm and are reported back to NWL.

LV monitors and secondary equipment are to be replaced upon failure and are to be tested in house before being returned to the vendor.

The LV monitor will be visually assessed for physical condition during distribution transformer inspections.

Renewal and Refurbishment Programme

Given the asset type, age and condition there are no renewal or refurbishment plans for NWL's LV monitoring units within the planning period.

6.14.6 Load Management System

Network Waitaki operates a load management (ripple injection) system to support network operation during peak demand and emergency conditions. The primary purpose of the system is distributor controlled demand response, predominantly through the control of hot water and irrigation load. A secondary function is the coordinated management of common load types such as streetlighting.

The load management system comprises centralised ripple injection plant and associated control systems supplied by Landis & Gyr. The central plant injects a carrier frequency with a digital signal into the electricity network, enabling remote control of connected loads.

Network Waitaki also owns a fleet of ripple receivers installed at customer premises and on streetlighting circuits. These receivers form part of the regulated distribution asset base and are used to receive load control signals across the network.

The existing load management system continues to provide a reliable and cost effective form of emergency demand response, and Network Waitaki intends to maintain this capability in service for the duration of the AMP period.

Age Profiles and Population Data

The typical life expectancy of this equipment is shown in the table below.

Asset Description	Standard life expectancy (years)
Ripple plant	20
Ripple receivers	15

There is currently no evidence of an increasing trend in failure rates across the load management system or associated receivers.

Asset Risks

Load Management Plant (Ripple Injection System)

Failure of the centralised ripple injection plant would affect a large number of customers by removing Network Waitaki's ability to implement distributor controlled demand response. This could reduce operational flexibility during peak demand periods or emergency conditions.

This risk is actively managed through asset design and operational controls. Network Waitaki holds a fully functional spare ripple injection controller, enabling rapid restoration of load management capability in the event of a primary system failure. The plant is maintained to ensure ongoing availability, and failure risk is considered low.

Ripple Receivers

Ripple receivers operate as individual devices at customer premises and on streetlighting circuits. Failures are isolated and localised, affecting only the connected load rather than the wider network.

Observed failure rates for ripple receivers remain low. The asset fleet is managed on a run to failure basis, which is appropriate given the modular nature of the equipment, low unit replacement cost, and limited consequence of individual failures. Network Waitaki holds a significant stock of spare receivers, and established processes are in place to identify and rectify faults promptly.

Overall, the risk associated with ripple receiver failures is low and does not present a material risk to network reliability or safety.

Inspection and Maintenance Programme

Load Management Plant is inspected and maintained annually during Zone Substation inspections.

There is no active inspection or maintenance regime for ripple receivers. These are replaced on failure.

Renewal and Refurbishment Programme

Load Management Plant is not expected to reach end of life within the planning period. Relays and receivers are replaced on failure. NWL carries a quantity of spares based on historical failure rates.

Distribution ($000)	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Asset Replacement & Renewal	0	300	0	0	0	0	0	0	0	0
System Operations and network Support	1,232	632	632	632	632	632	632	632	632	632
Total	**1,485**	**1,185**	**885**	**885**	**885**	**885**	**885**	**885**	**885**	**885**

6.15 Total Maintenance and Renewal Expenditure Summary

Forecast expenditure for renewals and maintenance are summarised by asset category below.

Table 15 – Maintenance and renewal expenditure forecast by category and asset type

$000s	Asset Class	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Asset Relocations	Zone Substations	0	0	0	0	0	0	0	0	0	0
	Sub-transmission	0	0	0	0	0	0	0	0	0	0
	Distribution	0	0	0	0	0	0	0	0	0	0
	Secondary & Support	0	0	0	0	0	0	0	0	0	0
Replacement & Renewal	Zone substations	945	2,694	1,910	1,804	1,684	1,804	1,684	1,804	1,684	1,794
	Sub-transmission	643	606	549	549	287	287	287	287	287	287
	Distribution	6,137	5,871	5,986	6,055	6,065	6,221	6,273	6,384	6,384	6,384
	Secondary & Support	0	300	0	0	0	0	0	0	0	0
Total	Capex	7,726	9,473	8,446	8,410	8,037	8,314	8,244	8,476	8,355	8,465
Replacement & Renewal	Sub-transmission	100	100	100	100	100	100	100	100	100	100
	Distribution	135	135	135	135	135	135	135	135	135	135
Service Interruptions & Emergencies	Zone Substations	0	0	0	0	0	0	0	0	0	0
	Sub-transmission	18	18	18	18	18	18	18	18	18	18
	Distribution	496	496	496	496	496	496	496	496	496	496
	Secondary & Support	197	197	197	197	197	197	197	197	197	197
	Vegetation	60	60	60	60	60	60	60	60	60	60
Routine & Corrective Maintenance	Zone Substations	489	491	444	444	444	444	444	444	444	444
	Sub-transmission	229	193	229	290	229	229	229	229	229	229
	Distribution	902	942	899	940	899	940	899	940	899	940
	Secondary & Support	1,232	632	632	632	632	632	632	632	632	632
	Vegetation	847	847	847	847	847	847	847	847	847	847
Total	Opex	4705	4111	4057	4159	4057	4098	4057	4098	4057	4098
Grand Total		12,431 1	13,584 4	12,503 3	12,569 9	12,094 4	12,412 2	12,301 1	12,574 4	12,412 2	12,563 3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EV
At All Times
Network Waitaki
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electric
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NORTH OTAGO
100% PLUG IN ELECTRIC

SECTION

07

Our Future Network Plan

07

Our Future Network Plan

This chapter sets out Network Waitaki's forward-looking planning view of future network needs and potential responses. It identifies and assesses options over the planning horizon This plan does not constitute approval or commitment to deliver specific projects, which remain subject to further assessment and governance processes.

7.1 Introduction

In this section we will provide further detail on our:

- Plans to transform our network to support our customers' future energy requirements
- Future energy scenarios and planning assumptions
- Capacity and security analysis
- Potential development responses identified through network planning.

We base our development plans on traditional network solutions due to our comprehensive understanding of costs and benefits. Before progressing a significant project beyond planning, we assess whether non-traditional solutions such as solar, batteries, or the procurement of flexibility services can provide better value for our customers over the lifecycle of the solution.

We value collaboration and standardisation between EDBs and are active members of the following industry groups:

- **Electricity Networks Aotearoa (ENA) Future Networks Forum (Steering Group)**
  Developing strategy and aligned solutions across the industry
- **ENA Regulatory Working Group**
  Working with regulators to develop sound legislation and fair rules
- **South Island Chief Executives**
  Direction setting to enable collaboration between EDBs
- **ENA Communications and Engagement Forum**
  Providing strategic direction and collaboration opportunities
- **ENA Energy Hardship Forum**
  Collaborating, sharing ideas, wins and challenges - how different EDBs support those experiencing energy hardship
- **EEA Flex Talk Project**
  Investigating communications protocols between EDBs and flex providers

7.2 Transforming Our Network

This section describes how we are responding to the changing energy system by progressively strengthening key network capabilities. As an active participant in the ENA Future Networks Forum, we have chosen to align our approach with the ENA Network Transformation Roadmap (NTR), which reflects agreed good practice across the New Zealand electricity distribution sector.

While traditional planning methods remain important, emerging technologies, new connection types, and changing customer expectations mean that existing approaches alone are no longer sufficient. The NTR provides a structured and coordinated framework to assess current capability, identify gaps, and guide network transformation in a controlled and cost effective manner. This supports improved risk management, enables an efficient response to future change, and helps deliver long term value for customers.

This gap analysis has been used to deliberately prioritise a small number of foundational focus areas for this AMP. Actions not identified as a current focus are either dependent on these foundational capabilities, not material given current network conditions, or better addressed at a sector level. This prioritisation is reflected in the initiatives described in Section 7.2.2.

NTR Action	NTR Stage	AMP Focus (FY27)	Gap Analysis / Commentary
Information			
Access to smart meter data	Developing	Foundational focus	Proof of concept completed for 1,000 customers. Business case to be evaluated in FY27.
LV monitoring	Developing	Foundational focus	Real-time monitoring covers ~80% of urban LV feeders. Focus on embedding into planning and operations.
Understand DER deployment	Emergent	Monitor / defer	Low DER penetration. Capability understood not a priority in the current AMP.
Network stability	Developing	Foundational focus	Network model to distribution transformer level. GIS synchronisation and LV extension prioritised.
Provision of network information	Developing	Foundational focus	Hosting capacity maps published to support transparency and future self-service connections.
Network understanding	Developing	Foundational focus	LV data used to model future scenarios and inform investment planning.
Procurement			
Demand response framework	Developing	Monitor / defer	Demand response in place at Oamaru GXP. Further development not required given current DER levels.
Develop contracting for network support	Emergent	Monitor / defer	Peer processes available. No immediate action planned.
Third-party flexibility services	Initial	Not a current focus	Dependent on foundational capabilities and market development.
Enable distribution network trading	Initial	Not a current focus	Dependent on foundational capabilities and market development.
Off-grid power supplies	Developing	Monitor / defer	OGPS considered case-by-case for remote asset renewal decisions.
Standardisation			
Understand new distributed generation	Developing	Foundational focus	DG standards aligned with peer EDBs to support consistent connection processes.
DER connection codes	Developing	Foundational focus	DG connection standards and congestion policy aligned with best practice.
Appliance / DER connection standards	Initial	Not a current focus	Behind-the-meter standards to be led at sector or national level.
Consumer Driven			
Understand new loads	Developing	Foundational focus	Electrification scenarios for EVs and process heat incorporated into demand forecasts.

Asset Management			
Network engineering	Developing	Foundational focus	Common overhead line standard adopted; underground cable standard in development.
Asset management practice	Developing	Foundational focus	Asset management maturity addressed in Section 5.13.

7.2.1 Progress since last AMP

Since the previous AMP, we have made progress against a targeted subset of Network Transformation Roadmap (NTR) actions. Consistent with our overall approach, effort has been focused on strengthening foundational capabilities that improve network visibility, decision making, and risk management, while deliberately deferring actions that are either dependent on these foundations or not material under current network conditions.

Progress is summarised below using the same categories and actions presented in the NTR gap analysis table, providing a clear linkage between assessed gaps, areas of focus, and subsequent initiatives.

Information

LV monitoring and network understanding

Since the last AMP, we have materially improved visibility of LV network performance. Real time monitoring of LV feeders has been expanded and now covers approximately 80% of residential urban customers in Ōamaru, along with selected rural feeders. This has established a baseline for LV performance and enabled early insights into emerging trends.

LV monitoring data is now being used to support future energy scenario analysis at LV feeder level, informing investment planning and network development decisions.

Access to smart meter data

A proof of concept using smart meter data for approximately 1,000 customers has been completed. This demonstrated our ability to securely access and analyse smart meter data and established the commercial and technical arrangements required to build on this capability when a clear business need is identified. Further evaluation of the business case for broader use of smart meter data is planned.

Network stability and provision of network information

We have maintained a comprehensive network model to distribution transformer level and developed a methodology to synchronise this model with our GIS system. This improves alignment between asset records and analytical models and supports capacity, security, and hosting capacity assessments.

We have also published interactive generation and load hosting capacity maps and continue to provide network information through this AMP, improving transparency for customers and stakeholders.

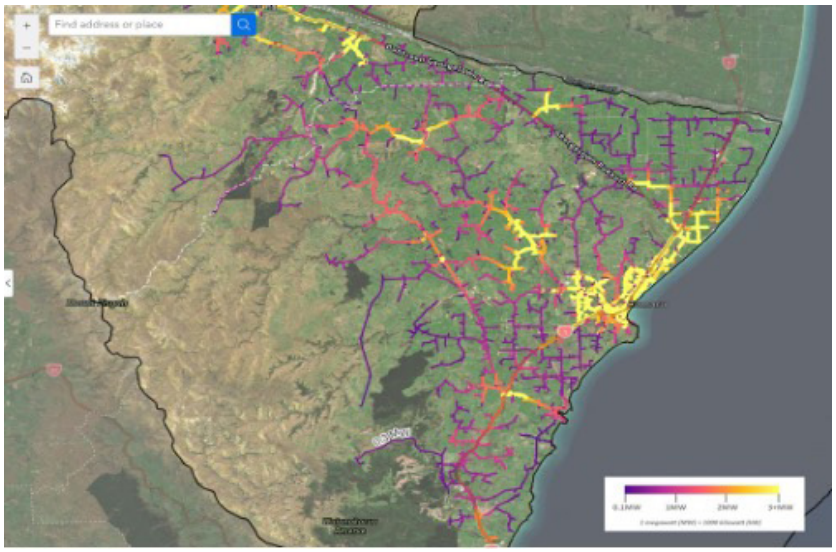


Figure 46 - Generation hosting capacity maps

Procurement

Actions relating to demand response, contracting for network support, and third party flexibility services have been reviewed. Given current levels of DER penetration and market maturity, no material progress has been required since the last AMP. Existing capabilities remain available where needed, and these actions will be revisited as foundational capabilities mature or network conditions change.

Standardisation

Since the previous AMP, we have continued to align standards and processes with sector good practice. Distributed generation standards, congestion policies, and a utility scale generation process guide have been aligned with peer EDBs.

We have also led a group of peer EDBs to develop a common overhead line design standard and have commenced work on a common underground cable design standard. These initiatives support consistency, reduce complexity, and improve efficiency across the sector.

Consumer driven change

Understanding of new and emerging loads has improved, particularly in relation to process heat electrification and electric vehicle uptake. Growth scenarios for EVs, domestic solar, and hot water control have been aligned with good practice and are incorporated into demand forecasting and network planning activities.

Asset management

Progress has continued in strengthening asset management practices and network engineering consistency. Standardisation initiatives and improvements in asset management maturity underpin the delivery of network transformation initiatives and are addressed further in Section 5.13.

7.2.2 Key Initiatives in this AMP

This section sets out the specific network transformation initiatives that will be progressed during this AMP. Consistent with the NTR gap analysis, initiatives are limited to a small number of foundational focus areas that deliver the greatest risk reduction and enable future capability. Actions not identified as a focus are either dependent on these foundations or not material under current network conditions.

Information

LV monitoring and network understanding

Improving visibility of the LV network is a priority focus for this AMP. The emphasis is on completing existing initiatives and embedding LV data into planning and operational decision making.

During the AMP period we will:

- Complete the Low Voltage Feeder Monitoring programme, including transition from project delivery to business as usual use.
- Embed LV monitoring data into planning workflows, including scenario analysis and identification of emerging constraints.
- Evaluate the business case for broader use of smart meter data, informed by outcomes from the completed trial.

Network stability and provision of network information

Maintaining an accurate and current network model underpins effective capacity, security, and hosting capacity assessment.

During the AMP period we will:

- Productionise synchronisation between the network model and GIS, ensuring the model remains current.
- Establish regular hosting capacity updates using the synchronised model.
- Develop a staged approach to extending the model to LV assets, aligned with improvements in LV visibility.
- Procurement
- Actions relating to demand response and network trading, are not a focus of this AMP. Existing capabilities and sector knowledge will be retained, and these actions will be revisited as foundational capabilities mature or network conditions change.

- We have access to templates and guidance from FNF members to allow us to contract for non-network support options (including third party flexibility) as this is identified as a potential solution to a network problem.

Standardisation

Standardisation supports delivery efficiency and consistency but is not treated as a standalone transformation programme.

During the AMP period we will:

- Finalise and adopt a common underground cable design standard with peer EDBs.
- Continue alignment of customer facing documentation and connection processes where this delivers clear efficiency or consistency benefits.
- Identify further standardisation opportunities that support asset management efficiency and resilience.

Consumer driven change

Enabling customer self service connections

With improved LV understanding and a current network model, this AMP focuses on practical steps toward more efficient customer connection processes.

During the AMP period we will:

- Refine and maintain HV hosting capacity maps as a standard planning and customer information tool.
- Develop and validate LV hosting capacity methodologies for both generation and load.
- Define the pathway for integrating hosting capacity information into customer connection processes, in collaboration with Customer Services and Network Information teams.
- Continue participation in ENA Future Networks Forum workstreams supporting standardised approaches across EDBs.

Asset management

Asset management capability improvements are progressed through a standalone AMMAT improvement programme, with assessment outcomes and planned maturity actions described in **Section 5.13,** rather than being duplicated in this section.

7.3 Our Planning Approach

7.3.1 Planning Process

The main drivers for network development projects are:

- Customer demand growth
- Customer reliability
- Security of supply
- Network transformation
- Power quality and thermal constraints.

Where we identify immediate drivers (customer growth, power quality or thermal constraints) we look to deliver projects in time to meet customer needs. When studies indicate future drivers, we will signal the potential investment in our Future Networks Plan.

Before confirming significant projects for delivery, we:

- Review capacity and security gaps, value of risk, and develop a case for change
- Develop a long list of technically viable options (including non-traditional solutions)
- Evaluate options for ability to reduce risk and create a shortlist of options
- Evaluate risk reduction and value over the life of the solution for shortlisted solutions
- Develop a business case for the preferred option.

Once a business case is approved under the appropriate delegated authority, a project may be scheduled for delivery in accordance with approved funding and priorities.

Once a project is completed, we review to check that it delivered the expected benefits.

7.3.2 Planning Criteria

Safety

We prioritise safety for our people and the public during planning, design, and construction stages. We use standard designs or conduct Safety in Design reviews to ensure new designs are safe before construction.

Energy efficiency

Our network is configured to minimize voltage drop and maximize efficiency. Although we pass network loss costs to customers, we aim to reduce their total electricity costs by considering energy losses, where material.

Voltage quality and constraints

The Electricity (Safety) Regulations require us to maintain a supply voltage of 230 V +/- 10% at customer points of supply.

Environmental and sustainability

When analysing options for a solution, lifecycle environmental impact and sustainability are considered. For example, vacuum-type switchgear is chosen instead of Sulphur Hexafluoride (SF6) type where possible, due to SF6 being a potent greenhouse gas.

Equipment rating and selection

Where available, equipment ratings are taken from nameplate data or manufacturers' published data. When this information is unavailable, ratings are calculated from first principles or estimated from similar equipment. Conductors and switchgear are selected to meet the highest demand scenario, provided that the incremental cost of upsizing is less than the future cost of upgrading the equipment. The first stage in the design process is to check for existing standard designs or find one developed by others. Network assets are designed using standard sizes and models to minimise spares, maximise interchangeability, and reduce stock levels. Standard equipment sizes are specified in design standards.

Security of supply and reliability

Security of supply refers to the network's ability to meet customer demand for energy delivery without interruption. Deterministic security criteria are used to check for security gaps. When a gap is identified, a more detailed probabilistic analysis may be conducted to understand the risk exposure and estimate its cost so that we can ensure the cost of solutions is appropriate. Failure rates for specific classes of equipment are derived from internal statistics, when available. In cases of insufficient data, industry guidelines such as the EEA Guide for Security of Supply and IEEE standard 493 are consulted.

Class	Description	Examples	First Outage (restoration target)	Second Outage (restoration target)	Bus/switchgear failure (restoration target)	Target Switching time target (min)
Grid Exit Points (GXPs)						
A1	Business hub/ urban	Oamaru GXP Bortons GXP	No interruption (except N security demand)	50% in switching time 50% in repair time	50% in switching time 50% in 2 hrs	30
A2	Urban		75% in switching time 15% in 8 hrs 10% in repair time	100% in repair time	50% in switching time remainder in repair time	30
A3	Township	Waitaki GXP Twizel GXP	50% in switching time 40% in 12 hrs, 10% in repair time		100% in repair time	30

Zone substations and sub-transmission feeders						
B1	Business hub	Chelmer Redcastle	No interruption (except N security customers)	100% in repair time	50% - No interruption 50% in switching time	15
B2	Urban	Parsons			-	15
B3	Township	Maheno, Hampden, Pukeuri, Otematata, Omarama, Duntroon, Kurow	100% - switching time		-	15
B4	Rural A and B	Papakaio, Te Awamako, Eastern Rd, Five Forks, Enfield, Ngapara			-	15
B5	Rural C	Ohau			-	15
Distribution feeders, distribution substations, LV feeders						
C1	Business hub		100% - switching time (except faulted segment which is repair time)	100% in repair time	-	15
C2	Urban				-	45
C3	Township				-	90
C4	Rural A		50% in switching time remainder in repair time 100% in repair time		-	105
C4	Rural B				-	165
C5	Rural C				-	225
Spur lines (HV and LV) and customer substations						
D1	All		100% in repair time	100% in repair time	-	--

Table 16 - NWL security of supply guideline - deterministic criteria

Security of Supply notes

- Switching time: time taken to reconfigure the network for backup supply
- Repair time: time taken to repair faulted assets, including locating and isolating the fault
- Individual security levels may be negotiated with large or non-standard customers
- The security criteria are based on the ability to interrupt irrigation demand for up to 48 hours per event
- Restoration targets are based on percentage of customer numbers (excluding contracted N-security customers)
- Customer Supply Group for GXP, zone substations and sub-transmission assets will be based on highest connected customer group
- Distribution feeders, substations and LV feeders will be broken into segments for analysis based on customer types.

7.3.3 Future Energy Scenarios - Overview

These scenarios are not forecasts but plausible planning futures used to evaluate development pathways for our business.

Our EV growth assumptions are based on the ENA/Sapere nationally developed scenarios which we adjusted downwards to account for lower regional average wages.

We engaged Deta Consulting to independently review our scenario inputs, methodology, and EV growth assumptions to ensure they are appropriate for our region.

Network optimised

- Regional population growth continues at steady historic levels
- Known process heat conversions occur
- EV uptake increases but lags larger centres
- Irrigation growth slows in 2027 after known conversion projects are completed
- Steady uptake in new smart technologies (customer energy resources or CER)
- We understand constraints and can influence demand in constrained areas with our pricing and can override CER in a Network Emergency Event.

(Aligned with ENA/Sapere Network Optimised scenario)

Balanced

- • Regional population growth continues at steady historic levels
- • Known process heat conversions occur
- • EV uptake increases but lags larger centres
- • Irrigation growth slows in 2027 after known conversion projects are completed
- • Steady uptake in new smart technologies (customer energy resources or CER)
- • Spot market energy prices usually keep flexible demand away from network peaks. We understand real-time network constraints and have some ability to influence demand in constrained areas through our pricing and can override CER in a Network Emergency Event.

(Aligned with ENA/Sapere Naïve scenario)

Energy Optimised

- Regional population growth increases as larger centres become less affordable
- Known process heat conversions occur
- EV uptake increases but lags larger centres
- Irrigation growth slows in 2027 after known conversion projects are completed
- High uptake in new smart technologies (customer energy resources or CER)
- CER managed by aggregators using algorithms to maximize customer value and we have limited ability to influence the operation of CER but can override in a Network Emergency Event.

(Aligned with ENA/Sapere Energy Optimised scenario)

7.4 Planning Assumptions by Customer Segment

We also look at each customer segment in more detail, examining growth stages, confidence in our assumptions, and the materiality of assumptions to our investment plan.

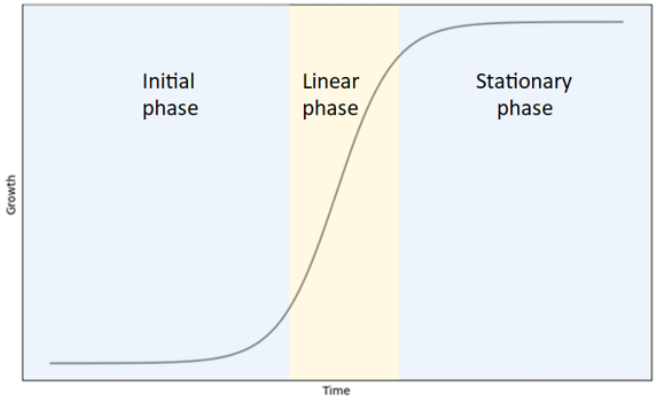
Planning data

We collect historical data from our SCADA system to analyse past demand and trends on our GXPs, sub-transmission, zone substations, and high voltage feeders, and compare this with constraints using our system model. We also gather historical data per phase of each LV feeder for 80% of urban Ōamaru customers and are exploring the potential benefits of augmenting this with smart meter data.

Growth Stage

We use a Sigmoid (S-curve) model to describe the growth phase for each customer segment. This model is frequently used to depict growth cycles, illustrating how new technologies first experience slow adoption, followed by rapid growth, and eventually stabilize as the market becomes saturated.

For instance, in our region, dairy shed growth is in the stationary phase of the S-curve, with most dairy conversions already completed. Conversely, EV growth is in the initial phase, where uptake is currently low, making it challenging to predict when we will enter the linear phase.



Confidence levels

We evaluate our assumptions based on the following confidence levels:

- Low Confidence: assumptions involving new or emerging technologies with no historical precedent, or customer projects that are currently at early enquiry stage
- Medium Confidence: assumptions derived from historical data, but still subject to some variability, or related to customer projects at the feasibility stage
- High Confidence: assumptions associated with well-established trends supported by robust data, or customer projects that are committed, or where customers have indicated a high likelihood of proceeding.

Materiality

We rate the materiality of our assumptions based on the potential to affect our investment plan during the AMP period as per our company risk framework.

- **Low**: low impact on investment plan (less than $0.25m)
- **Medium:** medium impact on investment plan (less than $1m)
- **High:** significant impact on investment plan (above $1m).

7.4.1 Residential Growth Assumptions

Base housing growth

Our residential growth projections fall between the Waitaki District Council's 2043 Long Term Plan, which anticipates an average annual housing stock growth of 0.31%, and Statistics NZ's high scenario of 0.45%.

Given the absence of clear constraints on regional housing development, we assess the growth rates as being in the linear phase of the growth S-curve.

The materiality is considered medium, as growth occurs in relatively small and predictable increments and we are aware of the land marked for residential housing growth in the district and have plans in place to supply sufficient capacity into these areas. We do not foresee a significant rise in housing development or an increase in housing density in the planning period.

- S-Curve phase – linear
- Confidence level – medium
- Materiality – medium

Efficiency

As customers transition to LED lighting, improved building insulation, and more energy efficient appliances and motors, we expect a slight reduction in demand due to efficiency improvements.

We model a 0.5% decrease in residential and commercial demand from energy efficiency across all scenarios. However, often this is offset by increased usage as more energy efficient appliance manufacturing lowers costs, leading to more appliances per household and negating operational efficiency gains.

Although the impact of energy efficiency is challenging to quantify and our confidence in this projection is low, it does not significantly affect overall demand.

- S-Curve phase - unknown
- Confidence level – low
- Materiality – low

Solid fuels/gas phase out

In our supply area, many homes use wood burners for heating. Without strict clean-air rules, we don't foresee a significant shift from wood burners to heat pumps soon. However, new homes are expected to favour heat pumps, and older units will likely be replaced with modern, energy efficient inverters at end of life.

This gradual transition will reduce reliance on wood, gas, and less energy efficient electric heating, increasing peak demand by 0.6 to 1.2 MW over ten years across all GXPs.

- S-Curve phase - unknown
- Confidence level – low
- Materiality - low

7.4.2 Commercial and Industrial Growth Assumptions

Base growth

Over the past decade, connected capacity has grown at an average annual rate of 1.2%, decreasing to 0.9% over the last five years. Our model predicts a base growth rate (excluding process heat electrification) of 0.9%, with a potential increase to 1.2% under the energy-optimised scenario.

Our confidence level is medium based on historical growth patterns; however, the materiality for this group is higher than for residential growth due to the larger potential load steps. For instance, a new factory in the district could require a significant electricity supply. We do not speculate on unforeseen large loads in our demand forecasts; instead, we allocate capacity once an application has been submitted.

- S-Curve phase - linear
- Confidence level – low
- Materiality – high

Electrical intensity

We are not aware of any factors that will increase electrical intensity across commercial and industrial customers, (except for known process heat conversions which are included in the next section).

We are currently talking with a customer who intends to significantly increase electrical intensity at their factory and have included this in our demand forecasts.

To manage uncertainty around this, we regularly catch up with key customers to discuss their future energy plans.

- S-Curve phase - unknown
- Confidence level – low
- Materiality - medium

Process heat electrification

We collaborated with Deta Consulting to identify material process heat electrification opportunities in our region and to assess the feasibility of choosing electricity as a replacement fuel source instead of biomass.

Among the remaining identified opportunities, there is an estimated 5 MVA of additional electricity demand depending on whether a meat processing plant elects to electrify their process heat needs. We will continue working with this customer to understand their needs.

- S-Curve phase – linear
- Confidence level – low
- Materiality – high

7.4.3 Agricultural Growth Assumptions

Dairy sheds

Following extensive dairy shed expansion over the past two decades, we have not received any new requests for dairy shed connections in the last three years. Farmers have indicated they do not to see significant dairy shed conversions in the future.

- S-Curve phase – stationary
- Confidence level – high
- Materiality - medium

Irrigation

Over the past 10 years, connected capacity grew at an average annual rate of 3.2%, slowing to 2.0% in the past year, indicating a slowdown in irrigation expansion.

We are confident that these irrigation projects will connect to the Ōamaru GXP within two years:

- An irrigation company expects customers in Lower Waitaki to switch about 2,000 hectares from gravity to spray irrigation by 2027, adding up to 1.5 MVA of demand.
- An irrigation company plans to add 0.4 MVA capacity at their pump stations by 2027.

Once completed, irrigation growth will stall in the region as most viable land will be irrigated.

- S-Curve phase – top end of linear
- Confidence level – high
- Materiality – high

7.4.4 Transport Growth Assumptions

Light vehicles

The current penetration of light EVs (battery and plug-in hybrid) in our district stands at 1.5% compared to 2.9% across New Zealand.

We have based our projections for the growth in uptake of light and commercial EVs on the ENA/Sapere 2050 scenarios model. We adjusted these projections to reflect the specific conditions of our region, where household incomes are 24% lower than the national average, and there is a regional preference for traditional vehicles commonly used in farming, trades, and recreational activities.

These scenarios suggest minimal impact from EVs over the planning period, confirming that we are still in the initial phase of S-Curve growth, with a significant increase in EV demand anticipated within the following decade.

- S-Curve phase – Initial
- Confidence level – low
- Materiality – high

Public chargers

The utilisation of public EV charging stations continues to see substantial growth, particularly along state highways. We anticipate ongoing expansion in both the number and capacity of these charging stations within our region.

In collaboration with Deta Consulting, we have developed a projection of demand for public EV chargers extending through to 2050.

We expect flexibility associated with public EV charging infrastructure will be minimal, as it is unlikely that customers will significantly alter their charging behaviour while travelling based on pricing or incentives.

- S-Curve phase – initial
- Confidence level – low
- Materiality – high

Public transport

Public transport availability in our area is limited, and significant effects from public fleet electrification are not anticipated. If autonomous vehicles become widespread, they might be used for public transport, potentially replacing existing private vehicles, resulting in minimal net impact.

- S-Curve phase – unknown
- Confidence level – low
- Materiality – low

Heavy vehicles

The national electrification of heavy vehicles may increase the load on the network at critical points along state highways where charging stations are required. The local adoption is expected to progress gradually during the planning period due to evolving technology and potential alternatives such as hydrogen.

Over the next year, we will work with local heavy vehicle fleet customers and national fleet users to refine our strategies in this area.

- S-Curve phase – initial
- Confidence level – low
- Materiality - high

7.4.5 Distributed Generation Assumptions

Our aim is to enable our customers to connect Distributed Generation to our networks and we have developed systems and processes to make this easier for our customers, including hosting capacity maps. Further details on our approach can be found on our website. Connecting Generation or Batteries | Network Waitaki

Rooftop solar

Most Distributed Generation (DG) in our region is provided by small-scale photovoltaic (PV) panels, and this continues to grow. There are currently 360 DG connections on our network, representing 2.5% of all connections or 3.5 MW, with an average residential size of 5 kW.

Our growth scenarios are aligned with the 2022 Boston Consulting Group report, “The Future is Electric”. We estimate the firm reduction in network demand from solar generation to be approximately 5% of the DG rated power. This estimate is based on statistical analysis of solar performance under full cloud cover during evening peak demand. Our presently installed 3.5 MW of solar DG results in a firm reduction in demand of 175 kVA.

Materiality is low as new connections are approved based on available hosting capacity.

- S-Curve phase – initial
- Confidence level – low
- Materiality – low

Utility-scale distributed generation

Numerous large-scale solar generation projects are planned in New Zealand. These large-scale schemes would connect to our network at HV levels and will be evaluated as applications are received.

Our large-scale DG connection standard and congestion policy are aligned with best-practice EDBs to provide a consistent experience for national operators and manage risk to connected customers.

Materiality is low as new connections are approved based on available hosting capacity.

- S-Curve phase – initial
- Confidence level – low
- Materiality – low

7.4.6 Consumer Energy Resource Assumptions

Batteries

Currently, there are low but increasing numbers of customer battery installations connected to our network. All of these are associated with solar installations.

As battery costs decrease and value streams for flexibility services develop, an increase in distributed battery capacity connected to our network is anticipated. This will enhance the ability to align solar distributed generation with network peaks.

Due to the low number of batteries and uncertainty about their impact on the network, these are not currently modelled in demand forecasts. We will monitor the effects of batteries on our network as penetration increases.

- S-Curve phase – initial
- Confidence level – low
- Materiality – medium

Vehicle to grid

We do not currently model impacts from vehicle-to-grid technology, whether behind the meter or true vehicle-to-grid. This could be a major opportunity for short-term storage if it becomes feasible in the future. By 2050, with near 100% electrification of light vehicles and more vehicles on the road, energy storage in cars will surpass other sources and even exceed daily electricity demand.

Due to the low number of batteries and uncertainty about their impact on the network, these are not currently modelled in demand forecasts. We will monitor the effects of V2G technology on our network as penetration increases.

- S-Curve phase – initial
- Confidence level – low
- Materiality – medium

Hot water

We currently purchase hot water flexibility services from customers and shift 2.5 MW of hot water heating demand from network peaks into the 11pm to 7am period, with an additional 1 MVA that we can control, if necessary.

Retailers and aggregators have shown increased interest in sharing control of this demand, and we will collaborate with these groups to ensure optimal outcomes for our customers. We will continue to provide emergency control of these resources via our ripple control system.

- S-Curve phase – initial
- Confidence level – low
- Materiality – medium

7.4.7 Summary

Customer	Network optimised	Balanced	Energy Optimised
Household			
Residential growth	Steady	Steady	Increased
Residential efficiency	Medium	Medium	Medium
Residential gas/solid fuels phase out	Medium	Medium	Medium
Industrial and commercial			
Economic growth	Medium	Medium	Increased
Electrical intensity	Medium	Medium	Medium
Transport			
Electrification uptake	Medium	Medium	Medium
Mode shift	Low	Low	Low
Process heat			
Electrification of boilers	Low	Low	Low
Irrigation			
Papakaio plains area	High to 2027	High to 2027	High to 2027
Remainder of region	Low	Low	Low
Distributed generation			
Rooftop solar uptake	Low	Medium	Medium
Utility scale generation uptake	Unknown	Unknown	Unknown
Consumer Energy Resources			
Battery uptake	Low	Medium	Medium
Vehicle to grid uptake	Low	Medium	Medium
Our management of hot water	Slow reduction	Medium reduction	Rapid reduction
Major customer demand response	No change	No change	No change
Our ability to influence residential flexibility	High	Medium	Low

7.5 Grid Exit Point (GXP)[2] - Capacity and Security Summary

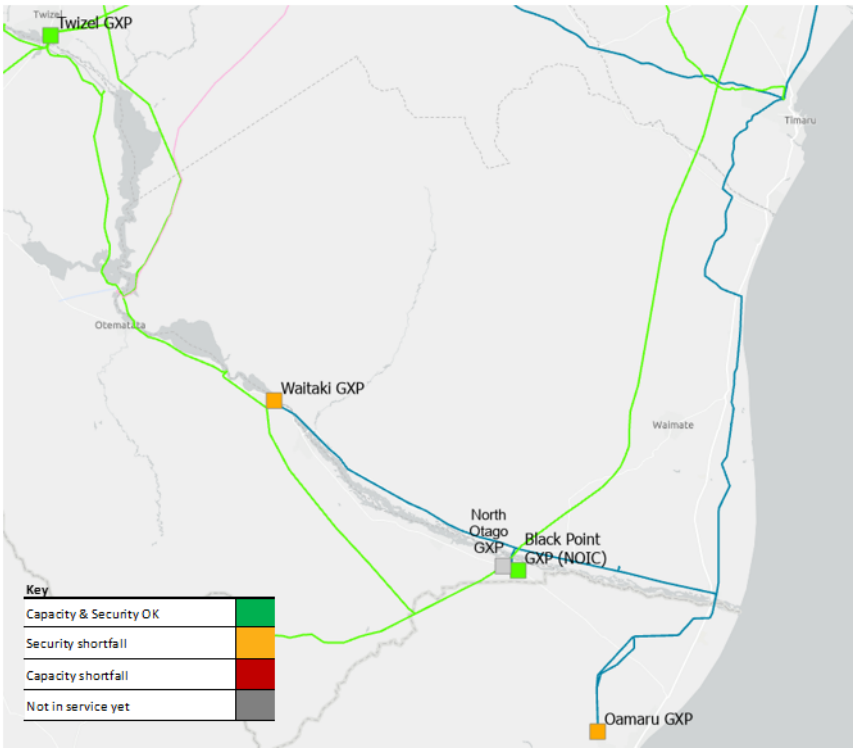


Figure 47 - Network Waitaki GXP locations and Transpower transmission network

GXP	Capacity and security summary									
	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Ōamaru	1									
North Otago					2					
Waitaki	3									
Twizel	4									
Black Point	4									

Comments

1. For our highest growth scenario customer demand will result in Ōamaru GXP reaching the capacity limit by FY31
2. We are working with Transpower to plan for a new “Bortons GXP” by FY30. Until the new GXP is operational, Transpower has allowed us to use a temporary Special Protection Scheme to allow us to continue to supply new customer demand. Until FY30, we may need to connect new large-load customers at (n) level GXP security
3. Backup security at Waitaki GXP will decrease as demand increases at Ōamaru GXP. There is a risk of a shortfall of backup security for parts until the new Bortons GXP is in service
4. There are no capacity or security constraints expected at Twizel or Black Point GXPs over the planning period.

[2]Note: detailed planning information and related projects can be found in Appendix B

7.6 Sub-transmission/substation - Capacity and Security Summary

7.6.1 Ōamaru GXP Supply Area

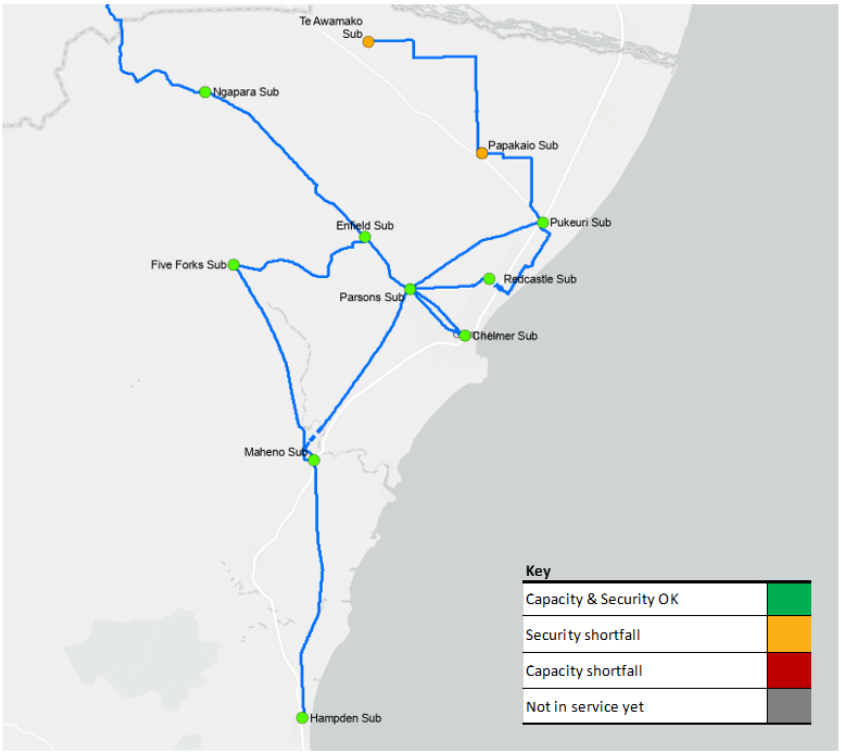


Figure 48 - Ōamaru GXP sub-transmission and substations

Table 17 - Ōamaru GXP substations - capacity and security summary

Zone Substation	Capacity and security summary									
	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Te Awamako	1									
Chelmer										
Enfield										
Five Forks										
Hampden										
Maheno										
Ngapara				2						
Papakaio	1									
Redcastle										
Parsons										
Pukeuri										

Comments

1. Te Awamako and Papakaio Zone Sub security constraints are present until FY30 when the Bortons GXP and sub-transmission ring is in service (for part of the year, irrigation load on these substations may need to be shed for repair time for a failure on the overhead sub-transmission line between Pukeuri and Papakaio).
2. We plan to transfer Ngapara zone substation to the Bortons GXP in FY30.

7.6.2 Waitaki GXP Supply Area

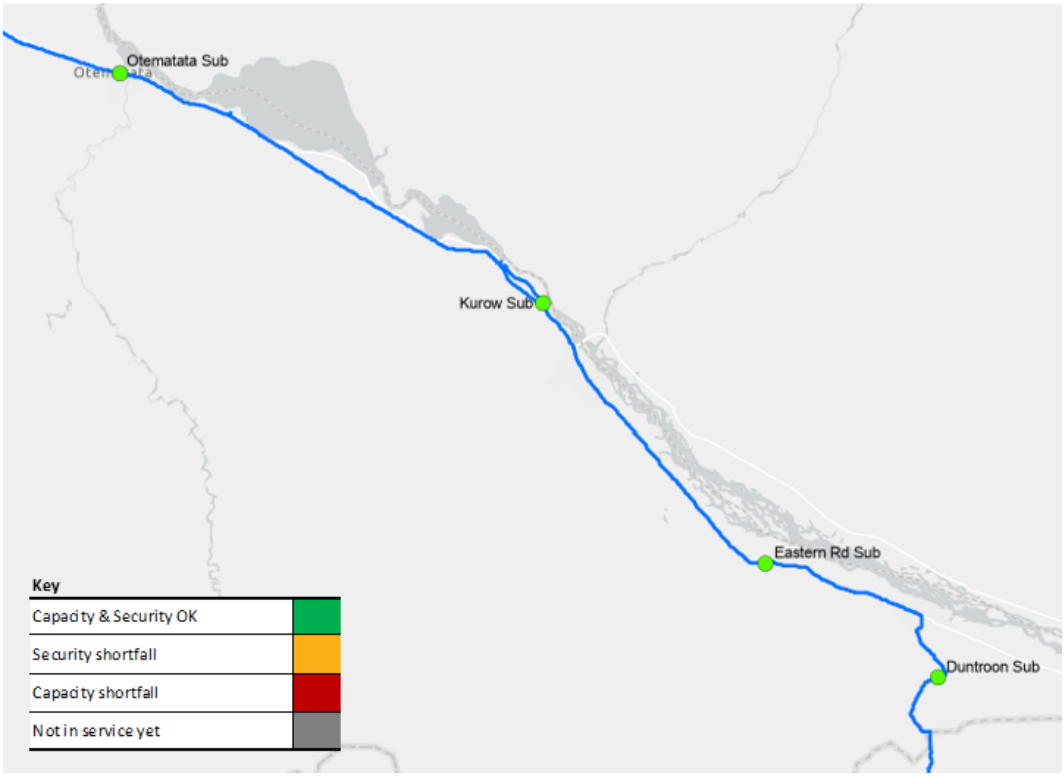


Figure 49 -Waitaki GXP sub-transmission and substations 3
Table 18 - Zone substation capacity and security summary

Zone Substation	Capacity and security summary									
	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Duntroon					1					
Eastern										
Kurow										
Otematata										

Comments

1. In FY30, Duntroon zone substation will be transferred to the new Bortons GXP.

7.6.3 Twizel GXP Supply Area

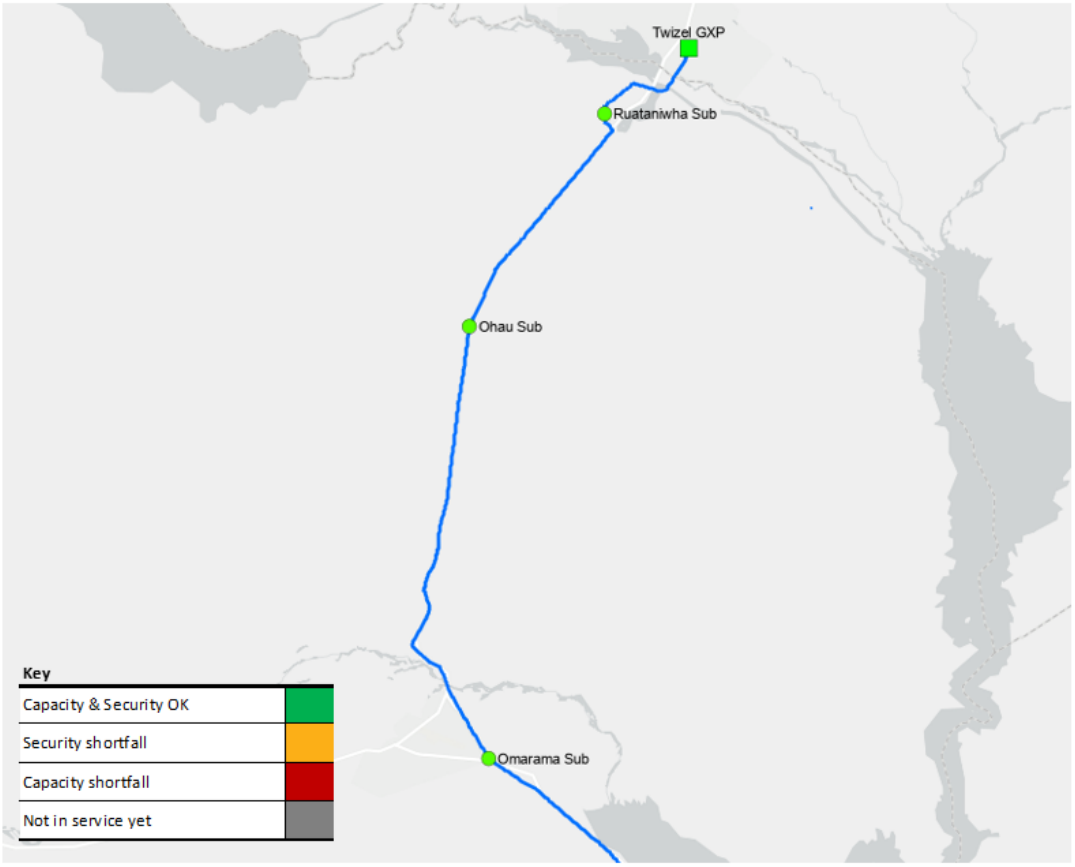


Figure 50 - Twizel GXP sub-transmission and substations FY24
Table 19 - Zone substation capacity and security summary

Zone Substation	Capacity and security summary									
	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Ōhau										
Ōmārama										
Ruataniwha										

Comments

No capacity or security constraints are expected in the planning period.

7.6.4 Bortons GXP Supply Area (FY30)

Figure 51 - Bortons GXP sub-transmission and substations

Table 20- Zone substation capacity and security summary

Zone Substation	Capacity and security summary									
	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Te Awamako					1					
Ngapara					2					
Papakaio					1					
Duntroon					2					

Comments

No capacity or security constraints are expected in the planning period:

- Te Awamako and Papakaio zone substations will be transferred from Ōamaru GXP in FY30
- Ngapara and Duntroon zone substations will be transferred from Ōamaru GXP in FY30.

7.7 Distribution Network - Capacity and Security Summary

High level capacity and security assessments have been completed for customer groups supplied from our high voltage feeders. These assessments use deterministic methods to review historic reliability performance, feeder security arrangements, and network resilience, including the ability to restore supply following outages or major storm events.

The analysis identifies areas where capacity or security gaps may emerge under future operating conditions. These findings are intended to highlight potential risks and inform further investigation, rather than represent committed investment decisions.

Where material gaps have been identified, potential response options have been developed for further consideration. Detailed analysis and business cases will be completed before any projects are progressed, in line with our investment governance processes.

Further detail on the identified gaps and potential response options is provided in **Appendix D – Future Network Plan – Projects.**

Table 21 summarises the capacity and security position across the HV feeder groups assessed.

Table 21 - Distribution HV feeder capacity and security summary

Customer Area	Zone Substation	Capacity (MVA)	Security Service Level
Ōmārama feeder	Ōmārama		
Observatory Village	Chelmer		
Kurow	Kurow		
Horse Gully	Parsons		
Weston	Parsons		
Ōhau	Ōhau		
Waitaki Bridge	Papakaio		
Solway St	Chelmer		
Teaneraki	Enfield		
Moeraki	Hampden		

Further details of proposed projects and rationale behind these can be found in Appendix D – Future network plan – projects.

7.8 Communications System Summary

Our Operational Technology (OT) Roadmap sets out the strategic direction for the progressive modernisation of NWL's communications and control systems. This work is driven by the increasing risk associated with ageing and obsolete infrastructure, alongside the need to maintain safe, reliable, and secure operation of the network.

High level assessment has identified that limitations in our current SCADA, data networks, and communications platforms constrain system visibility, control, and cyber security resilience. Addressing these gaps will improve network protection, fault response times, operational safety, and public safety, while ensuring our systems remain fit for purpose as regulatory requirements, technology, and customer expectations evolve.

We are currently reviewing our communications system options, and business cases will be developed before any major investments are committed, in line with our investment governance processes.

7.9 Ten Year Development Plan

Proj No.	Description	FY27	FY28	FY29	FY30	
	System growth	**990**	**7,620**	**6,283**	**4,133**	
1	Bortons GXP - establish 33kV connection point		200	2,500	2,500	
2	New subtrans - Bortons GXP to Te Awamako		4,400			
3	New subtrans - Bortons GXP to Ngapara		220	3,183	3,183	
4	110/33 kV conversion stations – secure land					
5	Ruataniwha substation –conversion to zone substation (customer dependent)					
6	Low Voltage monitoring	290				
7	Provisional Distribution trans-former and LV reinforcement	300	300	400	750	
8	Provisional HV reinforcement	200	200	200	200	
	Reliability, safety & environment - quality of supply	**994**	**420**	**676**	**873**	
9	Weston switching station - Secu-rity improvements	200				
10	Weston/Redcastle ring protec-tion upgrade	300				
11	Ōmārama township security improvement	284				
12	Observatory Village security improvement		210			
13	Kurow township security improvement			331		
14	Ōmārama Zone Sub security improvement			135		
15	Horse Gully Rd – Security improvement				105	
16	Weston/Parsons Road Security improvement				453	
17	Ōhau feeder security improvement				105	
18	Waitaki Bridge security improvement					
19	Solway feeder security improvement					
20	Teaneraki security improvement					
21	Hampden township security im-provement					
22	Security of Supply improvements - provisional projects					
23	Radio link upgrade	105	105	105	105	
24	Communications upgrades	105	105	105	105	
	Consumer Connection	**1,812**	**1,812**	**1,812**	**1,812**	
25	Install distribution transformers - customers	424	424	424	424	
26	New 11kV network extensions	522	522	522	522	
27	New LV service connections	612	612	612	612	
28	Private line transfers – legal	15	15	15	15	
29	Residential subdivisions	239	239	239	239	
	Grand Total	**3,595**	**7,551**	**8,770**	**9,316**	

	FY31	FY32	FY33	FY34	FY35	FY36
	1,050	**1,800**	**1,900**	**2,400**	**2,550**	**3,050**
					550	550
				500		
	750	1,500	1,500	1,500	1,500	2,000
	300	300	400	400	500	500
	615	**690**	**594**	**610**	**640**	**610**
	105					
		250				
			284			
					30	
	300	230	100	400	400	400
	105	105	105	105	105	105
	105	105	105	105	105	105
	1,812	**1,812**	**1,812**	**1,812**	**1,812**	**1,812**
	424	424	424	424	424	424
	522	522	522	522	522	522
	612	612	612	612	612	612
	15	15	15	15	15	15
	239	239	239	239	239	239
	3,477	**4,302**	**4,306**	**4,822**	**5,002**	**5,472**

SECTION

08

Non-Network Assets and Systems

08

Non-Network Assets and Systems

This Chapter sets out our plans for managing Non-Network Assets.

8.1 Asset Categories

The delivery of our AMP strategies requires supporting infrastructure, equipment and systems. At NWL these are categorised as:

- Vehicles and plant to construct and maintain the assets
- Buildings and depots to store equipment and spares
- Systems and data to inform operations and other asset management activities
- Other business systems and support.

The lifecycle management of non-network assets follows the estimated useful life in keeping with the company's accounting policies, most recently set out in the Annual Report. The estimated useful lives are shown below:

Asset Description	Standard life expectancy (years)
Information and technology systems	2-15
Office buildings and workshops	40-100
Office furniture and equipment	10
Motor vehicles	5-15
Tools, plant and machinery	2-10

Table 22 - Life expectancy of other fixed network assets

8.2 Property

8.2.1 Asset Summary

Additional to zone substations buildings, NWL has properties in Ōamaru (main office, depot, workshops and store), Weston (backup office, depot, workshops, store and training facilities) and Otematata (depot and emergency store).

8.2.2 Maintenance Approach

Maintenance contracts are in place with third parties to ensure we remain compliant with building warrant of fitness requirements. These contracts cover scheduled and reactive maintenance activities on both grounds and buildings, including air-conditioning units, fire alarms and security systems.

8.2.3 Renewals Approach

The renewal of property assets is primarily on an 'as required' basis. The organisation's property requirements are reviewed frequently at both a strategic and tactical level. The review identifies any changes which may be necessary to ensure the continued efficient operation of the business.

8.2.4 Development Approach

Of note in the Property component of our non-network capex expenditure forecast is the redevelopment of our Chelmer Street site (our primary administration and operations site) between FY26 and FY28. This project will increase the resilience of our operations and involves redevelopment of our yard and construction of a new earthquake-rated (IL4) operations building and control room.

8.3 Operational Systems and Network Support

Operating the network safely and efficiently requires robust systems and data. We also anticipate the need to be more agile and responsive to our customers' changing expectations, requiring us to continually review and look at our systems, processes, and capabilities. NWL needs to become data-centric to ensure our operations are performing as effectively as possible. We have identified that optimal solutions may require collaboration with other businesses so we can provide these services in the most efficient manner. We have engaged with other EDBs to identify opportunities to collaborate with a variety of our systems.

A key area of focus for us is to ensure continual investment in and development of our key systems and processes to extend our use of data and digitisation to deepen our understanding of how customers are using our network. These insights will help us to optimise our business processes, inform system and platform development, and engage in new ways with our customers.

Another key focus is cyber security and maintaining the operational integrity of our systems in both the IT and OT environments as well as data protection.

8.3.1 Asset Summary

The system operations and network support activity area covers the teams managing our network, and includes:

- Network development responsible for the overall direction and management of our network infrastructure. It is responsible for strategic and engineering planning for our electricity distribution network
- Our customer service activity delivering excellent customer engagement, service and support
- Infrastructure stewardship, developing appropriate whole of life strategies for our network assets
- The daily operation of the network, delivery of AMP work programmes, and other delivery and engineering related services
- Network data management that includes geospatial information and asset information systems that extend out to field mobility solutions.

Function	Current	Future
Load Modelling	Digsilent Power Factory	Digsilent Power Factory
Geospatial Information	Esri ArcGIS Pro	Esri ArcGIS Pro
System Operations	Abbey	TBA (2026)
Outage Management	Revman	TBA (2027)
Customer Interaction	Microsoft	TBA (2028)
Distributed Energy Management	N/A	TBA (2029)
Asset Lifecycle Management	Microsoft	TBA (2030)
Real Time Event Response	N/A	TBA (2031)

Digsilent Power Factory is a widely used power system analysis software application that analyses generation, transmission, distribution and industrial systems. It offers a range of functionality including distributed generation, real-time simulation and performance monitoring, and is used for network planning, analysis of new connections and constraint identification.

Esri ArcGIS Pro is a full-featured professional desktop GIS application from Esri, widely used in NZ and particularly by Local Authorities which simplifies sharing of information. It is used to store records of network assets both by location and electrical connectivity.

Abbey Systems is an established SCADA (Supervisory Control and Data Acquisition) system designed for water and wastewater utilities, power and gas distribution networks. The SCADA enables control and operation of the network and includes managing and communicating with assets in the field along with tools to enable operators to make informed decisions based on the current network status, enabling faster fault detection and supply restoration.

8.3.2 Maintenance Approach

All systems are fully licensed and supported by the vendor.

8.3.3 Renewals Approach

Servers, storage devices, and network devices are continuously monitored for availability and errors with alarms. Other hardware is repaired/replaced on failure.

Software vendors automatically notify if new versions are available and provide notice when they will stop support. NWL has a policy to remain on supported versions of software and replace hardware at the end of the vendor-provided warranty period.

8.3.4 Development Approach

We look to cooperate and coordinate with similar organisations to reduce the cost, complexity and risk associated with new systems. This often means that the development and implementation of new systems does not always follow our own plan.

Discussions are underway with several other EDBs to establish a common approach for the System Operations, Outage Management and Customer Interaction support systems. These are at varying states of progress and are still commercially sensitive.

8.4 Corporate and Business Support Systems

The business support activity area manages the support systems, processes, that supports the network business to deliver its strategic plans. This includes:

- Delivery of systems of management of quality, health and safety management systems
- Risk and compliance management frameworks
- People and culture support services
- Financial management and business support
- Support for delivery of field services and corporate support infrastructure, including business information technology services
- Corporate and strategic governance.

The table below outlines the IT application landscape and shows the major business functions supported by the material applications in use at NWL, and how this is planned to change over time.

Function	Current	Future
Works Management	Business Central (SaaS)	Business Central (SaaS)
Finance	Business Central (SaaS)	Business Central (SaaS)
Inventory	Business Central (SaaS)	Business Central (SaaS)
Payroll	iPayroll (SaaS)	iPayroll (SaaS)
Safety	Vault	Vault
Risk Management	Microsoft Excel	
Retailer Billing	Revman	Digital Stock ARC (2025)
Vehicle and Plant Maintenance	QuipCheck	QuipCheck
Business Productivity	Microsoft O365	Microsoft O365
Business Integration	FME	FME

Microsoft Dynamics 365 Business Central is used in over 160 countries by SMEs to manage their entire business from finances to customer service, using a single, integrated platform. It is SaaS cloud-based solution which ensures we maintain regular software updates, data storage and back up. Business Central is NWL's Financial Management System (FMS) and incorporates the asset register for all financial assets. The asset data that Business Central masters is linked to other systems such as GIS through a Microsoft Power App known as MAPA (Master Asset Power Application). As part of its materials management role (inventory and purchasing) Business Central masters the location of network assets prior to installation and utilisation.

iPayroll is a cloud-based payroll solution developed in 2001 for New Zealand businesses. It is the leading online PAYE Intermediary (PI) with Inland Revenue, processing gross payrolls of over $4.5 billion per year.

Vault is a Safety Management Software widely used in Australia and New Zealand. Vault catalogues our health and safety information including audits and compliance documentation.

Quantate is Risk Management software designed to support risk and assurance frameworks consistent with best practice and standards such as ISO 31000. We have transferred the risk register information from Quantate to an Excel register. We have maintained the likelihood, consequence and residual risk assessments in line with our Risk Management Policy and framework from Quantate.

Revman is software widely used within our business. It integrates activities within various parts of the business including Outage Management (Planning, Recording, Notifications), Retailer Billing (incl. detailed disclosure reporting), ICP Management (in sync with Electricity Authority Registry), and Metering Works Management. NWL is the only user of Revman, which is supported by a single developer. As the product is approaching the end of life, we undertook a needs assessment and RFP process, resulting in the decision to implement Digital Stock ARC. ARC is on a modern Software as a Service (SaaS) platform, is supported by a well-regarded New Zealand-based vendor, and is already used by six other New Zealand EDBs with additional EDBs transitioning to this solution. This is expected to full operational by 1 April 2026.

QuipCheck is used to monitor plant and vehicle condition and compliance. It records any maintenance or repair activities and any requests for them.

Microsoft 0365 is the system used to track, manage, and store documents while keeping a record of the various versions created and modified by different users. SharePoint 2016 houses all of our controlled documents including standards.

8.4.1 Maintenance Approach

All systems are fully licensed and supported by the vendor.

8.4.2 Renewals Approach

Servers, storage devices, and network devices are continuously monitored for availability and errors with alarms. Other hardware is repaired/replaced on failure.

Software vendors automatically notify if new versions are available and provide notice when they will stop support. We have a policy to remain on supported versions of software and replace hardware at the end of the vendor-provided warranty period. Enforced vendor software updates are provided for all SaaS solutions.

8.4.3 Planned System Developments

The Retailer Billing system is currently in a tendering and price assessment process with implementation of Digital Stock ARC by April 2026. A summary of planned material, capital, and maintenance expenditure in respect of these assets is provided below.

Non-Network Assets ($000)	Opex	Renewal Capex	Development Capex	Total
Information and Technology*	11,500	1,000		12,500
Office Buildings and Workshops	2,300		4,040	6,340
Office Furniture and Equipment		300		300
Total	13,800	1,300	4,040	19,140

3 Includes licensing and support costs for SaaS solutions. Previously these may have been accounted for a renewal and development capex

4 Includes cyber security expenditure $2.8 over 10 years

**Excludes Operation Technology such as SCADA and Network Communications*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SECTION

09

Summary of Expenditure Forecasts

09

Summary of Expenditure Forecasts

The summary of our forecast expenditure for the planning period is presented below:

- These forecasts are expected costs based on known measures and values for the first five years of the planning period, with the figures being indicative beyond that point.

- Many of our investment, maintenance and renewal decisions will be highly dependent on the outcomes of inspections in the first five years, on customer growth, and other issues that are out of our control, such as the development of the Transpower network.

- **Note:** The forecasts are presented in constant dollars. Deliverability of the proposed expenditures will be subject to inflationary pressures, and these are considered in business forecast modelling.

Network Capital Expenditure	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
System Growth	790	5,320	6,283	6,633	1,050	1,800	1,900	2,400	2,550	3,050
Reliability, Safety & Environment - Quality of Supply	994	420	676	873	615	690	594	610	640	610
Reliability, Safety & Environment - Legislative & Regulatory	-	-	-	-	-	-	-	-	-	-
Asset Replacement & Renewal	7,726	9,473	8,446	8,410	8,037	8,314	8,244	8,476	8,355	8,465
Consumer Connection	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811
Asset Relocations	-	-	-	-	-	-	-	-	-	-
Total Network Capital Expenditure	**11,321**	**17,024**	**17,216**	**17,726**	**11,513**	**12,615**	**12,549**	**13,298**	**13,357**	**13,937**

Network Operational Expenditure	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Asset Replacement & Renewal	235	230	230	230	230	230	230	230	230	230
Routine & Corrective Maintenance and Inspections	1,631	1,638	1,584	1,686	1,584	1,624	1,584	1,624	1,584	1,624
Vegetation Manage-ment	847	847	847	847	847	847	847	847	847	847
Service Interruptions & Emergencies	694	694	694	694	694	694	694	694	694	694
System Operations and Network Sup-port	1,232	632	632	632	632	632	632	632	632	632
Customer Safety Isolations	66	66	66	66	66	66	66	66	66	66
Total Network Opera-tional Expenditure	**4,705**	**4,107**	**4,053**	**4,155**	**4,053**	**4,093**	**4,053**	**4,093**	**4,053**	**4,093**

Total Network Expenditure	16,026	21,132	21,269	21,882	15,567	16,709	16,603	17,392	17,410	18,031

Table 23 - Summary of expenditure forecasts

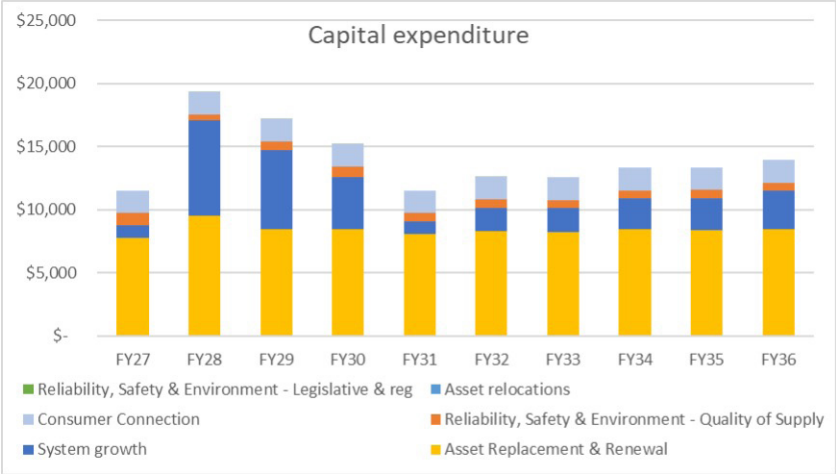


Figure 52 - Annual capital expenditure forecast by category

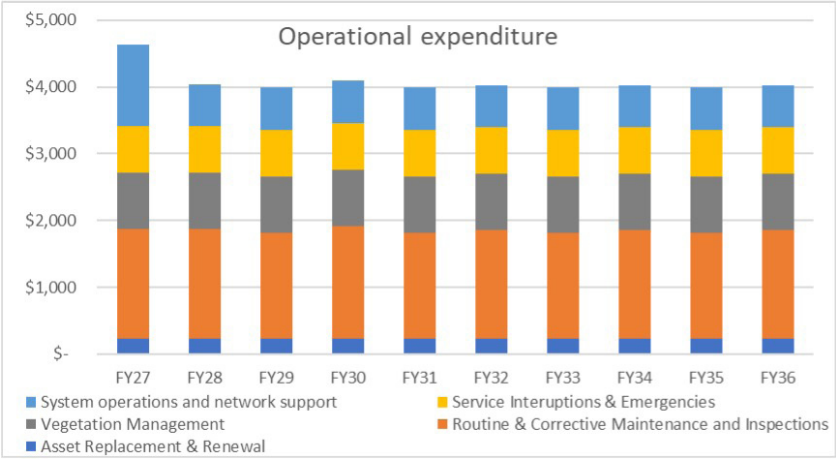


Figure 53 - Annual operational expenditure forecast by category

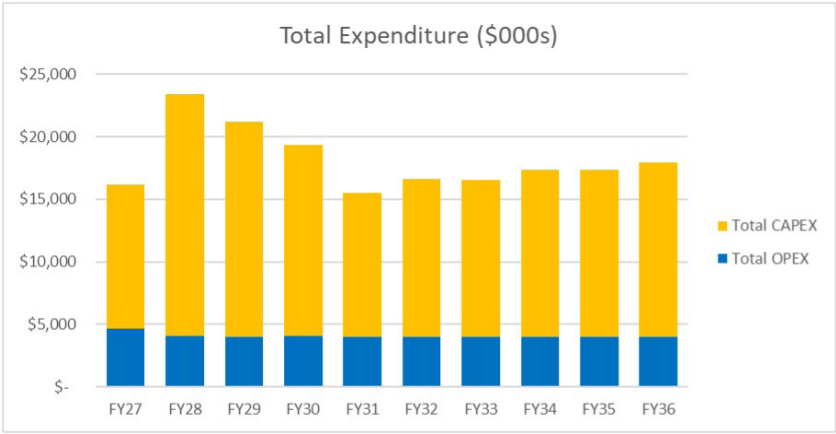


Figure 54 - Summary of total network expenditure forecast across planning period

SECTION

10

Appendices

10.1 Appendix A – Compliance Schedule to Information Disclosure Requirements 2015

Electricity Distribution Information Disclosure, Amendment Determination 2022	AMP Section
3 The AMP must include the following -	
3.11 An overview of systems and information management data	5.15
3.12 A statement covering any limitations in the availability or completeness of asset management data and disclose any initiatives intended to improve the quality of this data	5.15
3.13 A description of the processes used within the EDB for-	
3.13.1 Managing routine asset inspections and network maintenance	6.5
3.13.2 Planning and implementing network development projects	5.7
3.13.3 measuring network performance.	5.1
3.14 An overview of asset management documentation, controls and review processes	4.6
3.15 An overview of communication and participation processes	2.5
3.16 The AMP must present all financial values in constant price New Zealand dollars except where specified otherwise;	2.13
3.17 The AMP must be structured and presented in a way that the EDB considers will support the purposes of AMP disclosure set out in clause 2.6.2 of the determination.	Yes
Assets covered	
4 The AMP must provide details of the assets covered, including-	
4.1 a high-level description of the service areas covered by the EDB and the degree to which these are interlinked, including-	2.6
4.1.1 the region(s) covered	2.6
4.1.2 identification of large consumers that have a significant impact on network operations or asset management priorities	3.3.1
4.1.3 description of the load characteristics for different parts of the network	10.3/10.4
4.1.4 peak demand and total energy delivered in the previous year, broken down by sub-network, if any.	1.1
4.2 a description of the network configuration, including-	
4.2.1 identifying bulk electricity supply points and any distributed generation with a capacity greater than 1 MW. State the existing firm supply capacity and current peak load of each bulk electricity supply point;	10.3
4.2.2 a description of the sub-transmission system fed from the bulk electricity supply points, including the capacity of zone substations and the voltage(s) of the sub-transmission network(s). The AMP must identify the supply security provided at individual zone substations, by describing the extent to which each has n-x sub-transmission security or by providing alternative security class ratings;	6.13.1 10.3/10.4
4.2.3 a description of the distribution system, including the extent to which it is underground;	6.14
4.2.4 a brief description of the network's distribution substation arrangements;	6.14.10
4.2.5 a description of the low voltage network including the extent to which it is underground; and	6.14.4 6.14.7
4.2.6 an overview of secondary assets such as protection relays, ripple injection systems, SCADA and telecommunications systems.	6.14.1
4.3 If sub-networks exist, the network configuration information referred to in subclause 4.2 must be disclosed for each sub-network.	N/A

Electricity Distribution Information Disclosure, Amendment Determination 2022	AMP Section
Network assets by category	
The AMP must describe the network assets by providing the following information for each asset category-voltage levels;	
4.4.2 description and quantity of assets;	6
4.4.3 age profiles; and	6
4.4.4 a discussion of the condition of the assets, further broken down into more detailed categories as considered appropriate. Systemic issues leading to the premature replacement of assets or parts of assets should be discussed.	6
4.5 The asset categories discussed in subclause 4.4 should include at least the following-	
4.5.1 The categories listed in the Report on Forecast Capital Expenditure in Schedule 11a (iii)	6
4.5.2 Assets owned by the EDB but installed at bulk electricity supply points owned by others	6
4.5.3 EDB owned mobile substations and generators whose function is to increase supply reliability or reduce peak demand	N/A
4.5.4 Other generation owned by the EDB.	N/A
Service levels	
5 The AMP must clearly identify or define a set of performance indicators for which annual performance targets have been defined. The annual performance targets must be consistent with business strategies and asset management objectives and be provided for each year of the AMP planning period. The targets should reflect what is practically achievable given the current network configuration, condition and planned expenditure levels. The targets should be disclosed for each year of the AMP planning period.	4
6 Performance indicators for which targets have been defined in clause 5 must include SAIDI values and SAIFI values for the next 5 disclosure years.	4
7 Performance indicators for which targets have been defined in clause 5 above should also include-	
7.1 Consumer oriented indicators that preferably differentiate between different consumer types;	N/A
7.2 Indicators of asset performance, asset efficiency and effectiveness, and service efficiency, such as technical and financial performance indicators related to the efficiency of asset utilisation and operation.	N/A
8 The AMP must describe the basis on which the target level for each performance indicator was determined. Justification for target levels of service includes consumer expectations or demands, legislative, regulatory, and other stakeholders' requirements or considerations. The AMP should demonstrate how stakeholder needs were ascertained and translated into service level targets.	4
9 Targets should be compared to historic values where available to provide context and scale to the reader.	4
10 Where forecast expenditure is expected to materially affect performance against a target defined in clause 5, the target should be consistent with the expected change in the level of performance.	4
Network Development Planning	
AMPs must provide a detailed description of network development plans, including— A description of the planning criteria and assumptions for network development;	7.3
11.2 Planning criteria for network developments should be described logically and succinctly. Where probabilistic or scenario-based planning techniques are used, this should be indicated and the methodology briefly described;	73
11.3 A description of strategies or processes (if any) used by the EDB that promote cost efficiency including through the use of standardised assets and designs;	7.3.2
11.4 The use of standardised designs may lead to improved cost efficiencies. This section should discuss- **11.4.1** the categories of assets and designs that are standardised; **11.4.2** the approach used to identify standard designs.	7.3.2

Electricity Distribution Information Disclosure, Amendment Determination 2022	AMP Section
11.5 A description of strategies or processes (if any) used by the EDB that promote the energy efficient operation of the network.	7.3.2
11.6 A description of the criteria used to determine the capacity of equipment for different types of assets or different parts of the network.	7.3.2
11.7 A description of the process and criteria used to prioritise network development projects and how these processes and criteria align with the overall corporate goals and vision.	7.3.1
11.8 Details of demand forecasts, the basis on which they are derived, and the specific network locations where constraints are expected due to forecast increases in demand;	7.3 / 7.4 / 10.3 / 10.4
11.8.1 explain the load forecasting methodology and indicate all the factors used in preparing the load estimates;	
11.8.2 provide separate forecasts to at least the zone substation level covering at least a minimum five-year forecast period. Discuss how uncertain but substantial individual projects/developments that affect load are taken into account in the forecasts, making clear the extent to which these uncertain increases in demand are reflected in the forecasts;	
11.8.3 identify any network or equipment constraints that may arise due to the anticipated growth in demand during the AMP planning period; and	7.5 / 7.6 / 7.7
11.8.4 discuss the impact on the load forecasts of any anticipated levels of distributed generation in a network, and the projected impact of any demand management initiatives.	7.4.5
11.9 Analysis of the significant network level development options identified and details of the decisions made to satisfy and meet target levels of service, including-	10.5
11.9.1 the reasons for choosing a selected option for projects where decisions have been made;	
11.9.2 the alternative options considered for projects that are planned to start in the next five years and the potential for non-network solutions described;	
11.9.3 consideration of planned innovations that improve efficiencies within the network, such as improved utilisation, extended asset lives, and deferred investment.	Throughout AMP
11.10 A description and identification of the network development programme including distributed generation and non-network solutions and actions to be taken, including associated expenditure projections. The network development plan must include-	S7.0 / 7.9 / 10.5
11.10.1 A detailed description of the material projects and a summary description of the non-material projects currently underway or planned to start within the next 12 months;	
11.10.2 a summary description of the programmes and projects planned for the following four years (where known); and	S7.0 / 7.9 / 10.5
11.10.3 an overview of the material projects being considered for the remainder of the AMP planning period.	
11.11 A description of the EDB's policies on distributed generation, including the policies for connecting distributed generation. The impact of such generation on network development plans must also be stated.	7.4.5
11.12 A description of the EDB's policies on non-network solutions, including-	5.4 / 7.1
11.12.1 economically feasible and practical alternatives to conventional network augmentation. These are typical approaches that would reduce network demand and/or improve asset utilisation; and	
11.12.2 the potential for non-network solutions to address network problems or constraints.	

Electricity Distribution Information Disclosure, Amendment Determination 2022	AMP Section
Lifecycle Asset Management Planning (Maintenance and Renewal)	
12 The AMP must provide a detailed description of the lifecycle asset management processes, including—	5
12.1 The key drivers for maintenance planning and assumptions;	
12.2 Identification of routine and corrective maintenance and inspection policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include-	
12.2.1 the approach to inspecting and maintaining each category of assets, including a description of the types of inspections, tests and condition monitoring carried out and the intervals at which this is done;	
12.2.2 any systemic problems identified with any particular asset types and the proposed actions to address these problems; and	
12.2.3 budgets for maintenance activities broken down by asset category for the AMP planning period.	
12.3 Identification of asset replacement and renewal policies and programmes and actions to be taken for each asset category, including associated expenditure projections. This must include-	
12.3.1 the processes used to decide when and whether an asset is replaced or refurbished, including a description of the factors on which decisions are based, and consideration of future demands on the network and the optimum use of existing network assets;	
12.3.2 a description of innovations that have deferred asset replacements;	
12.3.3 a description of the projects currently underway or planned for the next 12 months;	
12.3.4 a summary of the projects planned for the following four years (where known); and	
12.3.5 an overview of other work being considered for the remainder of the AMP planning period.	
12.4 The asset categories discussed in clauses 12.2 and 12.3 should include at least the categories in subclause 4.5.	
Non-Network Development, Maintenance and Renewal	
13 AMPs must provide a summary description of material non-network development, maintenance and renewal plans, including—	8
13.1 a description of non-network assets;	
13.2 development, maintenance and renewal policies that cover them;	
13.3 a description of material capital expenditure projects (where known) planned for the next five years;	
13.4 a description of material maintenance and renewal projects (where known) planned for the next five years.	
Risk Management	
14 AMPs must provide details of risk policies, assessment, and mitigation, including—	5.11
14.1 Methods, details and conclusions of risk analysis;	
14.2 Strategies used to identify areas of the network that are vulnerable to high impact low probability events and a description of the resilience of the network and asset management systems to such events;	5.11
14.3 A description of the policies to mitigate or manage the risks of events identified in clause 14.2;	
14.4 Details of emergency response and contingency plans.	5.13
Evaluation of performance	
15 AMPs must provide details of performance measurement, evaluation, and improvement, including—	Throughout document
15.1 A review of progress against plan, both physical and financial;	
15.2 An evaluation and comparison of actual service level performance against targeted performance	4

Electricity Distribution Information Disclosure, Amendment Determination 2022	AMP Section
15.3 An evaluation and comparison of the results of the asset management maturity assessment disclosed in the Report on Asset Management Maturity set out in Schedule 13 against relevant objectives of the EDB's asset management and planning processes.	5.14
15.4 An analysis of gaps identified in clauses 15.2 and 15.3. Where significant gaps exist (not caused by one- off factors), the AMP must describe any planned initiatives to address the situation.	5.14
Capability to deliver	
16 AMPs must describe the processes used by the EDB to ensure that-	
16.1 The AMP is realistic and the objectives set out in the plan can be achieved;	
16.2 The organisation structure and the processes for authorisation and business capabilities will support the implementation of the AMP plans.	2.10
Voltage Quality and Constraints	
17.2 a description of the EDB's practices for: monitoring voltage, including:: **17.2.1** monitoring voltage, including: (a) the EDB's practices for monitoring voltage quality on its low voltage network; (b) 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; (c) how the EDB responds to and reports on voltage quality issues when the EDB identifies them, or when they are raised by a stakeholder; (d) how the EDB communicates with affected consumers regarding the voltage quality work it is carrying out on its low voltage network; and (e) any plans for improvements to any of the practices outlined at clauses (a)-(d) above;	10.7
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(e) (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).	7.2
Customer service practices - There may be a degree of overlap between the information required under this clause and the information required in respect of customer charters under clause 2.5.3. For the avoidance of doubt, if there is overlap, EDBs should disclose the information in both places. **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; **17.3.2** the EDB's approach to planning and managing customer complaint resolution;	3
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-Electricity Distribution Information Disclosure (Targeted Review 2024) Amendment Determination 2024 (a) connecting new consumers (offtake and injection connections), and overcoming commonly encountered issues; and (b) alterations to existing connections (offtake and injection connections); **17.4.2** how the EDB is seeking to minimise the cost to consumers of new or altered connections; **17.4.3** the EDB's approach to planning and managing communication with **17.4.4** commonly encountered delays and potential timeframes for different connections	6.3 6.3 6.3

Electricity Distribution Information Disclosure, Amendment Determination 2022	AMP Section
17.4.5 the EDB's approach to sharing information on current and forecast constraints (both 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 .	4.3
New connections likely to have a significant impact on network operations or asset management priorities The following requirements focus on the EDB's capability and risk management regarding demand, generation, or storage capacity that the EDB considers are likely to have a significant impact on its network operations or asset management priorities. The EDB may consider voltage, network location, or other factors in making this assessment. **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, e.g., 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;	Section 9.4 – Our planning assumptions
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.	Chapter 4.3 – Enabling our customers future energy needs

10.2 Appendix B – Transmission/GXP Capacity and Security Analysis

10.2.1 GXP Summary

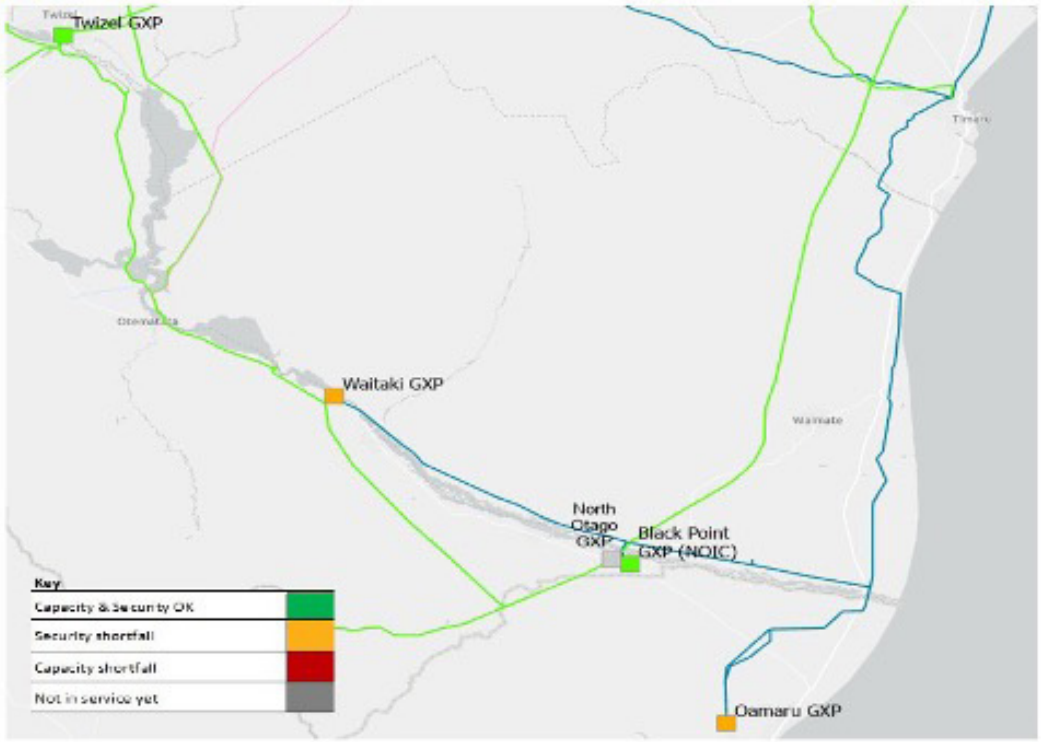


Table 24 - GXP details

Grid Exit Point	Voltage	Supply Configuration	Capacity	Max demand FY24 (Non-Coincident)	FY24 Zone Substations supplied
Ōamaru GXP	33 kV	(n-1) (n)	45 MVA 53 MVA	44 MVA	11
Twizel GXP	33 kV	(n-1)	27 MVA	4 MVA	3
Waitaki GXP	11 kV 33 kV	(n) (n-1) switched	24 MVA 13.5 MVA	13 MVA	4
Black Point GXP	110 kV	(n)	25 MVA	17 MVA	0

10.2.2 Ōamaru GXP

Configuration – Dual 60 MVA power transformers, Dual 45 MVA transmission circuits

GXP security rating – 45 MVA (n-1), 53 MVA (n)

Table 25 - Ōamaru GXP capacity and security summary

Capacity (MVA)	Security class	Security service level for first sub-transmission or zone substation outage	Capacity and security summary									
			FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
45 (n-1) 53 MVA (n)	A3	No interruption										

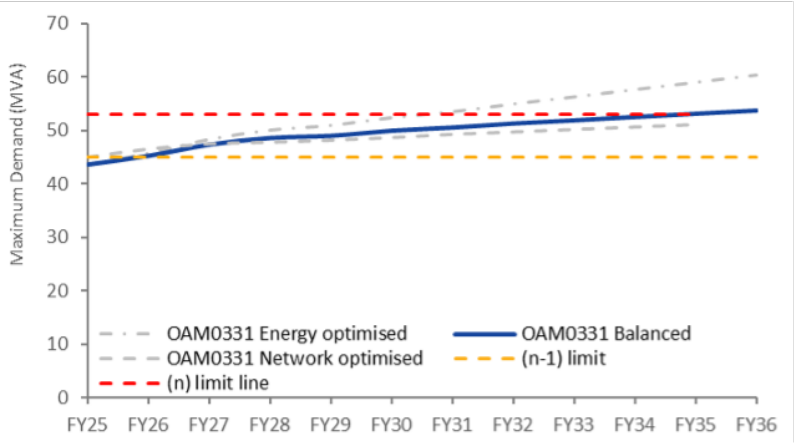
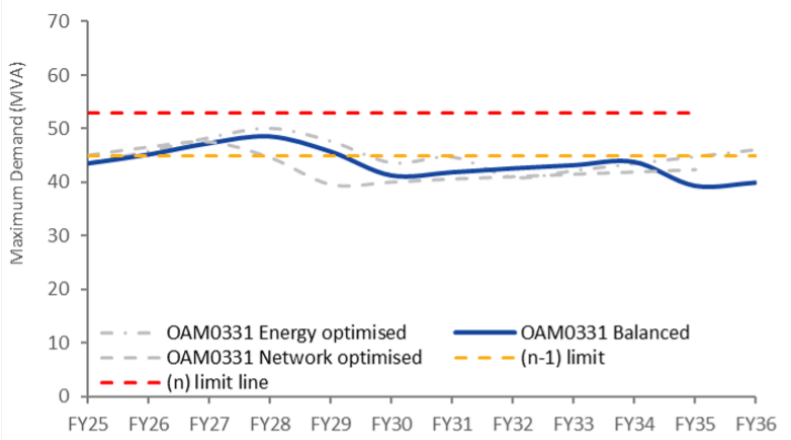


Figure 55 - Ōamaru GXP demand growth (excluding transfers to new GXP)

From FY27, periods of demand above 45 MVA may occur, during which some load at the Ōamaru GXP would be supplied at N level security, with support from a temporary Transpower special protection scheme. Under the highest growth scenario, this scheme could reach capacity as early as FY31, which would prevent us from meeting new customer demand and exposing a significant portion of existing load to N-level security risk.

To address this risk, we are planning for a new GXP at Bortons by 2030. This would enable a progressive transfer of demand from Ōamaru GXP and to reduce reliance on the special protection scheme.

Figure 56 - Ōamaru GXP demand growth (allowing for transfers to new GXP)



Note:

The timing of load transfers to the new GXP will vary by scenario, leading to differences in the demand forecast curves.

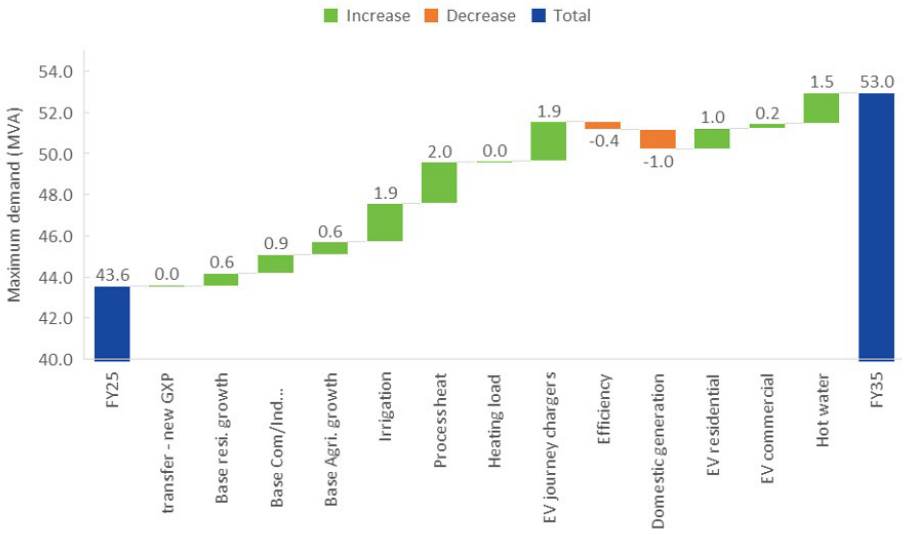


Figure 57 - Ōamaru GXP demand growth components – Balanced scenario (excluding transfers to new GXP)

Notes:

- Until the new GXP is operational and the temporary Special Protection Scheme retired in FY30 demand between 45 MVA and 53 MVA will be subject to (n) security of supply. Until FY30, we will be unable to offer N-1 level GXP security to new large-load customers.
- Since 2022, all new subtransmission lines have been constructed at 110 kV standard and initially operated at 33 kV. Once demand approaches the capacity of the 33 kV network, the system can be upgraded to 110 kV.
- Connecting Ōamaru GXP to this 110 kV subtransmission ring would free up significant capacity on Transpower's Waitaki-Glenavy 110 kV system. Under our balanced demand scenario, we do not expect this upgrade will be required within the planning period.

We provide further details on these projects in Appendix E – Future Network Plan - projects

10.2.3 Twizel GXP

Configuration – Dual 27 MVA power transformers

GXP security rating – (n-1)

Twizel GXP supplies Network Waitaki, Alpine Energy and Meridian Energy. At present, our demand is about 50% of the total GXP demand.

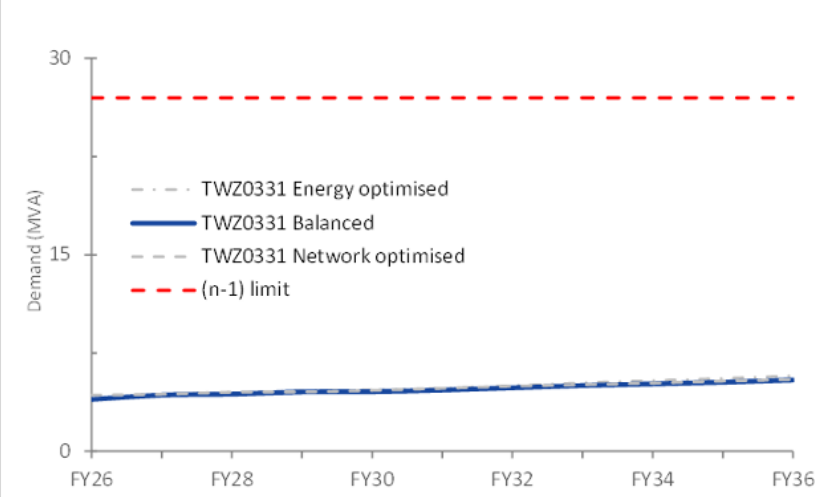


Figure 58 – Twizel GXP demand growth scenarios

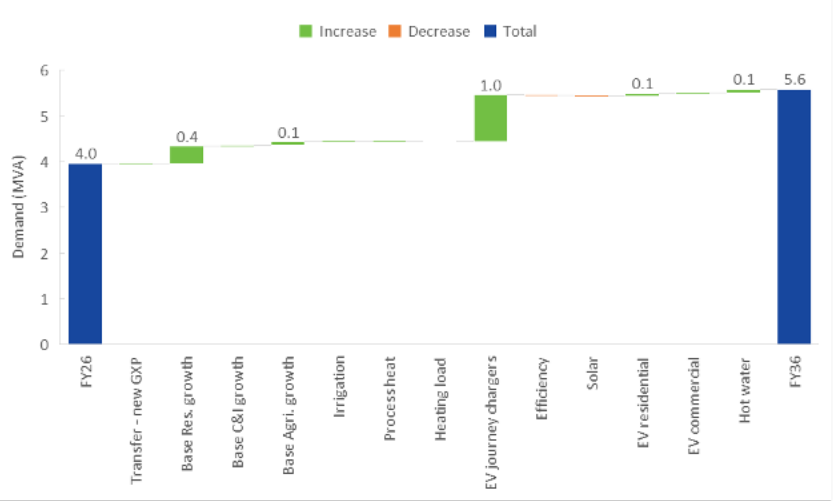


Figure 59 - Demand growth components – expected scenario

We expect low demand growth over the planning period, with the main component being EV journey chargers in the Ōmārama area.

Capacity (MVA)	Security class	Security service level for first sub-transmission or zone substation outage	Capacity and security summary									
			FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
27	(n-1)	No interruption										

Table 26 - Twizel GXP capacity and security summary

There are no capacity or security constraints expected in the planning period.

Note:

The timing of load transfers to the new GXP will vary by scenario, leading to differences in the demand forecast curves.

10.2.4 Black Point GXP

Configuration – Single 25 MVA power transformer

GXP security rating – (n) level security

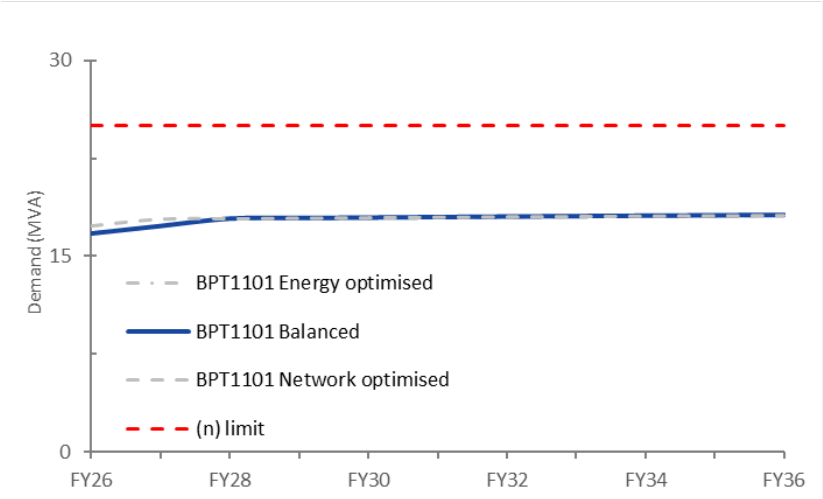


Figure 60 - Black Point GXP demand scenarios

The connected irrigation company has sold the remaining shares in their irrigation scheme, which will increase demand for water supply from the scheme. As a result, we expect maximum demand to increase to 18 MVA by FY27.

Capacity (MVA)	Security class	Security service level for first sub-transmission or zone substation outage	Capacity and security summary									
			FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
25	(n)	Supply restored in repair time										

Table 27 - Black Point GXP capacity and security summary

No capacity or security constraints are expected in the planning period.

Note:

This GXP is subject to a Transpower special protection (demand control) scheme. In the event of a fault on the Waitaki-Bells Pond-Ōamaru 110 kV line during a constrained period, the special protection scheme may reduce NOIC pumping demand below the constraint.

10.2.5 Bortons GXP (Proposed FY30)

Configuration – 50 MVA supply from Transpower at 33 kV

GXP security rating – (n) level security

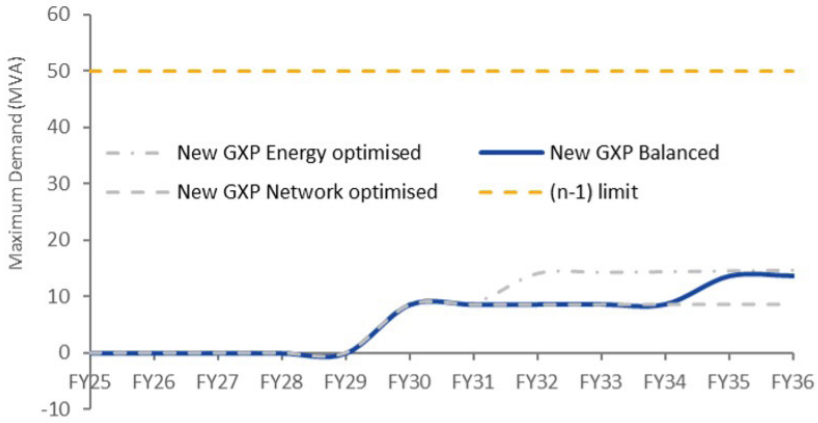


Figure 61 - Bortons GXP demand scenarios

Marker	Period	Description
1	FY28	• Bortons GXP in service at 33 kV • Te Awamako Sub (3.2 MVA) transferred - Ōamaru GXP to Bortons GXP • Papakaio Sub (5.3 MVA) transferred - Ōamaru GXP to Bortons GXP
2	FY32-FY35	• Ngapara Sub (3.2 MVA) transferred - Ōamaru GXP to Bortons GXP • Enfield Sub (3.2 MVA) transferred - Ōamaru GXP to Bortons GXP • Duntroon Sub (4.7 MVA) transferred - Waitaki GXP to Bortons GXP

Table 28 - Key events in demand scenarios

Note:

The timing of load transfers to the new GXP will vary by scenario, leading to differences in the demand forecast curves

Capacity (MVA)	Security class	Security service level for first sub-transmission or zone substation outage	Capacity and security summary									
			FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
50	(n)	No interruption										

Table 29 - Bortons GXP capacity and security summary

There are no capacity or security constraints expected in the planning period

10.3 Appendix C – Subtransmission/Zone Sub Capacity and Security Analysis

Duntroon Zone Substation

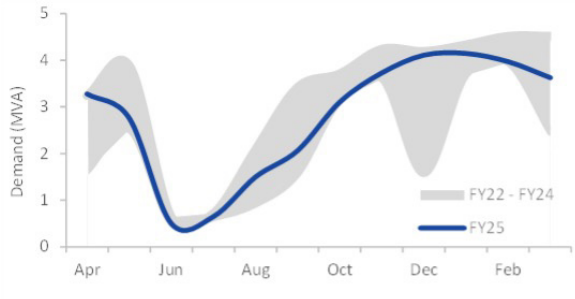
Configuration – Single 7 MVA power transformer

GXP security rating – B4 rural zone substation

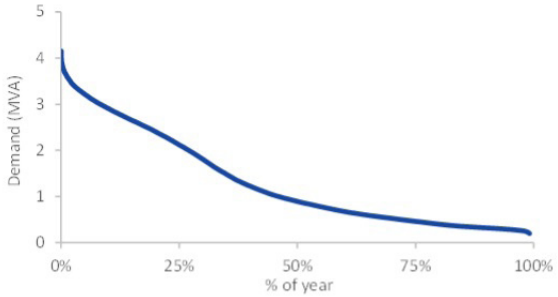
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural A	218			

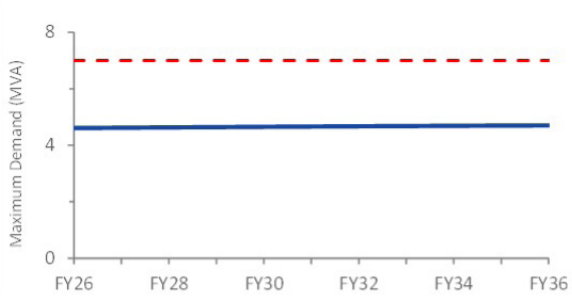
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation			Distribution feeder		
	FY27	FY31	FY36	FY27	FY31	FY36
Rural A						

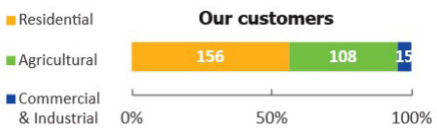
Commentary

Duntroon Zone Substation has sufficient capacity to meet all demand scenarios. Duntroon Zone Substation may have insufficient sub transmission backup security from Ōamaru GXP from FY27. In the event of an outage, irrigation demand would be subject to rolling outages. This will be alleviated by the new Bortons GXP

Enfield Zone Substation

Configuration – Single 7 MVA power transformer

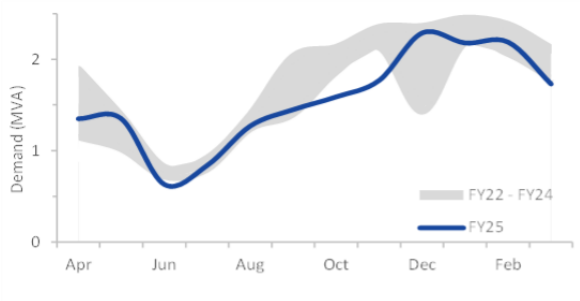
GXP security rating – B4 rural zone substation



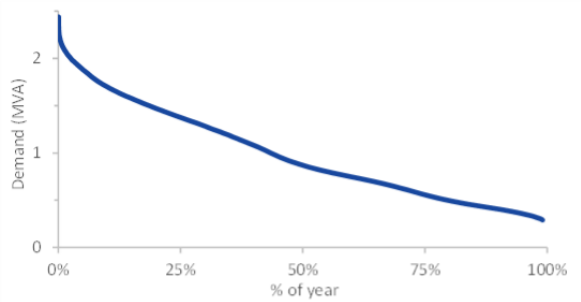
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural A	279			

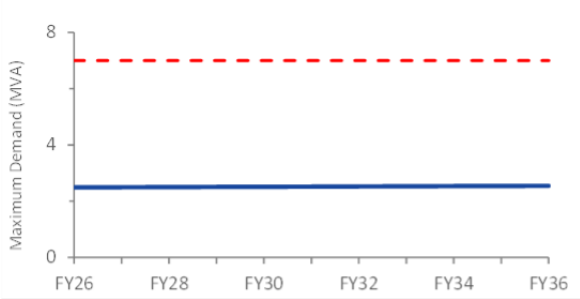
FY25 demand profile



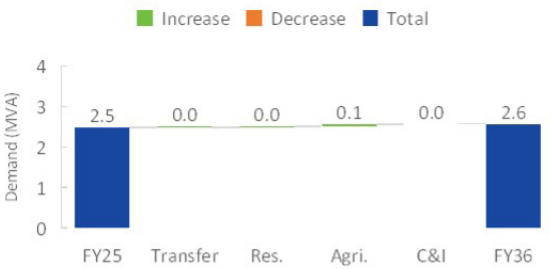
FY25 demand duration curve



10 year demand forecast



New demand breakdown



Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation									Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Rural A																				

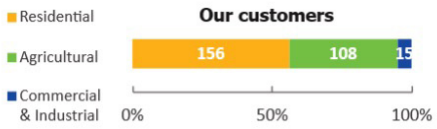
Commentary

Enfield Zone Substation has sufficient capacity to meet all demand scenarios and will meet our security of supply standard for the expected scenario over the planning period

Five Forks Zone Substation

Configuration – Single 7 MVA power transformer

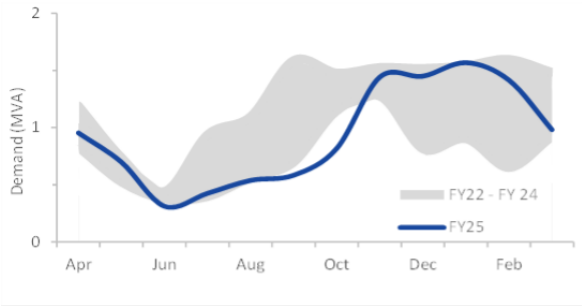
GXP security rating – B4 rural zone substation



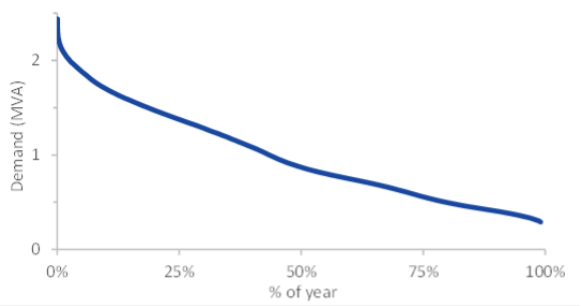
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural A	212			

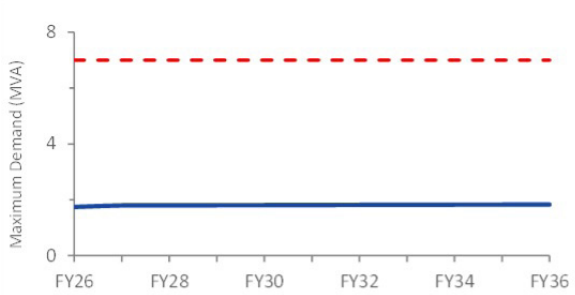
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation									Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36	
Rural A																			

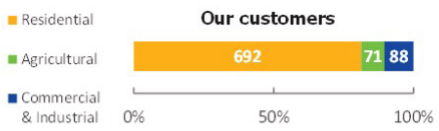
Commentary

Five Forks Zone Substation has sufficient capacity to meet all demand scenarios and will meet our security of supply standard for the expected scenario over the planning period

Hampden Zone Substation

Configuration – Single 7 MVA power transformer

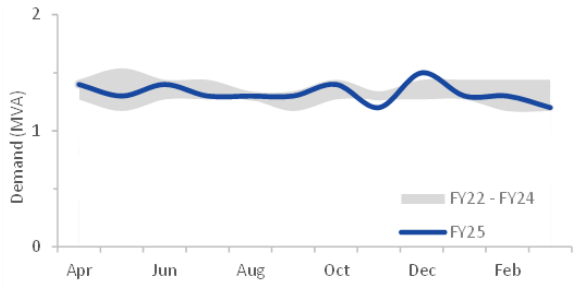
GXP security rating – B5 township zone substation



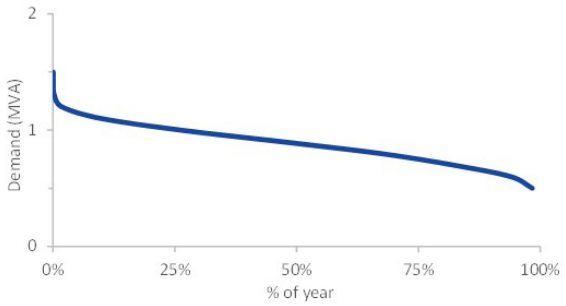
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Township - Hampden	283			
Township - Moeraki	210			
Rural A	358			

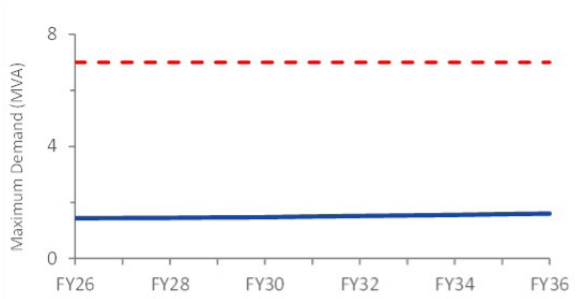
FY25 demand profile



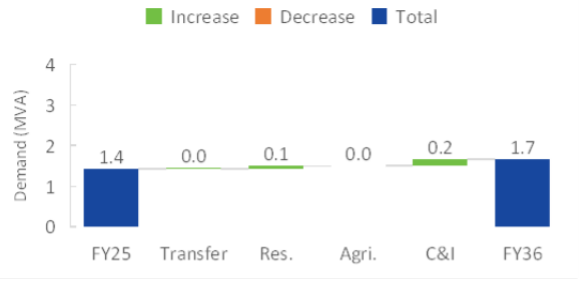
FY25 demand duration curve



10 year demand forecast



New demand breakdown



Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation										Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Township - Hampden																				
Township - Moeraki																				
Rural A																				

Commentary

Hampden Zone Substation has sufficient capacity to meet all demand scenarios.
Scheduled maintenance effect reliability performance.

Maheno Zone Substation

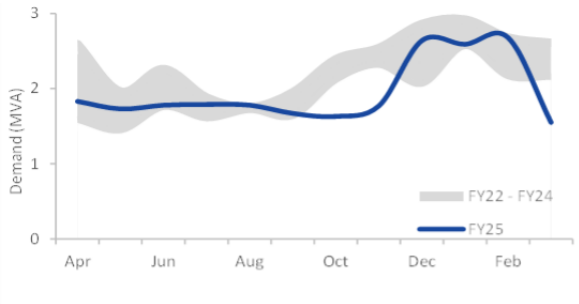
Configuration – Single 5 MVA power transformer

GXP security rating – B3 township zone substation

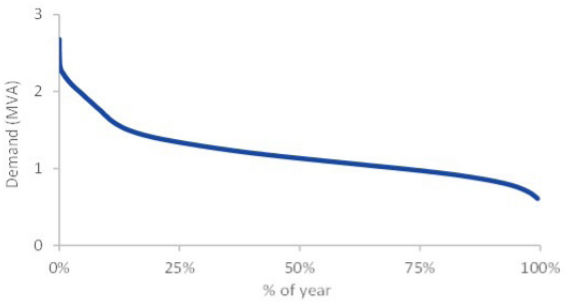
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Township - Kakanui	378			
Rural A	690			

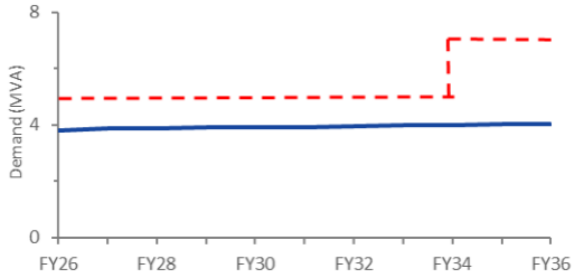
FY25 demand profile



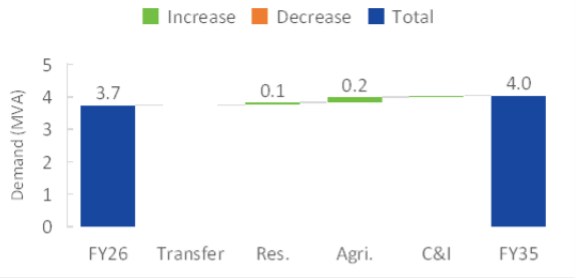
FY25 demand duration curve



10 year demand forecast



New demand breakdown



Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation									Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36	
Township - Kakanui																			
Rural A																			

Commentary

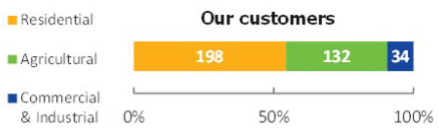
Maheno Zone Substation has sufficient capacity to meet all demand scenarios and will meet our security of supply standard for the expected scenario over the planning period.

Planned asset replacement impacted reliability performance. Maheno power transformer is scheduled for end of life replacement in FY34 and will be replaced with a larger standard sized unit.

Ngapara Zone Substation

Configuration – Single 7 MVA power transformer

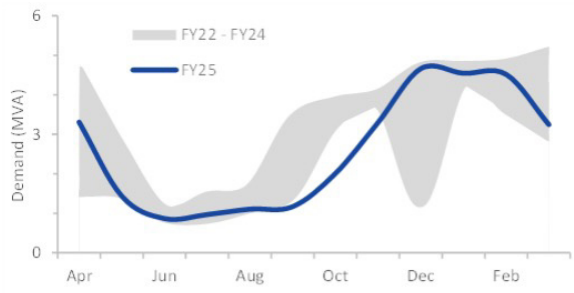
GXP security rating – B4 rural zone substation



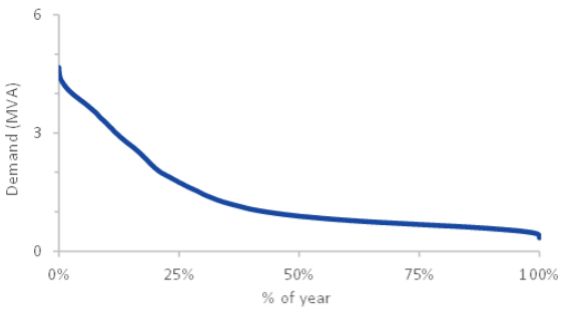
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural A	364			

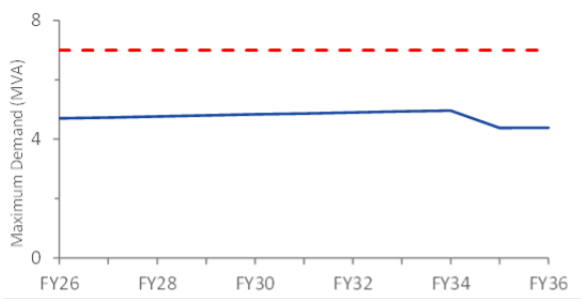
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation									Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Rural A																			

Commentary

Ngapara Zone Substation has sufficient capacity to meet all demand scenarios and will meet our security of supply standard for the expected scenario over the planning period. HV feeder CB421 Island Cliff affected the reliability.

Papakaio Zone Substation

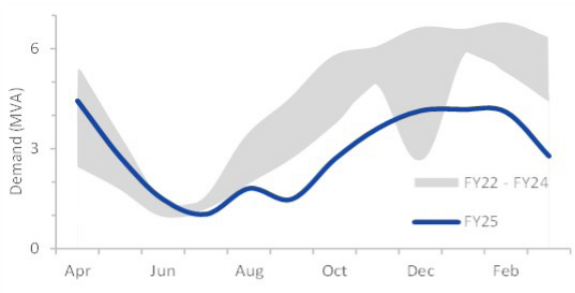
Configuration – Single 7 MVA power transformer

GXP security rating – B4 rural zone substation

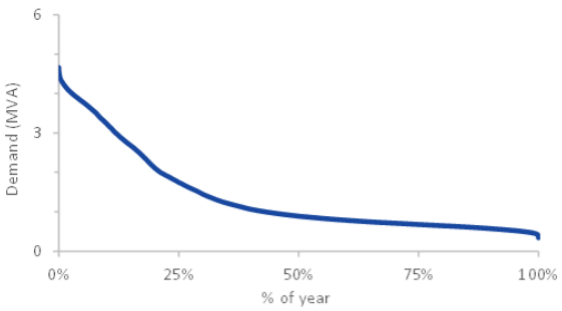
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural A	364			

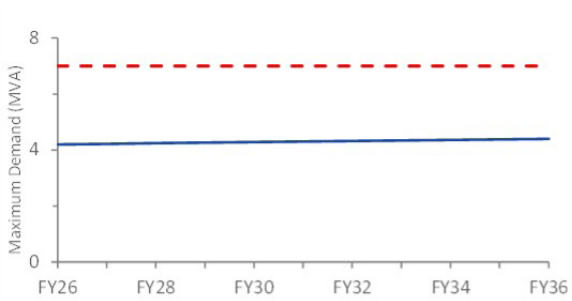
FY25 demand profile



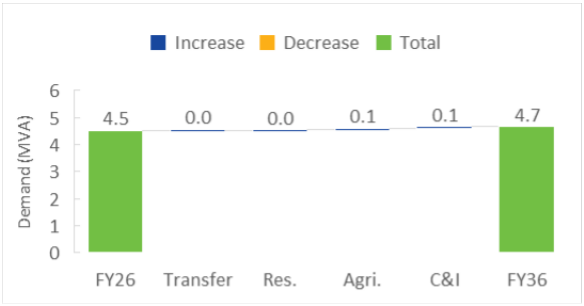
FY25 demand duration curve



10 year demand forecast



New demand breakdown



Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation			Distribution feeder		
	FY27	FY31	FY36	FY27	FY31	FY36
Rural A						

Commentary

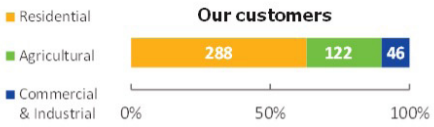
Papakaio Zone Substation has sufficient capacity to meet all demand scenarios.

Historical peaks shown in demand profile graph have been lowered with transfers to new Te Awamako Zone Substation. There is a security constraint for a sub-transmission outage between Pukeuri and Papakaio Zone Substations. This constraint which will be alleviated in FY30 when the new Bortons GXP is in service.

Pukeuri Zone Substation

Configuration – Dual 23 MVA power transformer

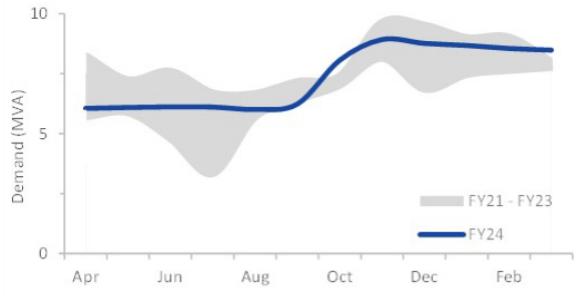
GXP security rating – B1 Business hub zone substation



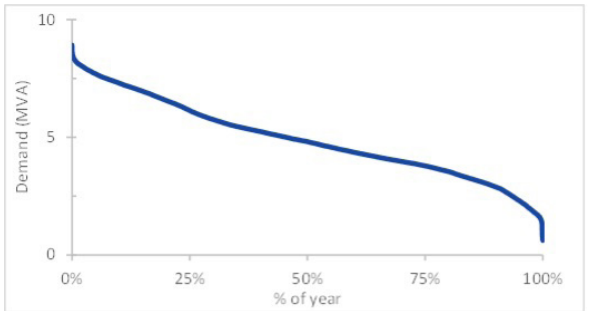
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Business hub	10			
Rural A	437			

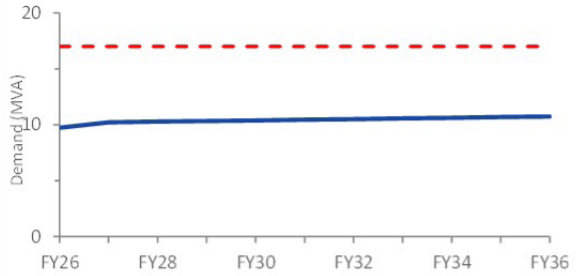
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation										Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Business																				
Rural A																				

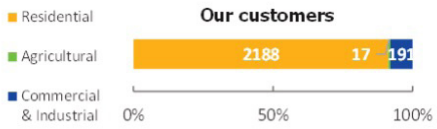
Commentary

Pukeuri Zone Substation has sufficient capacity to meet all demand scenarios and will meet our security of supply standard for the balanced scenario. Planned maintenance impacted reliability performance.

Redcastle Zone Substation

Configuration – Dual 15 MVA power transformer

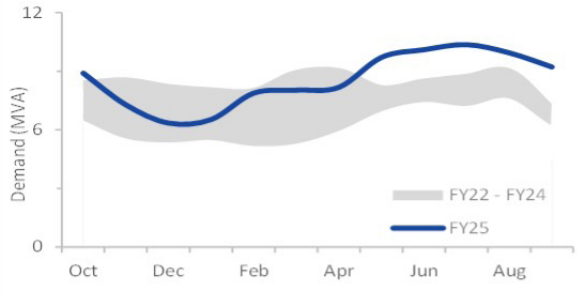
GXP security rating – B1 business hub zone substation



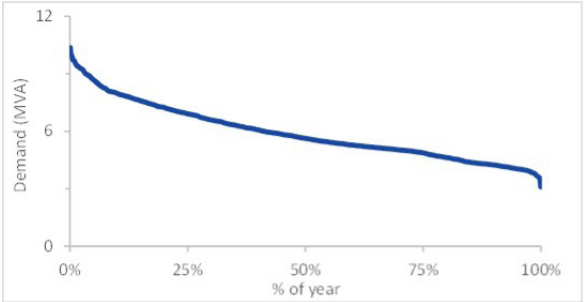
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Business	191			
Urban	2170			
Rural A	35			

FY25 demand profile

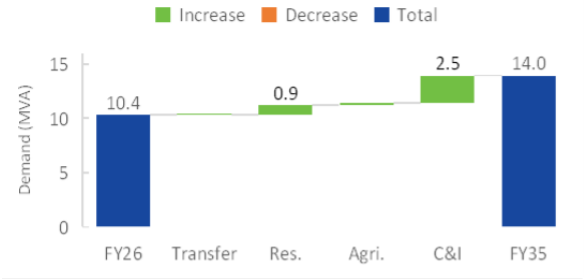


FY25 demand duration curve



10 year demand forecast

New demand breakdown



Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation			Distribution feeder		
	FY27	FY31	FY36	FY27	FY31	FY36
Business						
Urban						
Rural A						

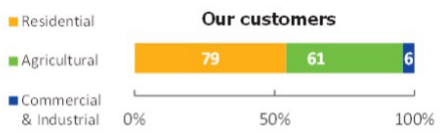
Commentary

Redcastle Zone Substation has sufficient capacity for the expected scenario and will meet our security of supply standard for the expected scenario over the planning period.

Te Awamako Zone Substation

Configuration – Single 10 MVA power transformer

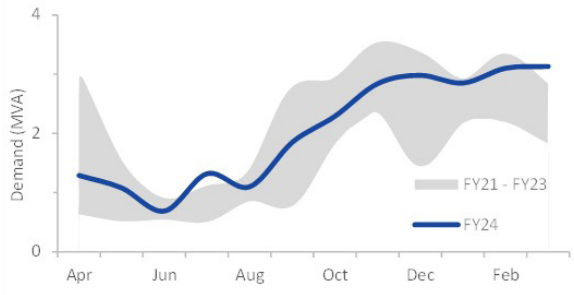
GXP security rating – B4 rural zone substation



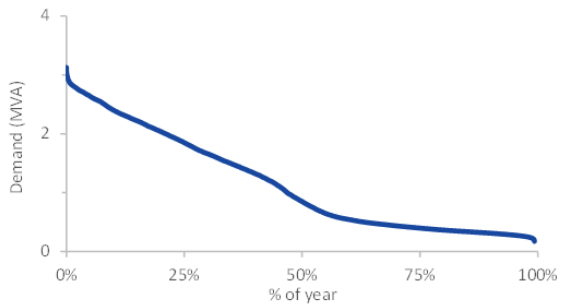
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural A	146			

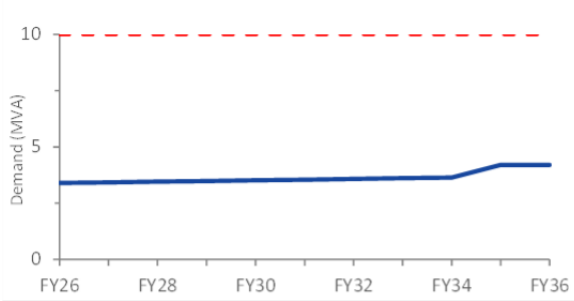
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation										Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Rural A																				

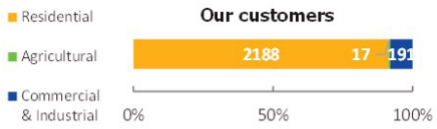
Commentary

Te Awamako Zone Substation was commissioned in FY25. There is a security constraint for a sub-transmission outage between Pukeuri and Papakaio Zone Substations which will be alleviated in FY30, when the new Bortons GXP is in service. No further capacity or security constraints are expected in the planning period.

Kurow Zone Substation

Configuration – 12 & 15 MVA power transformers

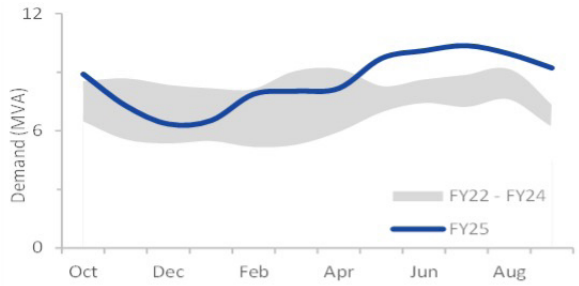
GXP security rating – B3 township zone substation



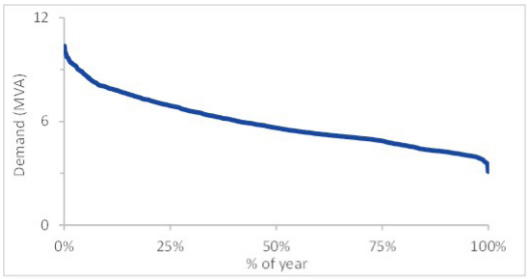
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Township - Kurow	270			
Rural A	65			
Rural B	366			
Rural C	55			

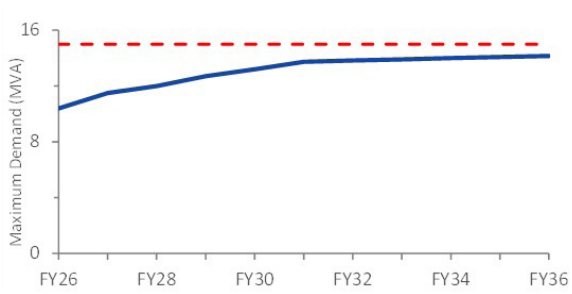
FY25 demand profile



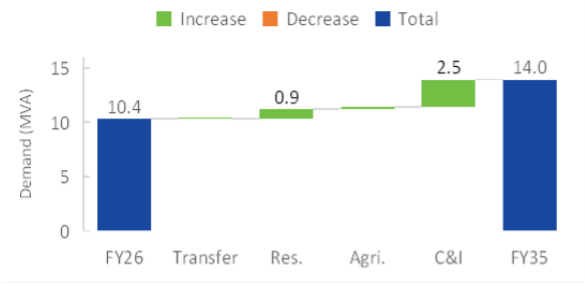
FY25 demand duration curve



10 year demand forecast



New demand breakdown



Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation										Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Township - Kurow																				
Rural A																				
Rural B																				
Rural C																				

Commentary

Kurow Zone Substation has sufficient capacity to meet all demand scenarios.

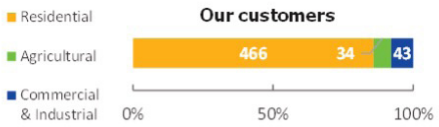
Distribution feeder security of supply constraint alleviated in FY29 by Kurow Township Security & Resilience Improvement Project.

Reliability performance affected Hakataramea due to 3rd. party cable strike.

Otematata Zone Substation

Configuration – Double 3 MVA industrial transformer

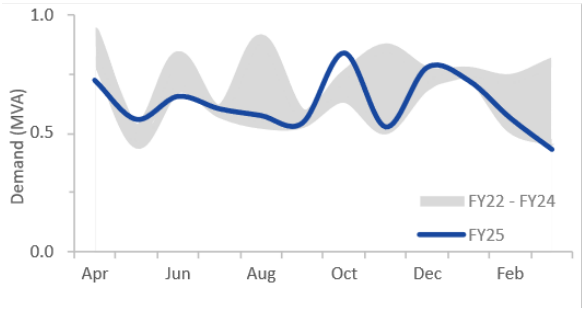
GXP security rating – B3 township zone substation



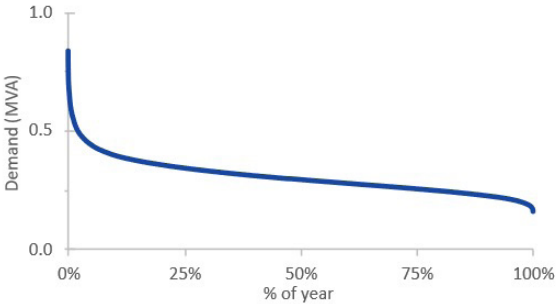
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Township - Otematata	498			
Rural B	45			

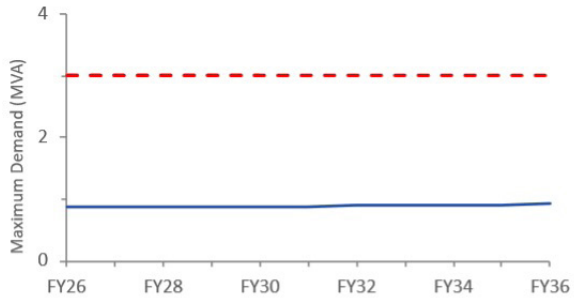
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation										Distribution feeder									
	FY27			FY31				FY36			FY27			FY31				FY36		
Township - Otematata																				
Rural B																				

Commentary

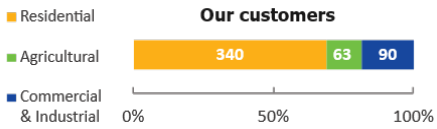
Otematata zone substation has sufficient capacity to supply forecast demand for the remainder of the planning period.

Distribution feeder security of supply constraint will be alleviated in FY27 by Otematata township security/resilience improvement project.

Ōmārama Zone Substation

Configuration – Dual 3 MVA power transformer

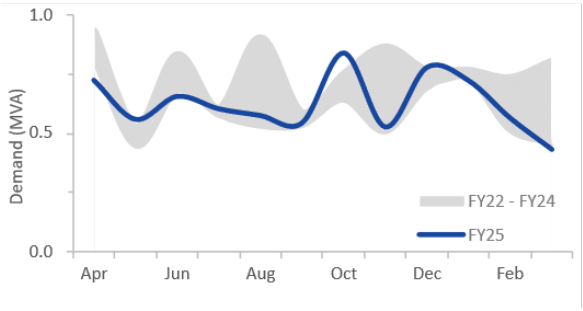
GXP security rating – B3 township zone substation



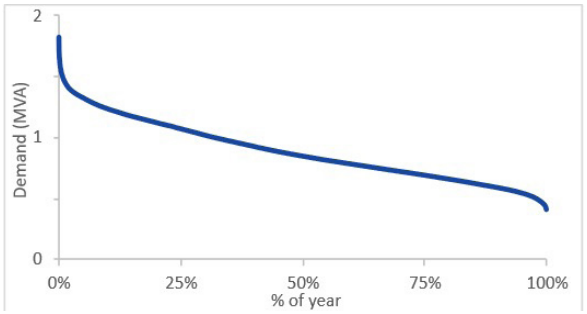
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Township - Ōmārama	354			
Rural C	139			

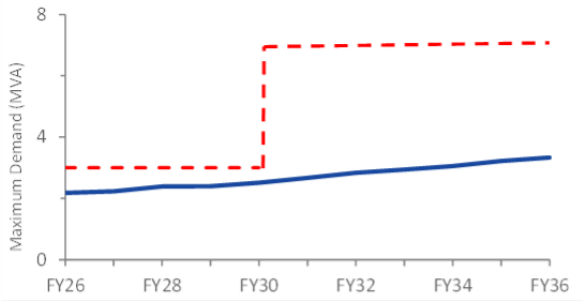
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation			Distribution feeder		
	FY27	FY31	FY36	FY27	FY31	FY36
Township - Ōmārama						
Rural C						

Commentary

Ōmārama zone substation has sufficient capacity to meet all demand scenarios and will meet our security of supply standard for the expected scenario over the planning period.

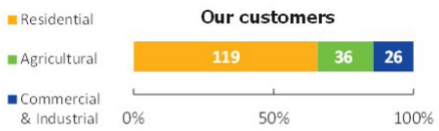
Planned maintenance and a vehicle crash impacted reliability performance. Distribution feeder security of supply constraint will be alleviated in FY27 by Ōmārama township security/resilience improvement project.

Subtransmission & Zone substation security of supply constraint alleviated in FY29 when two automated switches are installed (in conjunction with transformers end of life renewal).

Ōhau Zone Substation

Configuration – Single 3 MVA power transformer

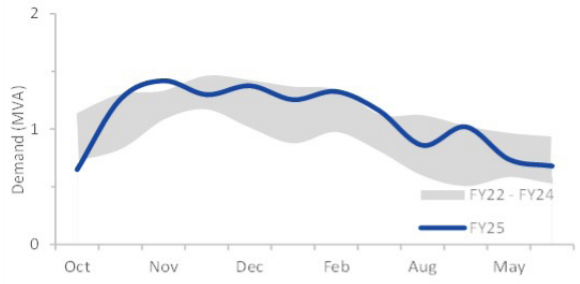
GXP security rating – B5 rural zone substation



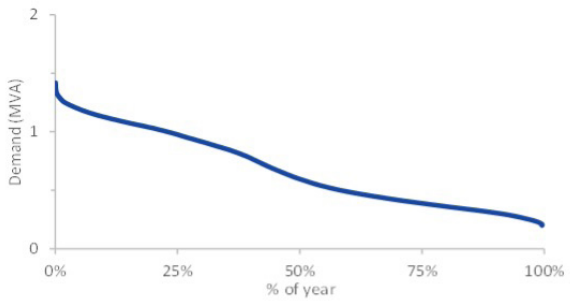
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural C	181			

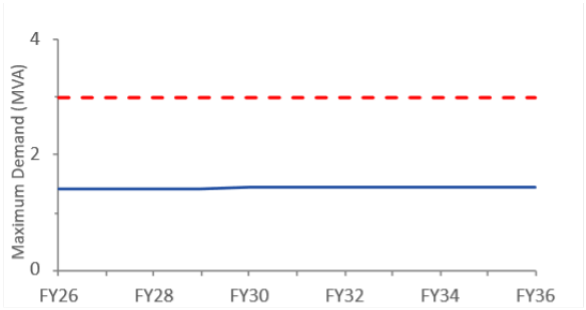
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation			Distribution feeder		
	FY27	FY31	FY36	FY27	FY31	FY36
Rural B						

Commentary

Ōhau zone substation has sufficient capacity to meet all demand scenarios.

Ōhau feeder does not meet our security standard, we cannot restore 50% of customers within switching time for a feeder outage. It is currently uneconomic to provide a backup supply into this area; however we have hardened this distribution feeder to reduce susceptibility to faults.

This work impacted reliability performance over FY25.

Ruataniwha Zone Substation

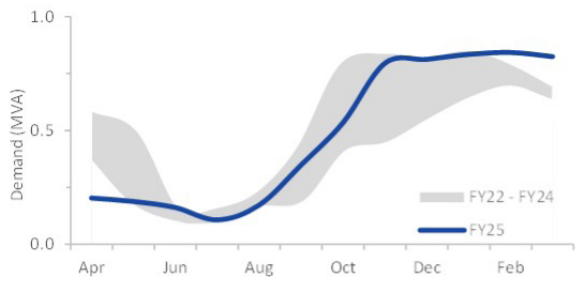
Configuration – Single 2 MVA power transformer

GXP security rating – (n) security customer substation

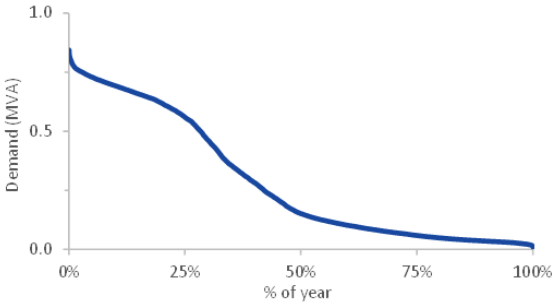
FY25 customer reliability performance

Customer supply group	Number of customers	Average interruption duration	Average number of interruptions	Max interuptions for any customer
Rural C	18			

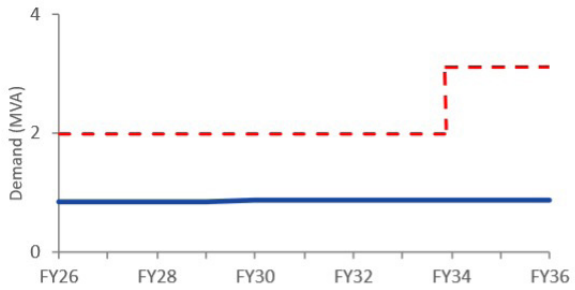
FY25 demand profile



FY25 demand duration curve



10 year demand forecast



New demand breakdown

Customer security of supply summary

Customer supply group	Sub-transmission/Zone substation			Distribution feeder		
	FY27	FY31	FY36	FY27	FY31	FY36
Rural C						

Commentary

Ruataniwha Zone Substation has sufficient capacity to meet all demand scenarios and will meet our customer's security requirements over the planning period. Ruataniwha transformer is scheduled for condition-based replacement in FY34, and transformer will be sized for planned demand growth.

10.4 Appendix D – Future Network Plan – Projects

10.4.1 System Growth Projects

Project No.	Project Name	Cost ($000)	Year	Primary Driver
1	Bortons GXP – NWL component	$200 $2,500 $2,500	FY27 FY28 FY29	System growth
Issue	Ōamaru GXP is forecast to reach a capacity/security constraint within the AMP horizon, creating a regional supply risk unless additional grid exit capacity is established to share load and restore security margin across the customer base.			
Planned Solution	This project involves construction of a new GXP (Bortons GXP) to be operational by FY30. Initially this GXP will connect into our 33 kV sub-transmission network and allow us to progressively offload Ōamaru GXP.			
Comments/ alternatives	We engaged an external consultant to peer review our demand scenarios, evaluate the risks associated with a do nothing approach, and review preliminary business case options to address this issue. Options considered included reconductoring existing transmission circuits, grid-scale batteries, embedded renewable generation, demand response, grid bypass options, and building a new GXP. Building a new GXP was evaluated as the best technical and economic solution. The 220 kV GXP infrastructure would be delivered through a Transpower capital project and funded via a Transpower Works Agreement. This project involves construction of a 33 kV switching station to integrate the GXP into our sub-transmission network. A final business case will be developed following completion of preliminary design to confirm that the investment remains justified before committing to delivery.			

Project No.	Project Name	Cost ($000)	Year	Category
2	New sub-transmission – Bortons GXP to Te Awamako	$4,400	FY27	System growth
Issue	Integration of the new GXP into the sub transmission backbone is required to enable transfer of multiple zone substations, allowing the capacity and security benefits of the GXP to be realised across the affected supply areas.			
Planned Solution	Construct a new sub-transmission circuit to enable transfer of Te Awamako and Papakaio zone substations onto Bortons GXP once operational (FY30), alleviating security constraints at those substations.			
Comments/ alternatives	The line will initially operate at 33 kV and be constructed to 110 kV standard to provide future capacity optionality as demand evolves. A business case will be developed to compare the options available at the time, including non network alternatives.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
3	New sub-transmission – Bortons GXP to Ngapara (Stages 1–2)	$220 $3,183 $3,183	FY27 FY28 FY29	System growth
Issue	Without an additional sub-transmission path, transfer of Ngapara supply and relief of shared security constraints remains unavailable; this is enabling infrastructure required to unlock the system-level benefits of the new GXP.			
Planned Solution	Design and construct a new sub-transmission line between Bortons GXP and Ngapara zone sub to enable Ngapara to be supplied from Bortons. Initially operate at 33 kV; construct to 110 kV standard for future proofing.			
Comments/ alternatives	A business case will be developed to compare the options available at the time, including non network alternatives.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
4	110/33 kV conversion stations – secure land	$550 $550	FY35 FY36	System growth
Issue	If growth triggers a sub-transmission conversion to 110 kV, suitable sites and easements become a critical lead-time constraint; securing land early preserves feasible future pathways without committing to full conversion.			
Planned Solution	Select appropriate locations and secure land and related easements for potential 110/33 kV conversion stations in the Papakaio and Ngapara areas.			
Comments/ alternatives	To be confirmed as growth and option evaluation progresses. This is an option-preserving action only and may be brought forward or deferred based on actual growth experienced A business case will be developed to compare the options available at the time, including non network alternatives.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
5	Ruataniwha substation –conversion to zone substation	$500	FY34	System growth
Issue	Transformer condition based replacement is scheduled for FY34. At that time, based on advised customer expansion plans, there may be an opportunity to convert the site from a customer only substation to a zone substation.			
Planned Solution	Reconfigure/interconnect the substation into the 11 kV network to enable additional capacity into the Ōhau/Ruataniwha feeder area.			
Comments/ alternatives	Customer- and growth-dependent. The project may be brought forward or deferred based on customer developments and transformer condition outcomes. A business case will be developed to compare the options available at the time, including non network alternatives.			

10.4.2 Network Transformation and provisional projects

Project No.	Project Name	Cost ($000)	Year	Primary Driver
6	Low voltage monitoring	$290	FY27	System growth (Network Transformation)
Issue	Most distributed energy resources and electric vehicle growth are expected to impact low voltage feeder cables and distribution transformers. Without visibility of current performance and emerging trends, there is a risk of either premature or delayed investment. Monitoring is required to benchmark performance and enable timely, least cost intervention.			
Planned Solution	Install LV feeder and distribution transformer monitors (final year of multi-year project) and embed into business operations			
Comments/ alternatives	Rationale is described in the LV networks section. This is a continuation/embedding phase rather than a new initiative.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
7	Provisional DTx & LV reinforcement (allowance)	$300 $300 $400 $750 $750 $1,500 $1,500 $1,500 $1,500 $2,000	FY27 FY28 FY29 FY30 FY31 FY32 FY33 FY34 FY35 FY36	System growth
Issue	DERS and electric vehicle uptake is expected to create incremental, location specific constraints on low voltage feeders and distribution transformers that cannot yet be defined as discrete projects.			
Planned Solution	This allowance provides flexibility while further work is undertaken to refine capacity understanding and investment profiles, with specific LV feeder and distribution transformer upgrades identified and prioritised through annual planning.			
Comments/ alternatives	Allowance only; specific projects will be defined as evidence emerges through LV monitoring, applications and planning studies. A business case will be developed to compare the options available at the time, including non network alternatives.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
8	Provisional HV reinforcement (allowance)	$200 $200 $200 $200 $300 $300 $400 $400 $500 $500	FY27 FY28 FY29 FY30 FY31 FY32 FY33 FY34 FY35 FY36	System growth
Issue	HV reinforcement needs will be triggered by discrete connection steps and emerging constraints that cannot be fully specified now; this allowance is governed through annual planning and option assessment.			
Planned Solution	To be determined through annual planning based on HV feeder studies and growth triggers.			
Comments/ alternatives	Allowance only; specific works and Primary Driver will be confirmed as studies and connection applications progress. A business case will be developed to compare the options available at the time, including non network alternatives.			

10.4.3 RSEQ Projects

Project No.	Project Name	Cost ($000)	Year	Primary Driver
9	Weston Switching Station security improvements	$200	FY27	RSEQ; Security of supply
Issue	Weston 33 kV switchboard configuration creates a common-mode failure exposure that does not meet security intent for this supply point; reconfiguration reduces a low-probability/high-impact shared supply risk affecting multiple customers.			
Planned Solution	Reconfigure the switchboard to remove the common bus-bar failure risk			
Comments/ alternatives	Completion of a carried-over project (FY26).			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
10	Weston/Redcastle ring protection upgrade	$300	FY27	RSEQ; Security of supply
Issue	Recent faults have shown the existing ring protection scheme can lead to avoidable customer impact and sub-optimal fault isolation; upgrading protection reduces the likelihood and consequence of widespread outages for a shared feeder group.			
Planned Solution	Upgrade ring protection scheme to include line/bus zone differential protection with fibre communications to improve protection performance.			
Comments/ alternatives	Completion of Stage 2 (Stage 1 completed in FY26).			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
11	Ōmārama township security improvement	$284	FY27	RSEQ; Security of supply
Issue	Manual switching causes restoration times to exceed target time frames for our township customer group; automation reduces restoration time and customer risk during faults and major events.			
Planned Solution	Install remotely operated switches to enable backup supply to be restored from the control room. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
12	Observatory Village security improvement	$200	FY28	RSEQ; Security of supply
Issue	The current network configuration supplying the retirement village relies on manual backup restoration, which can result in longer restoration times for the affected feeder segment during fault events.			
Planned Solution	Install a remotely operated switch to allow backup supply to be restored from the control room.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
13	Kurow township security improvement	$331	FY29	RSEQ; Security of supply
Issue	Lack of a practicable backup supply path limits the ability to restore supply to the township segment during wider events; creating an inter-tie reduces outage consequence and improves restoration capability for shared community loads.t.			
Planned Solution	Install a new section of line and two remotely operable switches to enable a remotely operated backup supply.			
Comments/ alternatives	A business case will be developed to compare the options available at the time, including non-network alternatives. While security is the primary driver, this project will also deliver resiliency and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
14	Ōmārama Zone Sub security improvement	$135	FY29	RSEQ; Security of supply
Issue	Zone substation restoration relies on manual switching dispatched from Oamaru that can materially delay supply restoration for affected customers; automation reduces restoration time and aligns switching performance with security intent, coordinated with transformer renewal to minimise incremental cost.			
Planned Solution	Replace Ōmārama Zone Substation's manual backup switches with automated devices.			
Comments/ alternatives	A business case will be developed and approved in accordance to evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
15	Horse Gully feeder security improvement	$105	FY30	RSEQ; Security of supply
Issue	Backup supply restoration depends on manual field switching, creating avoidable restoration delay for the feeder segment; a remotely operable tie reduces outage duration and improves restoration performance consistent with security of supply intent..			
Planned Solution	Install remotely operated tie switch to allow remote switching of backup supply.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
16	Weston / Parsons supply security improvement	$453	FY30	RSEQ; Security of supply
Issue	Limited 11 kV backup supply options into Parsons creates restoration exposure for the Weston township segment which does not meet our security of supply guidelines			
Planned Solution	Install an automated ring main unit and two new remotely operated switches to improve backup supply capability.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
17	Ōhau feeder security improvement	$105	FY30	RSEQ; Security of supply
Issue	Manual switching drives extended restoration times for the affected feeder segment exceeding security of supply guidelines.			
Planned Solution	Replace ABS 1604 with an automated switch.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
18	Waitaki Bridge security improvement	$100	FY31	RSEQ; Security of supply
Issue	Manual switching drives extended restoration times for the affected feeder segment exceeding security of supply guidelines.			
Planned Solution	Install an automated switch near Seven Mile Rd to allow remotely operated partial backup supply from Pukeuri Zone Substation.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
19	Solway feeder security improvement	$250	FY32	RSEQ; Security of supply
Issue	Manual switching between Weston and Ōamaru backup paths can materially extend outage duration for affected customer groups; automation provides reliable remote restoration capability and reduces customer impact for a shared feeder corridor.			
Planned Solution	Install an automated ring main unit to provide remote operation of the backup supply.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
20	Teaneraki security improvement	$250	FY32	RSEQ; Security of supply
Issue	Manual switching drives extended restoration times for the affected feeder segment exceeding security of supply guidelines.			
Planned Solution	Create a feeder tie via new line on Teaneraki Rd and install a remotely operated tie switch.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
21	Hampden township security improvement	$30	FY35	RSEQ; Security of supply
Issue	Hampden township is exposed to rural overhead circuit fault risk that can drive disproportionate outage duration; relocating protection sectionalises risk and reduces customer impact without constituting an above-standard enhancement for a single party.			
Planned Solution	Relocate recloser R651 to the township boundary to reduce township exposure to rural overhead circuits.			
Comments/ alternatives	A business case will be developed and approved in accordance with company processes to re-evaluate the available options at the time, including non-network alternatives, and to confirm that the risk-cost trade-offs support proceeding with the preferred solution. While security is the primary driver, this project will also deliver resiliency improvements and real-time operational benefits.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
22	Security of Supply improvements – provisional projects	$300 $230 $100 $400	FY31 FY32 FY33 FY34-36	RSEQ; Security of supply
Issue	Provision for security of supply issues that appear as a result of system studies. These will most likely be driven by erosion of design security levels by system growth.			
Planned Solution	Solutions will be determined in response to problems being identified and after option analysis and business justification.			
Comments/ alternatives				

Project No.	Project Name	Cost ($000)	Year	Primary Driver
22	Radio Link comms upgrades Communications system upgrades	$105 $105	FY31-FY37	RSEQ; Security of supply
Issue	Comms upgrades to take advantage of new technologies and features.			
Planned Solution	To be determined			
Comments/ alternatives				

10.4.4 Customer Dependent Projects

Project No.	Project Name	Cost ($000)	Year	Primary Driver
25	Install Distribution Transformers – Customers	$424	FY27–FY37	Consumer connection
Issue	These works are customer-triggered			
Planned Solution	To be determined per connection / application.			
Comments/ alternatives	Provisional budget based on previous three-year average and may be offset by customer capital contribution.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
26	New 11 kV Network Extensions	$522	FY27–FY37	Consumer connection
Issue	These works are customer-triggered			
Planned Solution	To be determined per connection / application.			
Comments/ alternatives	Provisional budget based on previous three-year average and may be offset by customer capital contribution.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
27	New LV Service Connections	$612	FY27–FY37	Consumer connection
Issue	These works are customer-triggered			
Planned Solution	To be determined per connection / application.			
Comments/ alternatives	Provisional budget based on previous three-year average and may be offset by customer capital contribution.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
28	New LV Service Connections	$15	FY27–FY37	Consumer connection
Issue	Private line transfers			
Planned Solution	To be determined per connection / application.			
Comments/ alternatives	Provisional budget based on previous three-year average and may be offset by customer capital contribution.			

Project No.	Project Name	Cost ($000)	Year	Primary Driver
29	Residential Subdivisions	$239	FY27–FY37	Consumer connection
Issue	Private line transfers			
Planned Solution	To be determined per connection / application.			
Comments/ alternatives	Provisional budget based on previous three-year average and may be offset by customer capital contribution.			

10.6 Appendix F – EDB Information Disclosure Requirements Schedules

COMMERCE COMMISSION NEW ZEALAND

EDB Information Disclosure Requirements
Information Templates

Schedules 11a–13
Excluding 11c

Company Name	Network Waitaki Ltd
Disclosure Date	31 March 2026
AMP Planning Period Start Date (first day)	1 April 2026

Templates for Schedules 11a–13 excluding 11c
Prepared 19 February 2026.

Company Name	**Network Waitaki Ltd**
AMP Planning Period	**1 April 2026 - 31 March 2036**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes). EDBs must express the information in this schedule (11a) as a specific value rather than ranges. Any supporting information about these values may be disclosed in Schedule 15 (Voluntary Explanatory Notes).

This information is not part of audited disclosure information.

sch ref		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
	11a(i): Expenditure on Assets Forecast	**$000 (in nominal dollars)**										
	Consumer connection	1,711	1,811	1,897	1,988	2,087	2,176	2,249	2,325	2,403	2,497	2,581
	System growth	11,239	790	5,573	6,894	7,641	1,261	2,235	2,439	3,184	3,515	4,346
	Asset replacement and renewal	13,001	7,726	9,923	9,268	9,689	9,653	10,323	10,582	11,247	11,516	12,061
	Asset relocations											
	Reliability, safety and environment:											
	Quality of supply	1,323	994	440	741	1,005	739	857	762	809	882	869
	Legislative and regulatory											
	Other reliability, safety and environment											
	Total reliability, safety and environment	1,323	994	440	741	1,005	739	857	762	809	882	869
	Expenditure on network assets	27,274	11,321	17,833	18,890	20,423	13,828	15,663	16,107	17,644	18,409	19,857
	Expenditure on non-network assets	2,097	3,901	215	158	226	166	238	174	250	183	262
	Expenditure on assets	29,371	15,222	18,048	19,048	20,649	13,994	15,901	16,281	17,893	18,592	20,119
plus	Cost of financing											
less	Value of capital contributions	1,600	1,380	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
plus	Value of vested assets											
	Capital expenditure forecast	27,771	13,842	17,048	18,048	19,649	12,994	14,901	15,281	16,893	17,592	19,119
	Assets commissioned	22,217	16,628	14,702	17,748	21,134	14,325	14,520	15,205	16,571	17,452	18,814

		Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
		$000 (in constant prices)										
	Consumer connection	1,711	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811	1,811
	System growth	11,239	790	5,320	6,283	6,633	1,050	1,800	1,900	2,400	2,550	3,050
	Asset replacement and renewal	13,001	7,726	9,473	8,446	8,410	8,037	8,314	8,244	8,476	8,355	8,465
	Asset relocations	-	-	-	-	-	-	-	-	-	-	-
	Reliability, safety and environment:											
	Quality of supply	1,323	994	420	676	873	615	690	594	610	640	610
	Legislative and regulatory	-	-	-	-	-	-					
	Other reliability, safety and environment	-	-	-	-	-	-					
	Total reliability, safety and environment	1,323	994	420	676	873	615	690	594	610	640	610
	Expenditure on network assets	27,274	11,321	17,024	17,216	17,726	11,513	12,615	12,549	13,298	13,357	13,937
	Expenditure on non-network assets	2,097	3,901	210	150	210	150	210	150	210	150	210
	Expenditure on assets	29,371	15,222	17,234	17,366	17,936	11,663	12,825	12,699	13,508	13,507	14,147
	Subcomponents of expenditure on assets (where known)											
	Energy efficiency and demand side management, reduction of energy losses											
	Overhead to underground conversion											
	Research and development											

Company Name	**Network Waitaki Ltd**
AMP Planning Period	**1 April 2026 - 31 March 2036**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes). EDBs must express the information in this schedule (11a) as a specific value rather than ranges. Any supporting information about these values may be disclosed in Schedule 15 (Voluntary Explanatory Notes).

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sch ref		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	Difference between nominal and constant price forecasts	**$000**										
	Consumer connection	-	(0)	86	176	276	364	438	514	592	685	769
	System growth	-	-	253	611	1,009	211	435	539	784	965	1,296
	Asset replacement and renewal	-	-	450	821	1,279	1,616	2,009	2,337	2,770	3,161	3,596
	Asset relocations	-	-	-	-	-	-	-	-	-	-	-
	Reliability, safety and environment:											
	Quality of supply	-	-	20	66	133	124	167	168	199	242	259
	Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
	Other reliability, safety and environment	-	-	-	-	-	-	-	-	-	-	-
	Total reliability, safety and environment	-	-	20	66	133	124	167	168	199	242	259
	Expenditure on network assets	-	(0)	809	1,674	2,697	2,315	3,048	3,558	4,346	5,052	5,920
	Expenditure on non-network assets	-	-	5	8	16	16	28	24	40	33	52
	Expenditure on assets	-	(0)	814	1,682	2,713	2,331	3,076	3,582	4,386	5,085	5,972

Commentary on options and considerations made in the assessment of forecast expenditure

EDBs may provide explanatory comment on the options they have considered (including scenarios used) in assessing forecast expenditure on assets for the current disclosure year and a 10 year planning period in Schedule 15

11a(ii): Consumer Connection

$000 (in constant prices)

*Consumer types defined by EDB**	*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
New LV Service Connections	583	612	612	612	612	612
Install Distribution Transformers - Customers	404	424	424	424	424	424
New 11kV Network Extensions	497	522	522	522	522	522
Residential Subdivisions	228	239	239	239	239	239
Other	-	15	15	15	15	15
*include additional rows if needed						
Consumer connection expenditure	1,711	1,811	1,811	1,811	1,811	1,811
less Capital contributions funding consumer connection	850	780	500	500	500	500
Consumer connection less capital contributions	861	1,031	1,311	1,311	1,311	1,311

11a(iii): System Growth

	Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
Subtransmission	9,018		4,820	5,683	5,683	
Zone substations	105					
Distribution and LV lines	721	200	200	200	200	300
Distribution and LV cables	300	300	300	400	750	750
Distribution substations and transformers						
Distribution switchgear	1,095					
Other network assets		290				
System growth expenditure	11,239	790	5,320	6,283	6,633	1,050
less Capital contributions funding system growth	800	600	500	500	500	500
System growth less capital contributions	10,439	190	4,820	5,783	6,133	550

Company Name	**Network Waitaki Ltd**
AMP Planning Period	**1 April 2026 - 31 March 2036**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes). EDBs must express the information in this schedule (11a) as a specific value rather than ranges. Any supporting information about these values may be disclosed in Schedule 15 (Voluntary Explanatory Notes).

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11a(iv): Asset Replacement and Renewal

$000 (in constant prices)

sch ref		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	Subtransmission	567	644	607	550	550	288
	Zone substations	5,467	945	2,694	1,910	1,804	1,684
	Distribution and LV lines	3,324	3,981	4,020	4,020	4,020	4,020
	Distribution and LV cables	180	220	201	222	252	273
	Distribution substations and transformers	516	633	768	804	939	975
	Distribution switchgear	1,637	1,302	883	941	845	798
	Other network assets	1,310		300			
	Asset replacement and renewal expenditure	13,001	7,726	9,473	8,446	8,410	8,037
less	Capital contributions funding asset replacement and renewal						
	Asset replacement and renewal less capital contributions	13,001	7,726	9,473	8,446	8,410	8,037

11a(v): Asset Relocations

$000 (in constant prices)

	*Project or programme**	*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
	**include additional rows if needed*						
	All other project or programmes - asset relocations						
	Asset relocations expenditure	-	-	-	-	-	-
less	Capital contributions funding asset relocations						
	Asset relocations less capital contributions	-	-	-	-	-	-

11a(vi): Quality of Supply

$000 (in constant prices)

	*Project or programme**	*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
	Weston Switching Station	1,050					
	Weston/Redcastle Ring Protection Upgrade		300				
	Security Improvements - Omarama Feeders		284				
	Security Improvements - Weston				453		
	Other Security/ Resiliance Improvements	273	410	420	223	873	615
	**include additional rows if needed*						
	All other projects or programmes - quality of supply						
	Quality of supply expenditure	1,323	994	420	676	873	615
less	Capital contributions funding quality of supply						
	Quality of supply less capital contributions	1,323	994	420	676	873	615

Company Name	**Network Waitaki Ltd**
AMP Planning Period	**1 April 2026 - 31 March 2036**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes). EDBs must express the information in this schedule (11a) as a specific value rather than ranges. Any supporting information about these values may be disclosed in Schedule 15 (Voluntary Explanatory Notes).

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11a(vii): Legislative and Regulatory

sch ref	Project or programme*	$000 (in constant prices) Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	*include additional rows if needed						
	All other projects or programmes - legislative and regulatory						
	Legislative and regulatory expenditure	-	-	-	-	-	-
less	Capital contributions funding legislative and regulatory						
	Legislative and regulatory less capital contributions	-	-	-	-	-	-

11a(viii): Other Reliability, Safety and Environment

	Project or programme*	$000 (in constant prices) Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	*include additional rows if needed						
	All other projects or programmes - other reliability, safety and environment						
	Other reliability, safety and environment expenditure	-	-	-	-	-	-
less	Capital contributions funding other reliability, safety and environment						
	Other reliability, safety and environment less capital contributions	-	-	-	-	-	-

11a(ix): Non-Network Assets

Routine expenditure

	Project or programme*	$000 (in constant prices) Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	Vehicles			60		60	
	Information Technology	100	100	100	100	100	100
	Other Equipment	89	36	50	50	50	50
	*include additional rows if needed						
	All other projects or programmes - routine expenditure						
	Routine expenditure	189	136	210	150	210	150

Atypical expenditure

	Project or programme*	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
	Depot Redevelopment (Buildings)	1,908	3,765				
	*include additional rows if needed						
	All other projects or programmes - atypical expenditure						
	Atypical expenditure	1,908	3,765	-	-	-	-
	Expenditure on non-network assets	2,097	3,901	210	150	210	150

											Company Name	Network Waitaki Ltd
											AMP Planning Period	1 April 2026 - 31 March 2036

SCHEDULE 11b: REPORT ON FORECAST OPERATIONAL EXPENDITURE

This schedule requires a breakdown of forecast operational expenditure for the disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms.

sch ref		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
9	**Operational Expenditure Forecast**	**$000 (in nominal dollars)**										
10	Service interruptions and emergencies	735	694	714	736	758	781	804	828	853	879	905
11	Vegetation management	807	847	873	899	926	954	982	1,012	1,042	1,073	1,106
12	Routine and corrective maintenance and inspection	1,602	1,698	1,755	1,750	1,914	1,857	1,960	1,970	2,079	2,090	2,206
13	Asset replacement and renewal	296	235	237	244	252	259	267	275	283	292	301
14	**Network Opex**	3,439	3,474	3,579	3,629	3,850	3,851	4,013	4,085	4,257	4,334	4,518
15	System operations and network support	4,674	6,165	5,710	5,859	6,012	6,169	6,331	6,497	6,667	6,842	7,022
16	Business support	4,338	4,703	4,831	4,962	5,097	5,235	5,378	5,524	5,674	5,828	5,987
17	Non-network solutions provided by a related party or third party											
18	**Non-network opex**	9,012	10,868	10,541	10,821	11,109	11,405	11,708	12,021	12,341	12,670	13,009
19	**Operational expenditure**	12,451	14,342	14,120	14,450	14,959	15,256	15,721	16,106	16,598	17,004	17,527
20		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
22		**$000 (in constant prices)**										
23	Service interruptions and emergencies	735	694	694	694	694	694	694	694	694	694	694
24	Vegetation management	807	847	847	847	847	847	847	847	847	847	847
25	Routine and corrective maintenance and inspection	1,602	1,698	1,704	1,650	1,752	1,650	1,690	1,650	1,690	1,650	1,690
26	Asset replacement and renewal	296	235	230	230	230	230	230	230	230	230	230
27	**Network Opex**	3,439	3,474	3,475	3,421	3,523	3,421	3,461	3,421	3,461	3,421	3,461
28	System operations and network support	4,674	6,165	5,565	5,565	5,565	5,565	5,565	5,565	5,565	5,565	5,565
29	Business support	4,338	4,703	4,703	4,703	4,703	4,703	4,703	4,703	4,703	4,703	4,703
30	Non-network solutions provided by a related party or third party											
31	**Non-network opex**	9,012	10,868	10,268	10,268	10,268	10,268	10,268	10,268	10,268	10,268	10,268
32	**Operational expenditure**	12,451	14,342	13,743	13,689	13,791	13,689	13,729	13,689	13,729	13,689	13,729
33	**Subcomponents of operational expenditure (where known)**											
35	Energy efficiency and demand side management, reduction of energy losses											
36	Direct billing*											
37	Research and Development											
38	Insurance											
39		703	873	873	873	873	873	873	873	873	873	873
41	** Direct billing expenditure by suppliers that direct bill the majority of their consumers*											
43		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*	*CY+6*	*CY+7*	*CY+8*	*CY+9*	*CY+10*
45	**Difference between nominal and real forecasts**	**$000**										
46	Service interruptions and emergencies	-	-	20	42	64	87	110	134	159	185	211
47	Vegetation management	-	-	26	52	79	107	135	165	195	226	259
48	Routine and corrective maintenance and inspection	-	-	51	100	162	207	270	320	389	440	516
49	Asset replacement and renewal	-	-	7	14	22	29	37	45	53	62	71
50	**Network Opex**	-	-	104	208	327	430	552	664	796	913	1,057
51	System operations and network support	-	0	145	294	447	605	766	932	1,102	1,278	1,457
52	Business support	-	-	128	259	394	532	674	820	971	1,125	1,283
53	Non-network solutions provided by a related party or third party	-	-	-	-	-	-	-	-	-	-	-
54	**Non-network opex**	-	0	273	553	841	1,137	1,441	1,753	2,073	2,402	2,741
55	**Operational expenditure**	-	0	377	761	1,168	1,567	1,993	2,417	2,869	3,315	3,798
57	**Commentary on options and considerations made in the assessment of forecast expenditure**											
58	*EDBs may provide explanatory comment on the options they have considered (including scenarios used) in assessing forecast operational expenditure for the current disclosure year and a 10 year planning period in Schedule 15.*											

Company Name	**Network Waitaki Ltd**
AMP Planning Period	

SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref

					Asset condition at start of planning period (percentage of units by grade)							
	Voltage	**Asset category**	**Asset class**	**Units**	**H1**	**H2**	**H3**	**H4**	**H5**	**Grade unknown**	**Data accuracy (1–4)**	**% of asset forecast to be replaced in next 5 years**
10	All	Overhead Line	Concrete poles / steel structure	No.	0.01%	0.72%	5.37%	76.53%	17.37%		3	6.70%
11	All	Overhead Line	Wood poles	No.	0.06%	3.01%	21.12%	51.08%	24.73%		3	9.02%
12	All	Overhead Line	Other pole types	No.							N/A	
13	HV	Subtransmission Line	Subtransmission OH up to 66kV conductor	km			12.86%	33.09%	54.05%		3	-
14	HV	Subtransmission Line	Subtransmission OH 110kV+ conductor	km							N/A	
15	HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)	km			1.40%	89.77%	8.83%		3	-
16	HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)	km							N/A	
17	HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)	km							N/A	
18	HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)	km							N/A	
19	HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)	km							N/A	
20	HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)	km							N/A	
21	HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)	km							N/A	
22	HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)	km							N/A	
23	HV	Subtransmission Cable	Subtransmission submarine cable	km							N/A	
24	HV	Zone substation Buildings	Zone substations up to 66kV	No.		5.00%	20.00%	20.00%	55.00%		4	-
25	HV	Zone substation Buildings	Zone substations 110kV+	No.							N/A	
26	HV	Zone substation switchgear	22/33kV CB (Indoor)	No.				100.00%			4	-
27	HV	Zone substation switchgear	22/33kV CB (Outdoor)	No.		1.82%	23.63%	43.64%	30.91%		4	13.44%
28	HV	Zone substation switchgear	33kV Switch (Ground Mounted)	No.							N/A	
29	HV	Zone substation switchgear	33kV Switch (Pole Mounted)	No.	4.65%	12.79%	30.23%	51.17%	1.16%		3	17.02%
30	HV	Zone substation switchgear	33kV RMU	No.							N/A	
31	HV	Zone substation switchgear	50/66/110kV CB (Indoor)	No.							N/A	
32	HV	Zone substation switchgear	50/66/110kV CB (Outdoor)	No.			100.00%				4	
33	HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)	No.	7.84%	-	4.91%	50.98%	36.27%		4	7.84%
34	HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)	No.		-	75.00%	-	25.00%		4	

Company Name	**Network Waitaki Ltd**
AMP Planning Period	

SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref					Asset condition at start of planning period (percentage of units by grade)							
	Voltage	**Asset category**	**Asset class**	**Units**	**H1**	**H2**	**H3**	**H4**	**H5**	**Grade unknown**	**Data accuracy (1–4)**	**% of asset forecast to be replaced in next 5 years**
39	HV	Zone Substation Transformer	Zone Substation Transformers	No.		15.38%	23.08%	19.23%	42.31%		4	11.54%
40	HV	Distribution Line	Distribution OH Open Wire Conductor	km		10.02%	56.84%	19.67%	13.47%		3	7.72%
41	HV	Distribution Line	Distribution OH Aerial Cable Conductor	km							N/A	
42	HV	Distribution Line	SWER conductor	km							N/A	
43	HV	Distribution Cable	Distribution UG XLPE or PVC	km			0.15%	48.00%	51.85%		3	-
44	HV	Distribution Cable	Distribution UG PILC	km	0.08%	17.73%	39.47%	42.72%			3	2.41%
45	HV	Distribution Cable	Distribution Submarine Cable	km							N/A	
46	HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers	No.		13.43%	22.39%	41.79%	22.39%		4	10.45%
47	HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)	No.					100.00%		4	-
48	HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)	No.	0.88%	3.99%	16.02%	43.49%	35.62%		3	11.32%
49	HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU	No.							N/A	
50	HV	Distribution switchgear	3.3/6.6/11/22kV RMU	No.		7.39%	33.00%	35.47%	24.14%		4	14.06%
51	HV	Distribution Transformer	Pole Mounted Transformer	No.	0.12%	7.80%	16.47%	55.05%	20.56%		3	6.23%
52	HV	Distribution Transformer	Ground Mounted Transformer	No.	0.34%	2.21%	11.59%	59.97%	25.89%		4	2.91%
53	HV	Distribution Transformer	Voltage regulators	No.			5.56%	69.44%	25.00%		4	-
54	HV	Distribution Substations	Ground Mounted Substation Housing	No.		30.00%	70.00%				2	-
55	LV	LV Line	LV OH Conductor	km	0.49%	24.32%	70.63%	3.04%	1.52%		2	4.00%
56	LV	LV Cable	LV UG Cable	km	-	-	18.86%	47.19%	33.95%		2	-
57	LV	LV Streetlighting	LV OH/UG Streetlight circuit	km		5.00%	50.00%	35.00%	10.00%		2	5.00%
58	LV	Connections	OH/UG consumer service connections	No.		5.46%	19.94%	36.63%	37.97%		2	2.23%
59	All	Protection	Protection relays (electromechanical, solid state and numeric)	No.		5.61%	34.18%	56.63%	3.58%		3	16.84%
60	All	SCADA and communications	SCADA and communications equipment operating as a single system	Lot		50.00%	25.00%	15.00%	10.00%		4	50.00%
61	All	Capacitor Banks	Capacitors including controls	No.				100.00%			4	
62	All	Load Control	Centralised plant	Lot			100.00%				4	
63	All	Load Control	Relays	No.		20.00%		80.00%			2	
64	All	Civils	Cable Tunnels	km							N/A	

Company Name	**Network Waitaki Ltd**
AMP Planning Period	**1 April 2026 - 31 March 2036**

SCHEDULE 12c: REPORT ON FORECAST NETWORK DEMAND

This schedule requires a forecast of new connections (by consumer type), peak demand and energy volumes for the disclosure year and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumptions used in developing the expenditure forecasts in Schedule 11a and Schedule 11b and the capacity and utilisation forecasts in Schedule 12b.

sch ref

12c(i): Consumer Connections

Number of ICPs connected during year by consumer type

Number of connections

*Consumer types defined by EDB**	*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
Small customers - residential and commercial to 15kVA	94	95	96	96	97	98
Medium customers - residential and commercial 16kVA to 50kVA	14	14	14	14	14	15
Large customers - commercial and industrial 51kVA and above	8	8	8	8	8	8
Non-standard customers - large commercial and industrial						
[EDB consumer type]						
Connections total	116	117	118	119	120	121

**include additional rows if needed*

Distributed generation	*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
Number of connections made in year	43	54	67	84	105	131
Capacity of distributed generation installed in year (MVA)	0.34	0.40	0.52	0.67	0.88	1.14

12c(ii): System Demand

	Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
Maximum coincident system demand (MW)						
GXP demand	67	68	68	69	70	70
plus Distributed generation output at HV and above						
Maximum coincident system demand	67	68	68	69	70	70
less Net transfers to (from) other EDBs at HV and above						
Demand on system for supply to consumers' connection points	67	68	68	69	70	70
Electricity volumes carried (GWh)						
Electricity supplied from GXPs	280	297	302	308	315	321
less Electricity exports to GXPs						
plus Electricity supplied from distributed generation	1.9	2.4	3.0	3.8	4.7	5.9
less Net electricity supplied to (from) other EDBs						
Electricity entering system for supply to ICPs	282	299	305	312	319	327
less Total energy delivered to ICPs	269	284	290	296	303	310
Losses	13	15	16	16	16	17
Load factor	48%	50%	51%	52%	52%	53%
Loss ratio	4.6%	5.1%	5.1%	5.1%	5.1%	5.1%

Company Name **Network Waitaki Ltd**

AMP Planning Period

SCHEDULE 12b: REPORT ON FORECAST CAPACITY

This schedule requires a breakdown of current and forecast capacity and constraints for each zone substation. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

sch ref

12b(i): System Growth - Zone Substations

Existing Zone Substations	Current peak load (MVA)	Current peak load period	Installed operating capacity (MVA)	Current security of supply classification (type)	Current constraint type	Current available capacity (MVA)	Peak load period +5 yrs	Available capacity +5 yrs (MVA)	Security of supply classification +5 yrs (type)	Peak load period +10 yrs	Min. available capacity +10 yrs (MVA)	Max. available capacity +10 yrs (MVA)	Security of supply classification +10 yrs (type)	Forecast constraint type	Year of any forecast constraint	Constraint primary cause	Constraint solution type	Constraint solution progress	Temporary constraint solution remaining lifespan	Explanation
Chelmer	13	Winter	28	N-1	No constraint	15.18367347	Winter	13.6	N-1	Winter	8.8	12.1	N-1	No constraint						
Duntroon	5	Summer	7	N-1 switched	No constraint	2.4	Summer	2.3	N-1 switched	Summer	2.3	2.3	N-1 switched	Security	2	Transpower	Network upgrade	Planning stage		Will be alleviated under new GXP project to alleviate Oamaru GXP constraint
Eastern Rd	3	Summer	7	N-1 switched	No constraint	4.040816327	Summer	4	N-1 switched	Summer	3.9	4	N-1 switched	No constraint						
Enfield	3	Summer	7	N-1 switched	No constraint	4.5	Summer	2.3	N-1 switched	Summer	2.2	2.3	N-1 switched	No constraint						
Five Forks	2	Summer	7	N-1 switched	No constraint	5.3	Summer	5.2	N-1 switched	Summer	5.1	5.2	N-1 switched	No constraint						
Hampden	1	Summer	7	N-1 switched	No constraint	5.571428571	Summer	5.5	N-1 switched	Summer	5.1	5.4	N-1 switched	No constraint						
Kurow	5	Summer	12	N-1 switched	No constraint	6.653061224	Summer	6.5	N-1 switched	Summer	6.2	6.5	N-1 switched	No constraint						
Maheno	4	Summer	5	N-1 switched	No constraint	1.255102041	Summer	1	N-1 switched	Summer	2.7	3	N-1 switched	No constraint						Maheno power transformer scheduled for condition based replacement in FY28 will be upgraded to standard sizing which will
Ngapara	5	Summer	7	N-1 switched	No constraint	1.795918367	Summer	1.8	N-1 switched	Summer	1.9	2.1	N-1 switched	No constraint						
Ohau	1	Summer	3	N-1 switched	No constraint	1.6	Summer	1.5	N-1 switched	Summer	1.5	1.5	N-1 switched	No constraint						
Omarama	2	Summer	6	N-1 switched	Security	3.918367347	Summer	3.3	N-1 switched	Summer	3.4	3.6	N-1 switched	Security	1	Other	Network upgrade	No active planning		Security constraint is related to switching time after a fault. Will be alleviated by adding remote automation to switches at same time
Otematata	1	Summer	3	N-1 switched	Security	2.173469388	Summer	2.2	N-1 switched	Summer	2	2.2	N-1 switched	No constraint	1	Zone substation transformer	Network upgrade	Implementation stage		Condition based replacement of transformer triggered security upgrade which will solve this constraint - will be completed early
Papakaio	7	Summer	7	N-1 switched	Security	0.204081633	Summer	2.3	N-1 switched	Summer	2.1	2.2	N-1 switched	No constraint	1	Subtransmission circuit	Network upgrade	Planning stage		Demand shifted to Te Awamako substation will increase capacity at Papakaio - Subtransmission security risk will be alleviated in FY27
Parsons	3	Summer	12	N-1 switched	No constraint	8.989795918	Summer	8.8	N-1 switched	Summer	8.5	8.9	N-1 switched	No constraint						
Pukeuri	9	Summer	12	N-1	No constraint	2.6	Summer	10.3	N-1	Summer	4.9	10.1	N-1	No constraint						
Redcastle	9	Winter	18	N-1	No constraint	8.908163265	Winter	5.8	N-1	Winter	4.5	7.6	N-1	No constraint						
Ruataniwha	1	Summer	2	N-1 switched	No constraint	1.142857143	Summer	1.1	N-1 switched	Summer	1.1	1.1	N-1 switched	No constraint						
Te Awamako	3	Summer	7	N-1 switched	Security	3.7	Summer	3.3	N-1 switched	Summer	3.3	3.3	N-1 switched	Security	1	Subtransmission circuit	Network upgrade	Planning stage		Subtransmission security risk will be alevated in FY27 when new GXP and associated subtransmission is in service to alleviate

[4] *Extend table as necessary to disclose all capacity and constraint information by each zone substation*

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Network / Sub-network Name	**All**

SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

sch ref		*Current Year CY*	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
10	**SAIDI**						
11	Class B (planned interruptions on the network)	105.0	105.0	105.0	105.0	105.0	105.0
12	Class C (unplanned interruptions on the network)	55.0	55.0	55.0	55.0	55.0	55.0
13	**SAIFI**						
14	Class B (planned interruptions on the network)	0.50	0.50	0.50	0.50	0.50	0.50
15	Class C (unplanned interruptions on the network)	1.30	1.30	1.30	1.30	1.30	1.30

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
3	Asset management policy	To what extent has an asset management policy been documented, authorised and communicated?	4	The Board of Directors has approved an updated Asset Management Policy compliant with ISO 55001 requirements. A summary of the policy is included in the Asset Management Plan (AMP) and is accessible to staff and stakeholders. The policy has been explicitly communicated through an all-hands meeting and is promoted as a guiding framework for asset management decision-making.		Widely used AM practice standards require an organisation to document, authorise and communicate its asset management policy (eg, as required in PAS 55 para 4.2 i). A key pre-requisite of any robust policy is that the organisation's top management must be seen to endorse and fully support it. Also vital to the effective implementation of the policy, is to tell the appropriate people of its content and their obligations under it. Where an organisation outsources some of its asset-related activities, then these people and their organisations must equally be made aware of the policy's content. Also, there may be other stakeholders, such as regulatory authorities and shareholders who should be made aware of it.	Top management. The management team that has overall responsibility for asset management.	The organisation's asset management policy, its organisational strategic plan, documents indicating how the asset management policy was based upon the needs of the organisation and evidence of communication.
10	Asset management strategy	What has the organisation done to ensure that its asset management strategy is consistent with other appropriate organisational policies and strategies, and the needs of stakeholders?	3	There are linkages within the Asset Management Plan (AMP) between Network Waitaki's strategic priorities, service levels, and the strategies described in the AMP.		In setting an organisation's asset management strategy, it is important that it is consistent with any other policies and strategies that the organisation has and has taken into account the requirements of relevant stakeholders. This question examines to what extent the asset management strategy is consistent with other organisational policies and strategies (eg, as required by PAS 55 para 4.3.1 b) and has taken account of stakeholder requirements as required by PAS 55 para 4.3.1 c). Generally, this will take into account the same polices, strategies and stakeholder requirements as covered in drafting the asset management policy but at a greater level of detail.	Top management. The organisation's strategic planning team. The management team that has overall responsibility for asset management.	The organisation's asset management strategy document and other related organisational policies and strategies. Other than the organisation's strategic plan, these could include those relating to health and safety, environmental, etc. Results of stakeholder consultation.
11	Asset management strategy	In what way does the organisation's asset management strategy take account of the lifecycle of the assets, asset types and asset systems over which the organisation has stewardship?	3	Maintenance and renewal investments are supported by Fleet Management Plans covering the most critical asset classes.		Good asset stewardship is the hallmark of an organisation compliant with widely used AM standards. A key component of this is the need to take account of the lifecycle of the assets, asset types and asset systems. (For example, this requirement is recognised in 4.3.1 d) of PAS 55). This question explores what an organisation has done to take lifecycle into account in its asset management strategy.	Top management. People in the organisation with expert knowledge of the assets, asset types, asset systems and their associated life-cycles. The management team that has overall responsibility for asset management. Those responsible for developing and adopting methods and processes used in asset management	The organisation's documented asset management strategy and supporting working documents.
26	Asset management plan(s)	How does the organisation establish and document its asset management plan(s) across the life cycle activities of its assets and asset systems?	3	The work program is documented and includes a comprehensive work plan containing detailed information on projects, their budgets, and the assets they will impact. This work plan serves as the baseline for the approved project list, later summarized in the Asset		The asset management strategy need to be translated into practical plan(s) so that all parties know how the objectives will be achieved. The development of plan(s) will need to identify the specific tasks and activities required to optimize costs, risks and performance of the assets and/or asset system(s), when they are to be carried out and the resources required.	The management team with overall responsibility for the asset management system. Operations, maintenance and engineering managers.	The organisation's asset management plan(s).

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AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
3	Asset management policy	To what extent has an asset management policy been documented, authorised and communicated?	The organisation does not have a documented asset management policy.	The organisation has an asset management policy, but it has not been authorised by top management, or it is not influencing the management of the assets.	The organisation has an asset management policy, which has been authorised by top management, but it has had limited circulation. It may be in use to influence development of strategy and planning but its effect is limited.	The asset management policy is authorised by top management, is widely and effectively communicated to all relevant employees and stakeholders, and used to make these persons aware of their asset related obligations.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
10	Asset management strategy	What has the organisation done to ensure that its asset management strategy is consistent with other appropriate organisational policies and strategies, and the needs of stakeholders?	The organisation has not considered the need to ensure that its asset management strategy is appropriately aligned with the organisation's other organisational policies and strategies or with stakeholder requirements. OR The organisation does not have an asset management strategy.	The need to align the asset management strategy with other organisational policies and strategies as well as stakeholder requirements is understood and work has started to identify the linkages or to incorporate them in the drafting of asset management strategy.	Some of the linkages between the long term asset management strategy and other organisational policies, strategies and stakeholder requirements are defined but the work is fairly well advanced but still incomplete.	All linkages are in place and evidence is available to demonstrate that, where appropriate, the organisation's asset management strategy is consistent with its other organisational policies and strategies. The organisation has also identified and considered the requirements of relevant stakeholders.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
11	Asset management strategy	In what way does the organisation's asset management strategy take account of the lifecycle of the assets, asset types and asset systems over which the organisation has stewardship?	The organisation has not considered the need to ensure that its asset management strategy is produced with due regard to the lifecycle of the assets, asset types or asset systems that it manages. OR The organisation does not have an asset management strategy.	The need is understood, and the organisation is drafting its asset management strategy to address the lifecycle of its assets, asset types and asset systems.	The long-term asset management strategy takes account of the lifecycle of some, but not all, of its assets, asset types and asset systems.	The asset management strategy takes account of the lifecycle of all of its assets, asset types and asset systems.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
26	Asset management plan(s)	How does the organisation establish and document its asset management plan(s) across the life cycle activities of its assets and asset systems?	The organisation does not have an identifiable asset management plan(s) covering asset systems and critical assets.	The organisation has asset management plan(s) but they are not aligned with the asset management strategy and objectives and do not take into consideration the full asset life cycle (including asset creation, acquisition, enhancement, utilisation, maintenance decommissioning and disposal).	The organisation is in the process of putting in place comprehensive, documented asset management plan(s) that cover all life cycle activities, clearly aligned to asset management objectives and the asset management strategy.	Asset management plan(s) are established, documented, implemented and maintained for asset systems and critical assets to achieve the asset management strategy and asset management objectives across all life cycle phases.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

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AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
27	Asset management plan(s)	How has the organisation communicated its plan(s) to all relevant parties to a level of detail appropriate to the receiver's role in their delivery?	2	The Engineering Manager and contracting team regularly conduct coordination meetings to communicate the plan's requirements and negotiate timing and variations with stakeholders, such as the Network Lifecycle Manager, who is also invited to attend these meetings.		Plans will be ineffective unless they are communicated to all those, including contracted suppliers and those who undertake enabling function(s). The plan(s) need to be communicated in a way that is relevant to those who need to use them.	The management team with overall responsibility for the asset management system. Delivery functions and suppliers.	Distribution lists for plan(s). Documents derived from plan(s) which detail the receivers role in plan delivery. Evidence of communication.
29	Asset management plan(s)	How are designated responsibilities for delivery of asset plan actions documented?	3	The MS Project system is used to assign and schedule pre-construction tasks, while the contracting team is responsible for the execution of construction.		The implementation of asset management plan(s) relies on (1) actions being clearly identified, (2) an owner allocated and (3) that owner having sufficient delegated responsibility and authority to carry out the work required. It also requires alignment of actions across the organisation. This question explores how well the plan(s) set out responsibility for delivery of asset plan actions.	The management team with overall responsibility for the asset management system. Operations, maintenance and engineering managers. If appropriate, the performance management team.	The organisation's asset management plan(s). Documentation defining roles and responsibilities of individuals and organisational departments.
31	Asset management plan(s)	What has the organisation done to ensure that appropriate arrangements are made available for the efficient and cost effective implementation of the plan(s)? (Note this is about resources and enabling support)	2	Using the work plan, a work program is developed in Microsoft Project, where each project is represented by a simplified work breakdown structure highlighting essential phases such as long lead time procurement, design, and construction.		It is essential that the plan(s) are realistic and can be implemented, which requires appropriate resources to be available and enabling mechanisms in place. This question explores how well this is achieved. The plan(s) not only need to consider the resources directly required and timescales, but also the enabling activities, including for example, training requirements, supply chain capability and procurement timescales.	The management team with overall responsibility for the asset management system. Operations, maintenance and engineering managers. If appropriate, the performance management team. If appropriate, the performance management team. Where appropriate the procurement team and service providers working on the organisation's asset-related activities.	The organisation's asset management plan(s). Documented processes and procedures for the delivery of the asset management plan.
33	Contingency planning	What plan(s) and procedure(s) does the organisation have for identifying and responding to incidents and emergency situations and ensuring continuity of critical asset management activities?	3	Network Waitaki has a comprehensive and up-to-date Crisis Management Plan (CMP) that provides a framework for responding to various events of different types and scales. CIMS training has been provided for key staff, but the full integration of CIMS into Network Waitaki's processes has not been adopted. This approach reflects the organization's size and the routine nature of storm and network damage responses within its operations. Notably, the CMP was recently tested in		Widely used AM practice standards require that an organisation has plan(s) to identify and respond to emergency situations. Emergency plan(s) should outline the actions to be taken to respond to specified emergency situations and ensure continuity of critical asset management activities including the communication to, and involvement of, external agencies. This question assesses if, and how well, these plan(s) triggered, implemented and resolved in the event of an incident. The plan(s) should be appropriate to the level of risk as determined by the organisation's risk assessment methodology. It is also a requirement that relevant personnel are competent and trained.	The manager with responsibility for developing emergency plan(s). The organisation's risk assessment team. People with designated duties within the plan(s) and procedure(s) for dealing with incidents and emergency situations.	The organisation's plan(s) and procedure(s) for dealing with emergencies. The organisation's risk assessments and risk registers.

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SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Company Name	**Network Waitaki Ltd**
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Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
27	Asset management plan(s)	How has the organisation communicated its plan(s) to all relevant parties to a level of detail appropriate to the receiver's role in their delivery?	The organisation does not have plan(s) or their distribution is limited to the authors.	The plan(s) are communicated to some of those responsible for delivery of the plan(s). OR Communicated to those responsible for delivery is either irregular or ad-hoc.	The plan(s) are communicated to most of those responsible for delivery but there are weaknesses in identifying relevant parties resulting in incomplete or inappropriate communication. The organisation recognises improvement is needed as is working towards resolution.	The plan(s) are communicated to all relevant employees, stakeholders and contracted service providers to a level of detail appropriate to their participation or business interests in the delivery of the plan(s) and there is confirmation that they are being used effectively.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
29	Asset management plan(s)	How are designated responsibilities for delivery of asset plan actions documented?	The organisation has not documented responsibilities for delivery of asset plan actions.	Asset management plan(s) inconsistently document responsibilities for delivery of plan actions and activities and/or responsibilities and authorities for implementation inadequate and/or delegation level inadequate to ensure effective delivery and/or contain misalignments with organisational accountability.	Asset management plan(s) consistently document responsibilities for the delivery of actions but responsibility/authority levels are inappropriate/ inadequate, and/or there are misalignments within the organisation.	Asset management plan(s) consistently document responsibilities for the delivery actions and there is adequate detail to enable delivery of actions. Designated responsibility and authority for achievement of asset plan actions is appropriate.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
31	Asset management plan(s)	What has the organisation done to ensure that appropriate arrangements are made available for the efficient and cost effective implementation of the plan(s)? (Note this is about resources and enabling support)	The organisation has not considered the arrangements needed for the effective implementation of plan(s).	The organisation recognises the need to ensure appropriate arrangements are in place for implementation of asset management plan(s) and is in the process of determining an appropriate approach for achieving this.	The organisation has arrangements in place for the implementation of asset management plan(s) but the arrangements are not yet adequately efficient and/or effective. The organisation is working to resolve existing weaknesses.	The organisation's arrangements fully cover all the requirements for the efficient and cost effective implementation of asset management plan(s) and realistically address the resources and timescales required, and any changes needed to functional policies, standards, processes and the asset management information system.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
33	Contingency planning	What plan(s) and procedure(s) does the organisation have for identifying and responding to incidents and emergency situations and ensuring continuity of critical asset management activities?	The organisation has not considered the need to establish plan(s) and procedure(s) to identify and respond to incidents and emergency situations.	The organisation has some ad-hoc arrangements to deal with incidents and emergency situations, but these have been developed on a reactive basis in response to specific events that have occurred in the past.	Most credible incidents and emergency situations are identified. Either appropriate plan(s) and procedure(s) are incomplete for critical activities or they are inadequate. Training/ external alignment may be incomplete.	Appropriate emergency plan(s) and procedure(s) are in place to respond to credible incidents and manage continuity of critical asset management activities consistent with policies and asset management objectives. Training and external agency alignment is in place.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
37	Structure, authority and responsibilities	What has the organisation done to appoint member(s) of its management team to be responsible for ensuring that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s)?	3	The Asset Management team has undergone a restructuring to better align with NWL's strategy, enhancing roles, accountabilities, and key result areas. Further refinements are programmed to facilitate the ongoing needs of the company.		In order to ensure that the organisation's assets and asset systems deliver the requirements of the asset management policy, strategy and objectives responsibilities need to be allocated to appropriate people who have the necessary authority to fulfil their responsibilities. (This question, relates to the organisation's assets eg, para b), s 4.4.1 of PAS 55, making it therefore distinct from the requirement contained in para a), s 4.4.1 of PAS 55).	Top management. People with management responsibility for the delivery of asset management policy, strategy, objectives and plan(s). People working on asset-related activities.	Evidence that managers with responsibility for the delivery of asset management policy, strategy, objectives and plan(s) have been appointed and have assumed their responsibilities. Evidence may include the organisation's documents relating to its asset management system, organisational charts, job descriptions of post-holders, annual targets/objectives and personal development plan(s) of post-holders as appropriate.
40	Structure, authority and responsibilities	What evidence can the organisation's top management provide to demonstrate that sufficient resources are available for asset management?	3	This is evident through the creation of several new roles such as Network Lifecycle Manager, Asset Engineer (x2), Network Information Manager, Technical Specialist, and Network Strategic Manager (currently vacant), as seen in the new organizational chart. These structural changes and		Optimal asset management requires top management to ensure sufficient resources are available. In this context the term 'resources' includes manpower, materials, funding and service provider support.	Top management. The management team that has overall responsibility for asset management. Risk management team. The organisation's managers involved in day-to-day supervision of asset-related activities, such as frontline managers, engineers, foremen and chargehands as appropriate.	Evidence demonstrating that asset management plan(s) and/or the process(es) for asset management plan implementation consider the provision of adequate resources in both the short and long term. Resources include funding, materials, equipment, services provided by third parties and personnel (internal and service providers) with appropriate skills competencies and knowledge.
42	Structure, authority and responsibilities	To what degree does the organisation's top management communicate the importance of meeting its asset management requirements?	3	The importance of meeting asset management requirements appears to be well communicated by top management. Currently, managers appear to have sufficient authority to achieve their objectives, and there is		Widely used AM practice standards require an organisation to communicate the importance of meeting its asset management requirements such that personnel fully understand, take ownership of, and are fully engaged in the delivery of the asset management requirements (eg, PAS 55 s 4.4.1 g).	Top management. The management team that has overall responsibility for asset management. People involved in the delivery of the asset management requirements.	Evidence of such activities as road shows, written bulletins, workshops, team talks and management walk-abouts would assist an organisation to demonstrate it is meeting this requirement of PAS 55.
45	Outsourcing of asset management activities	Where the organisation has outsourced some of its asset management activities, how has it ensured that appropriate controls are in place to ensure the compliant delivery of its organisational strategic plan, and its asset management policy and strategy?	3	A formal service partnership agreement has been established between the Network and Contracting Divisions, defining the responsibilities for carrying out the majority of the work program. This agreement outlines required service levels, financial arrangements, and processes. Processes for engaging external contractors are largely based on past performance, pricing, and local availability. While this approach could be formalized, it appears to be effective, given the relatively small volume of		Where an organisation chooses to outsource some of its asset management activities, the organisation must ensure that these outsourced process(es) are under appropriate control to ensure that all the requirements of widely used AM standards (eg, PAS 55) are in place, and the asset management policy, strategy objectives and plan(s) are delivered. This includes ensuring capabilities and resources across a time span aligned to life cycle management. The organisation must put arrangements in place to control the outsourced activities, whether it be to external providers or to other in-house departments. This question explores what the organisation does in this regard.	Top management. The management team that has overall responsibility for asset management. The manager(s) responsible for the monitoring and management of the outsourced activities. People involved with the procurement of outsourced activities. The people within the organisations that are performing the outsourced activities. The people impacted by the outsourced activity.	The organisation's arrangements that detail the compliance required of the outsourced activities. For example, this this could form part of a contract or service level agreement between the organisation and the suppliers of its outsourced activities. Evidence that the organisation has demonstrated to itself that it has assurance of compliance of outsourced activities.

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SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Company Name	**Network Waitaki Ltd**
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Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
37	Structure, authority and responsibilities	What has the organisation done to appoint member(s) of its management team to be responsible for ensuring that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s)?	Top management has not considered the need to appoint a person or persons to ensure that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s).	Top management understands the need to appoint a person or persons to ensure that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s).	Top management has appointed an appropriate people to ensure the assets deliver the requirements of the asset management strategy, objectives and plan(s) but their areas of responsibility are not fully defined and/or they have insufficient delegated authority to fully execute their responsibilities.	The appointed person or persons have full responsibility for ensuring that the organisation's assets deliver the requirements of the asset management strategy, objectives and plan(s). They have been given the necessary authority to achieve this.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
40	Structure, authority and responsibilities	What evidence can the organisation's top management provide to demonstrate that sufficient resources are available for asset management?	The organisation's top management has not considered the resources required to deliver asset management.	The organisations top management understands the need for sufficient resources but there are no effective mechanisms in place to ensure this is the case.	A process exists for determining what resources are required for its asset management activities and in most cases these are available but in some instances resources remain insufficient.	An effective process exists for determining the resources needed for asset management and sufficient resources are available. It can be demonstrated that resources are matched to asset management requirements.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
42	Structure, authority and responsibilities	To what degree does the organisation's top management communicate the importance of meeting its asset management requirements?	The organisation's top management has not considered the need to communicate the importance of meeting asset management requirements.	The organisations top management understands the need to communicate the importance of meeting its asset management requirements but does not do so.	Top management communicates the importance of meeting its asset management requirements but only to parts of the organisation.	Top management communicates the importance of meeting its asset management requirements to all relevant parts of the organisation.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
45	Outsourcing of asset management activities	Where the organisation has outsourced some of its asset management activities, how has it ensured that appropriate controls are in place to ensure the compliant delivery of its organisational strategic plan, and its asset management policy and strategy?	The organisation has not considered the need to put controls in place.	The organisation controls its outsourced activities on an ad-hoc basis, with little regard for ensuring for the compliant delivery of the organisational strategic plan and/or its asset management policy and strategy.	Controls systematically considered but currently only provide for the compliant delivery of some, but not all, aspects of the organisational strategic plan and/or its asset management policy and strategy. Gaps exist.	Evidence exists to demonstrate that outsourced activities are appropriately controlled to provide for the compliant delivery of the organisational strategic plan, asset management policy and strategy, and that these controls are integrated into the asset management system	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

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AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
48	Training, awareness and competence	How does the organisation develop plan(s) for the human resources required to undertake asset management activities - including the development and delivery of asset management strategy, process(es), objectives and plan(s)?	2	Position descriptions for all roles have been developed with performance indicators generally clearly linked to asset management objectives.		There is a need for an organisation to demonstrate that it has considered what resources are required to develop and implement its asset management system. There is also a need for the organisation to demonstrate that it has assessed what development plan(s) are required to provide its human resources with the skills and competencies to develop and implement its asset management systems. The timescales over which the plan(s) are relevant should be commensurate with the planning horizons within the asset management strategy considers e.g. if the asset management strategy considers 5, 10 and 15 year time scales then the human resources development plan(s) should align with these. Resources include both 'in house' and external resources who undertake asset management activities.	Senior management responsible for agreement of plan(s). Managers responsible for developing asset management strategy and plan(s). Managers with responsibility for development and recruitment of staff (including HR functions). Staff responsible for training. Procurement officers. Contracted service providers.	Evidence of analysis of future work load plan(s) in terms of human resources. Document(s) containing analysis of the organisation's own direct resources and contractors resource capability over suitable timescales. Evidence, such as minutes of meetings, that suitable management forums are monitoring human resource development plan(s). Training plan(s), personal development plan(s), contract and service level agreements.
49	Training, awareness and competence	How does the organisation identify competency requirements and then plan, provide and record the training necessary to achieve the competencies?	2	Competence requirements stated in job profiles, however, do not generally specify role-related competencies, relying instead on broad descriptions of experience, sometimes expressed in the number of years of experience. A documented framework for asset management competencies, while under development, is not currently in place.		Widely used AM standards require that organisations to undertake a systematic identification of the asset management awareness and competencies required at each level and function within the organisation. Once identified the training required to provide the necessary competencies should be planned for delivery in a timely and systematic way. Any training provided must be recorded and maintained in a suitable format. Where an organisation has contracted service providers in place then it should have a means to demonstrate that this requirement is being met for their employees. (eg, PAS 55 refers to frameworks suitable for identifying competency requirements).	Senior management responsible for agreement of plan(s). Managers responsible for developing asset management strategy and plan(s). Managers with responsibility for development and recruitment of staff (including HR functions). Staff responsible for training. Procurement officers. Contracted service providers.	Evidence of an established and applied competency requirements assessment process and plan(s) in place to deliver the required training. Evidence that the training programme is part of a wider, co-ordinated asset management activities training and competency programme. Evidence that training activities are recorded and that records are readily available (for both direct and contracted service provider staff) e.g. via organisation wide information system or local records database.
50	Training, awareness and competence	How does the organization ensure that persons under its direct control undertaking asset management related activities have an appropriate level of competence in terms of education, training or experience?	3	A one-on-one staff/manager review form is available to add structure to manager/staff interactions. There is evidence that staff are engaged in training and continual professional development associated with their roles. An example of this is asset management-specific training being undertaken by members of the Network Lifecycle team.		A critical success factor for the effective development and implementation of an asset management system is the competence of persons undertaking these activities. organisations should have effective means in place for ensuring the competence of employees to carry out their designated asset management function(s). Where an organisation has contracted service providers undertaking elements of its asset management system then the organisation shall assure itself that the outsourced service provider also has suitable arrangements in place to manage the competencies of its employees. The organisation should ensure that the individual and corporate competencies it requires are in place and actively monitor, develop and maintain an appropriate balance of these competencies.	Managers, supervisors, persons responsible for developing training programmes. Staff responsible for procurement and service agreements. HR staff and those responsible for recruitment.	Evidence of a competency assessment framework that aligns with established frameworks such as the asset management Competencies Requirements Framework (Version 2.0); National Occupational Standards for Management and Leadership; UK Standard for Professional Engineering Competence, Engineering Council, 2005.

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SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Company Name	**Network Waitaki Ltd**
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Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
48	Training, awareness and competence	How does the organisation develop plan(s) for the human resources required to undertake asset management activities - including the development and delivery of asset management strategy, process(es), objectives and plan(s)?	The organisation has not recognised the need for assessing human resources requirements to develop and implement its asset management system.	The organisation has recognised the need to assess its human resources requirements and to develop a plan(s). There is limited recognition of the need to align these with the development and implementation of its asset management system.	The organisation has developed a strategic approach to aligning competencies and human resources to the asset management system including the asset management plan but the work is incomplete or has not been consistently implemented.	The organisation can demonstrate that plan(s) are in place and effective in matching competencies and capabilities to the asset management system including the plan for both internal and contracted activities. Plans are reviewed integral to asset management system process(es).	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
49	Training, awareness and competence	How does the organisation identify competency requirements and then plan, provide and record the training necessary to achieve the competencies?	The organisation does not have any means in place to identify competency requirements.	The organisation has recognised the need to identify competency requirements and then plan, provide and record the training necessary to achieve the competencies.	The organisation is the process of identifying competency requirements aligned to the asset management plan(s) and then plan, provide and record appropriate training. It is incomplete or inconsistently applied.	Competency requirements are in place and aligned with asset management plan(s). Plans are in place and effective in providing the training necessary to achieve the competencies. A structured means of recording the competencies achieved is in place.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
50	Training, awareness and competence	How does the organization ensure that persons under its direct control undertaking asset management related activities have an appropriate level of competence in terms of education, training or experience?	The organization has not recognised the need to assess the competence of person(s) undertaking asset management related activities.	Competency of staff undertaking asset management related activities is not managed or assessed in a structured way, other than formal requirements for legal compliance and safety management.	The organization is in the process of putting in place a means for assessing the competence of person(s) involved in asset management activities including contractors. There are gaps and inconsistencies.	Competency requirements are identified and assessed for all persons carrying out asset management related activities - internal and contracted. Requirements are reviewed and staff reassessed at appropriate intervals aligned to asset management requirements.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
53	Communication, participation and consultation	How does the organisation ensure that pertinent asset management information is effectively communicated to and from employees and other stakeholders, including contracted service providers?	3	The AMP represents a significant stakeholder communication tool providing detailed information to any interested stakeholder. The annual survey serves as a tool for assessing customer preferences and perceptions of service, with the gathered insights incorporated as inputs into the AMP. The AMP also includes a formal stakeholder engagement plan that identifies stakeholders.		Widely used AM practice standards require that pertinent asset management information is effectively communicated to and from employees and other stakeholders including contracted service providers. Pertinent information refers to information required in order to effectively and efficiently comply with and deliver asset management strategy, plan(s) and objectives. This will include for example the communication of the asset management policy, asset performance information, and planning information as appropriate to contractors.	Top management and senior management representative(s), employee's representative(s), employee's trade union representative(s); contracted service provider management and employee representative(s); representative(s) from the organisation's Health, Safety and Environmental team. Key stakeholder representative(s).	Asset management policy statement prominently displayed on notice boards, intranet and internet; use of organisation's website for displaying asset performance data; evidence of formal briefings to employees, stakeholders and contracted service providers; evidence of inclusion of asset management issues in team meetings and contracted service provider contract meetings; newsletters, etc.
59	Asset Management System documentation	What documentation has the organisation established to describe the main elements of its asset management system and interactions between them?	2	Network Waitaki has documented an overall approach to asset management in the AMP (Chapter 4) describing the broad elements of an asset management system and referring to other Network Waitaki policies and standards where these are available.		Widely used AM practice standards require an organisation maintain up to date documentation that ensures that its asset management systems (ie, the systems the organisation has in place to meet the standards) can be understood, communicated and operated. (eg, s 4.5 of PAS 55 requires the maintenance of up to date documentation of the asset management system requirements specified throughout s 4 of PAS 55).	The management team that has overall responsibility for asset management. Managers engaged in asset management activities.	The documented information describing the main elements of the asset management system (process(es)) and their interaction.
62	Information management	What has the organisation done to determine what its asset management information system(s) should contain in order to support its asset management system?	3	An asset information review conducted by external consultants provides analysis and recommendations for the information systems required by NWL. The review outlines a program for system implementations and replacements, including discussions on business capabilities and supporting data requirements, and includes a proposed timeline for these activities.		Effective asset management requires appropriate information to be available. Widely used AM standards therefore require the organisation to identify the asset management information it requires in order to support its asset management system. Some of the information required may be held by suppliers. The maintenance and development of asset management information systems is a poorly understood specialist activity that is akin to IT management but different from IT management. This group of questions provides some indications as to whether the capability is available and applied. Note: To be effective, an asset information management system requires the mobilisation of technology, people and process(es) that create, secure, make available and destroy the information required to support the asset management system.	The organisation's strategic planning team. The management team that has overall responsibility for asset management. Information management team. Operations, maintenance and engineering managers	Details of the process the organisation has employed to determine what its asset information system should contain in order to support its asset management system. Evidence that this has been effectively implemented.
63	Information management	How does the organisation maintain its asset management information system(s) and ensure that the data held within it (them) is of the requisite quality and accuracy and is consistent?	2	Scheduled inspections and pre-work site preparation provide confirmation that asset data is accurate. Field software is being adopted to maximise efficiency and reduce errors from the field. Personell in the office are responsible for recording information from teh field, with some already being		The response to the questions is progressive. A higher scale cannot be awarded without achieving the requirements of the lower scale. This question explores how the organisation ensures that information management meets widely used AM practice requirements (eg, s 4.4.6 (a), (c) and (d) of PAS 55).	The management team that has overall responsibility for asset management. Users of the organisational information systems.	The asset management information system, together with the policies, procedure(s), improvement initiatives and audits regarding information controls.

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SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Company Name	Network Waitaki Ltd
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Asset Management Standard Applied	ISO 55001

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
53	Communication, participation and consultation	How does the organisation ensure that pertinent asset management information is effectively communicated to and from employees and other stakeholders, including contracted service providers?	The organisation has not recognised the need to formally communicate any asset management information.	There is evidence that the pertinent asset management information to be shared along with those to share it with is being determined.	The organisation has determined pertinent information and relevant parties. Some effective two way communication is in place but as yet not all relevant parties are clear on their roles and responsibilities with respect to asset management information.	Two way communication is in place between all relevant parties, ensuring that information is effectively communicated to match the requirements of asset management strategy, plan(s) and process(es). Pertinent asset information requirements are regularly reviewed.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
59	Asset Management System documentation	What documentation has the organisation established to describe the main elements of its asset management system and interactions between them?	The organisation has not established documentation that describes the main elements of the asset management system.	The organisation is aware of the need to put documentation in place and is in the process of determining how to document the main elements of its asset management system.	The organisation in the process of documenting its asset management system and has documentation in place that describes some, but not all, of the main elements of its asset management system and their interaction.	The organisation has established documentation that comprehensively describes all the main elements of its asset management system and the interactions between them. The documentation is kept up to date.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
62	Information management	What has the organisation done to determine what its asset management information system(s) should contain in order to support its asset management system?	The organisation has not considered what asset management information is required.	The organisation is aware of the need to determine in a structured manner what its asset information system should contain in order to support its asset management system and is in the process of deciding how to do this.	The organisation has developed a structured process to determine what its asset information system should contain in order to support its asset management system and has commenced implementation of the process.	The organisation has determined what its asset information system should contain in order to support its asset management system. The requirements relate to the whole life cycle and cover information originating from both internal and external sources.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
63	Information management	How does the organisation maintain its asset management information system(s) and ensure that the data held within it (them) is of the requisite quality and accuracy and is consistent?	There are no formal controls in place or controls are extremely limited in scope and/or effectiveness.	The organisation is aware of the need for effective controls and is in the process of developing an appropriate control process(es).	The organisation has developed a controls that will ensure the data held is of the requisite quality and accuracy and is consistent and is in the process of implementing them.	The organisation has effective controls in place that ensure the data held is of the requisite quality and accuracy and is consistent. The controls are regularly reviewed and improved where necessary.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Network Waitaki Ltd
AMP Planning Period	
Asset Management Standard Applied	ISO 55001

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	Network Waitaki Ltd
AMP Planning Period	
Asset Management Standard Applied	ISO 55001

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
64	Information management	How has the organisation's ensured its asset management information system is relevant to its needs?	2	The asset management information systems is sized to foreseeable needs and aligned with good industry practice. Work continues with users to identify their ongoing needs, as developments continue. Systems are review and updated as required to meet asset management goals.		Widely used AM standards need not be prescriptive about the form of the asset management information system, but simply require that the asset management information system is appropriate to the organisations needs, can be effectively used and can supply information which is consistent and of the requisite quality and accuracy.	The organisation's strategic planning team. The management team that has overall responsibility for asset management. Information management team. Users of the organisational information systems.	The documented process the organisation employs to ensure its asset management information system aligns with its asset management requirements. Minutes of information systems review meetings involving users.
69	Risk management process(es)	How has the organisation documented process(es) and/or procedure(s) for the identification and assessment of asset and asset management related risks throughout the asset life cycle?	3	A risk framework is in place and has been authorized and implemented. Risks are being identified using a range of tools chosen to meet the task and required level of assessment. An audited public safety management system is in place. A process mapping tool Promap is used for documenting and managing critical processes and formally managing corrective actions arising from these processes.		Risk management is an important foundation for proactive asset management. Its overall purpose is to understand the cause, effect and likelihood of adverse events occurring, to optimally manage such risks to an acceptable level, and to provide an audit trail for the management of risks. Widely used standards require the organisation to have process(es) and/or procedure(s) in place that set out how the organisation identifies and assesses asset and asset management related risks. The risks have to be considered across the four phases of the asset lifecycle (eg, para 4.3.3 of PAS 55).	The top management team in conjunction with the organisation's senior risk management representatives. There may also be input from the organisation's Safety, Health and Environment team. Staff who carry out risk identification and assessment.	The organisation's risk management framework and/or evidence of specific process(es) and/ or procedure(s) that deal with risk control mechanisms. Evidence that the process(es) and/or procedure(s) are implemented across the business and maintained. Evidence of agendas and minutes from risk management meetings. Evidence of feedback in to process(es) and/or procedure(s) as a result of incident investigation(s). Risk registers and assessments.
79	Use and maintenance of asset risk information	How does the organisation ensure that the results of risk assessments provide input into the identification of adequate resources and training and competency needs?	3	Bowties are used for formally analyzing critical risks, a system 'Vault' is used for recording incidents near misses and associated corrective actions. A training framework is under development which will have linkages to risk assessments and where appropriate the outcome of incident		Widely used AM standards require that the output from risk assessments are considered and that adequate resource (including staff) and training is identified to match the requirements. It is a further requirement that the effects of the control measures are considered, as there may be implications in resources and training required to achieve other objectives.	Staff responsible for risk assessment and those responsible for developing and approving resource and training plan(s). There may also be input from the organisation's Safety, Health and Environment team.	The organisations risk management framework. The organisation's resourcing plan(s) and training and competency plan(s). The organisation should be able to demonstrate appropriate linkages between the content of resource plan(s) and training and competency plan(s) to the risk assessments and risk control measures that have been developed.
82	Legal and other requirements	What procedure does the organisation have to identify and provide access to its legal, regulatory, statutory and other asset management requirements, and how is requirements incorporated into the asset management system?	3	A formal legal compliance management system (ComplyWith) has been implemented and is being actively used. This system includes a registry of requirements and declarations of compliance. Risk registers are in place that can be used to record risks associated with compliance.		In order for an organisation to comply with its legal, regulatory, statutory and other asset management requirements, the organisation first needs to ensure that it knows what they are (eg, PAS 55 specifies this in s 4.4.8). It is necessary to have systematic and auditable mechanisms in place to identify new and changing requirements. Widely used AM standards also require that requirements are incorporated into the asset management system (e.g. procedure(s) and process(es))	Top management. The organisations regulatory team. The organisation's legal team or advisors. The management team with overall responsibility for the asset management system. The organisation's health and safety team or advisors. The organisation's policy making team.	The organisational processes and procedures for ensuring information of this type is identified, made accessible to those requiring the information and is incorporated into asset management strategy and objectives

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SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

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Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
64	Information management	How has the organisation's ensured its asset management information system is relevant to its needs?	The organisation has not considered the need to determine the relevance of its management information system. At present there are major gaps between what the information system provides and the organisations needs.	The organisation understands the need to ensure its asset management information system is relevant to its needs and is determining an appropriate means by which it will achieve this. At present there are significant gaps between what the information system provides and the organisations needs.	The organisation has developed and is implementing a process to ensure its asset management information system is relevant to its needs. Gaps between what the information system provides and the organisations needs have been identified and action is being taken to close them.	The organisation's asset management information system aligns with its asset management requirements. Users can confirm that it is relevant to their needs.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
69	Risk management process(es)	How has the organisation documented process(es) and/or procedure(s) for the identification and assessment of asset and asset management related risks throughout the asset life cycle?	The organisation has not considered the need to document process(es) and/or procedure(s) for the identification and assessment of asset and asset management related risks throughout the asset life cycle.	The organisation is aware of the need to document the management of asset related risk across the asset lifecycle. The organisation has plan(s) to formally document all relevant process(es) and procedure(s) or has already commenced this activity.	The organisation is in the process of documenting the identification and assessment of asset related risk across the asset lifecycle but it is incomplete or there are inconsistencies between approaches and a lack of integration.	Identification and assessment of asset related risk across the asset lifecycle is fully documented. The organisation can demonstrate that appropriate documented mechanisms are integrated across life cycle phases and are being consistently applied.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
79	Use and maintenance of asset risk information	How does the organisation ensure that the results of risk assessments provide input into the identification of adequate resources and training and competency needs?	The organisation has not considered the need to conduct risk assessments.	The organisation is aware of the need to consider the results of risk assessments and effects of risk control measures to provide input into reviews of resources, training and competency needs. Current input is typically ad-hoc and reactive.	The organisation is in the process ensuring that outputs of risk assessment are included in developing requirements for resources and training. The implementation is incomplete and there are gaps and inconsistencies.	Outputs from risk assessments are consistently and systematically used as inputs to develop resources, training and competency requirements. Examples and evidence is available.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
82	Legal and other requirements	What procedure does the organisation have to identify and provide access to its legal, regulatory, statutory and other asset management requirements, and how is requirements incorporated into the asset management system?	The organisation has not considered the need to identify its legal, regulatory, statutory and other asset management requirements.	The organisation identifies some its legal, regulatory, statutory and other asset management requirements, but this is done in an ad-hoc manner in the absence of a procedure.	The organisation has procedure(s) to identify its legal, regulatory, statutory and other asset management requirements, but the information is not kept up to date, inadequate or inconsistently managed.	Evidence exists to demonstrate that the organisation's legal, regulatory, statutory and other asset management requirements are identified and kept up to date. Systematic mechanisms for identifying relevant legal and statutory requirements.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Network Waitaki Ltd
AMP Planning Period	
Asset Management Standard Applied	ISO 55001

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	Network Waitaki Ltd
AMP Planning Period	
Asset Management Standard Applied	ISO 55001

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
88	Life Cycle Activities	How does the organisation establish implement and maintain process(es) for the implementation of its asset management plan(s) and control of activities across the creation, acquisition or enhancement of assets. This includes design, modification, procurement, construction and commissioning activities?	2	The portfolio management function has been implemented. The Engineering Manager is currently responsible for managing the work plan. Both the work plan and the project programmes estimate resourcing requirements and identify long lead time items and the lead times for designs or plant purchases.		Life cycle activities are about the implementation of asset management plan(s) i.e. they are the "doing" phase. They need to be done effectively and well in order for asset management to have any practical meaning. As a consequence, widely used standards (eg, PAS 55 s 4.5.1) require organisations to have in place appropriate process(es) and procedure(s) for the implementation of asset management plan(s) and control of lifecycle activities. This question explores those aspects relevant to asset creation.	Asset managers, design staff, construction staff and project managers from other impacted areas of the business, e.g. Procurement	Documented process(es) and procedure(s) which are relevant to demonstrating the effective management and control of life cycle activities during asset creation, acquisition, enhancement including design, modification, procurement, construction and commissioning.
91	Life Cycle Activities	How does the organisation ensure that process(es) and/or procedure(s) for the implementation of asset management plan(s) and control of activities during maintenance (and inspection) of assets are sufficient to ensure activities are carried out under specified conditions, are consistent with asset management strategy and control cost, risk and performance?	3	Network Waitaki (NWL) has implemented a functional approach for specifying inspection and maintenance requirements for its asset fleets. This approach is supported by maintenance standard documents that outline broad inspection and maintenance requirements, as well as field data collection apps that enable electronic data collection and collation of inspection results. The		Having documented process(es) which ensure the asset management plan(s) are implemented in accordance with any specified conditions, in a manner consistent with the asset management policy, strategy and objectives and in such a way that cost, risk and asset system performance are appropriately controlled is critical. They are an essential part of turning intention into action (eg, as required by PAS 55 s 4.5.1).	Asset managers, operations managers, maintenance managers and project managers from other impacted areas of the business	Documented procedure for review. Documented procedure for audit of process delivery. Records of previous audits, improvement actions and documented confirmation that actions have been carried out.
95	Performance and condition monitoring	How does the organisation measure the performance and condition of its assets?	2	Systems are in place for measuring the performance of Network Waitaki's assets as required by Commerce Commission information disclosures. These include network performance metrics SAIDI, SAIFI and asset condition measures using health indicators. Asset performance records include cause codes suitable for analysis. Asset condition is assessed by a combination of age, asset inspection information and		Widely used AM standards require that organisations establish implement and maintain procedure(s) to monitor and measure the performance and/or condition of assets and asset systems. They further set out requirements in some detail for reactive and proactive monitoring, and leading/lagging performance indicators together with the monitoring or results to provide input to corrective actions and continual improvement. There is an expectation that performance and condition monitoring will provide input to improving asset management strategy, objectives and plan(s).	A broad cross-section of the people involved in the organisation's asset-related activities from data input to decision-makers, i.e. an end-to end assessment. This should include contactors and other relevant third parties as appropriate.	Functional policy and/or strategy documents for performance or condition monitoring and measurement. The organisation's performance monitoring frameworks, balanced scorecards etc. Evidence of the reviews of any appropriate performance indicators and the action lists resulting from these reviews. Reports and trend analysis using performance and condition information. Evidence of the use of performance and condition information shaping improvements and supporting asset management strategy, objectives and plan(s).
99	Investigation of asset-related failures, incidents and nonconformities	How does the organisation ensure responsibility and the authority for the handling, investigation and mitigation of asset-related failures, incidents and emergency situations and non conformances is clear, unambiguous, understood and communicated?	3	At present a formal incident management process for asset related failures is not in place. This is manageable given the relatively small size of Network Waitaki coupled with the relatively low frequency of incidents which is also related to the organizations size. Investigation skills exist within the organization with some staff members trained in the ICAMS methodology. Incidents		Widely used AM standards require that the organisation establishes implements and maintains process(es) for the handling and investigation of failures incidents and non-conformities for assets and sets down a number of expectations. Specifically this question examines the requirement to define clearly responsibilities and authorities for these activities, and communicate these unambiguously to relevant people including external stakeholders if appropriate.	The organisation's safety and environment management team. The team with overall responsibility for the management of the assets. People who have appointed roles within the asset-related investigation procedure, from those who carry out the investigations to senior management who review the recommendations. Operational controllers responsible for managing the asset base under fault conditions and maintaining services to consumers. Contractors and other third parties as appropriate.	Process(es) and procedure(s) for the handling, investigation and mitigation of asset-related failures, incidents and emergency situations and non conformances. Documentation of assigned responsibilities and authority to employees. Job Descriptions, Audit reports. Common communication systems i.e. all Job Descriptions on Internet etc.

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SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Company Name	**Network Waitaki Ltd**
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Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
88	Life Cycle Activities	How does the organisation establish implement and maintain process(es) for the implementation of its asset management plan(s) and control of activities across the creation, acquisition or enhancement of assets. This includes design, modification, procurement, construction and commissioning activities?	The organisation does not have process(es) in place to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning.	The organisation is aware of the need to have process(es) and procedure(s) in place to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning but currently do not have these in place (note: procedure(s) may exist but they are inconsistent/incomplete).	The organisation is in the process of putting in place process(es) and procedure(s) to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning. Gaps and inconsistencies are being addressed.	Effective process(es) and procedure(s) are in place to manage and control the implementation of asset management plan(s) during activities related to asset creation including design, modification, procurement, construction and commissioning.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
91	Life Cycle Activities	How does the organisation ensure that process(es) and/or procedure(s) for the implementation of asset management plan(s) and control of activities during maintenance (and inspection) of assets are sufficient to ensure activities are carried out under specified conditions, are consistent with asset management strategy and control cost, risk and performance?	The organisation does not have process(es)/procedure(s) in place to control or manage the implementation of asset management plan(s) during this life cycle phase.	The organisation is aware of the need to have process(es) and procedure(s) in place to manage and control the implementation of asset management plan(s) during this life cycle phase but currently do not have these in place and/or there is no mechanism for confirming they are effective and where needed modifying them.	The organisation is in the process of putting in place process(es) and procedure(s) to manage and control the implementation of asset management plan(s) during this life cycle phase. They include a process for confirming the process(es)/procedure(s) are effective and if necessary carrying out modifications.	The organisation has in place process(es) and procedure(s) to manage and control the implementation of asset management plan(s) during this life cycle phase. They include a process, which is itself regularly reviewed to ensure it is effective, for confirming the process(es)/ procedure(s) are effective and if necessary carrying out modifications.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
95	Performance and condition monitoring	How does the organisation measure the performance and condition of its assets?	The organisation has not considered how to monitor the performance and condition of its assets.	The organisation recognises the need for monitoring asset performance but has not developed a coherent approach. Measures are incomplete, predominantly reactive and lagging. There is no linkage to asset management objectives.	The organisation is developing coherent asset performance monitoring linked to asset management objectives. Reactive and proactive measures are in place. Use is being made of leading indicators and analysis. Gaps and inconsistencies remain.	Consistent asset performance monitoring linked to asset management objectives is in place and universally used including reactive and proactive measures. Data quality management and review process are appropriate. Evidence of leading indicators and analysis.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
99	Investigation of asset-related failures, incidents and nonconformities	How does the organisation ensure responsibility and the authority for the handling, investigation and mitigation of asset-related failures, incidents and emergency situations and non conformances is clear, unambiguous, understood and communicated?	The organisation has not considered the need to define the appropriate responsibilities and the authorities.	The organisation understands the requirements and is in the process of determining how to define them.	The organisation are in the process of defining the responsibilities and authorities with evidence. Alternatively there are some gaps or inconsistencies in the identified responsibilities/authorities.	The organisation have defined the appropriate responsibilities and authorities and evidence is available to show that these are applied across the business and kept up to date.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

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AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY

This schedule requires information on the EDB'S self-assessment of the maturity of its asset management practices .

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Score	Evidence—Summary	User Guidance	Why	Who	Record/documented Information
105	Audit	What has the organisation done to establish procedure(s) for the audit of its asset management system (process(es))?	3	Network Waitaki conducts annual self-assessments using the Commerce Commission's AMMAT framework. The company's public safety management system is also formally audited and certified by an external audit party. The process mapping system Promap includes periodic review and of compliance with		This question seeks to explore what the organisation has done to comply with the standard practice AM audit requirements (eg, the associated requirements of PAS 55 s 4.6.4 and its linkages to s 4.7).	The management team responsible for its asset management procedure(s). The team with overall responsibility for the management of the assets. Audit teams, together with key staff responsible for asset management. For example, Asset Management Director, Engineering Director. People with responsibility for carrying out risk assessments	The organisation's asset-related audit procedure(s). The organisation's methodology(s) by which it determined the scope and frequency of the audits and the criteria by which it identified the appropriate audit personnel. Audit schedules, reports etc. Evidence of the procedure(s) by which the audit results are presented, together with any subsequent communications. The risk assessment schedule or risk registers.
109	Corrective & Preventative action	How does the organisation instigate appropriate corrective and/or preventive actions to eliminate or prevent the causes of identified poor performance and non conformance?	3	Network Waitaki has several systems that record actions arising from investigations or non-conformances. These include the system Vault which is associated with risks and safety incidents an an improvement register implemented using the Microsoft planner application. The Promap process mapping system also has an internal mechanism for creating improvement opportunities for implementation. Management meeting minutes are another		Having investigated asset related failures, incidents and non-conformances, and taken action to mitigate their consequences, an organisation is required to implement preventative and corrective actions to address root causes. Incident and failure investigations are only useful if appropriate actions are taken as a result to assess changes to a businesses risk profile and ensure that appropriate arrangements are in place should a recurrence of the incident happen. Widely used AM standards also require that necessary changes arising from preventive or corrective action are made to the asset management system.	The management team responsible for its asset management procedure(s). The team with overall responsibility for the management of the assets. Audit and incident investigation teams. Staff responsible for planning and managing corrective and preventive actions.	Analysis records, meeting notes and minutes, modification records. Asset management plan(s), investigation reports, audit reports, improvement programmes and projects. Recorded changes to asset management procedure(s) and process(es). Condition and performance reviews. Maintenance reviews
113	Continual Improvement	How does the organisation achieve continual improvement in the optimal combination of costs, asset related risks and the performance and condition of assets and asset systems across the whole life cycle?	3	A plan for improving asset management has been created based on the recommendations of previous AMMAT audits. The plan includes a list of initiatives, priorities, target completion dates, and the responsible manager. Evidence shows that the actions are being progressively addressed and proactively managed through results accomplished		Widely used AM standards have requirements to establish, implement and maintain process(es)/procedure(s) for identifying, assessing, prioritising and implementing actions to achieve continual improvement. Specifically there is a requirement to demonstrate continual improvement in optimisation of cost risk and performance/condition of assets across the life cycle. This question explores an organisation's capabilities in this area—looking for systematic improvement mechanisms rather that reviews and audit (which are separately examined).	The top management of the organisation. The manager/team responsible for managing the organisation's asset management system, including its continual improvement. Managers responsible for policy development and implementation.	Records showing systematic exploration of improvement. Evidence of new techniques being explored and implemented. Changes in procedure(s) and process(es) reflecting improved use of optimisation tools/techniques and available information. Evidence of working parties and research.
115	Continual Improvement	How does the organisation seek and acquire knowledge about new asset management related technology and practices, and evaluate their potential benefit to the organisation?	3	Network Waitaki actively seeks and acquires new knowledge regarding asset management related technology and practices through engagement and participation in industry bodies and working groups such as the EEA and ENA and their associated working groups. The organization's commitment to continual improvement is further demonstrated by the employment of a Continuous improvement Manager, who plays a key role in driving these initiatives forward and embedding a culture of ongoing development within		One important aspect of continual improvement is where an organisation looks beyond its existing boundaries and knowledge base to look at what 'new things are on the market'. These new things can include equipment, process(es), tools, etc. An organisation which does this (eg, by the PAS 55 s 4.6 standards) will be able to demonstrate that it continually seeks to expand its knowledge of all things affecting its asset management approach and capabilities. The organisation will be able to demonstrate that it identifies any such opportunities to improve, evaluates them for suitability to its own organisation and implements them as appropriate. This question explores an organisation's approach to this activity.	The top management of the organisation. The manager/team responsible for managing the organisation's asset management system, including its continual improvement. People who monitor the various items that require monitoring for 'change'. People that implement changes to the organisation's policy, strategy, etc. People within an organisation with responsibility for investigating, evaluating, recommending and implementing new tools and techniques, etc.	Research and development projects and records, benchmarking and participation knowledge exchange professional forums. Evidence of correspondence relating to knowledge acquisition. Examples of change implementation and evaluation of new tools, and techniques linked to asset management strategy and objectives.

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Company Name	**Network Waitaki Ltd**
AMP Planning Period	
Asset Management Standard Applied	**ISO 55001**

SCHEDULE 13: REPORT ON ASSET MANAGEMENT MATURITY (cont)

Question No.	Function	Question	Maturity Level 0	Maturity Level 1	Maturity Level 2	Maturity Level 3	Maturity Level 4
105	Audit	What has the organisation done to establish procedure(s) for the audit of its asset management system (process(es))?	The organisation has not recognised the need to establish procedure(s) for the audit of its asset management system.	The organisation understands the need for audit procedure(s) and is determining the appropriate scope, frequency and methodology(s).	The organisation is establishing its audit procedure(s) but they do not yet cover all the appropriate asset-related activities.	The organisation can demonstrate that its audit procedure(s) cover all the appropriate asset-related activities and the associated reporting of audit results. Audits are to an appropriate level of detail and consistently managed.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
109	Corrective & Preventative action	How does the organisation instigate appropriate corrective and/or preventive actions to eliminate or prevent the causes of identified poor performance and non conformance?	The organisation does not recognise the need to have systematic approaches to instigating corrective or preventive actions.	The organisation recognises the need to have systematic approaches to instigating corrective or preventive actions. There is ad-hoc implementation for corrective actions to address failures of assets but not the asset management system.	The need is recognized for systematic instigation of preventive and corrective actions to address root causes of non compliance or incidents identified by investigations, compliance evaluation or audit. It is only partially or inconsistently in place.	Mechanisms are consistently in place and effective for the systematic instigation of preventive and corrective actions to address root causes of non compliance or incidents identified by investigations, compliance evaluation or audit.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
113	Continual Improvement	How does the organisation achieve continual improvement in the optimal combination of costs, asset related risks and the performance and condition of assets and asset systems across the whole life cycle?	The organisation does not consider continual improvement of these factors to be a requirement, or has not considered the issue.	A Continual Improvement ethos is recognised as beneficial, however it has just been started, and or covers partially the asset drivers.	Continuous improvement process(es) are set out and include consideration of cost risk, performance and condition for assets managed across the whole life cycle but it is not yet being systematically applied.	There is evidence to show that continuous improvement process(es) which include consideration of cost risk, performance and condition for assets managed across the whole life cycle are being systematically applied.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.
115	Continual Improvement	How does the organisation seek and acquire knowledge about new asset management related technology and practices, and evaluate their potential benefit to the organisation?	The organisation makes no attempt to seek knowledge about new asset management related technology or practices.	The organisation is inward looking, however it recognises that asset management is not sector specific and other sectors have developed good practice and new ideas that could apply. Ad-hoc approach.	The organisation has initiated asset management communication within sector to share and, or identify 'new' to sector asset management practices and seeks to evaluate them.	The organisation actively engages internally and externally with other asset management practitioners, professional bodies and relevant conferences. Actively investigates and evaluates new practices and evolves its asset management activities using appropriate developments.	The organisation's process(es) surpass the standard required to comply with requirements set out in a recognised standard. The assessor is advised to note in the Evidence section why this is the case and the evidence seen.

Company Name	Network Waitaki Limited
For Year Ended	31 March 2026

Schedule 14a Mandatory Explanatory Notes on Forecast Information

(In this Schedule, clause references are to the Electricity Distribution Information Disclosure Determination 2012 – as amended and consolidated 3 April 2018.)

1. This Schedule requires EDBs to provide explanatory notes to reports prepared in accordance with clause 2.6.6.

2. This Schedule is mandatory—EDBs must provide the explanatory comment specified below, in accordance with clause 2.7.2. This information is not part of the audited disclosure information, and so is not subject to the assurance requirements specified in section 2.8.

Commentary on difference between nominal and constant price capital expenditure forecasts (Schedule 11a)

3. In the box below, comment on the difference between nominal and constant price capital expenditure for the current disclosure year and 10 year planning period, as disclosed in Schedule 11a.

Box 1: Commentary on difference between nominal and constant price capital expenditure forecasts
For CY+2 to CY+4 a forecast inflation increase of 5% was applied. The CY+5 forecast is reduced to 4% per annum. From CY+6 to CY+10 a forecast of 3.5% per annum was applied. These increases are based on the weighted inflation impacts on input costs.

Commentary on difference between nominal and constant price operational expenditure forecasts (Schedule 11b)

4. In the box below, comment on the difference between nominal and constant price operational expenditure for the current disclosure year and 10 year planning period, as disclosed in Schedule 11b.

Box 2: Commentary on difference between nominal and constant price operational expenditure forecasts
A forecast increase of 3% has been applied to Network Opex and 2-3% for System Operations and Business Support from CY+2 to CY+10 based on the inflation impact on input costs.

10.7 Appendix F – Clause 17.2.2 Low Voltage Monitoring Narrative

This appendix is provided to meet the requirements of clause 17.2.2 of Attachment A of the Electricity Distribution Information Disclosure Determination. It summarises Network Waitaki's practices, challenges, data sources, and modelling approaches for monitoring load and injection constraints across the low-voltage (LV) network.

10.7.1 Overview of Practices

Network Waitaki's Low Voltage Strategy supports monitoring of real-time performance of LV feeders to:

- understand customer energy trends
- establish a baseline for modelling future scenarios
- identify real-time transformer and feeder constraints
- protect LV assets and ensure efficient investment decisions

10.7.2 Data Collection and Procurement Challenges (17.2.2(a))

These monitors provide real-time power-quality data for each phase of our three phase feeders covering 75% of Ōamaru urban domestic customers. This is expected to rise to 85% coverage by the end of FY27.

Smart meter NODS data has been trialled with a Metering Equipment Provider (MEP) and a data analytics platform for 1000 customers over a 3-month period. In FY27, we will examine the value to the business from these services.

There are however challenges with obtaining this data which include:

- high NODS pricing
- long minimum contract terms from some MEPs
- lack of near-real-time smart meter event data

Half-hour consumption data has limited usefulness due to insufficient temporal resolution and lack of voltage information, but may be reconsidered if NODS proves uneconomic.

10.7.3 Analysis and Modelling Practices (17.2.2(b))

LV monitoring alerts our planners to emerging constraint conditions and provides baseline information for modelling solutions to future constraints.

Planned and ongoing analysis includes:

- evaluating voltage performance at customer premises
- assessing asset utilisation where LV monitors are absent
- improving customer load profile accuracy
- exploring model-free hosting capacity methods

Network Waitaki has developed customer self-service hosting capacity maps for load and generation at HV level and plans to extend these to the LV network in FY27.

Network Waitaki participates in industry collaboration through the ENA Future Network Forum to support standardization of approaches across NZ distributors.

10.6.4 Forward Work Programme

Over the next 18 months, Network Waitaki intends to develop customer self-service hosting capacity maps for load and generation at the LV level. Continued expansion of LV monitoring and refinement of data analytics will support more accurate constraint forecasting and customer-facing transparency.

Appendix G – Board Certification of AMP

Certification for Year-Beginning Disclosures

Pursuant to Schedule 17

Clause 2.9.1 of section 2.9

Electricity Distribution Information Disclosure Determination 2012

We, Michael de Buyzer and Jonathan Kay, being directors of Network Waitaki Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

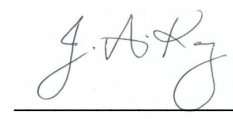
a) the following attached information of Network Waitaki Ltd prepared for the purposes of clauses, 2.6.1, 2.6.3, 2.6.6 and 2.7.2 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.

b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

c) The forecasts in Schedules 11a, 11b, 12a, 12b, 12c and 12d are based on objective and reasonable assumptions which both align with Network Waitaki Ltd.'s corporate vision and strategy and are documented in retained records.

Michael J. de Buyzer
Chairman of the Board of Directors

Date: 31 March 2026



Jonathan Kay
Director

Date: 31 March 2026