CENTRALINES LIMITED

2026-36

REGULATORY ASSET MANAGEMENT PLAN

Our People Our Power

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SUMMARY OF THE PLAN

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Our People Our Power

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1. SUMMARY OF THE PLAN

1.1 Introduction

Centralines' Regulatory Asset Management Plan (RAMP) sets out our strategic direction for managing and investing in the electricity distribution network across Central Hawke's Bay. As our operating environment continues to shift, driven by technological innovation, decarbonisation, and evolving consumer expectations, these changes bring both opportunity and complexity for us. If not carefully managed, the electrification of transport and process heat, alongside the uptake of distributed energy resources (DERs) such as solar, batteries, and EVs, could place significant pressure on our network. The pace of change remains uncertain, influenced by political, economic, and technological factors.

We are committed to being more than just an electricity distribution business (EDB). We are a trusted partner in Central Hawke's Bay, focused on delivering a seamless, customer-centred experience. Through our managed services agreement with Unison Networks Limited, we continue to provide safe, reliable, and cost-effective electricity to households, businesses, and community facilities across the district.

This 2026 RAMP reflects our response to a changing environment. It incorporates new insights, revised forecasts, and enhanced methodologies to ensure our network remains resilient and future-ready. We have sharpened our investment strategy to better align with:

- decarbonisation goals
- affordability challenges, and
- the growing demand for DERs.

Rising labour and material costs mean that upgrading network assets ahead of schedule to enable decarbonisation is not always efficient and can create affordability pressures. Our investment decisions are data-driven and carefully prioritised to deliver meaningful impact. We focus on essential upgrades that support local growth, demand, and resilience – avoiding premature or excessive spending.

Our approach balances cost, performance, and risk. Each project is assessed for its long-term value to the community, ensuring that our network meets today's needs while preparing for tomorrow's challenges. We continue to explore non-traditional solutions, such as flexibility services, to address network constraints more efficiently.

A key challenge remains, adapting to change while maintaining a safe, reliable, resilient, and affordable network. To navigate this, we leverage our managed services provider's mature and ISO 55001-certified asset management practices, which provide a structured framework for continuous improvement.

The 2026 RAMP outlines how we will enable a decarbonised energy future while optimising the existing network. It reflects our commitment to strategic investment, community wellbeing, and delivering value to our customers.

1.2 What is Centralines' Regulatory Asset Management Plan (RAMP)?

The RAMP is our key external asset management publication and serves as a roadmap to our success. It sets out a comprehensive ten-year plan for how we:

- design, build and maintain our electricity network, and
- support the prosperity, growth and future needs of our customers, regions, communities and businesses.

The RAMP is designed to meet the requirements of the Electricity Distribution Information Disclosure Determination. It is a composite of many controlled documents that form part of our Asset Management System (AMS), including our:

- Asset Management Policy – principles that we commit to in asset management (refer to Section 2 – Background and Objectives, subsection 2.3.2)
- Asset Management Strategy and Objectives – our Asset Management Objectives (AMOs), and the strategy to ensure those objectives will be met, and
- Asset Management Plan (AMP) – our register of asset risks and project proposals to be implemented within the ten-year planning period to manage down those risks.

1.3 Structure of the RAMP

The structure of the RAMP is set out in Table 1-1. Reference mapping to applicable sections of the Electricity Distribution Information Disclosure Determination can be found at Appendix B – Determination Reference Mapping table.

Section Name	Description
1. Summary of the Plan	Overview of the RAMP and our company profile.
2. Background and Objectives	Our Asset Management Objectives (AMOs) and the strategy employed to meet them.
3. Risk Management	Overview of our approach to risk management, risk environment, enterprise risks, risk management tools and business continuity for risk events.
4. Customer and Community	Overview of our customer and community strategy, customer experience and connections, including complaints, outage communication and voltage quality.
5. Data and Digital, Property, and Vehicles	Overview of our approach to managing our non-network assets, such as information technology, property and vehicles.
6. Network Development Plans	Overview of the assumptions, processes, and systems that we employ to formulate network development plans, as well as our strategic approach. This section provides a detailed breakdown of network development projects for the planning period.

Section Name	Description
7. Asset Management Planning	Overview of the assumptions, processes, and systems that we employ to formulate our asset maintenance and renewal plans. This section provides a detailed breakdown of maintenance plans and renewal projects for the planning period.
8. Evaluation of Performance	Evaluation of our asset management performance against the Service Levels disclosed in the 2025 RAMP and our targets for this planning period.
9. Capability to Deliver	Explains how we assure ourselves that the AMP can be delivered.
10. Schedules	Completed schedules containing required asset management information.
11. Appendix A: Glossary of Terms	Key technical and industry terms and acronyms.
12. Appendix B: Determination Reference Mapping Table	Provides mapping to the relevant clauses within the Electricity Distribution Information Disclosure Determination to assist in compliance assessment.

Table 1-1: Structure of the RAMP

1.3.1 Contact for Stakeholder Feedback

We are committed to continual improvement, and therefore welcome and encourage feedback, comments and questions regarding the RAMP. Feedback should be addressed to:

Rachel Butler
Document Control & RAMP Manager
c/o Centralines Limited
17 Coughlan Road
PO Box 59
Waipukurau 4200
New Zealand
rachel.butler@unison.co.nz

1.4 About Centralines

At Centralines, our core purpose remains unchanged: to deliver a safe, reliable, and cost-effective electricity supply to our customers across Central Hawke’s Bay. But how we achieve this is evolving. As the energy landscape transforms, so too does our approach to managing and growing the infrastructure that powers our communities.

We continue to invest in and enhance our electricity distribution network, comprising overhead lines, underground cables, transformers, and substations. Increasingly, this also includes the digital systems and smart technologies that enable us to:

- coordinate energy flows more efficiently, and
- respond to changing demand in real time.

Our role extends beyond managing our own assets. We actively support consumers, businesses, and contractors in developing their energy capabilities. Whether that's through decarbonisation initiatives, optimising energy use, or improving resilience. From enabling solar and battery integration to supporting electric vehicle adoption, we strive to help our district transition to a low-carbon future.

This refreshed plan reflects our commitment to strategic investment, community partnership, and future readiness. We're focused on delivering value where it matters most – ensuring our network meets today's needs while being prepared for tomorrow's challenges.

We currently supply electricity to approximately 9,500 consumers. Our supply area is shown in Figure 1-1.

Figure 1-1: Map of Centralines' Network

1.4.1 Purpose, Vision and Values

Our purpose is to 'deliver a reliable and affordable electricity supply to meet our customers' aspirations for wellbeing, growth and sustainability'.

Our corporate vision is 'a customer-centric partner that enables growth and long-term prosperity for Central Hawke's Bay'.

Our values really matter and define who we are as an organisation. They underpin our organisational culture and inform the behaviours that are expected of our employees. Our values are:

- Safety – Is part of our lives
- Teamwork – We are one team
- Integrity – Truth, honesty, respect
- Openness – We are approachable, and
- Passion – In everything we do.

1.4.2 Ownership and Governance

We are wholly owned by the Central Hawke's Bay Consumers Power Trust (CHBCPT) on behalf of Central Hawke's Bay's electricity consumers. The CHBCPT appoints our Board of Directors.

The electricity distribution sector is regulated by the Commerce Commission to ensure that the long-term interests of consumers are protected. This regulation means that many EDBs:

- may be limited in what they can charge their customers overall
- must meet prescribed customer service levels
- must disclose certain information about their operations, and
- may receive penalties for overspending against set expenditure allowances or receive incentives for underspending.

In 2021, the High Court granted the CHBCPT's application to vary its Trust Deed. This change meant that there would no longer be appointees to the Trust, with all Trustees being elected. This satisfied the criteria in the Commerce Act 1986 for us to be deemed 'consumer-owned'. Being 'consumer-owned' means we are subject to lighter regulation, which aligns better with smaller, consumer-owned EDBs.

With this status confirmed by the Commerce Commission, we are exempt from price and quality regulation but remain subject to information disclosure requirements. The benefit to consumers is lower year-to-year volatility in our prices and greater flexibility. This ensures we can undertake and sustainably fund expenditure at appropriate levels. It enables us to meet the needs of our stakeholders and ensure a safe and reliable network.

Beyond our customers, shareholders, primary service providers and the Commerce Commission, we have many other stakeholders. We are committed to understanding our stakeholders' interests and ensuring that key requirements are met. The processes we use to achieve this are discussed further in Section 2 – Background and Objectives.

1.4.3 Organisational Structure

We have adopted the organisation structure outlined in Figure 1-2. This structure reflects the significant number of asset management-related services that are outsourced to our managed services provider. A Managed Services Agreement (MSA) is in place between Centralines and our managed services provider. This agreement details the requirements of both parties to ensure the effective and efficient management of the network and associated risks.

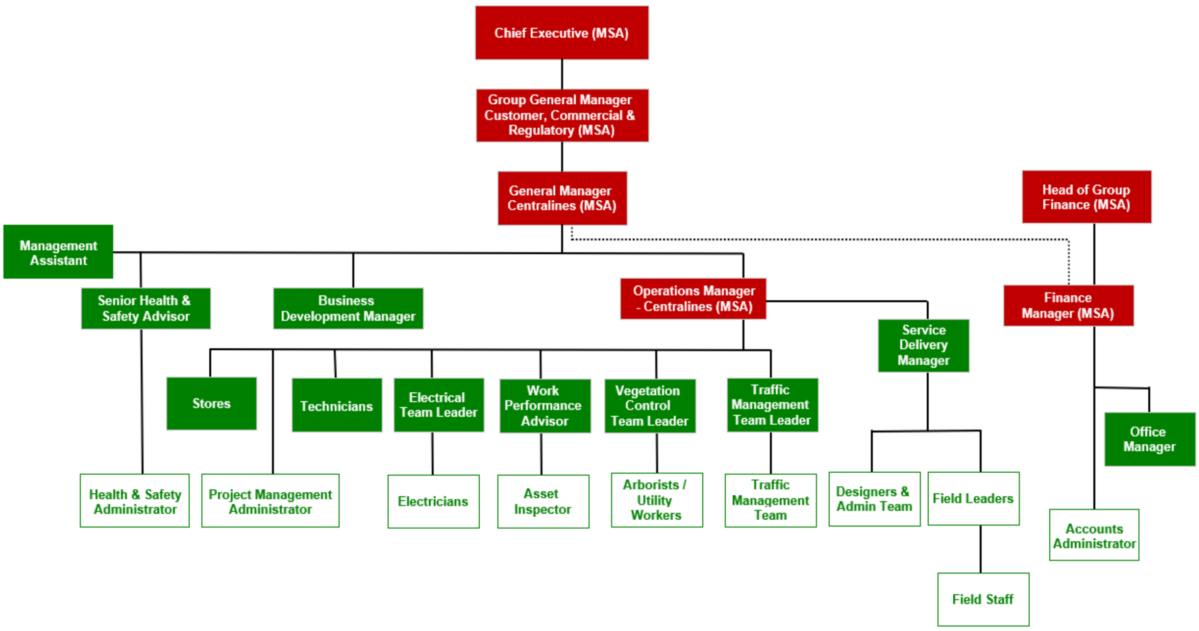


Figure 1-2: Centralines' High Level Organisational Structure

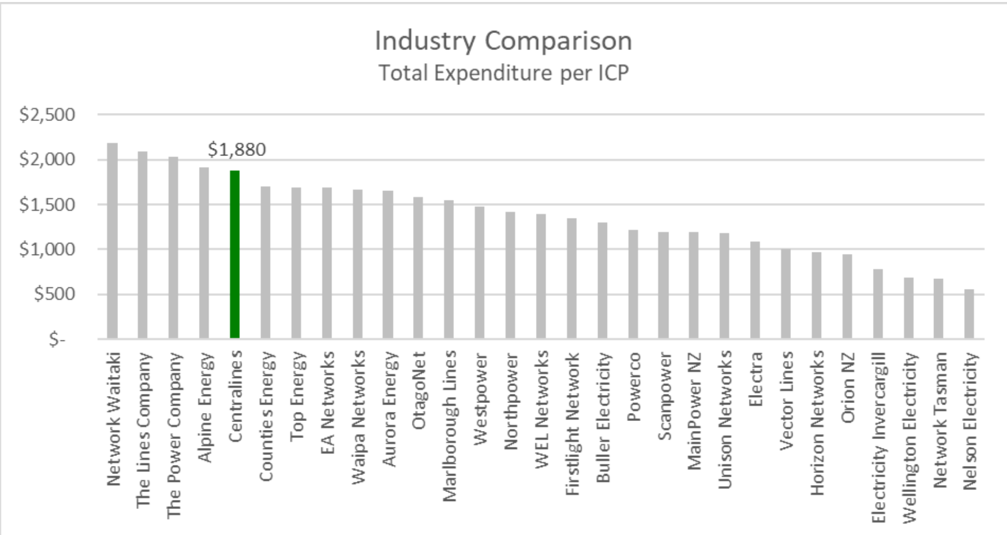
1.4.4 Our Asset Portfolio and Industry Comparison

Our suite of assets is referred to as the asset portfolio. Table 1-2 outlines some of the key statistics (data taken as current from the Commerce Commission website) associated with our asset portfolio, along with a comparison against the industry average for context.

Metric	Description	Centralines 2025	Industry Average 2025
Value of Asset Portfolio	Centralines' Regulatory Asset Base.	$102M ↑	$628M ↑
Expenditure on Assets	Expenditure on assets.	$11.1M ↑	$61.4M ↑
Operational Expenditure	Operational expenditure.	$6.5M ↑	$32.9M ↑
System Length	Total length of all energised circuits.	1,868km ↓	5,516km ↑
Consumers Connected	Total installation control points (ICPs) connected to the network.	9,361 ↑	79,924 ↑
Peak Demand	Peak system demand.	22MW ↓	238MW ↓
Electricity Supplied	Electricity entering system for supply to consumers.	118GWh ↑	1,158GWh -
SAIDI	System Average Interruption Duration Index – a measure of the number of (raw non-normalised) minutes per year the average consumer is without an electricity supply.	196.9 minutes ↓	277.8 minutes ↓
SAIFI	System Average Interruption Frequency Index – a measure of the number of (raw non-normalised) interruptions per year that affect the average consumer.	2.44 ↓	2.22 ↓

Table 1-2: Network Comparison between Centralines and Industry Average of NZ EDBs

Figure 1-3 provides the network comparison between Centralines and other EDBs.



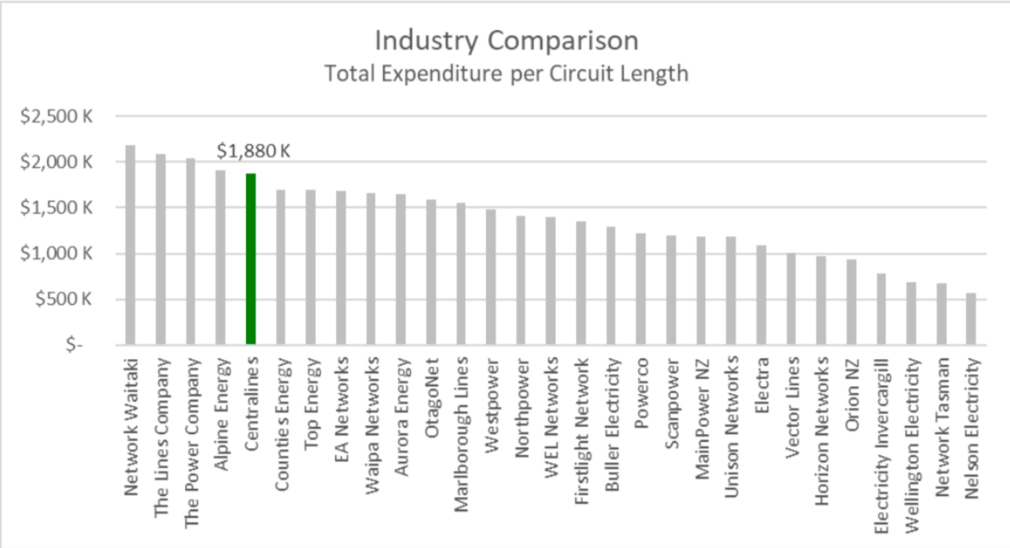


Figure 1-3: Network Comparison between Centralines and other EDBs

1.5 How Our Environment is Changing

1.5.1 New Zealand Electricity Sector

The electricity system involves generating the quantities of electricity needed (supply) and transporting and distributing it to consumers who need to use it (demand). Traditionally, electricity was generated in large amounts from hydro dams and thermal plants. It would then be transported across the country via the high-voltage national grid operated by Transpower. We then transport it directly to our consumers and their properties. Retailers manage the customer relationship and charge consumers for the power they use.

While this core model remains, decarbonisation is driving an evolution. Increasing levels of generation are coming from renewable sources, such as solar and wind, located closer to end consumers. This means that electricity does not have to be carried so far up and down the country. Some consumers are now generating electricity for their own use and storing it or giving back their surplus to the wider system for others to use. The electricity system is becoming:

- more diverse, with more large and small parties now involved, in generating or supplying electricity
- more diverse in its users and purposes for the use of electricity (demand), and
- more complex in the transport and distribution options to get the electricity to those who want it, when they need it.

Our core role of transporting and distributing energy remains. We are now working with a more complex set of partners to balance electricity supply and demand across the regions we serve. At the same time, we are continuing to improve the resilience and affordability of our services. Figure 1-4 shows the emerging value chain in the electricity sector and how it is changing.

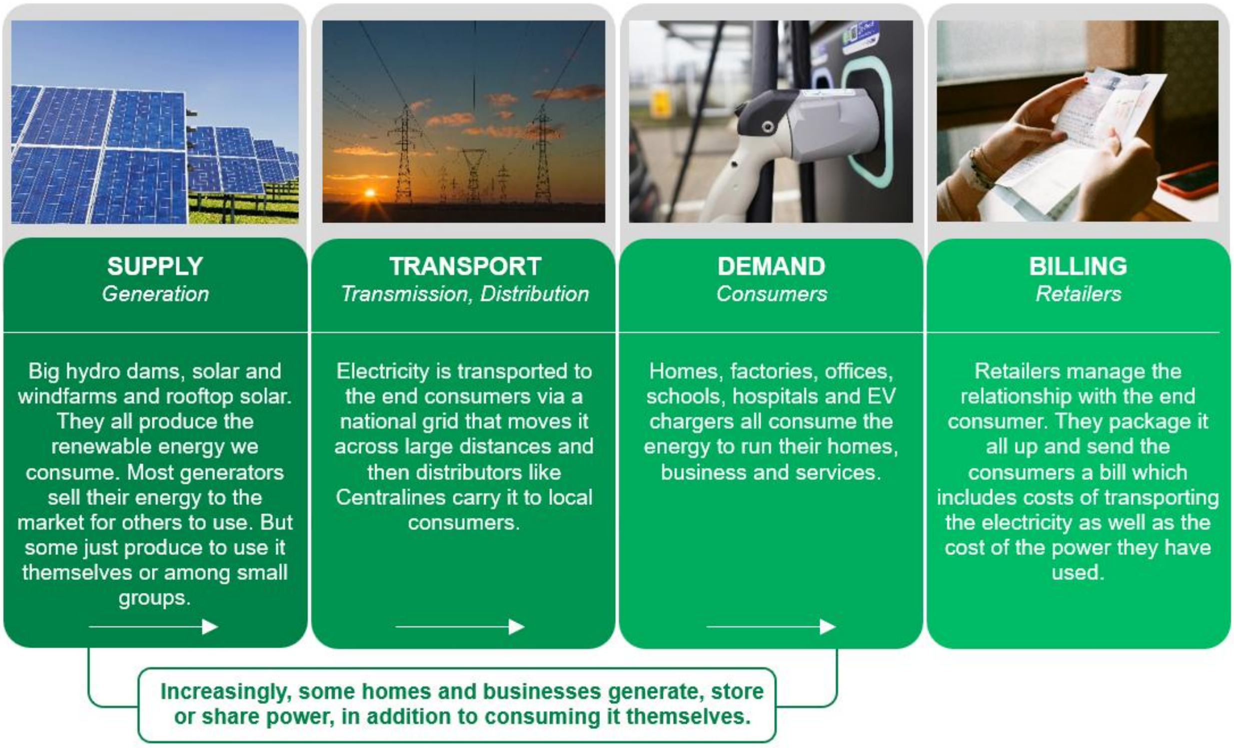


Figure 1-4: Value Chain in the Electricity Sector

1.5.2 The Electricity Sector: A Changing Landscape

Like the rest of the globe, New Zealand is on a journey to reduce emissions to mitigate the impact of climate change. This decarbonisation imperative is driving far-reaching change in the energy industry. Over time, it will lead to a massive increase in demand for renewable electricity as our communities and economy electrify transport and travel, industrial processes, home heating, and urban planning.

To satisfy that growing demand, our industry is having to:

- significantly increase the supply of renewable energy, and
- adapt the way it transports and manages the flows of that energy to meet an increasing array of purposes and users.

Consumers will need electricity for new uses, such as charging electric vehicles (EVs). Some will generate their own energy from solar farms or rooftop panels. Some will use the energy for their own purposes, while others will have excess electricity they can store and share with others.

This will all lead to a more decentralised energy system than in the past. There will be a wider range of large and small generation sources. Additionally, energy will be used for a wider range of purposes and by more users across various locations. Some will be independent, while others will need us to connect them to the nationwide energy system through our distribution network.

These changes will lead to a much larger and more complex energy system in New Zealand in the future. One that will require us to adapt and enhance our distribution and asset management solutions and create new ones. Digitalisation and digital technologies will play a key role in enabling these solutions and enhancing our customers' service experience. This will be important as the industry integrates and manages increasingly complex energy flows, participants, and consumer interactions.

No matter the progress we can make in decarbonisation, the impacts of climate change will be felt. Our industry is being challenged to progressively increase the resilience of our assets and systems, not just their scale. This will not be done in isolation, as the whole world is undergoing its own forms of decarbonisation and climate change. This is putting considerable pressure on global value chains for the equipment and skills that New Zealand needs for its own transition. The scale of the global transition is also challenging everyone to find the money to fund the changes needed. Our industry will have to work through these implementation challenges as we build the future energy systems we will need.

1.5.3 Ministerial Review of Electricity Market Performance and the Sector's Response

Following a period of elevated electricity prices, a Ministerial Review of Electricity Market Performance was undertaken. The government has made clear that the energy sector must improve the affordability and security of electricity for households and businesses. They highlighted that EDBs' capabilities and efficiency are central to achieving this. Recommendations have been adopted that will see targeted measures introduced to:

- improve gas supply
- ensure dry year fuel availability
- stimulate investment in generation
- enable effective electricity market regulation, and
- promote collaboration, efficiency and electrification in the distribution sector.

The Minister has set out expectations for EDBs to play an enabling role in supporting electrification and integrating new generation sources. At the same time, EDBs are expected to create a more flexible electricity system. This flexibility can empower consumers and businesses by giving them greater choice in how they generate and use electricity. EDBs need to play a greater role in enabling this transformation by supporting innovation, decentralised energy solutions, and demand-side participation. Several focus areas have been highlighted for EDBs.

- Planning and investment to ensure resilience and adaptation in the face of climate change.
- Consistent and responsive connection approaches and customer experiences for the connection of load, generation, and consumer energy resources.
- Faster, deeper collaboration, standardisation and innovation to drive efficiency and greater productivity from the sector.
- Providing insights and input into the continued evolution of an effective regulatory framework to ensure capability, delivery, and outcomes aligned with stakeholder expectations across all EDBs.

Building on current partnerships, collaboration and innovation within the sector, EDBs are taking a coordinated approach to outlining how these existing initiatives:

- contribute to the desired outcomes, and
- can be scaled for broader application.

At the same time, the sector is working together to collaborate and undertake new actions, particularly in:

- network planning
- procurement of common infrastructure
- network operations, and
- maintenance, or deployment of distributed/flexible energy solutions.

Work is also underway to build on existing initiatives and develop new capabilities in asset management and distribution system operation to:

- improve network usage, and
- avoid the need for expensive upgrades and lower service costs.

Maximising the usage of existing network assets and containing long-run costs underpins our approach. Our managed services provider continues to take a leadership role in the sector, providing management and procurement services to Centralines. This ensures that capability and performance are delivered efficiently in our network region. They continue to develop and enhance this managed services model. They have also pioneered a modular, sustainable substation design, which has been shared and adopted by others in the industry.

In the short term, the sector is:

- adopting national minimum 10kW export limits for small-scale generation (subject to local technical constraints), and
- embedding transparent queue-management practices to provide customers with greater certainty, consistency, and a better overall connection experience.

In collaboration with others, our managed services provider is:

- deploying dynamic export limits to unlock additional distributed generation
- implementing managed EV charging to reduce peak demand pressures, and
- expanding the use of non-network alternatives. This includes batteries and demand response as formal substitutes for traditional network reinforcement, where they deliver lower whole-of-life costs.

To support accountability and measurable progress, our managed services provider is developing and publishing performance key performance indicators (KPIs) covering:

- standardisation
- network usage
- connection performance
- resilience, and
- customer experience.

Looking ahead, our managed services provider is progressing a targeted programme of initiatives to strengthen efficiency and customer outcomes further. These initiatives include:

- **Scaling dynamic export management** over the next 12–24 months to support greater DER integration and improved network utilisation.
- **Implementing shared billing, data, and reporting standards** across participating EDBs to improve consistency and transparency for customers.
- **Expanding non-network alternatives**, including batteries, managed EV charging, and demand response as standard options in constrained areas where they provide better value than traditional reinforcement.
- **Embedding regionally coordinated planning** with Transpower and major customer loads to support system-wide alignment and efficient investment sequencing.
- **Publishing performance benchmarking** against our KPI baseline to provide transparent reporting and delivery assurance.
- **Continuing digital investment** to improve low-voltage visibility, enable proactive fault response, and support data-driven asset management.
- **Further streamlining customer participation**, including accelerated approval of compliant inverter-based systems and clear, transparent queue management.

Together, these initiatives are designed to deliver early, visible benefits for consumers while building enduring system capability and resilience. They support the long-term objectives of affordability, reliability, resilience and customer choice.

1.6 Our Asset Management Approach

As discussed in subsection 1.4.3, we (under the provisions of an MSA) contract our managed services provider to provide asset management services.

Managing electricity networks is our managed services provider's core skill set. They see asset management as a long-term undertaking because of:

- the high dependence that our customers have on the electrical infrastructure now, and for the future, and
- the long-lived nature of assets that are managed.

The core aim of our managed services provider's philosophy is to optimise the balance between cost, risk and performance in line with stakeholders' requirements. To ensure that this philosophy is embedded at all levels of asset management, an Asset Management System (AMS) has been developed. The AMS ties together and aligns all asset management activities.

Core components of the AMS include:

- the Asset Management Policy (CL-AMS0001)
- our Asset Management Objectives (AMOs) and
- our three key asset management processes:
    - Asset Management Planning – development of plans that ensure AMOs will be met, including asset renewal and asset capability improvement
    - Lifecycle Delivery – the safe execution of asset management plans (AMPs), to ensure work is delivered efficiently and in conformance to quality standards, and
    - Continual Improvement – to monitor, measure and evaluate the performance of assets and asset management, and actions improve continually.

1.6.1 ISO 55001 Certification

ISO 55001:2024 is an international standard that specifies the requirements for an AMS. It builds on the management systems approaches used in ISO 9001 for quality management and ISO 14001 for environmental management.

Our managed services provider was the first company in New Zealand to be certified to this standard in March 2018 through the accredited auditor, British Standards Institution (BSI). This certification provides further external scrutiny and validation of its AMS. It means our managed services provider can measure itself up to the best asset managers globally. After successfully passing all subsequent compliance and surveillance audits, this certification remains current under ISO 55001:2014. Our managed services provider will look to achieve certification against ISO 55001:2024 in the future. While ISO 55001 certification is specific to our managed services provider's network, key frameworks and processes developed through the certification process have been adopted to manage our network.

1.6.2 Asset Management Policy

Our Asset Management Policy is detailed in Table 1-3. The policy comprises 15 principles that we have committed to in the delivery of asset management. The policy was developed by the management team and approved by our Board of Directors.

Asset Management Policy
1. Ensuring that our people take personal responsibility for managing risks to ensure the safety of: • themselves • their colleagues • contractors, and • members of the public. 2. Ensuring that our assets are safe, resilient, free from defects and do not impact adversely on the environment. 3. Ensuring compliance with all applicable legislative and regulatory requirements and industry and internal standards. 4. Taking a risk-based, quality systems approach to asset management through an asset management system that is aligned to the principles of ISO 55001. 5. Using data, information, technology, and effective processes to support fact-based and robust decision-making. 6. Implementing asset management plans that: • propose efficient levels of expenditure • manage risk in the asset portfolio, and • ensure customer service levels will be met consistently over the long-term. 7. Investing in assets prudently and undertaking asset management in a way that represents value for money for our customers and owners. 8. Working closely with our owners, customers and other stakeholders and being responsive to all feedback, requests, and complaints. 9. Playing a positive, engaged, and communicative role in the development of infrastructure to serve our communities. 10. Acting ethically and transparently to gain the Trust and respect of our communities. 11. Providing appropriate levels of resource to enable asset management objectives to be achieved. 12. Monitoring, measuring, and reporting on asset and asset management performance. 13. Developing the capability of our people and teams to enable them to reach their potential in asset management. 14. Fostering a positive, diverse, and inclusive work environment that motivates our people to deliver their best each day. 15. Ensuring that our people are supported and empowered to find ways to do things better and continually improve asset management at Centralines.

Table 1-3: Asset Management Policy

1.7 Our Approach to Adapting to Challenges and Embracing Opportunities

1.7.1 Our Strategy to Enable Electrification

Our managed services provider has been preparing for a significant change in the electricity and wider energy sector for many years, beginning with the implementation of the smart grid strategy in 2010. This was followed by the journey towards excellence in asset management, culminating in ISO 55001 certification. These initiatives have been applied to the management of our network.

A key focus area within our asset management strategy has been:

- the monitoring and control of the sub-transmission and 11kV networks
- increasing visibility, and
- enabling better customer service through faster restoration of supply after faults.

Electrification presents risks, challenges and opportunities for New Zealand EDBs. Electricity flows are predominantly one-way, and distribution networks have not been designed for multi-directional flow. We anticipate the following will have the greatest impact on the low voltage (LV) network:

- small-scale DER systems, and
- the electrification of transport.

Furthermore, the uptake of EVs has the potential to double household loads, leading to overloading and power quality issues.

Continued adoption of smart technologies is a key part of our strategy to manage these risks. The use of smart technologies:

- provides improved visibility and network management across all voltage levels, including the LV network, and
- supports the connection of distributed and consumer energy resources.

1.7.2 Well-positioned for the Future

We are committed to strengthening the community through a reliable electricity service and active investment in local infrastructure.

We continue to develop and evolve our strategy, invest in and improve asset management processes to keep the power on. The analysis and detail set out in this RAMP illustrate some of the recent advances and how we will continue to deliver as New Zealand adapts to an electrified future.

Over the next decade, we are investing in our network development to ensure we continue to deliver reliable, resilient and future-ready power to Central Hawke's Bay. We aim to meet the evolving energy needs of the community while enabling sustainable growth by focusing on:

- infrastructure upgrades
- network resilience, and
- using modern technology.

Listed below are the areas where we are developing our network.

- **Substation and Equipment Upgrades** – We are prioritising the replacement of ageing equipment across key substations and transformers to boost network capacity and reliability. These upgrades will be essential in high-growth areas, ensuring that power distribution keeps pace with expanding residential, commercial and industrial demand. The modernisation of critical infrastructure helps safeguard against potential failures, enhancing the overall reliability of service for all customers.
- **Network Resilience** – We are committed to reinforcing the network against severe weather events. This involves:
  - strengthening infrastructure
  - upgrading vulnerable areas, and
  - introducing improved fault-detection and restoration systems to minimise downtime and enhance community resilience.
- **Smart Grid Technology** – We have implemented smart grid solutions, such as the Advanced Distribution Management System (ADMS). This technology provides real-time insights into network performance, enabling us to locate and resolve issues quickly. The ADMS will enable faster outage response and improved fault detection, thereby enhancing overall service reliability.
- **Renewable Integration** – Our network upgrades are designed to support renewable energy inputs, such as solar and small-scale wind power. We are also preparing for increased EV use by building the capacity to handle higher power loads and bidirectional flows, making the network flexible enough to accommodate future energy trends.

This plan positions us to thrive in this new era for the energy sector by providing a solid framework to deliver on the vision and commitment. It will ensure a flexible, resilient, modern, affordable and sustainable network that can serve the future generations in our communities.

1.8 Key Stakeholder Information

We firmly believe this RAMP should be accessible to readers with varying levels of technical understanding. It is intended that all stakeholders should be able to extract the information they require. From experience, we recognise that for many stakeholders (including our customers), the information of most interest is:

- the level of service and performance that can be expected
- projects that have been initiated to improve the quality of electricity supplied, and
- key information and innovation pertaining to our network.

Summaries of the areas above are outlined below.

1.9 Level of Service – Performance Measures and Targets

Our Strategic AMOs provide the ability to report on whether the needs and expectations of AMS stakeholders are being met.

The current measures that enable us to monitor and improve performance for these AMOs are provided in Table 1-4. More detail on our objectives and associated performance measures is provided in Section 8 – Evaluation of Performance.

Key Result Area	Strategic Asset Management Objective	Measurements	Targets 2026/2027
Health and Safety	Ensure people are safe around Centralines' assets.	Asset failures resulting in serious harm or fatality to a member of the public.	0
		Number of severity 1, field crew, health, and safety internal audit findings.	0
		Percentage of priority 1, 2, and 3 asset defects completed within required timeframes.	100%
Network Reliability	Deliver a reliable and compliant electricity supply to customers.	Unplanned SAIDI, less than Statement of Corporate Intent (SCI) Target (minutes).	<75.00
		Unplanned SAIFI, less than SCI Target (interruptions).	<2.48
		Number of annual, verified power quality complaints.	≤ 5
Customer Service	Improve customers' experience in relation to asset management services.	Percentage of planned shutdowns finishing outside notified outage windows.	15%
		Centralines responses not completed within Utilities Disputes (UDL) time limits.	0
		Timeframe to complete standard low voltage customer connection.	<15 business days
		Timeframe to complete investigation of power quality issue.	<20 business days
Financial	Improve the financial performance of the asset management plan without compromising network performance and asset integrity.	Total annual network CAPEX is within ±10% of total budget.	< ± 10%
		Total annual network OPEX is within ±10% of total budget.	< ± 10%
Service Delivery	Improve delivery performance of the Annual Works Plan.	Delivery of the annual network capital works programme.	Programme completed in full.
		Delivery of the annual planned network maintenance programme.	Programme completed in full.
		Delivery of non-standard customer projects outside of agreed scheduled date.	0

Key Result Area	Strategic Asset Management Objective	Measurements	Targets 2026/2027
		Number of severity 1 and 2 work practice and quality outcomes from internal field audits.	0
Innovation and Continual Improvement	Improve the asset management capability to support the development and implementation of the asset management strategies and plans.	Delivery of Asset Management Capability Plan Delivery.	100%
		Centralines' asset management service provider maintains ISO 55001 certification.	ISO 55001 Certification
	Improve the communication of the asset management system and strategy to staff.	Percentage of new Centralines' staff who received an asset management induction within three months of commencing employment.	100%
		Percentage of Centralines' staff receiving an annual asset management briefing.	100%
	Improve the environmental sustainability performance and resilience of the asset management activities.	Number of environmental breaches resulting in environmental contamination due to the failure or an asset, asset system or associated containment.	0
		Centralines' network resilience maturity is assessed on an annual basis through the EEA's Resilience Management Maturity Assessment Tool (RMMAT).	Completed
Assurance	Maintain compliance with all applicable requirements.	Percentage of non-compliances identified through Legislative Compliance Programme (LCP) in relation to Asset Management having a corrective plan in place.	100%
		Number of instances of unanticipated legal challenge or government investigation.	0

Table 1-4: Performance Measures and Targets

1.10 Programmes and Projects to Improve Network Performance

The lifecycle asset management (Section 7 – Asset Management Planning) and network development plans (Section 6 – Network Development Plans) reflect an asset management philosophy that seeks to balance performance with other considerations, including risk and cost management. The planning period considered by this RAMP sees a continuation of capital investment in the network to:

- manage any risks associated with our network assets
- meet customer-driven growth

- maintain network security
- meet customer service levels and network reliability targets, and
- ensure compliance with regulatory requirements (health, safety and environmental).

Resilience forms a key part of our approach to asset management, and the experience of Cyclone Gabrielle has reinforced the importance of this focus area. Centralines is currently delivering a multi-year programme to progressively replace ageing analogue SCADA radio communications with modern digital systems across the network. This renewal will improve the reliability, resilience, and performance of remote monitoring and control by providing more secure, robust, and future-ready communications for critical network assets. The programme is being staged over approximately ten years to manage risk, spread investment, and ensure continuity of network operations while performance benefits are realised progressively as devices are upgraded. For a full list, refer to Sections 7 – Asset Management Planning and Section 6 – Network Development Plans.

We are undertaking several strategic projects and programmes to support the delivery of our AMOs and meet the expectations of our customers and stakeholders. These include:

- our construction of an indoor 33kV switchboard to replace Transpower's ageing outdoor equipment at Ongaonga, providing us with:
  - greater planning and operational flexibility
  - improved response, and
  - enhanced reliability
- active work on upgrades to facilitate large user decarbonisation through the electrification of industrial processes, including heat and refrigeration, and
- a continued focus on resilience in asset management following Cyclone Gabrielle, with plans to conduct further network vulnerability assessments.

1.11 Innovation in Asset Management

We are constantly exploring novel and innovative ways to improve asset management outcomes. This includes:

- understanding the condition of our assets
- determining the most effective and efficient methods of capturing this knowledge
- providing a reliable and compliant electricity supply, and
- using technology to achieve the above.

An example of this innovation is the Conductor Condition Recognition (CCR) project outlined below.

1.11.1 Conductor Condition Recognition (CCR) Project

This project uses machine learning algorithms to recognise and categorise the condition of the overhead conductor. The project follows on from the successful completion of a combined research and development project with Callaghan Innovation in 2020. The condition assessment can be used to:

- target the replacement of poor condition, high risk conductor, and
- defer the replacement of lower-risk conductors.

This enables optimal replacement of the conductor and potential deferral of millions of dollars in investment costs. Our managed services provider has also used Unmanned Aerial Vehicles (drones) to capture high-definition images. These images are processed through machine learning algorithms to:

- assess the condition of overhead conductors, and
- further enable data-driven investment decisions.

Last financial year we flew all remaining copper conductors on our network for condition-assessment and were able to utilise the data to make informed and efficient decisions on a replacement programme. This will continue to further refine and enhance our ability to quantify specific constraints and investment requirements in future financial periods (also refer to Section 9 – Capability to Deliver).

1.12 Upgrades and Replacements to Key Enabling Systems

1.12.1 ERP System and EAMS

Our managed services provider has numerous systems that enable and support our asset management. The legacy Enterprise Asset Management System (EAMS) was replaced as part of the implementation of a company-wide Enterprise Resource Planning (ERP) System.

The EAMS enabled the following asset management-related benefits:

- improved asset condition information and work history, forecasting of risks, forward visibility for resource and material planning, material procurement and availability, and integration with related systems
- automated decision-making
- better information to field staff on work required and asset details, and
- enhanced systems to capture field information through tightly integrated mobility solutions.

Since its implementation in 2021, the system has continued to undergo optimisation to unlock greater efficiencies. An implementation plan will be developed to roll out the EAMS to Centralines.

1.12.2 Advanced Distribution Management System (ADMS)

In 2024, the ADMS was successfully upgraded with the key benefits of:

- enhanced functionality
- a technical platform upgrade to maintain operating system support, and
- the integration of complementary business systems.

The ADMS provides greater visibility into the LV network, enhancing the ability to manage electricity in real time.

1.13 Network Performance and Reliability

Network reliability is an important indicator of the quality of service customers receive from their EDB. A large variety of indices have been developed by industry to provide an indication of network reliability and performance. The most applied measures, which are industry-referenced and used by the Commerce Commission, are:

- SAIDI (System Average Interruption Duration Index) – measures, on average, the total number of minutes a customer is without power per annum, and
- SAIFI (System Average Interruption Frequency Index) – measures, on average, the total number of interruptions of over a minute that a customer experiences per annum.

Having 'consumer-owned' status exempts us from these quality thresholds, however we continue to maintain reliability targets and measures and report on our performance. This is to provide stakeholders with confidence in the continued performance and reliability of our network.

A summary and evaluation of our network performance for the 2025/26 financial year can be found in Section 8 – Evaluation of Performance.

BACKGROUND & OBJECTIVES

SECTION 2 / WĀHANGA 2

Contents

2. BACKGROUND AND OBJECTIVES

2.1 Introduction to this Section

This section provides an overview of the organisation and the Asset Management System (AMS), including the:

- Asset Management Policy, and
- Asset Management Objectives (AMOs).

A statement of our Asset Management Strategy is provided, along with a summary of the three key processes that ensure the strategy will be delivered effectively.

A table mapping the requirements of the Electricity Distribution Information Disclosure Determination to the information provided is available at Appendix B – Determination Reference Mapping.

2.2 Context of the Organisation

2.2.1 About Centralines

Centralines Limited is the consumer-owned electricity distribution business (EDB) serving the communities of Central Hawke's Bay. Owned by the Central Hawke's Bay Consumers Power Trust (CHBCPT) on behalf of local power consumers, we are responsible for:

- connecting homes and businesses to our network
- safely distributing electricity, and
- sustainably managing our infrastructure to support the region's prosperity and wellbeing.

We distribute electricity to approximately 9,500 consumers and provide a range of essential services, including:

- new connections for homes and businesses
- vegetation management, such as cutting and trimming trees near lines
- locating underground cables, and
- issuing close approach permits to ensure safe excavation around our assets.

Our infrastructure comprises a network of overhead lines, underground cables, transformers, substations, and digital systems. Together, these assets enable the safe and reliable delivery of electricity across Central Hawke's Bay. We continue to invest in modernising and strengthening our network to:

- meet the evolving needs of our customers, and
- support the region's transition to a low-carbon future.

We work in partnership with all members of the electricity supply chain, including generators, Transpower, and retailers, to meet the needs of electricity consumers. We also collaborate closely with local councils, government authorities, mana whenua, and other infrastructure owners to promote the effective management of community resources.

As a 'consumer-owned' EDB, confirmed by the Commerce Commission under the Commerce Act 1986, we are exempt from price and quality regulation. However, we remain subject to information disclosure requirements. This status provides greater flexibility and stability in our pricing and investment decisions. It ensures we can sustainably fund network improvements and deliver value to our stakeholders.

We leverage off our managed services provider's asset management services, including:

- planning
- acquisition and construction
- livening
- operation and maintenance
- renewal and modification, and
- disposal.

Our managed services provider's ISO 55001-certified Asset Management System (AMS) underpins our approach. Key frameworks and processes developed as part of this certification have been adopted to manage our distribution asset portfolio. While our managed services provider holds the certification for its own network, we benefit from the same best-practice standards and continuous improvement ethos.

Most of our capital projects, asset maintenance, and vegetation management activities are delivered by our dedicated in-house team. Our team are supported by external contracting partners for large or technically complex projects, particularly those involving zone substations. This approach ensures we have the right expertise and capacity to:

- deliver our annual works plan, and
- respond to customer-initiated works efficiently.

We are committed to being a responsible corporate citizen. We actively:

- seek and respond to customer feedback
- take a proactive stance on the health and safety of employees, contractors, and the public, and
- manage the environmental impacts of our operations.

Our focus on community partnership, stakeholder engagement, and sustainability ensures that we continue to deliver value and resilience for Central Hawke's Bay, today and into the future.

2.2.2 *Purpose, Vision and Values*

Our purpose, vision and values are outlined in Section 1 – Summary of the Plan, with further detail on the values presented in Figure 2-1.

We are instrumental to the region's social and economic wellbeing, ensuring that one of New Zealand's more sparsely populated regions has access to affordable, reliable, and sustainable electricity. By safely distributing electricity to homes, businesses, and community facilities, we empower our community to prosper and adapt to a changing energy future.

As a collaborative partner in the evolving energy sector, we are committed to meeting the changing needs of our customers and stakeholders. We embrace major shifts in the strategic environment that are transforming how energy is produced, stored, and consumed. This includes climate change, decarbonisation, and advances in technology.

The energy value chain is undergoing a significant transformation, from a centrally planned system to a more decentralised, consumer-driven 'internet of energy'. This transition opens opportunities for new services and business models, and we are actively shaping our role within this future landscape.

By staying close to our customers, we continue to build insights and understanding of their evolving needs. We recognise the importance of engaging the diverse talents of our people and the wider community to harness new ideas and solutions. With a strong focus on delivery, we are committed to finding practical solutions for our customers and the community we serve.

We are developing a realistic and forward-looking view of our future role. This recognises that incremental changes in our activities and investments will be necessary as the energy sector evolves. We will continue to explore and assess opportunities related to the new energy economy and infrastructure services, both within our region and in other markets.

Our commitment to delivering a valued and evolving customer service proposition will ensure we play a key part in enabling long-term prosperity and success for Central Hawke's Bay. We understand that people, culture, and climate are critical to effective asset management. The behaviours and attitudes we expect of our people are encapsulated in our five organisational values **Safety, Teamwork, Integrity, Openness, and Passion** (refer to Figure 2-1). Asset management is aligned with these values through the Asset Management Policy.

Figure 2-1: Centralines' Values

2.3 Overview of Centralines' Asset Management System (AMS)

Our managed services provider is committed to establishing a strong competence in asset management supported through their AMS. We are equally committed to:

- developing asset management plans that optimise investment on a total lifecycle basis
- ensuring all teams are clear in their responsibilities and are appropriately empowered
- making decisions about priorities through consideration of relative risk
- using data and information to support fact-based decision-making
- communicating to all stakeholders on asset management issues relevant to their role
- continually improving in all facets of asset management, and
- implementing novel and innovative asset management solutions, which will best support the achievement of the Asset Management Objectives (AMOs).

Our AMS has been established based upon existing:

- asset management capabilities
- processes and procedures
- standards
- practices, and
- institutional knowledge in the management of electricity distribution networks and assets.

Its primary function is to provide structure and connectivity to ensure that asset management is delivered in alignment with:

- stakeholder requirements
- Corporate Strategic Objectives, and
- the Asset Management Policy.

An overview of the key elements of our AMS is provided in Figure 2-2 and the following sections.

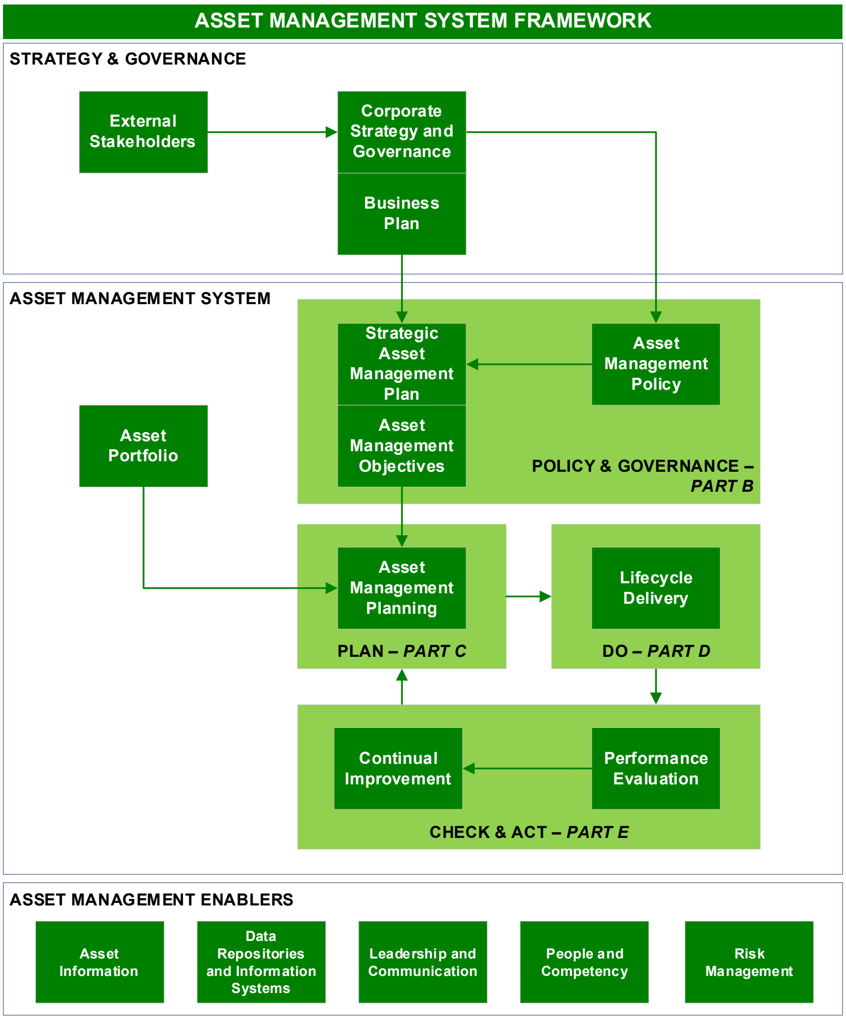


Figure 2-2: AMS Framework

2.3.1 *Corporate Strategy*

Our strategy and corporate governance processes integrate strategic decision-making with the requirements and expectations of external stakeholders. This results in the annual development and Board ratification of the Business Plan, which contains our Corporate Strategic Objectives.

The AMS is one of the key organisational systems supporting the delivery of the portfolio of Corporate Strategic Objectives. Other systems include customer service processes, environmental management processes, and health and safety management processes. These business systems are supported by the Integrated Management System (IMS). This system includes specification of processes that are applicable across the business, such as documentation control, internal audit, and risk management (refer to Figure 2-5 in subsection 2.4.3).

2.3.2 *Asset Management Policy*

Our Asset Management Policy (CL-AMS-0001) is a foundational, stand-alone controlled document in the AMS. It ensures that asset management is aligned and connected with the purpose, vision and values of the organisation and is displayed in our office to promote awareness. The Policy is:

- reviewed at least every two-years
- authorised by the General Manager Centralines
- approved by the Board and the Chief Executive.

The Asset Management Policy comprises 15 principles that we have committed to in the delivery of asset management, as set out in Table 2-1. Our AMOs are linked to these policy principles.

Asset Management Policy Principles
1. Ensuring that our people take personal responsibility for managing risks to ensure the safety of: • themselves • their colleagues • their contractors, and • members of the public.
2. Ensuring that our assets are safe, resilient, free from defects and do not impact adversely on the environment.
3. Ensuring compliance with all applicable legislative and regulatory requirements and industry and internal standards.
4. Taking a risk-based, quality systems approach to asset management through an asset management system that is aligned to the principles of ISO 55001.
5. Using data, information, technology, and effective processes to support fact-based and robust decision-making.
6. Implementing asset management plans that: • propose efficient levels of expenditure • manage risk in the asset portfolio, and • ensure customer service levels will be met consistently over the long-term.
7. Investing in assets prudently and undertaking asset management in a way that represents value for money for our customers and owners.
8. Working closely with our owners, customers and other stakeholders and being responsive to all feedback, requests, and complaints.
9. Playing a positive, engaged, and communicative role in the development of infrastructure to serve our communities.
10. Acting ethically and transparently to gain the trust and respect of our communities.
11. Providing appropriate levels of resource to enable asset management objectives to be achieved.
12. Monitoring, measuring, and reporting on asset and asset management performance.
13. Developing the capability of our people and teams to enable them to reach their potential in asset management.
14. Fostering a positive, diverse, and inclusive work environment that motivates our people to deliver their best each day.
15. Ensuring that our people are supported and empowered to find ways to do things better and continually improve asset management at Centralines.

Table 2-1: Asset Management Policy Principles

2.3.3 Asset Portfolio

The asset portfolio is the comprehensive inventory of assets, which must be managed in accordance with the AMS. Asset information for individual assets and asset systems within the asset portfolio is a key enabler of decision-making processes throughout the AMS. The asset portfolio is defined in Table 2-2.

Inclusions (the Asset Portfolio)	Exclusions

• All assets comprising our electricity distribution networks.
• Assets comprising our Regulatory Asset Base (RAB).
• Conductive assets, e.g., wires, cables, switchgear, and transformers.
• Non-conductive assets, e.g., poles, stay wires and substation buildings.
• Assets permanently installed to monitor the operating environment, condition and other information relating to the asset, e.g., weather stations, oil condition monitors and meters.
• Overhead assets (e.g., conductors, insulators and crossarms), ground mounted assets (e.g., ring-main units and pillars), and underground assets (e.g., cables).
• Operational land holdings used for electricity distribution.
• Asset information systems and supporting IT infrastructure.
• Some assets are located on customer premises as defined within Line Function Services Agreements.
• Low-voltage streetlight circuits, fuses, and ripple relays up to the base of streetlight poles, where we own these.
	• Personal Protective Equipment (PPE) used by our employees.
	• Vehicles and tools owned by us.
	• Non-network buildings and land owned by us.
	• Portable test equipment that is not permanently installed on the network, e.g., power quality loggers, distributed temperature sensing equipment and oil spectroscopy testers.
	• Customer service mains, i.e., electrical infrastructure beyond the fuse located inside pillars and on private property (not within council-owned road reserve).
	• Electricity meters, smart meters, and ripple relays at customer premises.
	• Some assets energised at 11kV located on customer premises as defined in the relevant:
	  ○ schedules of Line Function Services Agreements
	  ○ ownership agreements, or
	  ○ Memorandum of Understandings (MOUs).
	• Streetlight poles and associated hardware.

Table 2-2: Asset Portfolio

2.3.4 Asset Management Objectives

The process used to develop and review our strategic AMOs is detailed in Figure 2-3. This process ensures:

- full alignment with strategic business drivers, and
- enables the development of tactical AMOs for inclusion in fleet strategies and other processes.

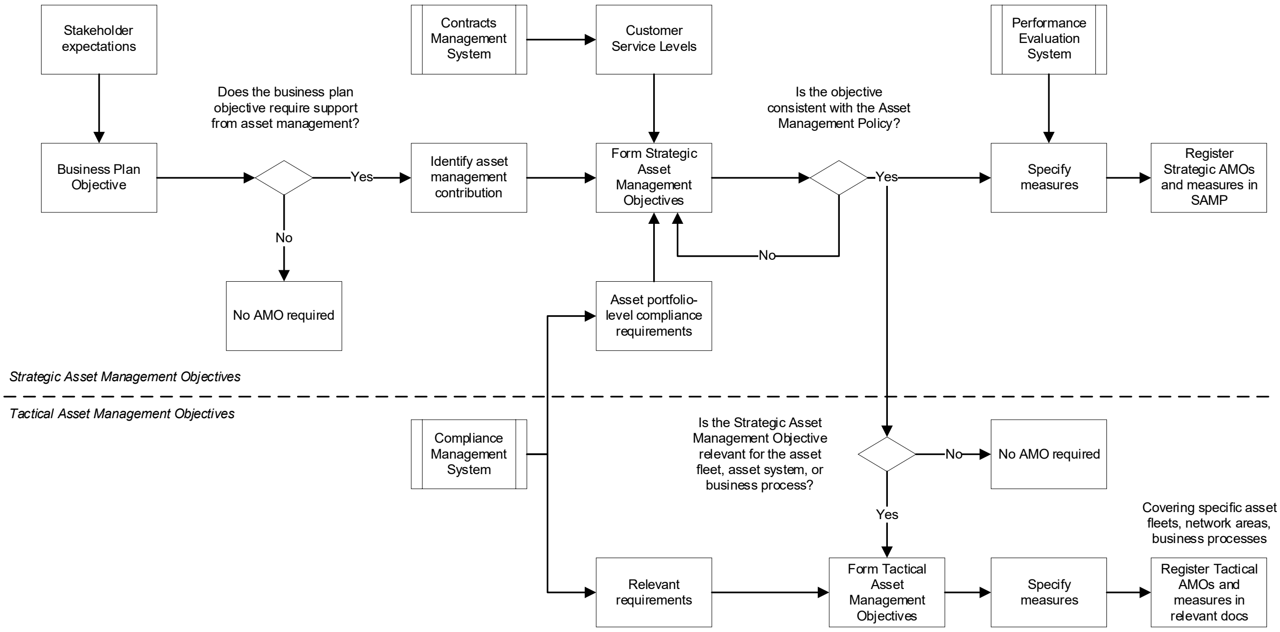


Figure 2-3: AMO Development Process

Strategic AMOs are identified through the analysis of commitments to customers contained in:

- service level and other agreements
- compliance requirements, and
- our Corporate Strategic Objectives.

These are then validated for consistency against the principles of the Asset Management Policy. This check ensures:

- selected objectives are aligned with asset management principles, and
- each asset management principle is reflected in at least one objective.

Measures are then developed for each objective to ensure they are specific, measurable, achievable, relevant and time-bound (SMART). To maintain flexibility and focus, the key results and measures may be reviewed and adjusted periodically. Feedback from performance evaluation processes guide their selection.

This process supports the formation of aligned tactical AMOs. These objectives exist at lower levels of the AMS, for example, for asset fleets, asset systems and business processes.

Our Strategic AMOs are set out below in Table 2-3.

Strategic Asset Management Objectives
1. Ensure people are safe around Centralines' assets.
2. Deliver a reliable and compliant electricity supply to customers.
3. Improve the customers experience in relation to asset management services.
4. Improve the financial performance of the Asset Management Plan without compromising network performance or asset integrity.
5. Improve the delivery performance of the Annual Works Plan.

Strategic Asset Management Objectives
6. Improve asset management capability to support the development and execution of asset management strategies and plans.
7. Improve the communication of the Asset Management System and strategy to staff.
8. Improve the environmental sustainability, performance, and resilience of asset management activities.
9. Maintain compliance with all applicable legislative and regulatory requirements.

Table 2-3: Strategic Asset Management Objectives

Summary descriptions and justifications of our Strategic AMOs are outlined in Table 2-4

Asset Management Objective	AM Policy Principle	Description/Justification
1. Ensure people are safe around Centralines' assets.	1, 2, 3	The most important asset management priority is to ensure the safety of our staff, contractors, and members of the public. This objective complements and aligns with the objectives of our Health and Safety Management System (HSMS) and Public Safety Management System (PSMS).
2. Deliver a reliable and compliant electricity supply to customers.	3, 4, 5, 6, 7	The supply of electricity is an essential service. Our customers and stakeholders expect a reliable supply that meets acceptable service levels and is aligned with any legislative quality requirements.
3. Improve customers' experience in relation to asset management services.	8, 9, 10	Customers expect us to be responsive, easy to deal with and meet the commitments it makes to them. These expectations are increasing as digital technologies and service delivery capabilities continue to evolve.
4. Improve the financial performance of the Asset Management Plan without compromising network performance or asset integrity.	5, 6, 7	The investment requirements of our AMP have a direct link with the cost and affordability of the service. Accordingly, all network investments must be prudent and efficient.
5. Improve the delivery performance of the Annual Works Plan.	2, 11, 12	The safe, efficient, and cost-effective delivery of our Annual Works Plan mitigates risks in the asset portfolio. It ensures the assets and asset systems will be fit for purpose and available to deliver a safe and reliable electricity supply.
6. Improve asset management capability to support the development and execution of asset management strategies and plans.	4, 5, 13, 15	Appropriate asset management maturity and capability are required to achieve AMOs. Continually improving our asset management maturity is necessary to be able to respond to the challenges and opportunities created by a changing electricity sector.

Asset Management Objective	AM Policy Principle	Description/Justification
7. Improve the communication of the asset management system and strategy to staff.	13, 14, 15	Our people and key stakeholders need to understand better our Asset Management System (AMS) and strategy, which drive asset management decision-making and outcomes. We believe providing this 'line of sight' will: • support the engagement and commitment of our people, and • assist in continuously improving our asset management performance.
8. Improve the environmental sustainability, performance, and resilience of asset management activities.	2	Environmental sustainability is of increasing interest to our stakeholders, especially with respect to climate change. In our most recent Business Plan, improving our environmental sustainability performance has been introduced as a strategic objective.
9. Maintain compliance with all applicable legislative and regulatory requirements.	3	We are committed to being a good corporate citizen. Compliance with all legislation and regulations represents a minimum threshold.

Table 2-4: Strategic Asset Management Objective Descriptions

The current measures that enable us to monitor and improve performance in relation to these AMOs are detailed in Section 8 – Evaluation of Performance.

2.3.5 Asset Management Plan

The Asset Management Plan (AMP) is the specification of major work to be undertaken on or in association with the assets over a ten-year period to enable AMOs to be achieved. Decisions about priorities are enabled through application of the risk management processes defined in our Risk Management Framework (CL-RM-1001) and translated for specific use in asset management in our managed services provider's AMS Risk Management Framework (AMS-0003), discussed in Section 3 – Risk Management.

2.3.6 Lifecycle Delivery Processes

Our Lifecycle Delivery processes include:

- the real-time network management performed by our managed services provider's Network Operations Centre (NOC)
- management of the capital works programme
- asset maintenance and inspection programmes
- construction and livening of new assets
- vegetation management, and
- associated configuration management and transactional processes are essential to ensure assets are safe and fit to deliver the AMOs.

2.3.7 *Performance Evaluation*

Evaluation of the performance of the AMS is accomplished through:

- measurement against performance indicators related to AMOs
- the achievement of specified business outcomes, and
- the internal audit of processes and systems of the AMS to ensure conformance to requirements.

2.3.8 *Continual Improvement Process*

The feedback generated through the processes specified above is a primary input into continual improvement (CI) processes, and includes feedback on:

- both asset capability and condition, and
- the organisation's asset management capability.

The CI processes used by the AMS are consistent with the organisational approach to CI provided in our Integrated Management System (IMS).

2.3.9 *Asset Management Enablers*

All asset management processes are enabled by:

- appropriate asset management information, which is stored and accessible from fit-for-purpose data repositories and information systems
- effective leadership and communication processes
- a well-defined organisational design
- people who have appropriate skills, competencies, and qualifications, and
- processes that utilise risk management concepts and principles to support effective decision-making.

2.4 Purpose of the Regulatory Asset Management Plan (RAMP)

2.4.1 *Purpose Statement*

The purpose of this RAMP is to publish information about our AMS, and the asset management plans that are developed to:

- manage down risks, and
- secure opportunities, in support of the AMOs.

This enables interested stakeholders to:

- make an informed judgement about the appropriateness of our overall approach to asset management, and
- learn of changes in the asset portfolio that may impact them.

In addition to this, the RAMP ensures that we are compliant with the requirements of the Electricity Distribution Information Disclosure Determination.

The purpose of asset management planning is to ensure that we achieve the AMOs specified in Table 2-3 for the benefit of all stakeholders.

2.4.2 *Documented Plans*

Figure 2-4 provides a hierarchical view of the documented plans produced as outputs of the annual business planning processes we use, and their relationship with the RAMP.

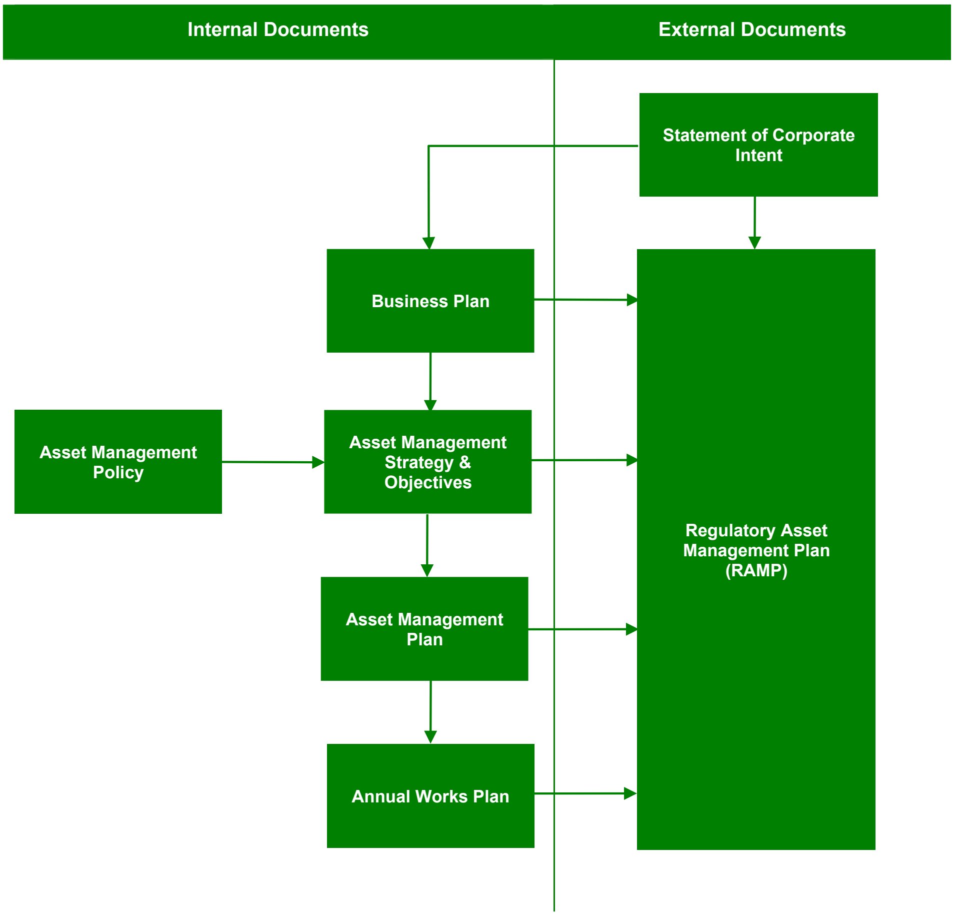


Figure 2-4: Consolidation of Asset Management Information in the RAMP

2.4.2.1 *Statement of Corporate Intent*

The Statement of Corporate Intent (SCI) sets out:

- our scope of activities and strategic aims, and
- the key performance targets for the next three financial years.

It is a requirement of the Energy Companies Act 1992 and is refreshed and published annually on our website. The SCI provides top-level guidance to the development of the Asset Management Policy and Strategy. Although rare, significant changes to the SCI require a detailed review of subordinate plans.

2.4.2.2 *Business Plan*

The Business Plan is our key strategic plan and, therefore, is highly influential in driving the Asset Management Strategy. The Business Plan contains the following elements:

- a review of our strategic context, both internally and externally
- our corporate strategic objectives
- a review of our performance in past periods against Corporate Strategic Objectives, and other goals and targets
- financial information, including capital and operating expenditure forecasts, revenue forecasts and a summary of the company's financial position, and
- an overview of key strategic initiatives for the organisation in the next period.

The Business Plan is reviewed and approved annually by our Board of Directors.

2.4.2.3 Asset Management Policy

The Asset Management Policy (CL-AMS-0001) specifies our commitments in the delivery of asset management. As mentioned in subsection 2.3.2, it is reviewed at least every two years to ensure continued alignment with the SCI and Business Plan.

2.4.2.4 Asset Management Strategy and Objectives

The asset management strategy is a container for our AMOs, as well as the documents that record our strategies for achieving the objectives.

2.4.2.5 Asset Management Plan

The Asset Management Plan (AMP) is the register of the major work required in the asset portfolio to ensure that AMOs are met. Most of the work registered in the AMP is capital work, however major non-routine maintenance programmes may be included. It has a ten-year horizon, where:

- the first two years are well-defined proposals of work ready to be actioned
- the next three years are plans with high levels of confidence, and
- the remaining five-years are speculative but represent the best plan based upon available information.

For all work registered in the AMP, the following information must be provided:

- the assets to be worked on
- the issue driving the requirement for work
- an assessment of the level of risk associated with the issue, utilising the Risk Management Framework, and
- the proposal of work required to manage down the risk, including:
    - the recommended timing and estimated cost
    - any risks in delivering the work
    - shutdown windows required, and
    - contractor resource requirements.

2.4.2.6 Annual Works Plan

The Annual Works Plan (AWP) is the consolidated programme of work to be conducted on the asset portfolio in a given financial year. This includes the following types of work:

- major capital projects from the AMP, including any large customer-driven projects
- preventive maintenance programmes, including inspections
- provisions for small-scale customer-driven projects
- provisions for minor asset replacements, e.g., pole replacements following inspections, and
- provisions for reactive maintenance, e.g., fault response.

The AWP is compiled and scheduled collaboratively by both our managed services provider and our Operations Teams.

2.4.3 Business Management System

The AMS is aligned with our Business Management System Framework (BMSF). The BMSF has been adopted from our managed services provider to enable its effective implementation and sustainment. The BMSF supports our three primary management systems. The supporting processes within the IMS are outside the scope of the AMS but must be available to enable the AMS to function as required.

These include:

- a controlled document system and associated processes
- an internal assurance framework
- a legislative compliance programme
- emergency/crisis management processes
- competency management systems and processes
- complaints management processes
- records management systems and processes
- incident management processes, and
- a continual improvement process.

Our BMSF is represented in Figure 2-5 with the red outline representing the scope of the AMS in this context.

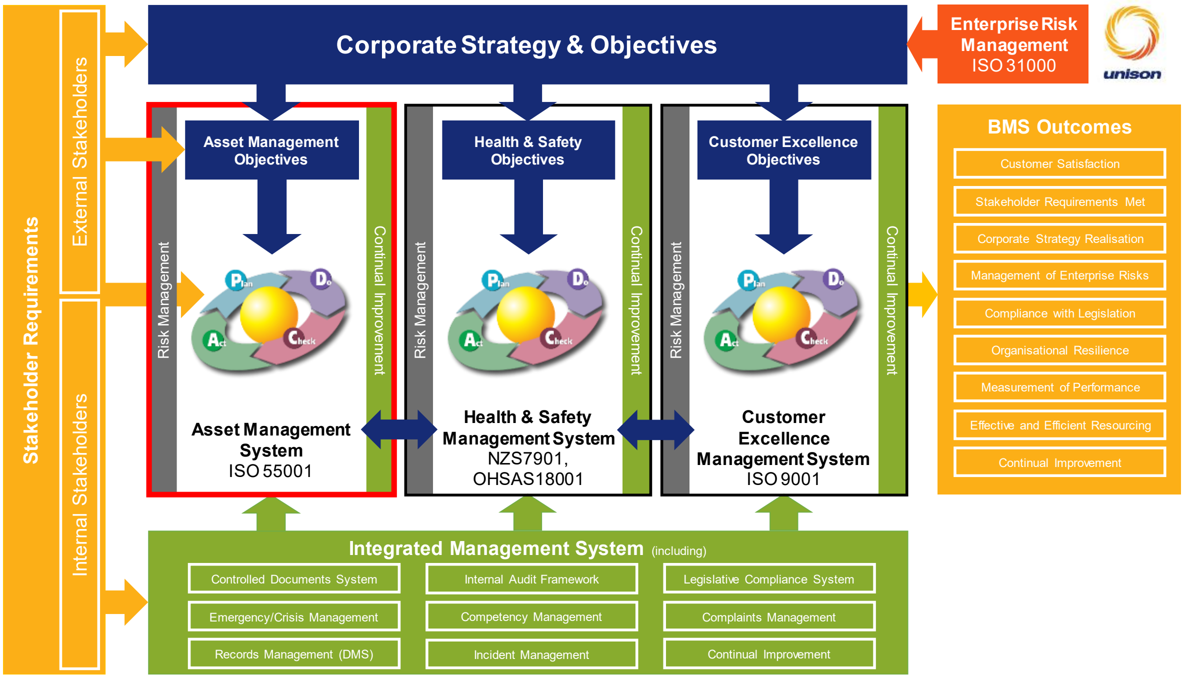


Figure 2-5: Business Management System Framework

2.5 Planning Period of the RAMP

The RAMP covers the period from 1 April 2026 to 31 March 2036. Necessarily, all prospective information is provided based on the currently best assumed future. As for any long-term planning, uncertainty increases further into the future. This is due to factors, including:

- the condition of assets
- demand growth
- government policy and changes to regulatory and legislative regimes
- the cost and availability of contracting resources
- technology changes, and
- stakeholder expectations.

Accordingly, for the first five-years of the planning period, more detailed information on asset management plans is provided. In the second half of the planning period, plans are presented in less detail, reflecting increasing uncertainty.

2.6 Date of Director Approval

Our Board of Directors approved the RAMP on 27 March 2026.

2.7 Centralines' Stakeholders

The requirements and expectations of stakeholders are strongly influential in our Asset Management Strategy and decision-making processes.

Table 2-5 and Table 2-6 set out our key external and internal stakeholders, respectively. The Stakeholder Interests column provides the key expectations of the stakeholder in relation to our operations. This column includes the information, notification and coordination required from us by the stakeholder.

2.7.1 External Stakeholders

Table 2-5 summarises our key external stakeholders, how their interests are identified, and what their interests are.

External Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
Electricity consumers	Customers of the overall electricity supply chain	• Customer surveys • Customer enquiries • Customer feedback and complaints	• A reasonably priced service that meets performance expectations. • Infrastructure is safe, environmentally sustainable and supports local amenity. • Information about changes to prices is effectively communicated. • Notification of planned outage windows and conformance to these windows by us. • Planned outages minimised on especially cold days of the year. • Information about restoration following unplanned outages is available.

External Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
Household consumers	End recipient of distribution service. Pay costs of service	• Customer surveys • Customer enquiries • Customer feedback and complaints	• On-demand and reliable access to as much electricity as they need – 24/7. • Infrastructure that keeps their families, home, possessions, and streets safe from harm. • Minimal disruption to their daily lives, including from planned or unplanned electricity outages or field works. • Energy and infrastructure that is environmentally sustainable and supports the drive for zero carbon. • A network that anticipates, is ready for, and incentivises their future energy and technology needs. • Empathetic and customer-centric handling of any complaints. • Simple, convenient operational processes for contacting and dealing with their distributor. • Assistance in upgrading/changing the energy infrastructure at their homes. • Pricing that all customers can afford power that they reasonably need without causing physical deprivation or financial duress. • Information that gives them transparency and certainty about network actions and expectations, especially during times of outage.
Major customers	Industrial customers supplied at HV who have a contract with us	• Customer surveys • Customer enquiries • Customer feedback and complaints • Relationship meetings	• Expectations as for general electricity consumers. • Engagement around planned outage requirements.
Electricity retailers	Customers, downstream participant in electricity supply chain	• Relationship meetings	• Effective communication on transactional matters, including new connections, outages, and billing submissions. • Effective engagement and negotiation of changes to pricing structures, tariffs, and Use of System Agreements.

External Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
			• Meeting our requirements under Use of System Agreements, including network performance requirements.
Transpower	Upstream asset owner in the electricity supply chain	• Relationship meetings • Engagement through projects • Transpower disclosures and planning documents	• Effective communication on transactional matters, including planned work, billing submissions and account management. • Sharing of long-term planning information, including demand forecasts. • Coordination of planned work and associated outage management. • Coordination between our managed serviced provider's Network Operations Centre and Transpower System Operator, especially in grid emergency situations.
Councils (District, City and Regional)	Territorial authorities, local government, local infrastructure owner	• Relationship meetings • Engagement through projects • Planning documents issued by Councils	• Infrastructure is sensitive to local amenity, compliant to planning requirements, such as District Plans, and are environmentally sound. • Sharing of long-term planning information to support synergies and alignment. • Project coordination to ensure effective service corridor management and minimal disruption to communities. • Coordination of civil defence and emergency management. • Notification of environmental issues.
Landowners	Individuals, iwi, and businesses with interests in land	• Engagement through projects • Enquiries, feedback, or complaints	• Engagement and negotiation on access requirements and the location of new infrastructure. • Local infrastructure is safe, tidy, and well-maintained. • Notification of vegetation management issues and plans to address these issues. • Engagement on asset-related issues in proximity to land holdings.

External Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
			• Understanding, sensitivity, and respect towards cultural issues in relation to land.
Electricity Networks' Association	Industry association	• Involvement and participation	• Regular management engagement with the Association and its members to support industry collaboration and advance the interests of the industry. • Involvement and support in regulatory submissions. • Participation in industry working groups.
Other electricity distribution businesses	Industry peers	• Information sharing forums • Asset Management Plans	• Collaboration on issues of mutual interest, including information sharing, joint projects, trials, and associated commercial arrangements. • Contracting resource support for businesses affected by major events such as storms and natural disasters.
Electricity Engineers' Association	Industry association	• Involvement and participation in working groups	• Involvement in working groups, sharing of knowledge and best practices. • Funding support for initiatives, including research and working groups. • Promotion of electrical engineering as a career pathway for young New Zealanders.
Commerce Commission	Economic regulator	• Regulatory requirements • Documents issued by the Commission • Engagement processes coordinated by the Commission	• Disclosure of information, including Regulatory Asset Management Plans, in conformance with requirements. • Submissions and feedback on proposed changes to the regulatory framework.
Electricity Authority	Electricity market regulator	• Regulatory requirements • Documents issued by the Authority	• Compliance with market rules, associated electricity industry legislation, regulation, and codes. • Consultation and issues-based correspondence. • Participation and cooperation with investigations.

External Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
WorkSafe New Zealand	Health and safety regulator	• Regulatory requirements • Engagement on specific issues • Documents issued by the Authority	• Engagement in working groups and consultation processes. • Notification of incidents and near misses. • Compliance with legislative and regulatory requirements.
Office of the Auditor-General	Independent regulator	• Engagement during audits • Review of documents issued by the Office of the Auditor-General	• Efficient use of electricity bill payers' funds through effective asset management. • Participation and cooperation with audit processes initiated from time to time.
Utilities Disputes Commissioner	Industry regulator	• Cooperation in any investigations • Review of decisions by the Commissioner	• Participation in dispute resolution processes. • Provision of information and records to support dispute resolution processes. • Adherence to rulings not found in our favour.
New Zealand Police	Partner agency	• Relationship meetings • Information sharing	• Notification of accidents involving our assets. • Coordination of responses to incidents and compliance with incident management processes. • Response capability from our first responders.
Fire and Emergency Response New Zealand	Partner agency	• Relationship meetings • Information sharing	• Notification of fires and emergencies involving our assets. • Coordination of responses to incidents and compliance with incident management processes. • Response capability from our first responders.

Table 2-5: Centralines' External Stakeholders and their Interests

2.7.2 *Internal Stakeholders*

Table 2-6 summarises our key internal stakeholders, how their interests are identified, and what their interests are.

Internal Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
Central Hawke's Bay Consumers Power Trust (CHBCPT)	Owner of Centralines on behalf of power consumers	• Annual General meeting • Meetings between Trustees, Directors, and Executive Management	• Reporting of performance against the Statement of Corporate Intent (SCI). • Effective and efficient asset management performance. • Prompt resolution of issues raised by our power consumers.
Board of Directors	Corporate governance Strategic direction	• Monthly Board meetings	• Performance against the Corporate Strategic Objectives. • Regular reporting on the health of the AMS and performance against AMOs. • Effective management of the organisation, especially relating to health and safety performance.
Executive Management	Governance Policy and strategy Enterprise risk management	• Business Plan • Communication and engagement with staff	• Regular management review of the health of the AMS and performance against AMOs. • Escalation of strategic risks in the asset portfolio and the AMS, where necessary, especially relating to the impact of distributed energy resources (DER). • Quarterly reports on progress towards the implementation of the AMS.
Centralines' employees	Internal customers Users and advocates Implementers	• One-on-one discussions with managers • Satisfaction surveys • Training and development processes	• Awareness of the AMS and its implications for roles and responsibilities, and how teams work together. Providing a basis for understanding why certain actions are important. • Awareness of significant risks and potential consequences of deviating from defined asset management practices. • Training and education on asset management, the AMS and role-specific skills and competencies. Professional development. • A secure role in a respected and professionally managed organisation. • Information about asset management risks, particularly relating to health and safety.

Internal Stakeholder	Role/ Relationship	How Stakeholder Interests are Identified	Stakeholder Interests
Centralines' Operation Teams	Primary supplier of contracting services	• Relationship meetings • Collaboration on projects	• Awareness of the AMS and why particular actions are important. • Visibility of the AMP to support business planning. • Information about asset management risks, particularly relating to health and safety. • Effective collaboration in work management, including project delivery. • Two-way feedback on performance and areas for improvement. • Minimised churn in the work programme to drive efficiency and support schedule compliance. • Quality technical standards and operating procedures.
Other Contractors and Vendors	Supplier of goods and services	• Relationship meetings • Contract negotiation processes	• Information about asset management risks, particularly relating to health and safety. • Adherence to terms and conditions of trade and contractual obligations. • Two-way feedback on performance and areas for improvement. • Quality technical standards and operating procedures.

Table 2-6: Centralines' Internal Stakeholders and their Interests

2.7.3 How Stakeholder Interests are Accommodated in Asset Management Practices

The importance of accommodating stakeholder interests in asset management is recognised in the asset management policy. This flows through into the AMOs, and the design of the business processes utilised in the AMS.

Our performance against the AMOs is measured and reported monthly to provide an overview of how effective we are in meeting stakeholder interests. Where gaps between actual and targeted levels of performance are identified:

- opportunities for improvement are considered, and
- actions are put into place through the AMS CI process.

2.7.4 How Conflicting Interests are Managed

Situations sometimes arise where we must make asset management decisions that bring the interests of different stakeholders into conflict. Once such a situation has been identified, we endeavour to work with each of the parties to ensure that their respective interests have been properly and fully understood. Often, through this process, a solution that is acceptable to each party can be identified. If an outcome is not possible, however, we use principles of natural justice, fairness, and equity to come to a decision. The guidelines applied in order of importance are:

- health and safety of our employees, contractors, and the public
- compliance with statutory and regulatory requirements
- congruence with the SCI
- congruence with our Asset Management Policy
- reasonable needs of customers
- synergy with asset management plans
- lowest lifecycle cost, and
- congruence with other stakeholder interests.

In all cases, the reasons for the decision will be communicated openly to all parties.

2.8 Accountabilities and Responsibilities for Asset Management

2.8.1 Corporate Governance

Leadership and commitment to the AMS start at the corporate governance level of the organisation. The Board of Directors represents our governance level. Directors have ultimate accountability for approving the strategic direction of the business as proposed by the Chief Executive and Management Team. Once the organisational strategic plan is approved, the Management Team are responsible for implementing it. The organisational strategic plan has a strong influence on our asset management strategy and objectives, and the line of sight that runs through the AMS.

2.8.1.1 Approval for Asset Management Decisions

The Directors approved the enterprise-wide strategic initiatives relating to asset management as part of the Business Plan in our annual planning processes.

In addition to the asset management strategic initiatives, approval from directors is also required for network projects costing more than one million dollars. When the need for such a project has been identified through asset management planning processes, a Board report is compiled. The structure of the report includes:

- an explanation of the constraint motivating the project
- the possible options for addressing the constraint
- selection of the optimum option with justification from both a technical and commercial perspective
- identification of any risks associated with the selected option, and
- a disaggregated costing for the project, and an estimated timeframe for delivery.

2.8.1.2 Reporting on Asset Management Outcomes

Performance against the AMOs specified earlier is reported to directors at Board meetings. Explanations are provided by senior management on deviations from expected performance.

The following asset management-related outcomes are reported on:

- network reliability
- progress in the execution of asset management plans
- network CAPEX and OPEX budget management, and
- health and safety outcomes.

Progress against asset management strategic initiatives is typically reported quarterly. At the conclusion of these initiatives, an internal review of the organisation's performance in executing the project is provided to the Board, with opportunities for improvement identified.

Performance against measures underpinning the AMOs that are not part of standard Board reporting is reported at the end of the financial year. This is part of the annual business planning process.

Each year, a detailed Board report is prepared on network performance. This report includes an in-depth analysis that:

- examines network performance from a range of perspectives
- critically probes underlying trends
- highlights areas where improvement is required, and
- provides an update on changes to the quality regulatory framework.

2.8.2 *Leadership Processes*

Our managed services provider's Executive Management Team (EMT) and the General Manager Centralines initiate and lead the implementation, utilisation, and sustainment of our AMS. The following top-level processes drive these:

- establishment and communication of our Asset Management Policy
- annual management review of asset management strategy and objectives
- communication to all members of the organisation on asset management performance, and the extent to which this supports the corporate strategic objectives
- consolidation of all legacy asset management processes, practices, plans and other material into the AMS
- annual delivery and disclosure of either a full Regulatory Asset Management Plan (RAMP) or RAMP Update documents, which are compliant with the Electricity Distribution Information Disclosure Determination
- planning and implementation of AMS capability projects by our managed services provider to drive continual improvement and build asset management capability
- ongoing internal assurance, management review and external audit of the AMS, and
- engagement by our managed services provider with external groups and subject matter experts in certain domains to augment and grow capabilities, including:
  - the Institute of Asset Management (IAM)
  - the Electricity Engineers' Association (EEA)
  - the Electricity Networks Association (ENA)
  - the New Zealand Organisation for Quality (NZOQ)
  - the Asset Management Council (AMC)
  - the EPE Centre of the University of Canterbury, and
  - Asset Dynamics.

2.8.3 *Leadership Responsibilities*

In accordance with their defined position descriptions and authorities, all our managers and team leaders are required to:

- model the company values in leadership actions, decisions, and communications
- encourage and coach people to apply the company values in their day-to-day work and challenge behaviours that do not match our values
- communicate clear performance expectations to people so that they understand how their role contributes to the achievement of our vision

- coach and support people to:
  - identify their personal development needs
  - formulate and implement an individual development plan, and
  - assess its impact on results and relationships
- inspire and motivate teams by leading, guiding, and providing motivational and developmental feedback to build a high-performing team and individuals
- cultivate an environment of continuous improvement, innovation, and initiative by facilitating an open exchange of ideas
- take a long-term view and formulate effective strategies consistent with the business strategy, and
- develop and build relationships, engage in cross-functional activities, collaborate across boundaries, and utilise contacts to build and strengthen internal processes.

2.8.4 Organisational Structure

Our asset management is led by our managed services provider, which includes six groups tasked with managing the functional activities required to deliver our corporate objectives. Each group is led by a General Manager reporting to the Group Chief Executive, as shown in Figure 2-6.

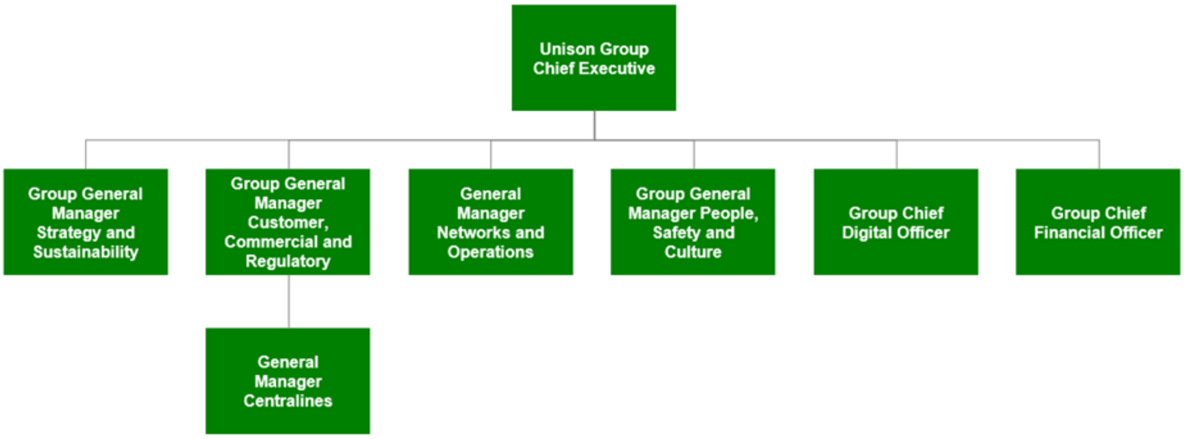


Figure 2-6: Management Structure of the Asset Management Organisation

2.8.4.1 General Manager Centralines

The General Manager Centralines ensures that the managed services provider delivers the asset management outcomes as outlined in the Managed Services Agreement (MSA).

2.8.4.2 General Manager Networks & Operations

The managed services provider's General Manager Networks & Operations is responsible for the AMS, which includes:

- coordinating review of the Asset Management Policy
- aligning the AMOs with the Corporate Strategic Objectives
- overseeing and coordinating the asset management plans, and
- organising management review and external assessment of the AMS.

2.8.4.3 Management Responsibilities

The Board delegates financial approval of up to $1m to the Chief Executive and up to $500k for the General Manager Centralines for network CAPEX projects.

Our managed services provider's General Manager Networks & Operations has primary responsibility for the implementation of the AMS. However, each of the managed services provider's General Managers plays an important role in the asset management organisation. Refer to Table 2-7.

Position	Key Accountabilities
Group Chief Digital Officer	• Enterprise asset management systems (information systems) • Infrastructure and communications hardware • Business analysis
General Manager Networks & Operations	• Facilitating the development of Asset Management Strategy and Objectives • Execution of asset management strategies • Asset management planning, including network development planning • Asset information management • Real-time operation of the network
Group Chief Financial Officer	• Treasury and financial control • Procurement and logistics • Risk management • Internal audit.
Group General Manager – Customer, Commercial & Regulatory	• Governance and commercial relationships • Managed services contract delivery • Billing • Pricing • Regulatory compliance.
General Manager Centralines	• Customer projects • Customer engagement and service levels • MSA delivery • Works delivery • Health and Safety
Group General Manager, People, Safety & Culture	• Human resources support • Health and safety support

Table 2-7: General Manager Key Accountabilities within Asset Management System

2.8.4.4 *Responsibility for Asset Management System Processes*

The services provider's Networks and Operations Group, reporting to the GM Networks & Operations, has the primary responsibility for the AMS. The structure of the group is represented in Figure 2-7. It indicates the primary areas of responsibility of each Line Manager in the key processes of the AMS.

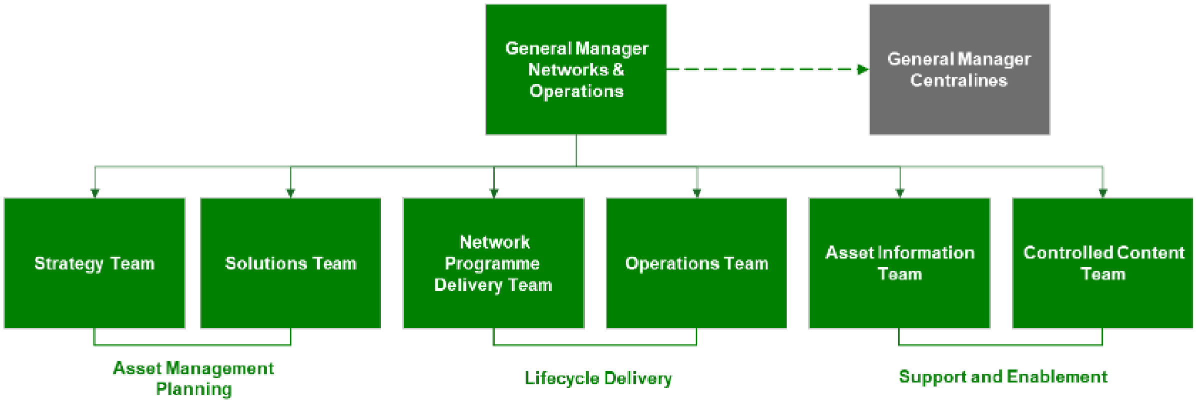


Figure 2-7: Management of the Asset Management System

Further details on the key processes each team is responsible for are provided in the following tables.

Planning Processes	Responsible Team	Contracted Under MSA	Centralines
Network Development Planning	Solutions Team	✓	
Contingency Planning	Solutions Team	✓	
Asset Renewal Planning	Strategy Team	✓	
Maintenance Planning	Strategy Team	✓	
Vegetation Planning	Network Programme Delivery Team	✓	
Works Planning and Consolidation	Network Programme Delivery Team	✓	
Annual Works Plan Development	Network Programme Delivery Team	✓	
Customer Projects	Customer Delivery		✓

Table 2-8: Responsible Teams for Planning Processes

Lifecycle Delivery Processes	Responsible Team	Contracted Under MSA	Centralines
Work Management	Network Programme Delivery (with field work undertaken by Centralines)	✓	
Switching and Outage Management	Operations (with field work undertaken by Centralines)	✓	
Asset Portfolio Control	Strategy Team	✓	
Asset Information Management	Asset Information Team	✓	

Table 2-9: Responsible Teams for Lifecycle Delivery Processes

Continual Improvement Processes	Responsible Team	Contracted Under MSA	Centralines
Performance Evaluation	Strategy Team	✓	✓
Internal Audit	Strategy Team	✓	✓
Coordination of Management Review	Strategy Team	✓	
Coordination of Capability Projects	Strategy Team	✓	
Continual Improvement	Strategy Team	✓	✓

Table 2-10: Responsible Teams for Continual Improvement Processes

2.8.4.5 Responsibility for Field Operations

The Centralines' Operations Manager is responsible for the field delivery of asset lifecycle activities that are specified in the RAMP, including:

- design
- construction
- inspection
- maintenance
- refurbishment
- fault response and repair
- vegetation management, and
- replacement and disposal.

Most of this work is carried out by our field staff who work out of our Waipukurau depot.

The field staff report to the Centralines' Operations Manager, who in turn reports to the General Manager Centralines, as shown in Figure 2-8. Collaboration takes place between our staff and our managed services provider's Networks and Operations teams to ensure the efficient and effective delivery of projects.

An example of this is the close collaboration for work taking place in the field between the Operations Manager and the managed services provider's Network Operations Centre (NOC). This collaboration ensures:

- the network is configured in a way that allows work to proceed
- the impact of outages is minimised
- safety protocols relating to access to the network are observed, and
- our field staff have the information that they require about the state of the network to work safely.

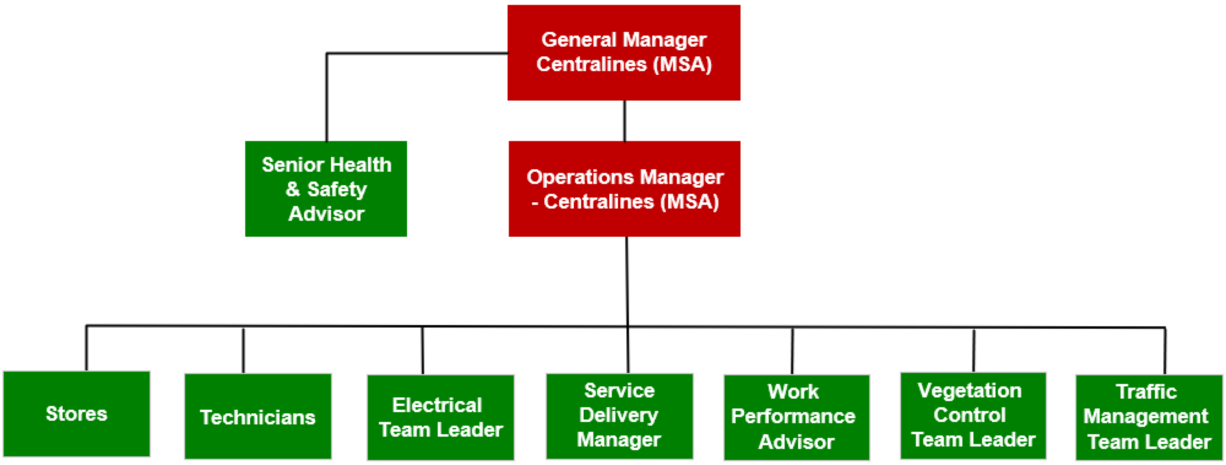


Figure 2-8: Field Leadership Structure of Centralines

2.8.4.6 Outsourcing of Field Operations

Occasionally, we subcontract work during times when demands on contracting resources cannot be met by our existing capacity. From time to time, we also directly engage other contractors when specialist capabilities are required. An example of this is substation design and related project engineering functions, which are performed by the managed services provider's Network Programme Delivery Team.

2.9 Significant Assumptions Made in the RAMP

In preparing the RAMP for a ten-year planning period, it is necessary for a number of assumptions to be made. Our planning assumptions fall into five main categories.

1. Macro-environmental assumptions.
2. Assumptions about actions of regulatory bodies and other external entities.
3. Governance and ownership assumptions.
4. Asset management planning assumptions.
5. Price inflator assumptions.

The significant assumptions under each of these categories are described below.

2.9.1 *Macro-environmental Assumptions*

Assumption	Significance of the Assumption
No change to the structure of the electricity industry	Our Business Plan and AMS are premised upon the assumption that: • the current industry structure will not change, and • we will remain an EDB. Changes to the structure of the industry could alter one or more of the input parameters to the RAMP. This change would have a fundamental impact on the plans disclosed.
No significant changes in customer demands for power quality and reliability	Our customer service levels are an important input into the RAMP. They have been formulated based upon our understanding of customer needs through: • quality regulation, and • our own customer engagement. Significant changes in customer needs for power quality and reliability due to a societal or technological shift could result in our AMOs and customer service levels becoming updated. Any subsequent update to these could have an impact on the RAMP.
No material uptake of distributed energy resources on Centralines' networks over the planning period	Technologies such as solar photovoltaic (PV) cells and batteries have the potential to reshape the electricity industry if: • they reach a level of efficiency that makes them complementary to, or • there is a credible alternative to centralised generation, transmission, and distribution. Research on these technologies strongly suggests that they will have an impact on the business. However, material uptake will occur beyond the planning period of the RAMP within our network footprint. Most of the assets that will be installed during the ten-year planning period will, however, last far beyond that time (some assets have a life of up to 80 years). It is therefore essential that the asset investment decisions being made now consider the prospect of future uptake of distributed energy resources (DER). Research in this area is discussed further in the context of constraint forecasting in Section 6 – Network Development Plans.

Table 2-11: Macro-Environmental Assumptions

2.9.2 Assumptions About Actions of Regulatory Bodies and Other External Entities

Assumption	Significance of the Assumption
Industry regulators employ and strengthen incentives for innovation and excellence in asset management	We strongly believe that best-practice asset management combined with an appropriate regulatory framework will lead to long-term benefits for electricity consumers. Industry regulators should therefore incentivise EDBs to innovate and continuously improve asset management outcomes. Our managed services provider continues to invest in innovation, which will generate long-term asset management benefits. These innovations are in the form of reduced capital expenditure with the potential for improvements in service quality for consumers.
The regulatory environment provides sufficient investment certainty for Centralines	To decide to invest, we require sufficient certainty that we will be able to make a return on that investment over the asset's life. Industry regulators have an important role to play in balancing the long-term interests of consumers with the creation of a regulatory environment that is sufficiently certain for businesses to invest. The RAMP assumes that the regulatory environment will adapt to threats posed by consumer uptake of alternatives, including electrification and that this uptake does not result in undue risk to Centralines.
Availability of field personnel capability and capacity to deliver the RAMP	Suitably resourced and competent field personnel, both in-house and external, will be necessary for the delivery of the RAMP. It is assumed that such a resource will continue to exist within our network footprint during the planning period. It is recognised, however, that increased demand from unprecedented customer connection growth means we will need to augment our current workforce capability through: • productivity improvement • recruitment, and • the contracting of external resources. In our estimation, there are two main sources of uncertainty relating to this assumption. Firstly, will the industry continue to be able to attract people into electrical, line mechanic, electrical fitting and technician apprenticeships at a rate that keeps up with people leaving the workforce and to cater for increasing work volumes? Secondly, will contracting businesses be able to match the pace of change in electricity distribution network technology and upskill and supplement their existing workforce?

Table 2-12: Assumptions about Actions of Regulatory Bodies and Other External Entities

2.9.3 Governance and Ownership Assumptions

Assumption	Significance of the Assumption
Centralines remains wholly owned by the Central Hawke's Bay Consumers Power Trust (CHBCPT)	A key assumption in our organisational strategic plan is that the business remains wholly owned by the CHBCPT. This assumption is therefore also relevant in the AMS and asset management planning. A change in ownership or ownership structure could alter key input parameters to the AMS, including the: • asset management strategy and objectives • availability of funding to deliver on asset management plans, and • risk appetite. It is likely that asset management plans would need to be re-formulated entirely. Under the Trust Deed of the CHBCPT, every five-years the Trustees are required to initiate a review of ownership of shares in Centralines. The last ownership review occurred in late 2024.
Constant appetite for risk at a corporate level	Risk to the business is an input into all decision-making. Risk associated with decisions is assessed against the company's risk appetite. The risk appetite is managed across the following categories: • financial • legal and contractual • reputational and customer • business operations and disruption, and • people, staff, and contractors. Our risk appetite is premised upon the company's internal and external environments. Changes in these environments could result in a shift to a more aggressive or conservative stance. A material change to our risk appetite would systematically affect our asset management plans.

Table 2-13: Governance and Ownership Assumptions

2.9.4 Asset Management Planning Assumptions

Assumption	Significance of the Assumption
Accuracy of constraint forecasts	Constraint forecasting provides a view of the expected future outputs required of our assets. It is therefore a fundamental part of both the Asset Management Strategy and Objectives, and the asset management planning elements of the AMS. Traditionally, the key uncertainty in constraint forecasting has been the rate of growth in the number of dwellings and businesses of different types connected to the network. To address this type of growth, we have drawn upon demographic and economic data and projections to create constraint forecasts down to the level of 11kV feeders to enable the development of robust asset management plans. This is the approach that has been taken in formulating the AMP, and it is assumed that this will be fit-for-purpose for the first half of the planning period. We believe that uptake of distributed energy resources (DER) and electric vehicles, and ongoing improvements in energy efficiency, will render such constraint forecasting approaches incomplete. Future demand forecasting will need to be able to forecast not only the quantity of consumers, but also their energy use intensity by segment, degree of distributed energy resource uptake, and be able to provide information down to the level of low voltage (400V) reticulation.
Situational awareness of the network continues to improve, and this delivers opportunities to defer, curtail or otherwise reduce network expenditure without resulting in increased network risk	We have been installing sensors and automated switches on their network for some time, and adopting our service provider's Advanced Distribution Management System (ADMS) provides enhanced situational awareness. This, coupled with our maturing asset management capability, is enabling better asset management decisions to be made and ultimately will result in more efficient and effective asset management. The theme of improved situational awareness leading to better asset management remains a key plank in our asset management strategy, and it is assumed that progress will continue to be made. The network expenditure forecasts in this RAMP assume that our improved situational awareness continues to enable the managed deferral of investment. The key factor that could lead to a difference between the expenditure forecasts disclosed and actual information recorded in future disclosures is if the situational awareness developed reveals that our earlier understanding of the condition of a material quantity of assets was optimistic. In such a situation, this would in fact require investment to be brought forward, rather than deferred. Although this would have an unfavourable financial impact, it would mean that underlying network risk would be reduced.

Table 2-14: Asset Management Planning Assumptions

2.10 Overview of the Asset Management Strategy and Delivery

2.10.1 Strategic Context

Our business environment is becoming increasingly uncertain due to a range of macro-environmental factors. An environmental scanning capability has been established to identify key issues that require a strategic response over a five to 15-year horizon. Figure 2-9 summarises the external context we are tracking.

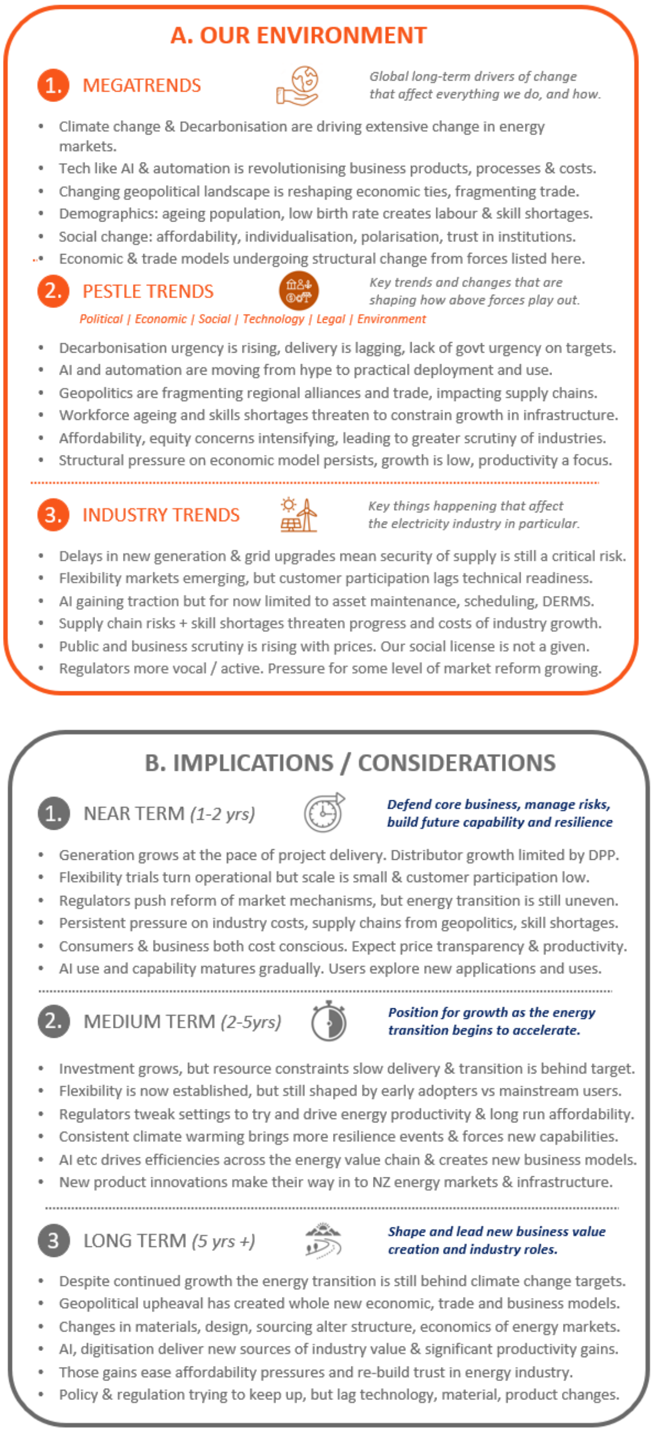


Figure 2-9: External Context

2.10.2 Strategy Overview

The focus of our strategy is aligning and keeping abreast of the changing energy landscape. Our strategy is based on the following key factors:

- the accelerating drive for decarbonisation, combined with improving economics of DERs, such as solar photovoltaics and batteries, and
- managing the organisation sustainably.

We believe that the timing and magnitude of the impact that DER will have are inherently unknowable. However, it is clear that widespread uptake of these technologies would impact the organisation's existing business model.

Our managed services provider has aligned their business with ISO 50001 through the development of an AMS. In their view, this represents best practice and will support our overall asset management aspiration of delivering best practice asset management decisions. This will allow us to respond to the changing environment with flexibility and ease.

The Strategy Framework presented in Figure 2-10 represents the current practice, in which:

- AMOs are established based upon external and internal context, and alignment with the principles of the Asset Management Policy is ensured
- measures are developed to quantify the gap between where current asset performance and asset management capability levels lie in relation to where they must be for the AMOs to be realised
- asset management strategies are developed to close gaps, considering the lifecycle of the assets
- strategies are implemented in asset management plans and through separate improvement initiatives, and
- implementation progress is reported on as required, and major projects are reviewed upon completion. Externally facilitated assessments of asset management maturity against good practice standards (ISO 55001:2014) and expert review of key pieces of work are employed as quality assurance mechanisms.

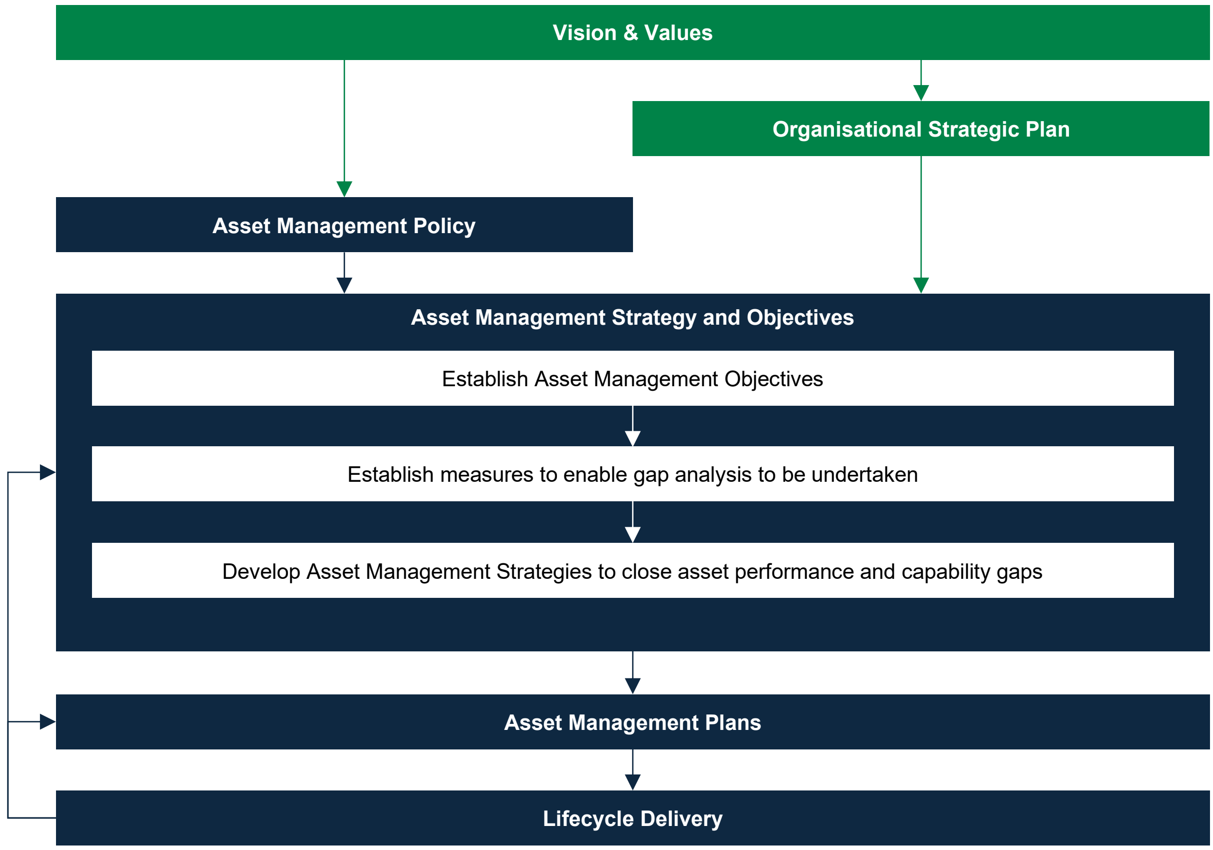


Figure 2-10: Asset Management Strategy and Objectives in the Asset Management System

2.10.3 Processes of the Asset Management System

The AMS ensures the effective implementation of the Asset Management Strategy. The AMS comprises three primary processes:

1. Asset Management Planning
2. Lifecycle Delivery, and
3. Continual Improvement.

These processes ensure:

- the asset strategy considers the lifecycle of the assets
- the AMOs drive investment programmes, including the AMP, and
- costs, risks, and system performance are controlled through the implementation of the AMP.

2.10.3.1 Asset Management Planning

Planning within the AMS is required to ensure that:

- risks to the asset portfolio are managed, and
- opportunities for improvement are realised.

Our planning processes are well-defined and embedded in the business. They use asset information and apply risk management principles to ensure that decision-making is robust and fact-based. The outputs are plans that specify clear tasks and projects to be initiated and scheduled to maximise the efficiency of resource utilisation.

The desired outcome of our asset management planning is the achievement of the AMOs specified in Table 2-3. These objectives are explicitly selected to align with our Asset Management Policy and Corporate Strategic Objectives. This ensures alignment with our asset management planning processes.

The key output of the planning process is the Asset Management Plan (AMP). This contains the details of all major work required on the asset portfolio over a ten-year planning horizon. This work includes:

- specialist and complex capital projects
- customer requested work
- asset refurbishments, and
- long lead-time corrective work, including pole replacements.

All work proposals submitted to the AMP must meet certain information requirements, including assessment against the AMP risk schema. This ensures that an acceptable balance between cost, risk and performance can be reached, and therefore resources are efficiently and prudently deployed.

The AMP is supplemented with other plans, including:

- plans for routine asset maintenance and vegetation management, and
- contingency and business continuity plans that are developed collaboratively by our managed services provider.

We use the majority of our managed services providers' asset planning system, which is represented in Figure 2-11.

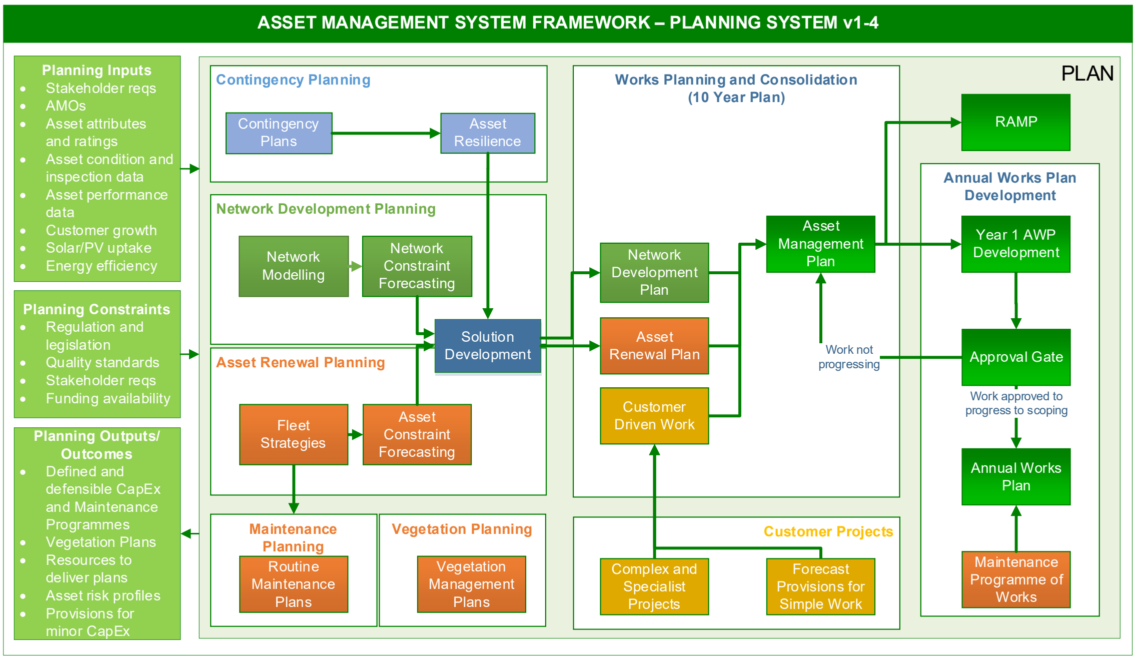


Figure 2-11: AMS Planning Systems

Figure 2-11 identifies eight sub-processes of the planning system, and these are outlined in Table 2-15.

Process	Description
Network Development Planning	• Model a range of possible future demand scenarios and identify the most plausible ones to use for planning. • Quantify the risk associated with capability constraints in the asset relating to capacity, security and voltage compliance over a ten-year planning horizon based upon selected demand scenario(s). • Specify project proposals to address high-priority risks and submit these proposals to the AMP.
Asset Renewal Planning	• Identify and quantify risks in the asset portfolio relating to asset condition. • Specify project proposals to address high-priority asset condition risks and submit these proposals to the AMP. • Specify project proposals to improve the resilience of the asset portfolio based upon requirements from enterprise risk management and contingency planning processes.
Customer Projects	• Forecast the volume of customer simple work over the planning period and submit proposed provisions to the AMP. • Identify any complex and specialist projects requested by customers and submit these proposals to the AMP.
Works Planning and Consolidation	• Coordinate the annual works planning and consolidation process. • Manage the AMP, including supporting teams to provide submissions and closing out completed work. • Quality assure submissions to the AMP to ensure submissions are complete and technically sound. • Manage the optimisation of the AMP to ensure efficiencies in the plan are realised. • Coordinate reporting, management review and approval processes, and provide information to support the formulation of the RAMP. • Provide contracting service providers with a forward view on the required resources and capabilities to deliver the AMP.
CAPEX Programme Establishment	• Establish the annual CAPEX programme for the following financial year by identifying the CAPEX projects and budget provisions required. • Introduce fiscal constraints (if any) and strategic investment criteria. • Initiate the project scoping process to ensure that work requests are available on a timely basis to: o Centralines' Operations Team, and o other contracting service providers.

Process	Description
Maintenance Planning	• Establish annual routine maintenance plans, including: ○ preventive maintenance programmes, and ○ asset inspection and monitoring programmes.
Vegetation Planning	• Establish the annual plan for the management of vegetation, including trees encroaching on the line corridor, that represent a risk to the asset portfolio.
Contingency Planning	• Establish contingency plans to mitigate the impact of high-impact, low-probability (HILP) events, should they occur. • Through enterprise risk management (ERM) processes supported by AMS stakeholders, identify and quantify resilience risks in the asset portfolio.

Table 2-15: Planning System Sub Processes

2.10.3.2 Lifecycle Delivery

Lifecycle Delivery comprises activities required to support the:

- sustainable operation and technical integrity of our network, and
- effective and efficient implementation of asset management plans.

In this way, Lifecycle Delivery can be thought of as '*assets doing things and things being done to assets*' through the asset lifecycle. There are three key issues dealt with in Lifecycle Delivery:

1. Specification and Control of Work – the key activities that support network operations and implementation of asset management plans, and how:
    - they are controlled, and
    - risks are managed to ensure consistent quality outcomes.
2. Technical Change Management – how change in the asset portfolio is controlled, and technical integrity is maintained so that assets remain safe and fit to deliver the operational outcomes specified in the AMOs.
3. Outsourcing – the framework where we assure ourselves that the Lifecycle Delivery activities that are conducted either in-house or in part by third parties meet AMS's quality requirements.

We use the majority of our managed services provider's Lifecycle Delivery Framework, which is shown in Figure 2-12.

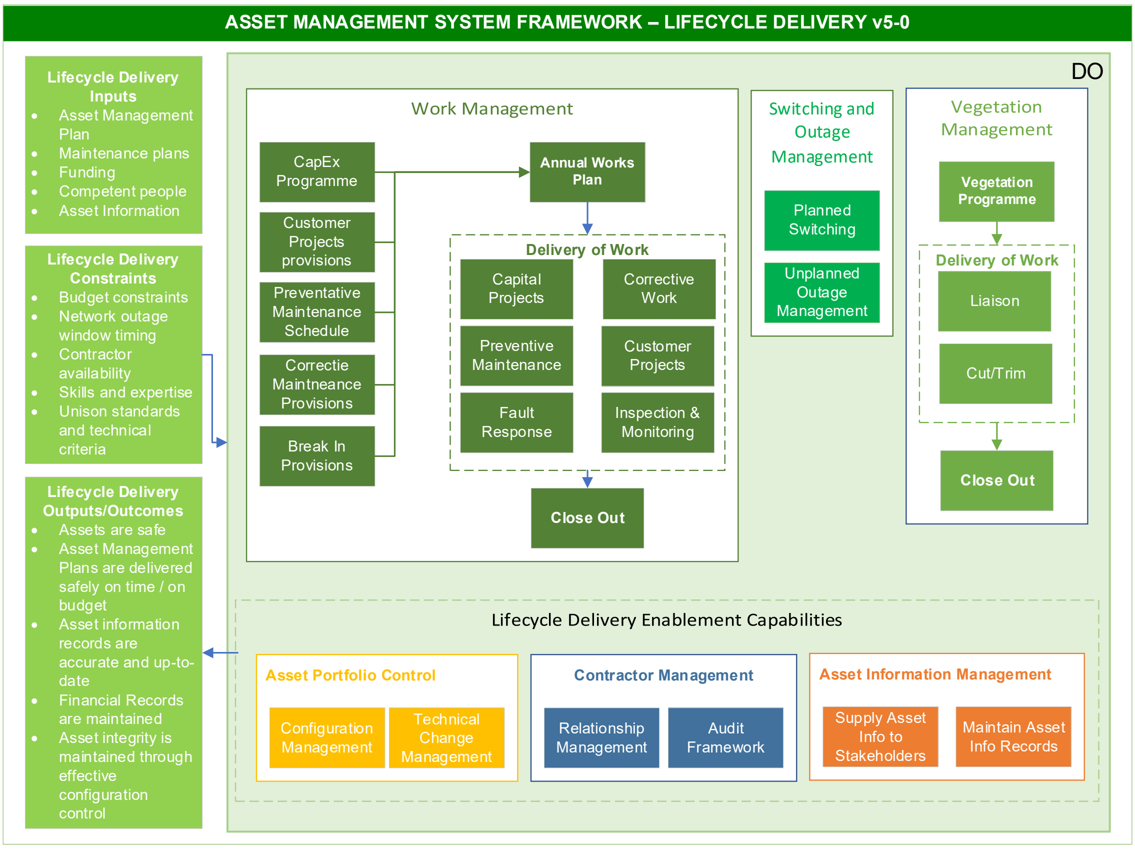


Figure 2-12: Lifecycle Delivery Framework

Further details on the key processes within the Lifecycle Delivery Framework are provided in Table 2-16.

Process	Description
Work Management	• The process where project and maintenance work is undertaken across the network. It assists resources to be productive and effective in maximising equipment safety and reliability.
Vegetation Management	• Identification of vegetation issues and securing of landowner consent for cutting work through the liaison process. • Cutting and trimming of vegetation to ensure line corridors are clear.
Contractor Management	• Utilise existing in-house resources or engage appropriately competent and cost-effective outsourced contracting service providers to undertake work on assets. • Issue work to internal resources or contracting service providers. • Measure the performance of contracting service providers under contractual frameworks.
Switching and Outage Management	• Develop switching plans to enable work on the network to proceed. • Identify the occurrence of unplanned outages and coordinate the response, including the dispatch of the first responder.
Asset Portfolio Control	• Maintenance of the configuration of the asset portfolio to ensure integrity.

Process	Description
	• Technical change management processes to ensure that the risk of change in the asset portfolio is effectively managed.
Asset Information Management	• Record asset information generated from Lifecycle Delivery activities within asset information systems, including an Enterprise Asset Management System (EAMS) and geo-spatial information system (GIS). • Respond to requests for asset information from our teams, contracting service providers, and third parties such as other utilities.

Table 2-16: Key Processes in the Lifecycle Delivery Framework

2.10.4 Continual Improvement

Continual improvement in all facets of asset management is vital to ensure we are well-positioned to support the organisation to respond to the possibility of disruption in the electricity sector.

The Continual Improvement Framework encompasses the 'Check' and 'Act' of the PDCA cycle within the AMS. Therefore, the purpose of these processes is to:

- monitor and evaluate the performance of assets, asset management, and the AMS
- deliver corrective action to respond to non-conformity and provide clear guidance on requirements for preventive action, and
- ensure that changes made to the AMS are controlled and result in sustained improvement.

The Continual Improvement Framework, developed by our managed services provider, has been adopted and is shown in Figure 2-13.

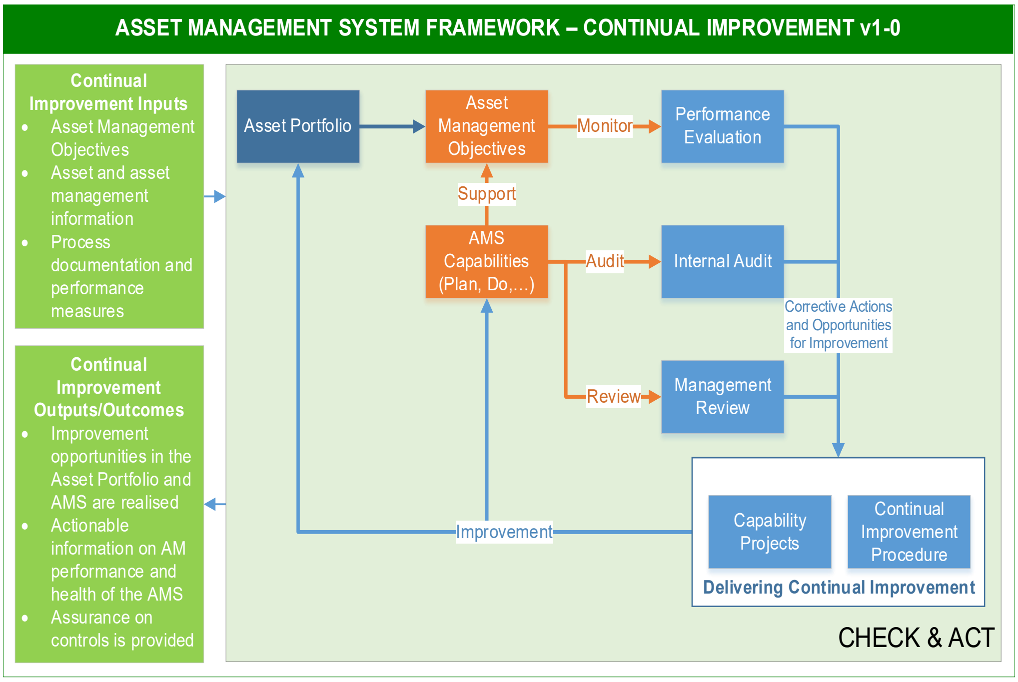


Figure 2-13: Continual Improvement Framework

Further details on the processes supporting continual improvement are set out in Table 2-17.

Process	Description
Performance Evaluation	• Establish SMART performance indicators based upon the AMOs. • Manage the performance evaluation framework to measure performance against the performance indicators over time. • Report on performance to stakeholders.
Internal Audit	• Deliver a risk-based internal audit programme against the processes of the AMS to ensure that risk controls are effective. • Provide feedback to teams on the alignment of processes with ISO 55001, the Asset Management Strategy, and the effectiveness of controls. • Identify corrective actions that are required. • Identify opportunities for improvement.
Management Review	• Systematic periodic review of the status and performance of key elements of the AMS to ensure situational awareness of the management team.
Capability Projects	• Deliver strategic change projects to establish and enhance the capabilities within the AMS. • Deliver effective change management, including: • engagement of people and teams • training and competency development • controlled documentation, and • change to information systems.
Continual Improvement Procedure	• Provide and manage a register of required corrective actions and opportunities for improvement (CI Register). • Risk prioritise work to be undertaken and provide a planning function. • Commission solutions to improve the asset portfolio and AMS. Close-out projects in the CI Register, including: o improving identification of non-conformity and targeting of corrective action, and o implementing preventive actions to avoid non-conformity in the first place. • Quality assure the work undertaken and verify its effectiveness in addressing the non-conformity or opportunity for improvement.

Table 2-17: Key Processes Supporting Continual Improvement

2.11 Overview of Systems and Information Data Management

2.11.1 Introduction to Asset Information Strategy

Information, including asset information, is a key enabler of the AMS, as shown in Figure 2-2. Information is used to support:

- the delivery of the AMS's key processes, which include:
  - planning
  - lifecycle delivery
  - continual improvement, and
  - consequential reporting requirements
- communication to a range of stakeholders, including both internal employees and contractors, and
- awareness among all internal stakeholders on the current performance of both the asset portfolio and the AMS, enabling them to be effective in their role, as it is relevant to asset management.

Alignment between the key types of information and the asset management processes is shown in Table 2-18.

AM Processes	Information Available
Policy and Governance	• Corporate strategic objectives • Capital investment strategy • Risk management framework • Regulatory requirements • Asset management policy principles • Communication plans
Asset Management Planning	• Asset management objectives • Proposals for work within the AMP • Asset class strategies, including technical standards • Asset health reporting and asset risk information
Lifecycle Delivery	• Asset work histories • Geospatial information about assets • Asset risks • Schedules for work on assets • Maintenance programmes and procedures • Asset master data and information generated through technical change management processes • Budgets for work to be done and project cost information • Work delivery reports

AM Processes	Information Available
Continual Improvement	• Continual improvement opportunities registered • Performance against asset management objectives • Results of internal audits and external assessments • Outcomes from management reviews • Project plans for capability projects

Table 2-18: Asset Management Processes Alignment to Information Requirements

To ensure that information is fit for purpose to meet the requirements above, our managed services provider has developed the Asset Information Strategy (AMS-0007). The strategy has four top-level goals.

1. Know what asset information is required to perform each asset management capability.
2. Acquire the asset information required in a way that optimises the cost, risk, and performance trade-off.
3. Know the state (quality, completeness, timeliness, and accuracy) of the asset information we have.
4. Be able to make informed decisions about asset information that appropriately balance the trade-off between asset performance, cost, and risk.

2.11.2 Responsibility for Asset Information

Our managed services provider's Asset Information Governance Group (AIGG) is a committee established to implement the Asset Information Strategy. They set direction and priorities for asset information improvement. The AIGG is primarily composed of our managed services provider's Networks and Operations managers and is chaired by their Asset Information Manager.

The Asset Information Team is responsible for the transactional processes for managing asset information. This includes:

- the maintenance of asset attribute information following an asset change, and
- management of asset location and connectivity data within our managed services provider's GIS.

Our managed services provider's Digital Technologies Group (DTG) is responsible for the maintenance and management of asset information systems and the supporting hardware. There is close collaboration between the Asset Information Team and DTG to ensure alignment between the teams. DTG has a representative on the AIGG.

2.11.3 Identification of Asset Information Requirements

Subordinate to the Asset Information Strategy are the Asset Information Management procedures. These procedures are summarised in Figure 2-14, where each block represents a procedure implemented in the organisation. Together, the asset information strategy and procedures represent a well-integrated system for managing asset information to support the achievement of our AMOs.

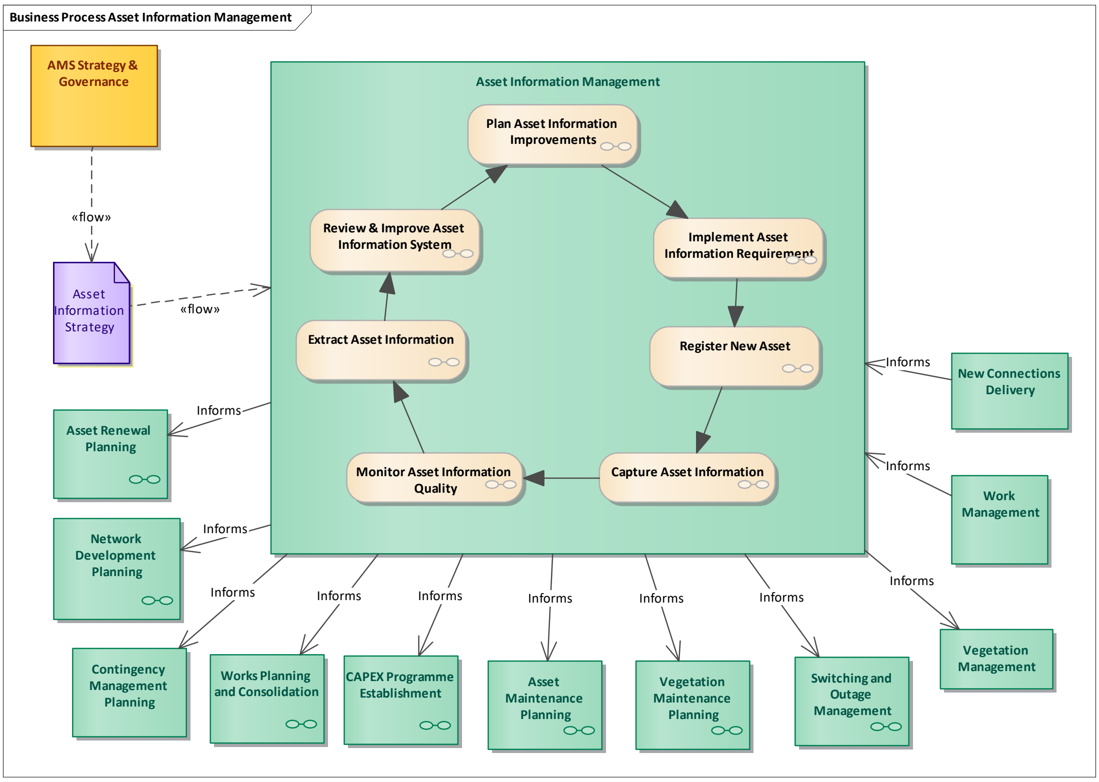


Figure 2-14: Asset Information Management Procedures

The 'Plan Asset Information Improvements' procedure is used to identify new asset information requirements to support the lifecycle management of assets. Diagrams for this procedure, and the following procedure that sees new requirements implemented, are provided in Figure 2-15 and Figure 2-16.

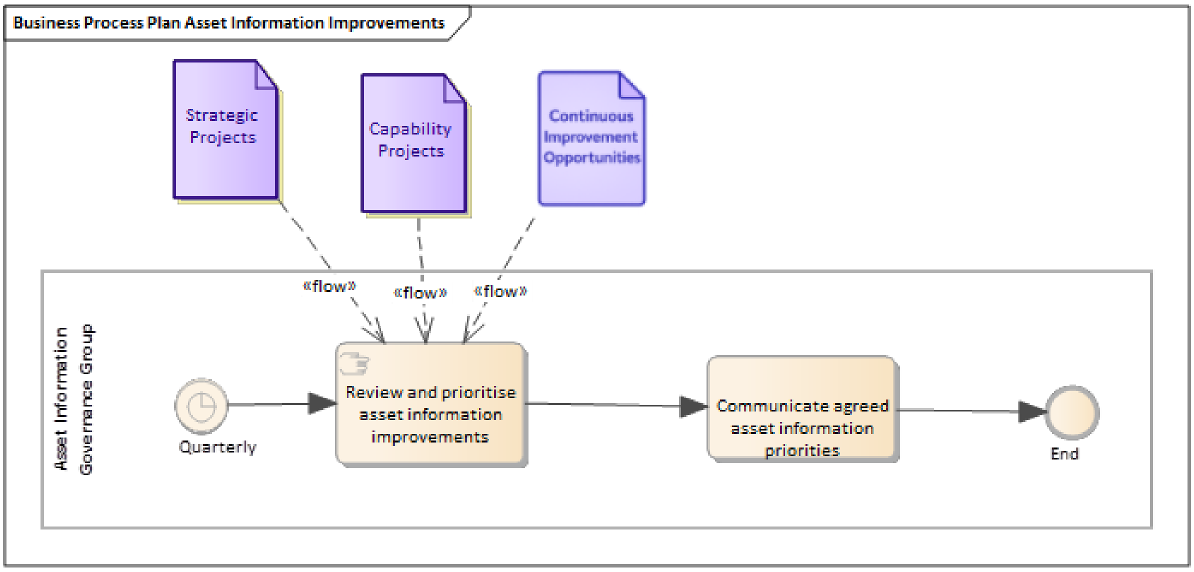


Figure 2-15: Plan Asset Information Improvements

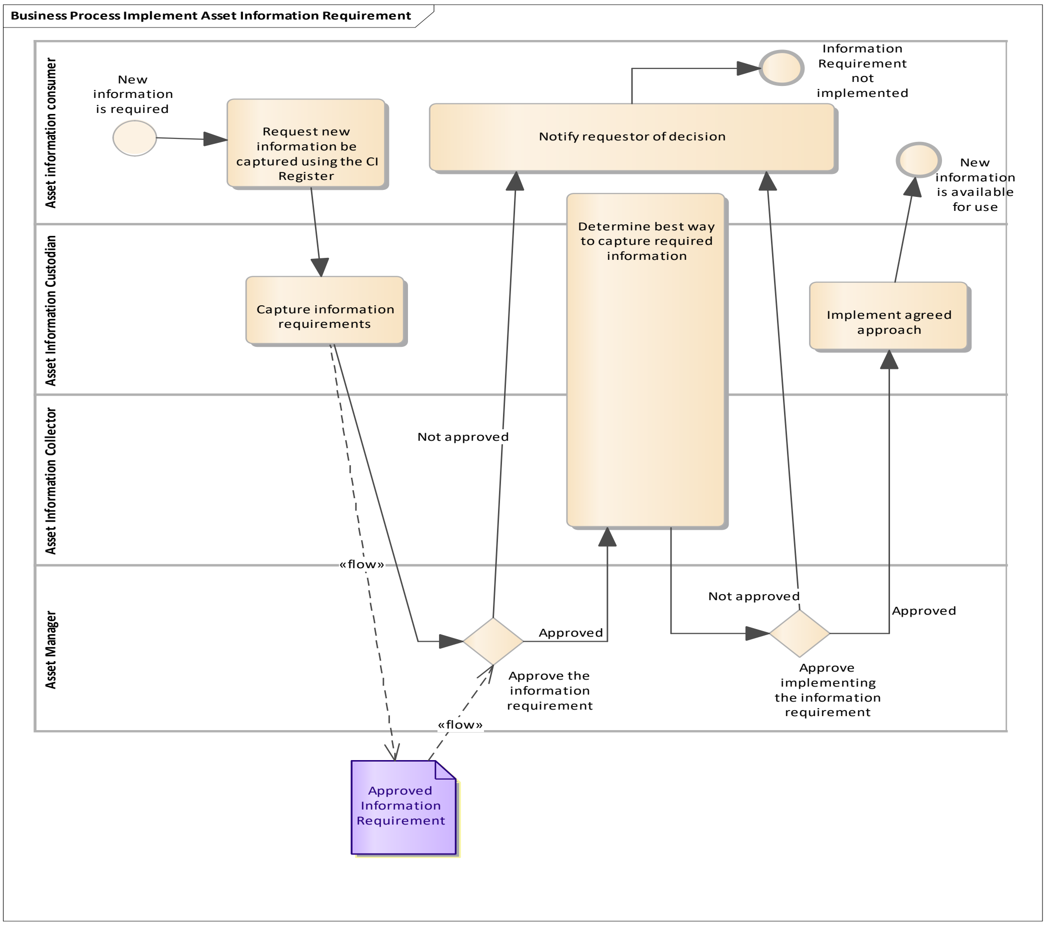


Figure 2-16: Implement Asset Information Requirement

2.11.4 Digital Platforms

Under the MSA, we use a number of applications and systems as repositories for information relevant to asset management, including, but not limited to a/an:

- Advanced Distribution Management System (ADMS)
- Geographic Information System (GIS)
- Enterprise Resource Planning (ERP)
- Billing and ICP Management
- Document Management System
- Drawing Management
- Master Data Services, and
- Microsoft 365.

These applications and systems provide essential data for risk assessments, investment decision-making and performance monitoring functions in the AMS. A range of data reporting tools are used to both report from these data sources and to extract data for further analysis.

2.11.5 Assuring the Quality and Accuracy of Asset Management Information

To ensure that data is suitable for achieving our business goals, it is necessary from time-to-time to review the state of the data required to support those goals. This requires a series of activities to check, and if necessary, remedy the data quality. Figure 2-17 provides a generic process for completing this data assurance.

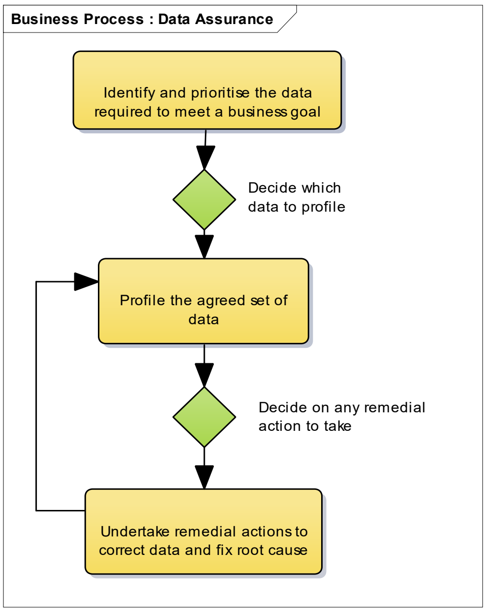


Figure 2-17: Data Assurance Process

When new data requirements are established, procedures are defined to support their implementation. This includes establishing a means of monitoring the quality of the information on an ongoing basis. This is part of the '*Determine best way to capture required information*' block in Figure 2-16.

2.12 Asset Management Processes

2.12.1 Asset Inspections

Inspections and monitoring programmes involve the collection of information on the condition of assets to enable informed, risk-based decisions about their ongoing maintenance and eventual replacement. In some cases, physical inspections are required by legislation to provide assurance of the safety and integrity of our network.

Listed below are the primary objectives of inspection and monitoring programmes.

1. Ensure the safety of assets.
    - Many of our assets are situated in public areas, meaning regular inspection is required to ensure that assets are free from damage and are secure.
    - Meet legislative requirements.
2. Improve network reliability.
    - Reduce unplanned/forced outages affecting customers.
    - Enable planned repairs or replacement prior to an asset failing in service.
    - Improve network performance.
3. Extend asset life.
    - Reduce permanent damage to parts, components, and equipment.
    - Detect and correct problems as they occur.

4. Optimise lifecycle costs and increase return on capital invested.
    - Reduce repair and operating costs.
    - Prevent catastrophic costs.
    - Reduce overtime.
    - Reduce parts inventory requirements.
    - Reduce insurance premiums.

Inspections and monitoring programmes generate both measurement data as well as metadata, i.e., data about the measurement data. The measurement data may be:

- qualitative data, e.g., condition grades
- single measurements
- tables of measurements, e.g., over an observation period
- commentary about what was observed, e.g., a patch of rust, or
- photographs and other digital imagery.

The metadata may include:

- where the measurements were collected from – this can be either where samples were obtained from or where direct measurements were taken
- when the measurements were collected – the date and time, and ambient conditions, and
- who collected the information – the individual, the monitoring device, and the specific measurement instrument utilised.

An overview of how an inspection and monitoring programme is developed is provided in Figure 2-18.

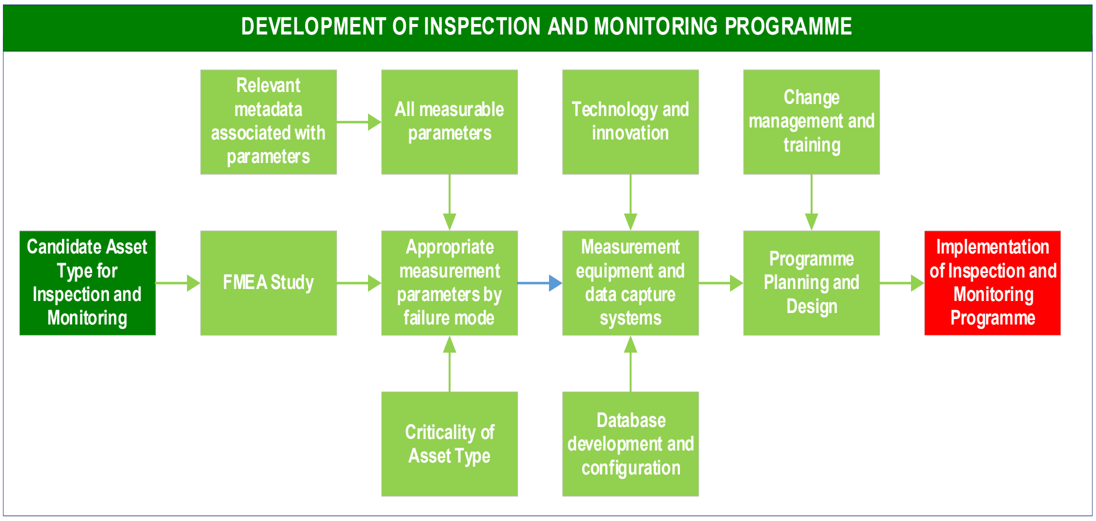


Figure 2-18: Development of Inspection and Monitoring Programme

When considering the inspection and monitoring approach for a class of equipment, consideration is given to the following factors:

- the design and characteristics of the asset, including:
    - why inspection and monitoring are required, and
    - what should be monitored in terms of failure modes and consequences
- information about techniques and methodologies that can be used for advanced inspection and condition monitoring, including:
    - library information, and
    - what is available in the marketplace

- how measurements can be used to support:
  - condition assessment, and
  - estimation of remaining life, and
- the benefits of the overall approach in terms of:
  - return on investment, and
  - savings associated with the prevention of failure.

Where people are required to obtain data, they require maintenance standards, which specify the:

- tasks
- quality to be achieved, and
- expectations of what they will deliver when undertaking these tasks.

Examples include the need for cleanliness when taking oil samples for dissolved gas analysis and where to position probes for partial discharge assessment.

Our current inspections and monitoring programmes are detailed in Section 7 – Asset Management Planning.

2.12.2 Preventative Maintenance

Preventive maintenance is work undertaken to ensure that assets continue to fulfil their intended functions in their present operating context, resulting in their service life being optimised. Preventive maintenance procedures are developed through a well-defined analysis that considers the equipment, how it is being operated, and its environment. The successful implementation of preventive maintenance programmes results in the following benefits:

- assets perform consistently through their service lives
- the rate of unexpected failures is minimised
- the service life of assets is optimised
- safety performance is improved with workplace injuries avoided
- SAIDI and SAIFI performance impacts are minimised, and
- legislative requirements are satisfied, including safety, environment, and sustainability.

The last benefit is a function of not only avoiding unscheduled downtime but also optimising the percentage of time an asset is in downtime.

Preventive maintenance procedures and their application are an essential means for us to assure safe and reliable operations.

The development of preventive maintenance procedures requires:

- an assessment of asset criticality that ranks the criticality of individual assets and components, based on relevant financial and non-financial business consequences of failure modes
- a routine means of identifying which procedures need review or assets are missing appropriate tactics, based on the consequences of equipment failure modes
- the ability to track progress on completing and implementing the procedures needed
- an adequate level of expertise to undertake reviews of the procedures
- engagement with field resources and equipment specialists to cross-check and advise improvements to preventive maintenance procedures, and
- a timely and efficient process to update systems with improved procedures.

The effectiveness of preventive maintenance procedures is assessed by equipment work history and considers the:

- rate of urgent repairs frequency, and duration of scheduled downtime
- availability of condition information so that condition-based actions may be triggered as needed, and
- proportion of preventive maintenance is adequate when compared to the need for repairs and condition-based interventions.

2.12.3 Network Development Planning Processes

2.12.3.1 Planning Network Development Projects

The central objective of Network Development Planning (NDP) is striking the optimal balance between risk, performance, and cost. The NDP process is repeated twice a year and incorporates improvement measures to ensure the best possible balance is achieved.

The purpose of NDP is to:

- identify risks in the network associated with changes or the introduction of demand and/or generation on the network, and
- propose projects to address these risks.

The NDP process comprises Network Constraint Forecasting and Solution Development activities.

The inputs, outputs, and workflow for both processes are outlined in their respective documents:

- Network Constraint Forecasting Process (AMS-1006), and
- Solutions Development Process (AMS-1008).

The goal of NDP is to ensure that:

- at peak times, customer energy/electrical needs are met without compromising the operating parameters of the asset, i.e., thermal overload, and
- customers receive a compliant quality of supply, e.g., voltage.

To achieve this, the risk profile is determined. This involves:

- estimating the timing of one or more constraints arising in the asset, and
- quantifying the impact of the constraint in financial terms.

This process enables the Network Planning Team to prioritise the development of solutions to resolve the constraints, where the risk is sufficient that action should be taken to control it.

Solutions are developed by identifying the most optimal control for the risk, considering the key asset management drivers of cost, risk, and performance. The most optimal solution may not require direct action but instead may involve engaging other parties to enable the successful resolution of the constraint.

When an appropriate solution has been identified, this solution is proposed as a capital project to the AMP, or work is issued out of an OPEX provision.

2.12.3.2 Process for Delivery of Capital Projects

Figure 2-19 shows the process used for the implementation of our capital projects.

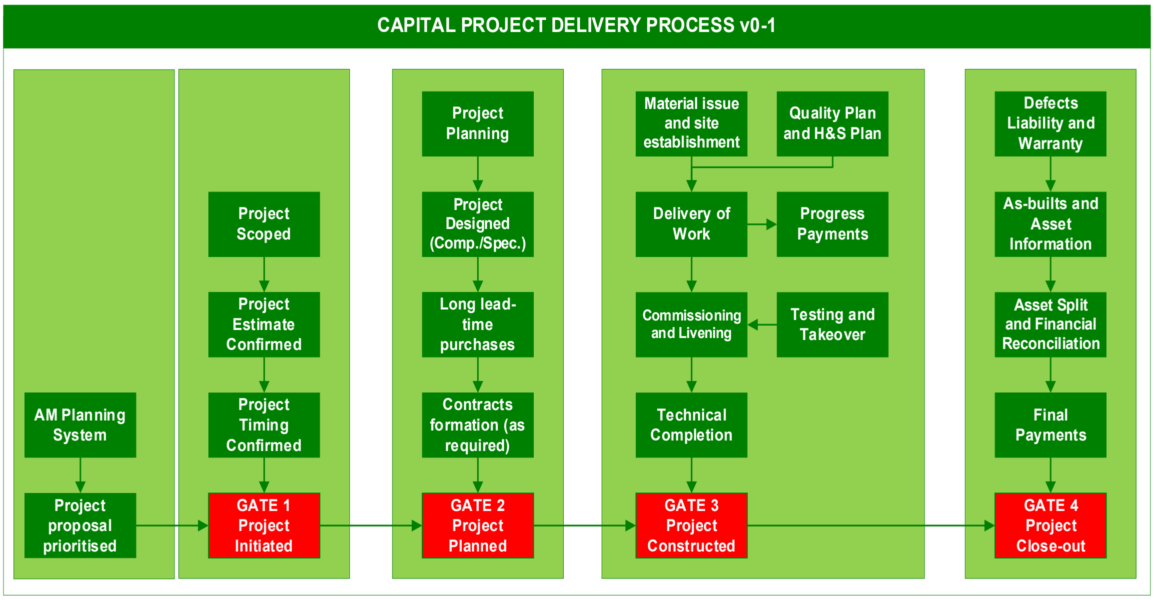


Figure 2-19: Process for Delivery of Capital Projects

Listed below are the requirements for this process.

- A project scope/solution to be registered in the AMP with a reasonable estimate of costs, resources, and required time frames. The project benefits must be quantified and be credible/justified before being technically approved.
- A project may only proceed to detailed planning once the delegated managers have approved the requirements of our managed services provider.
- Resources to plan a project may be internal or external but will represent a cost incurred in the project budget.
- The project should be planned and approved before the budget period in, which it starts, or special approval to expedite the work must be approved by the General Manager Centralines.
- When a project is expedited, a risk assessment is required to determine potential problems with its scope, budget, or timeframe for delivery. Once project costs are approved, the project forms part of the budget for the site in the year in which it commences, and the detailed scope must cover the potential impact on operations.
- The project has an appointed project manager. The project manager is:
    - required to resource the project, secure resources, confirm the budget and the project schedule
    - accountable for the safety of the project, its environmental compliance and management of the safety plan
    - accountable for the quality of the project and the strategy for commissioning the works at the completion of technical work
    - to develop a communications plan, advising stakeholders of the progress of the work, plus any requirement for their involvement, and
    - is accountable for keeping the risk register up-to-date and recording all risks and their controls as they become known. This can include all environmental, operations and sustainability risks.
- A commissioning plan must be communicated to all relevant stakeholders well before the scheduled time of commissioning to seek their feedback and agreement. When the project requires a change to the configuration of the site, the commissioning plan will cover how the information systems and site procedures will be updated.

- Review of the quality of the project, before the project can be closed out. The review must include the project's planning and delivery, plus the project's outcomes in terms of assets and systems commissioned.

2.12.4 Measuring Network Performance

Our managed services provider's Advanced Distribution Management System (ADMS) is used for controlling and measuring our network performance. The process for using this system is set out in Figure 2-20.

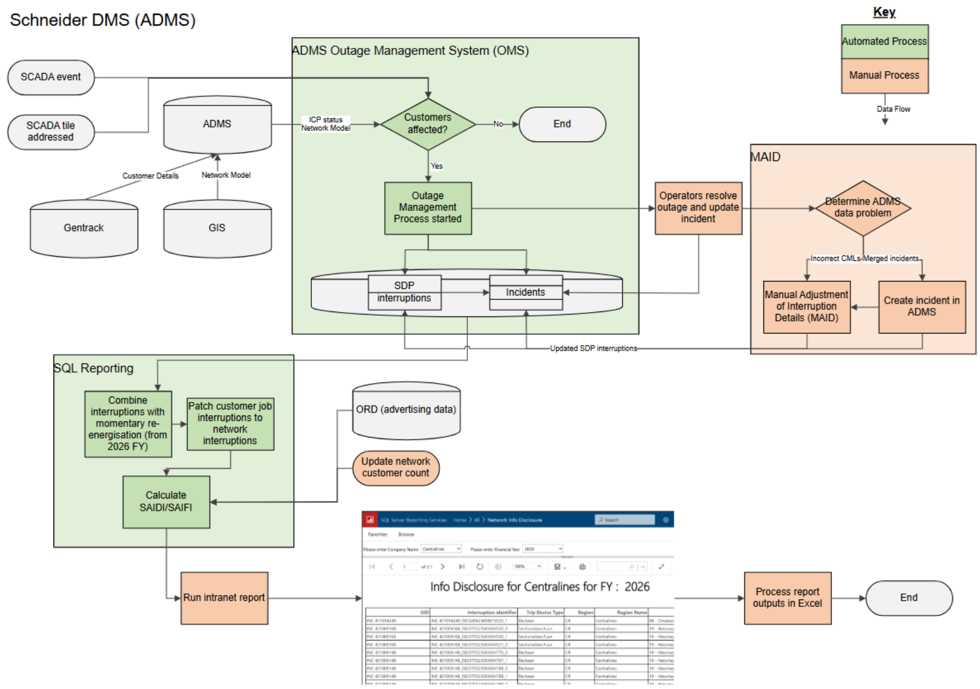


Figure 2-20: Measuring Network Performance

2.13 Documentation, Controls and Review Processes

2.13.1 Documentation

We have adopted and utilised the majority of our managed services provider's suite of controlled documents to support effective management of the organisation. The processes for documented information ensure that content is accessible, current, and appropriate for use. In 2025, our managed services provider migrated controlled content off the old controlled document system to a component content management system (CCMS) to ensure greater efficiencies in the reuse of content (refer to Section 5 – Data and Digital, Property, and Vehicles). The published controlled documents continue to be managed within SharePoint online to ensure accessibility for all staff. The Document Control and RAMP Manager manages the CCMS and publishes controlled documents with technical support provided by the managed services provider's Digital Technologies Group (DTG).

A controlled document may be modified, or a new one added, when a gap is identified to define a specific asset management process or procedure.

Internal audit processes require access to these documents. They are used to baseline any difference between what we intend by way of asset management and what is happening within the organisation.

Documented information is categorised by:

- Asset Management System governance (AMS series)
- Commercial (CM series)
- Contracting (SD series)
- Corporate (FC series)
- Emergency Plans
- Health and Safety (HS series)
- Information Management (IT and IMS series)
- Network Standards (NK series)
- Operating Standards (OS series), and
- Standard Operating Procedures (SOPs).

Key asset management documents are managed within the AMS series, including:

- the Asset Management Policy
- SAMP, and
- subordinate documents, which specify AMS processes such as Asset Management Planning.

These documents, along with key technical standards, plans and reports, are set out in the AMS document framework in Figure 2-21.

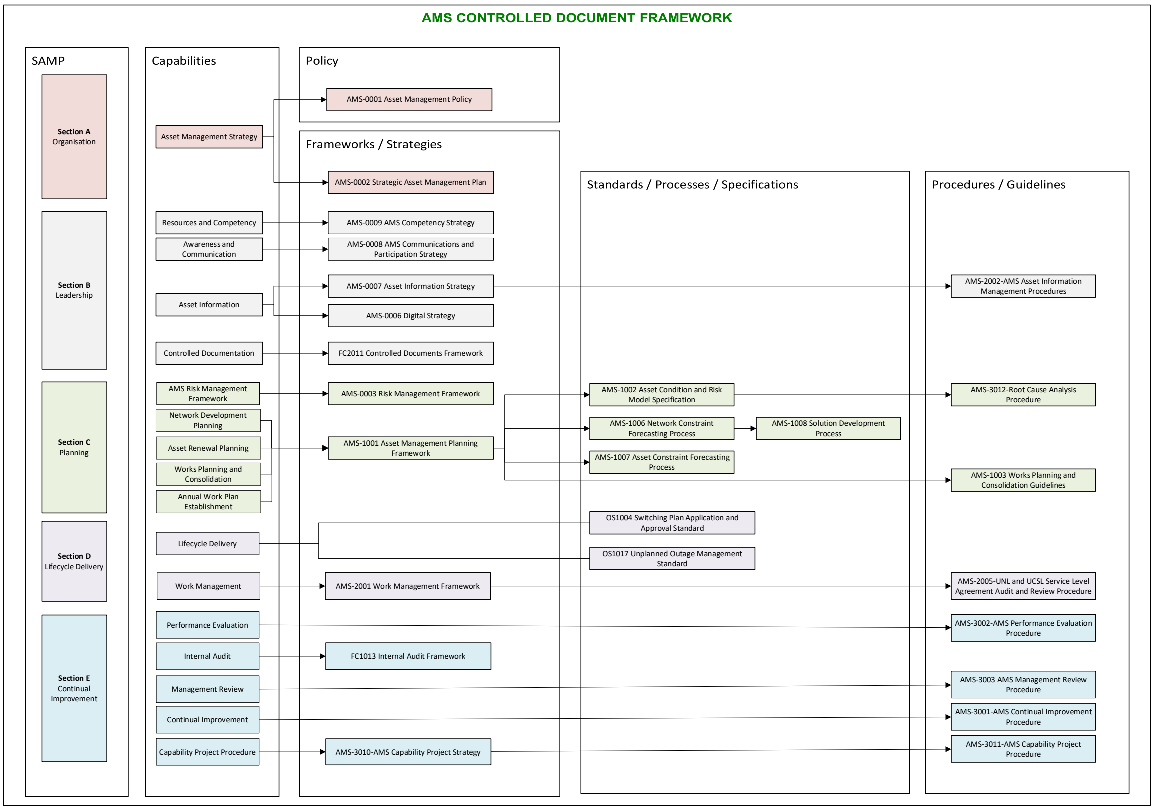


Figure 2-21: AMS Documentation Framework

Technical documents, including network policies, standards and operating standards, are managed within the NK, OS, and SD series. These documents are supplemented with SOPs and safety alerts, which are often issued as an interim measure before changes are incorporated within primary technical documentation.

Our managed services provider's Controlled Content Team, within Networks and Operations, are responsible for supporting and enabling Networks and Operations to produce efficient documentation. The Learning Experience Team of our managed services provider manages any associated training or induction content related to documented information.

Our managed services provider's Executive Risk Committee is responsible for monitoring the risk associated with outdated content. The committee provide recommendations on how to address any gaps or duplication in content or where bottlenecks in the process have been identified. The Document Control and RAMP Manager is notified of a new document request or a change to an existing document through the Change Request Form. Improvements in the process are raised through the CI Register and accepted into the plan following an assessment of its alignment with the AMOs.

Documents of external origin relevant to the AMS fall into four main categories. The management process for each category is specified in Table 2-19.

Document Category	Management Process
External standards	Managed through a subscription with Intertek Inform for the standards required by the managed services provider's Networks and Operations.
Legislation, regulation, and codes of practice	Managed through our managed services provider's Corporate Counsel and ComplyWith NZ Ltd. Our employees are advised to access current legislation and subordinate regulation through the New Zealand Government service at New Zealand Legislation.
Contracts, consents, easements, and other binding documents	Managed through our managed services provider's Contracts Management Register.
Original equipment manufacturer (OEM) documentation	Electronic records are stored with the project file on Microsoft SharePoint by the responsible Project Engineer. New and legacy documentation is stored electronically.

Table 2-19: Documents of External Origin

2.13.2 Control of Processes

Control of processes within the AMS is achieved through the measures listed below.

- Each process has an assigned process owner who is accountable to the managed services provider's GM Networks & Operations for its:
  - specification and documentation
  - implementation
  - monitoring for compliance, and
  - continual improvement.
- The process owner is supported through delegation to the management representative for the AMS.
- Subject Matter Experts (SMEs), who are people who work in the process, are called upon to develop, review and improve controls such as:
  - standards and procedures
  - training materials, and
  - performance measures.

- The process owner has the mandate to initiate a review of process controls as well as an internal audit of processes. Each of these tasks is delegated to the management representative for the AMS for coordination. A review of process controls involves an evaluation of whether the controls are appropriate, given the risk profile of the process. Internal audit involves an assessment of how well the process is performing and whether procedures are being followed. The approaches to review of process controls and internal audit are set out in a simplified form in Figure 2-22.

These processes apply both to internal and outsourced processes of the AMS.

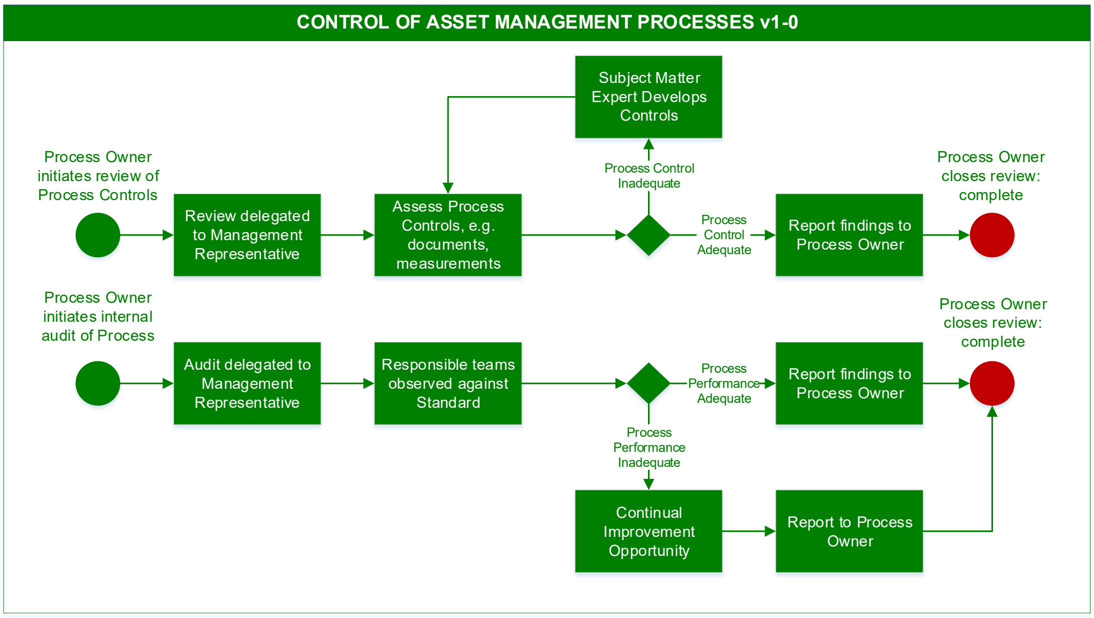


Figure 2-22: Control of the Asset Management Process

Where conformance issues or other process performance shortcomings are identified, a continual improvement opportunity may be raised in the CI Register.

2.13.3 Management Review

Regular top management review of the various components of the AMS is undertaken to ensure its ongoing fitness-for-purpose and effectiveness. The managed services provider's GM Networks & Operations is responsible for management review, with coordination delegated to the Asset Strategy & Future Networks Manager. The process for management review is documented in the AMS Management Review Procedure (AMS-3003).

The following items are subject to management review:

- the health of the AMS
- continuing suitability of the Asset Management Policy
- continuing suitability of the AMOs
- the SAMP
- changes in external and internal issues and risks relevant to the AMS
- incidents that have occurred and remedial actions that have been taken
- the AMP
- network performance
- adequacy of technical competency to meet the requirements of the AMS
- the Lifecycle Delivery performance, including the quality of, and progress through work programmes

- the CI Register
- the performance of active capability projects
- outcomes from recent internal audits
- assessments and audits by external bodies
- customer and other stakeholder feedback, including complaints
- recommendations for improvement, including other factors, such as resources and training, and
- the performance of the asset portfolio, asset systems and individual assets.

The 17 items listed above are addressed through seven management review meetings of varying frequency, as specified in Table 2-20.

Meeting	Frequency	Chair	Items Covered
AMS Governance Meeting	Annually	Asset Strategy & Future Networks Manager	1, 2, 3, 4
AMP Review Meeting	Six-monthly	Network Investment & Delivery Manager	7
N&O Strategic Risk Committee Meeting	Quarterly	Network & Operations Risk Champion	5, 6
Monthly Stakeholder Meeting	Monthly	Network Investment & Delivery Manager	10
Continual Improvement Meeting	Monthly	Asset Strategy & Future Networks Manager	1, 11, 12, 13, 14, 15, 16
Technical Competency Meeting	Six-monthly	Asset Strategy & Future Networks Manager	9
Network Performance Meeting	Monthly	Network Performance Engineer	6, 8, 17

Table 2-20: Summary of Management Reviews

Meeting documents, including briefing notes, performance information and minutes, are stored within the management review SharePoint library.

2.13.4 Internal Audit

Our Business Management System Framework (BMSF), referred to earlier, includes a strong audit capability within the internal assurance framework. This framework, from our managed services provider, is applied to some of the key business processes that have been adopted and are being used by the organisation. In the AMS, this capability has three main purposes.

1. Assess the competency of the various teams in their functional roles within the AMS.
2. Test conformance to planning and decision-making processes and the execution of activities.
3. Provide a basis for identification of corrective actions and continual improvement opportunities.

The Internal Audit process is set out in Figure 2-23.

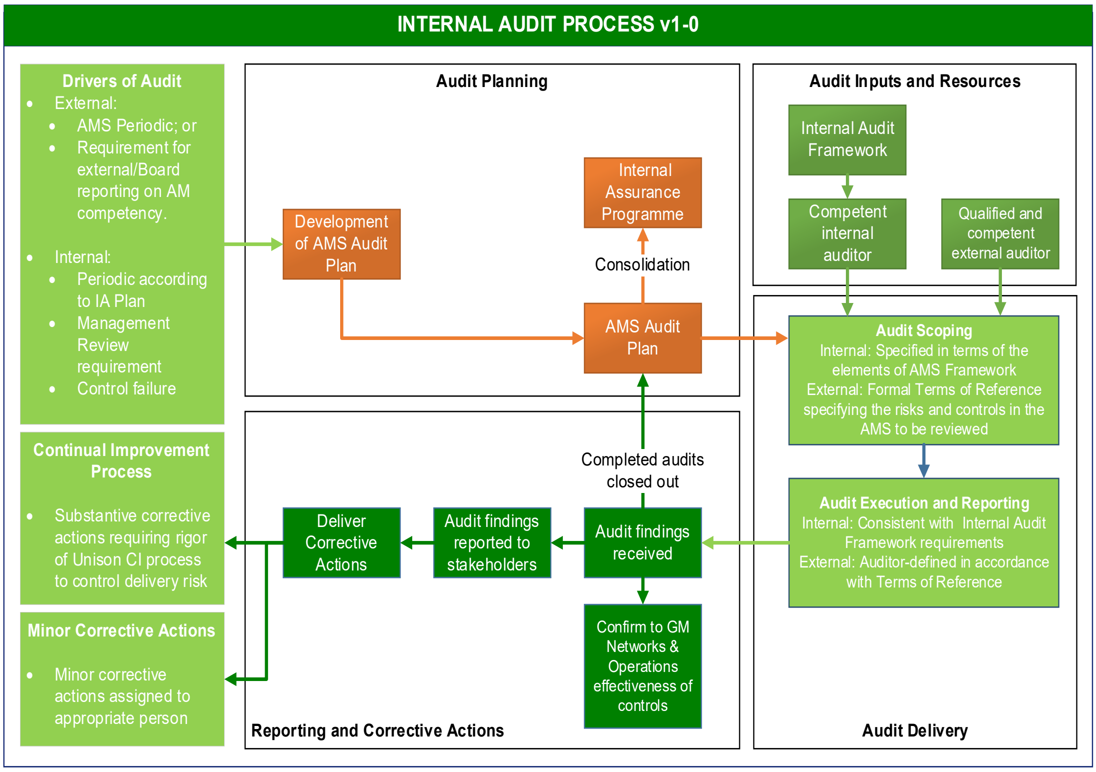


Figure 2-23: Internal Audit Process

A three-year internal audit plan has been developed collaboratively between the service providers. Our managed services provider's Group Risk & Assurance Manager is responsible for enterprise internal assurance. The management representative for the AMS is our managed services provider's Asset Strategy & Future Networks Manager.

This plan links planned internal audits to the controlled documentation specifying processes of the AMS, and the relevant clause of ISO 55001.

Internal audits are scheduled based on the risks associated with those processes. Higher-risk processes are audited more frequently than those of a lower risk. The likelihood risk is based on the results of the previous audit. The consequence risk is based on the criticality of the overall process to our AMS and strategy. Other information is also included in the risk assessment where relevant.

The scope of the periodic internal audit is limited to the conformance of teams with the specified processes. This is appropriate given that the processes have been developed to meet the ISO 55001 requirements. This is tested through the external audit process for certification to the standard.

For each of the internal audits specified in the plan, audit tools are progressively being developed. The audit tools include checklists and open-ended questions that probe the effectiveness of the:

- implementation of processes and systems, and
- support capabilities, including training and resourcing.

2.13.4.1 Reporting of Internal Audit Outcomes

The outputs of all internal audits are presented to our managed services provider's Asset Strategy & Future Networks Manager. If they are satisfied that the audit has fulfilled the Audit Plan or Terms of Reference, the report will be issued to relevant stakeholders, including the managed services provider's Group Risk & Assurance Manager. The Asset Strategy & Future Networks Manager will engage with the GM Networks & Operations to establish the next steps for reporting, where the driver for the audit has been:

- our managed services provider's Executive Management
- our Board, or
- external stakeholders.

Process owners of the process being audited are responsible for raising corrective actions and opportunities for improvement in the CI Register.

2.14 Communication of Asset Management Strategy and Objectives

Asset management outcomes are communicated formally through the mechanisms listed below.

- All documentation that features AMOs and targets are made available, and often, presented to all employees, e.g., Statement of Corporate Intent, Strategic Business Plan, etc.
- On a quarterly basis, a business-wide performance brief is delivered by management.
- The Operations Manager holds a monthly Team Brief where topical asset management outcomes are presented and discussed.
- Automated network performance and reliability reports are sent to key employees daily, detailing:
    - year-end targets
    - current performance
    - forecasts for SAIDI and SAIFI, and
    - recent outages.
- Incidents and urgent changes to SOPs are drawn to the attention of all employees through safety alert bulletins. These are sent to all employees by email, pinned up in visible locations around the office and managers are required to communicate details to employees.
- Relevant asset management outcomes are included within employee performance frameworks, which are reviewed and discussed six-monthly with their manager.
- Favourable and important asset management outcomes are celebrated within the organisation.

RISK MANAGEMENT

SECTION 3 / WĀHANGA 3

Contents

3. RISK MANAGEMENT

3.1 Approach to Risk Management

Risk management is an integral part of our activities. In a world of increasing uncertainty, business practices must be adapted to better understand and manage that uncertainty. This is essential to achieving organisational objectives. Like all organisations, we are not isolated from risk. The operating environment is never certain. Therefore, it is critical that we understand the sources of uncertainty we face, determine how these could impact us, and take appropriate action. Risk management provides structure for managing uncertainty. It is a key enabler in achieving our objectives.

We promote a risk-aware culture across the organisation and regularly review our risk management practices to adapt to changing circumstances. This ensures compliance with applicable laws, regulations and industry standards.

We identify, assess, manage and monitor risks across our organisation through:

- clearly established roles and responsibilities for risk management, and
- the use of a strong framework for the management of risk.

Risk management is used in business decision-making processes, systems, and culture. It supports the achievement of business objectives and our company vision of being '*A customer-centric partner that enables growth and long-term prosperity for Central Hawke's Bay'.*

3.2 Why Risk Management is Important to Us

Our risk management vision is to:

'Embed a risk culture and practices so all employees take personal ownership for identifying risks and limiting the impact of unforeseen events'.

Risk management is embedded into business decision-making processes, systems and culture. This will ensure the achievement of business objectives and achieve our company vision.

The risk management hierarchy in Figure 3-1 outlines how the Risk Management Framework and its resultant processes are integrated across all levels and functions of our organisation.

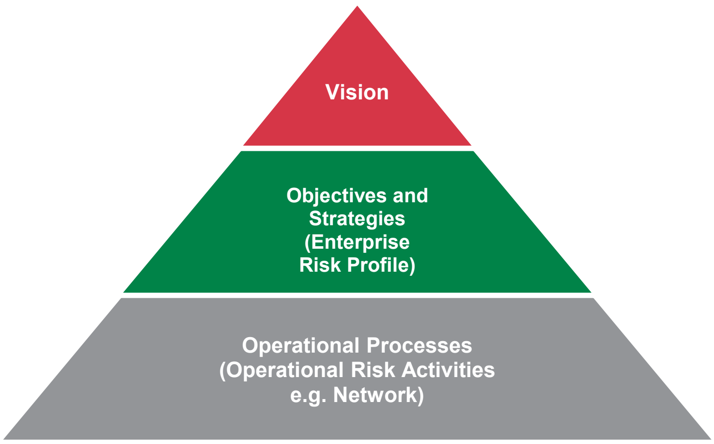


Figure 3-1: Risk Management Hierarchy

The key objectives of our Risk Management Policy (CL-RM-001) are to:

- ensure that risk management is an integral component in developing the company's strategies
- use business processes to systematically identify and assess risks to objectives, including strategy, assets and key stakeholders
- reduce, avoid, share or accept identified risks, having regard to the company's Board-approved appetite and tolerance for risk
- contain and minimise the consequences in the event of an identified risk materialising, and
- provide for the continued provision of services through adequate and timely response, restoration and recovery.

This policy uses a single framework for the management of risk, as detailed in our Risk Management Framework.

3.3 Our Risk Environment

We align risk practices and risk governance with best practice, primarily ISO 31000:2018 Risk Management.

Establishing the context is the first step in the risk management process and defines the scope and criteria against which the risks will be assessed.

The risk process considers context in two areas, the:

- external environment, and
- internal environment.

The internal environment represents features within the direct control of the business. Risk management is aligned to the business's culture, processes, structure and strategies.

The external environment represents features that are outside the direct control of the business.

Context is considered part of our annual business planning process. Plans typically span three years with a focus on the first year. Change in context is also considered part of our regular risk management.

Our context is set out in Section 2 – Background and Objectives.

As discussed in Section 4 – Customer and Community, we are focusing on the customer experience and ensuring their needs are at the heart of our vision.

3.4 Who Undertakes Risk Management?

We undertake risk management in accordance with our Risk Management Policy (CL-RM-001) and Risk Management Framework (CL-RM-1001). Through these documents, we:

- promote a risk-aware culture at all levels of the organisation
- ensure compliance with applicable laws, regulations and industry standards
- establish clear roles and responsibilities for risk management, and
- regularly review and update our risk management practices to adapt to changing circumstances.

Governance can be summarised as the oversight of how risk management practices are conducted. The Board of Directors serves as the business's governing body.

3.4.1 Key Roles and Responsibilities

To ensure risk management is part of the business's everyday business activity, it is essential to clearly define roles and responsibilities for governance, leadership and individuals in relation to risk management. Table 3-1 lists these specific risk management roles and responsibilities.

Role	Key Responsibilities
Board	The Board Charter states the Board is responsible for: • reviewing and ratifying systems of risk management, and • the company's system of internal controls, including approving the business's risk appetite and holding management to account.
Audit and Risk Committee (ARC)	The ARC is delegated the oversight of risk management practices, processes and reporting. This is governed by the ARC Terms of Reference.
Executive Risk Committee (ERC)	The ERC comprises members of our managed services provider's Executive Management Team, including the Group Chief Executive. The committee's primary function is to assess and review risk and risk practices across Centralines.
Chief Executive	Responsible for promoting a culture of actively managing risks, aligned to Risk Management Policy (CL-RM-001) and the Board's risk appetite.
Senior Management Team	Our senior managers are responsible for providing leadership to the business for risk management.
Technical Experts	Persons designated as Technical Experts are responsible for providing input into risks within their areas of expertise.
Risk Champions	Persons designated as 'Risk Champions' are responsible for coordinating and administering risk management practices.
Managed Services Provider's Group Risk & Assurance Manager	Responsible for: • coordinating and implementing decisions made regarding our risk management maturity, and • ensuring practices to support the maturity are implemented throughout Centralines.
Managed Services Provider's Group Chief Digital Officer	Responsible for overseeing all technical controls for the Information Security Management System.
Centralines' Employees	All our employees are responsible for managing risks.

Table 3-1: Risk Management Roles and Responsibilities

These roles and responsibilities (including the escalation of risks discussed further in subsection 3.5.3 are:

- set out in the Risk Management Framework (CL-RM-1001), and
- supported by our Delegations Policy (CL-WP-001) and each role's position description.

3.5 How We Undertake Risk Management

3.5.1 Best Practice

ISO 31000:2018 Risk Management – Guidelines is widely recognised as the leading international standard in risk management. Our Risk Management Framework is aligned with this standard.

ISO 31000:2018 notes several principles that should be considered at all levels of an organisation for risk management to be effective. We recognise each of these principles as fundamental to the effectiveness of risk management throughout the business.

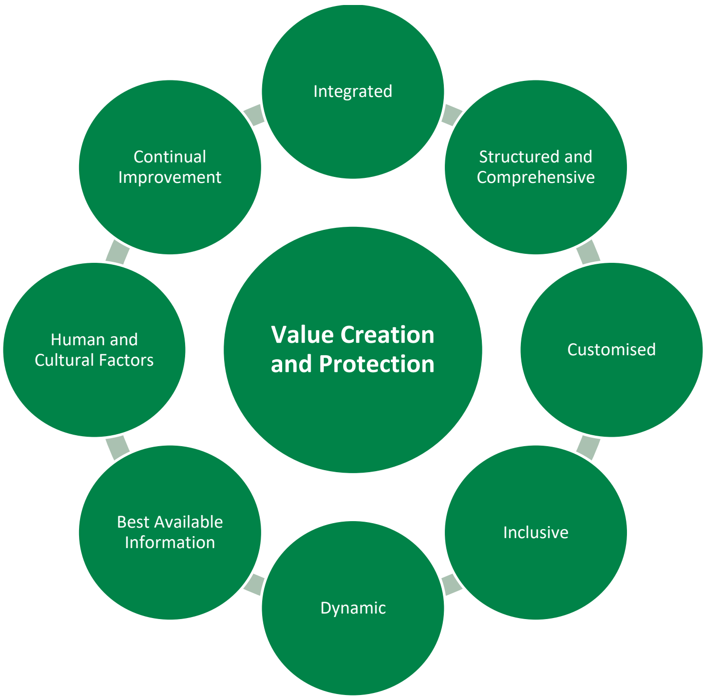


Figure 3-2: Principles for Effective Risk Management

3.5.2 Our Risk Assessments

ISO 31000:2018 provides guidance and a structure for the risk management process. The business has adopted this process as an integral part of its Risk Management Framework. The process provides the practical tools and guidance for identifying, ranking and managing risks.

The following sections detail each stage of the risk management process.

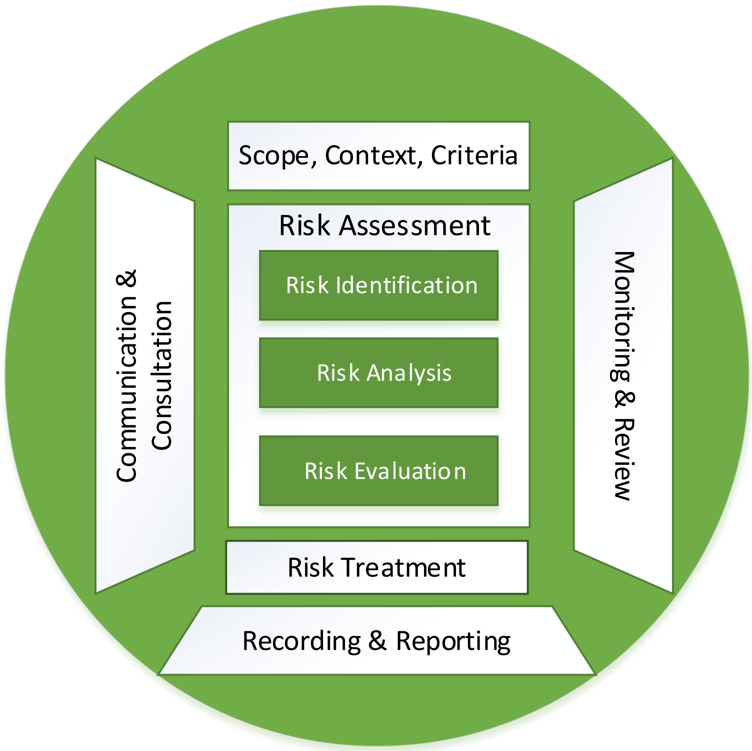


Figure 3-3: Risk Management Process

Once the scope, context and criteria are considered (as discussed above in subsection 3.3), risks to which the business is exposed are identified. One method that we use to identify risks is the Bow-tie method.

Once identified, risk assessments are undertaken consistently in accordance with our Risk Management Framework and assessed by considering the following:

- nature of the uncertainty that may affect outcomes and objectives
- consistent consequence and likelihood definitions
- time-related factors, i.e. if the issue is emerging rapidly or more slowly
- risk capacity as defined by the Board's risk appetite statement, and
- sequence and combinations of multiple risks.

The Risk Management Framework provides a likelihood and a consequence matrix to ensure a consistent approach is used. Consequence can be thought of as impacting five broad areas, namely:

1. Financial
2. Legal/contractual and regulatory
3. Reputation/customer
4. Business disruption/operational, and
5. People (employees, contractors, etc).

3.5.3 Our Risk Appetite

Once risks have been analysed, they are assessed against the business's risk appetite statement and the risk escalation scale outlined in Table 3-2.

A rule of thumb is '*the greater the risk, the more executive/senior management and potentially Board involvement is required'*.

Risk Rating	Escalation Point	Risk Tolerance
Extreme	Board	Extreme risk – detailed action plan required immediately. Chief Executive manages risk. Direct monitoring by the Board.
High	Chief Executive	High risk – action plan required – additional controls to be implemented. Chief Executive manages risk.
Medium	Executive Level – Senior Team	Risk is acceptable within pre-determined control levels. Monitoring reported to the Chief Executive.
Low	Service Level	Operational monitoring to ensure risk is controlled and has not escalated. Reported to operational levels as required.
Insignificant	Routine Procedures	Managed within existing controls and mitigation plans.

Table 3-2: Risk Escalation Scale

3.5.4 Risk Aggregation

We have aggregated our risk environment into enterprise risk areas. Through aggregation, every risk can be assessed to ensure the aggregated risk materiality is within the Board-approved risk appetite or accepted at the appropriate level.

Objectives at all organisational levels should align with our strategic objectives. Therefore, as risk is defined as 'risk to objectives' most risks can be aggregated into the enterprise risk profile.

Table 3-3 outlines the key areas of enterprise risk.

	Enterprise Risk	Description
	Strategic	Risks that affect or are created by business strategy decisions and execution.
	Financial	Failure to effectively manage financial risks (liquidity, market, credit), access to capital (including stress scenarios) and subsidiary financial performance to deliver returns to the shareholder and ensure good stewardship of the business's assets.

	Enterprise Risk	Description
	Health, Safety and Wellbeing	Identified and unidentified hazards that could harm the health and safety of employees, contractors or the public.
	Our People	Not having the capacity, competency, culture or performance for us to be successful.
	Our Contractors and Suppliers	Failure of our partners to provide the resources, goods or services in the manner required by us.
	Our Customers and Stakeholders	Failing to identify, understand and deliver on the needs of customers and other stakeholders.
	Network and Product	Failure of network assets, structures, systems or facilities.
	Corporate Assets and Infrastructure	Events relating to the company's capacity, performance, private use, inventory and intangible assets.
	Information Technology and Systems	Failing to provide and maintain technology platforms, supporting systems and data for the business to operate.
	Cybersecurity	The loss of confidentiality, integrity or availability of information, data or information systems.
	Regulatory and Legal	Non-compliance with laws, regulations, or contractual obligations.
	Fraud	A deliberate action with intent to defraud, by deceit or any fraudulent means, to: • gain a benefit directly or for another person, or • cause detriment to any person or organisation directly.

	Enterprise Risk	Description
	Natural and Other Hazards	Natural, pervasive and man-made events, such as war or terrorism, that could impact operations in our areas.

Table 3-3: Key Areas of Enterprise Risk

3.6 Our Enterprise Risks

We identify and assess risk within our network through an enterprise risk lens. This helps us consider each area from different perspectives: technical areas versus operational business units. This ensures consistency and completeness.

Of the enterprise risks, eight relate more specifically to our asset-related risks. For each of the enterprise risks outlined in this section, the following areas are reviewed in more detail:

HILP Risks	Risks that are high impact and low probability.
Initiatives	Initiatives that will have a significant impact on the achievement of our objectives.
Focus Areas	Other focus areas or events with a high impact on our ability to achieve our objectives.

Each of these areas will have a different impact on our objectives. Our risks are assessed against the impacts set out above at subsection 3.5.2. The risks discussed in this section will primarily impact:

- business disruption/operational consequences - the operation of our network assets, including our systems and technology, and
- people (employees or contractors).

3.6.1 Network Enterprise Risk

Network enterprise risk considers the effect of poor asset management practices and processes. With increasing electricity demand, the network needs to accommodate more connected renewable and distributed generation, as well as the conversion of process heat.

To manage our network risk, our managed services provider maintains ISO 55001 certification as discussed in Section 7 – Asset Management Planning. The Asset Management Systems Risk Framework applies the general risk management principles set out above. Table 3-4 outlines the six key activities for managing risk.

Key Activities for Managing Risk	
Asset Criticality Ranking	Identification of assets and asset systems where loss of capability or acceptable condition presents a significant risk to our business, including network operations.
Asset Health Reporting	The state of assets in terms of their condition and likelihood to deliver the requisite capability at any point in time.
Project Investment Analysis	Each expenditure proposal should be ranked by risk.
Project Works Delivery	The progress of each project should include reporting of the risks and how they are being managed.
Work Scheduling	The timing of work should be a function of the risk that it will address.
Continual Improvement	Each continual improvement opportunity should be ranked according to risk and performance.

Table 3-4: Key Activities in Managing Risk

3.6.1.1 HILP: Systemic Failure Mode in Critical Asset Fleet

Criticality indicates the relative importance of delivering electricity to end consumers. In today's network configuration, different asset fleets have different inherent criticalities. As a result, specific assets carry a defined consequence if they are unable to perform their intended function. For example, the power transformer fleet is inherently more critical than the low voltage pillar fleet because the loss of a power transformer affects far more electricity consumers.

There is the potential for a systemic failure mode to emerge in a critical asset fleet. This is where a common mode of failure occurs, resulting in an unplanned and unanticipated outage occurring frequently. This may occur because of a design flaw, a manufacturing defect, poor operating practices or condition management, or a variety of other reasons.

We gain confidence that systemic failure modes will not emerge by:

- using established technical change processes
- regularly inspecting assets
- having standard operating procedures in place
- reviewing all equipment failures that occur to understand the root cause, and
- working with the wider industry to establish standardised asset selection and construction, which support unified learning and interoperability.

3.6.1.2 HILP: Loss of Supply Transpower

Under the current architecture of our electrical distribution system and the low availability of distributed generation, we are dependent on Transpower for transmission supply from large-scale generators.

We are reliant on one grid exit point (GXP) for supply from Transpower, and continue to look to mitigate this risk by:

- configuration of substation equipment to mitigate risks at the GXP (Ruataniwha)
- meeting with Transpower regularly to discuss respective works plans and associated risks, including resilience
- ongoing network operational planning and control

- development of the solar farm, and
- holding annual incident response scenarios with Transpower.

3.6.1.3 Focus Area: Construction Design Standards

When risk events are realised in a physical manner within the asset portfolio, the response typically requires a rapid distribution of materials and/or plant and labour resources.

Almost all New Zealand electricity distribution businesses (EDBs) have their own construction standards and methodologies for constructing or repairing network assets. This can lead to inefficiencies in serving consumers and in providing assistance or services to other EDBs. Along with our managed services provider:

- we only have a finite amount of plant and people available to respond
- materials can be difficult to source in a hurry when not held in stock, and
- materials are often different, and the assembly method can be too.

Our managed services provider is promoting the concept of standardisation through their participation in industry working groups. We are happy to compromise on their current approaches/standards if the objective of standardisation can be realised. We acknowledge the Government's standardisation recommendations following the Frontier Review and are active in industry collaboration.

3.6.1.4 Initiative: Low Voltage Visibility

Our managed services provider is considering our needs and those of our customers on their decarbonisation pathway. Their Distribution System Operator Readiness Strategy identified that our planning needs to include scenarios to cover the speed and breadth of increased electricity demand. Our managed services provider is exploring ways to enhance visibility of the low voltage network to support future flexibility and resilience. Using the electrification planning model, low-voltage (LV) operations data and analytics tools are being evaluated to enhance monitoring, fault detection, and insights into hosting capacity. This would support optimisation of energy distribution and enable a timely response to network events. The initiative aligns with our Data Asset and Information Management Programme (see subsection 3.6.5.1).

3.6.2 Health, Safety and Wellbeing Risk

Safety is our key value. Given the inherently dangerous nature of electricity, the health and safety of our people and the public is paramount. We have a dedicated health and safety lead, supported by Health and Safety committees. They continually assess, monitor and review workplace health and safety risks, practices, processes and their associated management systems.

Monthly governance workplace health and safety performance reports are provided to our Board. These reports:

- ensure Directors are fully informed of workplace health and safety performance and risks, and
- support the ongoing optimisation of the health and safety of all our employees, workplaces and sites.

3.6.2.1 HILP: Critical Risks

Critical risks are risks identified as having inherent catastrophic health and safety impacts irrespective of their likelihood. Risks assessed as critical are recorded in the Health and Safety risk registers.

Tier One critical risks are those where we can reduce the likelihood through controls, but the impact remains high. Tier Two is critical risks, where we can reduce both likelihood and impact with controls.

Our critical risks are shown in Figure 3-4.

Figure 3 4: Our Critical Risks

3.6.3 Focus Area: Health and Safety Assurance

Our Health and Safety Management System (HSMS) is monitored biennially against the Accident Compensation Commission's (ACC) Workplace Safety Management Practices (WSMP) Programme, of which we are at the tertiary level. This process ensures our policies and procedures are in place and being followed.

Public safety is another area of critical importance, as most of our assets are installed in publicly accessible areas. We have a Public Safety Management System (PSMS) in place, accredited to NZS 7901:2008 Electricity and Gas Industries – Safety Management Systems for Public Safety. As part of the Health and Safety roadmap, we will transition to the current 2014 standard. Public safety performance and risks are reported monthly to the Board in a format similar to workplace health and safety.

In 2025, Energy Safety audited Centralines for compliance with the Electricity (Safety) Regulations 2010. The results showed confidence in the network's and the business's operations. To provide further assurance in this area, public safety desktop audit activities are undertaken to test the company's systems (see subsection 3.7.1).

3.6.4 Our Customer and Other Stakeholders' Risk

These are risks related to our customers and other stakeholders who have an interest in our performance. Stakeholders include landowners, communities, Transpower, other electricity distribution businesses, councils and iwi.

Our Business Plan ensures there is an increasing focus on the customer by placing them at the centre of everything we do. This will drive a better understanding of customer needs and deliver on these.

3.6.4.1 *Focus Area: Affordability*

Energy affordability is about individuals' or households' ability to access and afford energy services without experiencing financial hardship. Household energy is seen as essential to a sustainable lifestyle and is the 7th of the United Nations 17 sustainable development goals.

Centralines' purpose is to '*deliver a reliable and affordable electricity supply to meet our customers' aspirations for wellbeing, growth and sustainability*'.

As a largely rural network, we have a broad network area with fewer ICPs. We can mitigate the impact of this configuration on affordability by contributing to the total cost of electricity. We do this through good asset management practices with appropriate levels of investment to balance cost, risk and performance. While price increases are critical for the future, we must not lose sight of the fact that any upward movement can pose challenges for consumers, especially in the current environment.

Efficiency and affordability are key elements of our network planning processes. Part of the AMS planning process is to consider the benefits of addressing adjacent constraints to lower the cost of intervention. For example, this can result in overhead distribution transformers being replaced a couple of years earlier than strictly necessary (based on their condition). If a crew is already replacing conductors and crossarms on the pole, then replacing the transformer at the same time offsets the:

- direct costs of site establishment, outages, travel time, and
- hidden costs associated with the planning and dispatch processes.

3.6.4.2 *Focus Area: Decarbonisation*

We maintain close relationships with key business customers across our network to better understand their transition from gas and coal to alternative energy sources, such as electricity.

We also participate in and collaborate with industry, monitoring trends and technologies to help enable our customers and communities in their decarbonisation journey.

Our Network Planning for Electrification Initiative, discussed in subsection 3.6.1.4, will guide our decarbonisation efforts and put our customers' needs at the centre.

3.6.4.3 *Initiative: Customer Focus*

The Customer and Community Strategy focuses on improving the customer experience now while preparing for the experience of the future. The Business Development Manager works closely with current customers as well as sourcing new revenue streams (refer to Section 4 – Customer and Community).

3.6.5 *Information Technology (IT) and Systems Risk*

Our IT and Systems Enterprise Risk covers information technology and systems risk solutions, including hardware, software, cloud applications and data. The risk considers integrity, security, privacy, corruption, fit for purpose, availability, and performance, including damage and failure.

Our managed services provider operates an Information Security Management System that aligns with ISO/IEC 27000. This standard currently represents best practice.

We are continually reviewing the resilience of our information management. Steps to improve resilience are discussed further in Section 5 – Data and Digital, Property, and Vehicles.

3.6.5.1 *Initiative: Going Digital*

We know customers are changing how they use energy and networks as they decarbonise their homes, businesses, facilities and transport.

With decarbonisation driving electrification and distributed energy resources (DER), the importance of data and information management becomes critical for the safe and reliable operation of the distribution system.

Recognising the importance of data and information management, we focus on transforming how we serve customers to meet their expectations. We need to be where our customers are and engage with them through their preferred channels.

3.6.6 Cybersecurity Risk

Our managed services provider is working to define minimum cyber standards across our business and implement a cyber programme of controls and monitoring to mitigate cyber risk. CIS Controls, National Institute of Standards and Technology and ISO 27001 Information Security Cyber Security and Privacy are being followed to ensure best practice in this area.

3.6.6.1 Initiative: Cyber Vulnerability

Our cyber vulnerability risk in relation to the network focuses on the loss of control of operational asset systems (refer to Section 5 – Data and Digital, Property, and Vehicles).

Our managed services provider conducted a cyber review to gain a comprehensive understanding of cybersecurity strengths and vulnerabilities and to identify areas for improvement. This review benchmarks the cyber environment against the Center for Internet Security framework.

As a result, we are actively considering key controls, their implementation, events, and responding to business requirements.

3.6.7 Regulatory and Legal Risk

This risk focuses on our regulatory and legal environment. With rapid electrification on the path to net zero, there is substantial change being discussed in electricity regulation to facilitate better regulatory settings that meet consumer demand. Significant government-led structural changes in response to recent high wholesale market prices will not be pursued at this time. However, expectations regarding efficiencies, standardisation, and potential metrics and measures have been outlined.

This risk also considers legal compliance and issues that are reported through the legal compliance survey.

3.6.7.1 Initiative: Regulatory Engagement and Outcomes

This year, our managed services provider has a regulatory focus to champion efficiency and innovation to improve the affordability of electricity for consumers. This will be achieved by:

- promoting pragmatic regulatory frameworks, and
- enabling operational improvements within internal regulatory parameters.

We are mindful of consumer sensitivity to price increases and degraded shareholder or consumer perception, loss of social licence, and loss of regulatory trust.

3.6.7.2 Focus Area: Legislative Compliance Risk Management Programme

To ensure employees are aware of specific requirements, we execute an annual Legislative Compliance Programme (LCP) survey using an external provider. The provider actively notifies us of active changes in legislation in real time, where these are relevant to our operations. Each obligation is assigned to a relevant owner or owners. The obligation owners are required to:

- assess the level of compliance with the obligation, and
- report any non-compliances.

Areas of non-compliance are required to have remediation plans, which are tracked until full implementation. A summary of the remediation plans is reported to our Audit and Risk Committee (ARC) on a six-monthly basis.

3.6.8 Natural and Other Hazard Risk

We are acutely aware of the impact that natural and other hazard risks can have on our operations.

COVID, Cyclone Gabrielle, and generation shortfalls have ensured that this risk is at the forefront of mind in our asset management and operations. Weather is being monitored, including the potential for drought impacts and fire risks throughout the year.

To ensure we remain agile to these events, training and desktop simulations have been and continue to be undertaken. Exercises conducted include earthquake, cyber, solar and volcanic events.

3.6.8.1 HILP: Natural Disaster

A natural disaster is a widespread event in which the natural environment disrupts the ability of our assets to function. For critical assets, our managed services provider has used the Network Vulnerability Assessment Model (NVAM) to model the impact on the network of earthquakes, fluvial flooding, tsunami and volcanic ashfall. This modelling has been based on publicly available information. Vulnerabilities exposed through the modelling are identified against the assets. These are considered during the planning process for opportunistic resolution when other work is undertaken on the asset. In the future, we intend to improve both the inputs and the outputs of this process. To progress this modelling further, we intend to partner with external service providers. To improve the use of the modelling outputs, the intent is to specify our risk appetite such that some natural disaster vulnerabilities may be proactively addressed, while others remain opportunistic.

3.6.8.2 Focus Area: Climate Change

Climate change is the long-term change in weather patterns, typically over a period of 30 years. The Ministry for the Environment published updated climate projections in September 2024.[1] This has broken down the sixth Assessment Report from the Intergovernmental Panel for Climate Change into a 5km grid projection. This allows for a far more granular assessment of the potential effects of the changing climate over the lifecycle of specific assets. We are using information from the different Shared Socioeconomic Pathways (SSPs) scenarios for our region, along with the anticipated seasonal changes in rainfall, temperature, wind speed and humidity. These outlooks are being applied to our decision-making process. Given the long-life infrastructure assets, as our understanding of climate change and its effects on specific assets in specific locations evolves, we will continue to pursue a 'least regrets' approach. This approach will balance cost, risk and performance to manage specific risks to individual assets. This is also discussed in Section 6 – Network Development Plans.

3.7 Other Risk Management Tools

3.7.1 Assurance

An integrated risk and assurance programme provides visibility into the entire risk landscape, layered with various levels of assurance to provide accuracy and credibility of the position. The 'Four Lines of Defence' model will be integrated to provide various levels of business assurance.

[1] Climate projections map | Ministry for the Environment

These are:

- management oversight (first line)
- management of risk and compliance (second line)
- internal audit (third line), and
- independent external audits (fourth line).

Benefits of integrated assurance include:

- coordinated and relevant assurance efforts focusing on key risks
- optimised assurance spend
- a comprehensive and prioritised approach to the tracking and testing of remedial actions on identified improvement opportunities, control weaknesses or significant inherent risk mitigations, and
- minimised operational and business disruptions.

We also operate an internal audit framework in which the Board approves the Enterprise Audit Plan. This plan sets out the audits to be completed within the business for the financial year. We have trained a pool of internal auditors to undertake these audits across the business.

Internal Audit is a key component of the AMS and is managed by our managed services provider. A series of audit are undertaken cyclically (refer to Section 7 – Asset Management Planning).

3.7.2 Centralines' Insurance Programme

The role of our Insurance Programme is to provide a financial recovery capability in the event of significant loss. Policy coverage is included for significant risks that, should they occur, would have a major impact on our ability to continue to operate as a going concern. The programme is assessed for suitability on an ongoing basis and is renewed annually.

3.8 Business Continuity for Risk Events

Our Business Continuity Management System (BCMS) has the following objectives:

- ensuring the safe supply of power
- satisfying our legislative and community responsibilities
- preserving our reputation, and
- ensuring our continued operation.

The BCMS framework is available to:

- guide us through the process that enables us to meet these commitments, and
- ensure we have a documented, communicated, regularly reviewed and tested plan to ensure its continuing suitability.

Preparedness is the key. It is a visible way to meet our customers' expectations and to emphasise due diligence to our key stakeholders. It helps safeguard our reputation. Business Continuity Management (BCM) ensures we will continue to operate and meet legal, regulatory and contractual obligations.

As an EDB, we have obligations under section 60 of the Civil Defence Emergency Management Act 2002.

3.8.1 *Coordinated Incident Management System (CIMS)*

We use the Coordinated Incident Management System (CIMS) to enable effective coordination of any incidents. CIMS is recognised as the primary reference for incident management in New Zealand. The purpose of CIMS is to achieve effective, coordinated incident management across responding agencies for all emergencies, regardless of size, hazard or complexity.

During 2024 and 2025, Centralines staff undertook CIMS training, led by an independent expert, to improve staff CIMS knowledge and capabilities. This training involved three simulated incidents and enabled staff to become certified to CIMS Level 3 and 4.

3.8.1.1 Key Documents

Our key documents that relate to our network resilience are outlined in Table 3-5.

Doc (Placeholders)	Description
Business Continuity Policy	The purpose of this Business Continuity Policy is to: • outline our business continuity objectives, and • assign responsibilities and accountabilities for BCM.
Incident Management Response Plan and Slimpack	The Incident Management Response Plan provides the arrangements for managing any incident that may impact us. It will help business operations to continue during and immediately following an incident. The Incident Management Response Plan is aligned to CIMS. The slimpack is a condensed version of the plan containing only essential information.
Event Specific Response Plans	These documents provide additional information to assist in responding to and recovering from specific events. The Cyber Security Incident Response Plan (CSIRP) ensures: • that our managed services provider consistently handles information security events in an effective and efficient manner • the impact of a cybersecurity incident is contained, and • the consequences to the Business and its members are minimised as much as possible. The Pandemic/Epidemic Management Plan is to: • provide structure to our response to, and recovery from, a pandemic or epidemic • help the business manage impacts through a pandemic or epidemic, and Other event-specific response plans are in development to provide specific details. However, all incidents can be managed through the scalable and adaptable Incident Management Response Plan.
Business Continuity Plans	Business Continuity Plans (BCPs) outline: • the critical processes undertaken by each business unit • the workarounds to perform the critical processes in the event of a denial of people, facilities, systems and/or supplies resulting from an incident, and

Doc (Placeholders)	Description
	• key dependencies to perform each critical process.
Recovery Plans	Our Information Management Systems Disaster Recovery Plan is designed to manage information management incidents.
Alternate Operations Centre (AOC) Activation Plan	The AOC Activation Plan • identifies the facilities available at the AOC • provides a checklist of actions to be followed by Network Operations Centre (NOC) staff when operations are transferred, and • identifies tasks required to close down the alternate site upon resuming usual operations.
Evacuation Plans	Site Emergency Evacuation Plans detail how, during an emergency, our staff and any visitors will evacuate safely and quickly from our premises.
Switching Plans	Restoration switching plans developed for each zone substation at a feeder level.
Incident and Accident Procedure	This document sets out the requirements for reporting, recording and investigating all workplace and public safety incidents/accidents that occur: • on our premises • worksites, and/or • during the operation of assets.
Unplanned Outage Management Standard	The purpose of this standard is to: • detail how we respond to unplanned outages on the network, and • document the process for restoring supply to customers.
Emergency Procedures Flip Chart	Quick-reference guides are designed to help staff respond effectively during various emergency situations.
System Emergency Event Management Policy	This document outlines our policy for managing load on our network during a System Emergency Event.
Participant Rolling Outage Plan (PROP)	The PROP complies with: • Part 9 of the Electricity Industry Participation Code 2010 (the Code), and • the System Operator Rolling Outage Plan (SOROP). The procedures described are in response to major generation shortages and/or significant transmission constraints. Typical scenarios include: • unusually low inflows into hydro-generation facilities • loss of multiple thermal generating stations, or • multiple transmission failures.

Table 3-5: Key Documents Relating to Network Resilience

CENTRALINES
LIMITED

CUSTOMER & COMMUNITY

SECTION 4 / WĀHANGA 4

Our People Our Power

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4. CUSTOMER AND COMMUNITY

4.1 Introduction to this Section

Our Vision and Purpose guide Centralines' electricity distribution network and service performance:

'*To deliver reliable, affordable electricity that supports wellbeing, growth, and sustainability for all in Central Hawke's Bay*'.

Our commitment to being a customer-centric partner is reflected in every aspect of our operations and planning.

Understanding what matters most to our community is at the heart of our decision-making. We actively engage with customers and stakeholders through:

- regular meetings
- direct interactions, and
- ongoing dialogue with major customers and the Central Hawke's Bay District Council.

These engagements help us anticipate future developments and ensure our asset and resource planning aligns with the district's long-term needs.

We maintain close relationships with residential, commercial, and industrial customers, responding to service interruptions, new connections, and future requirements. Feedback is welcomed through our website, social media, and direct contact, ensuring we remain responsive to evolving needs. Our annual customer surveys provide valuable insights into what our customers value most and highlight key areas for organisational focus. These insights directly inform our priorities and help us deliver services and solutions that matter most to our customers.

Our vision of being a collaborative partner means our service levels go beyond regulatory compliance, they are shaped by customer expectations and priorities. We enable Central Hawke's Bay to grow and prosper by prioritising reliability, ensuring energy is consistently available to meet the needs of our customers. Value is central to our efforts, as we strive to offer energy solutions that provide long-term benefits.

Open and clear communication is fundamental to our approach, allowing for better engagement and greater input into our decision-making. Our strategy is to continually broaden and deepen this engagement, making energy solutions accessible and affordable for all. To support a future aligned with both customer expectations and sustainable energy goals, we are committed to:

- transparency
- keeping customers informed about our operations and decisions, and
- adapting quickly to feedback.

We are dedicated to anticipating the future needs of both customers and the system, creating innovative solutions through co-creation. We balance reliability, affordability, and sustainability, while managing uncertainty and risk. Our dynamic systems enable us to manage increasing diversity and complexity, ensuring our network remains adaptable and resilient as needs evolve.

As a vital contributor to the region's social and economic wellbeing, we invest in resilient infrastructure, foster a diverse and inclusive workforce, and support community growth. We stay connected to our customers and listen to their feedback, including through annual surveys. Customer insights help ensure our network and operations reflect the needs of the unique and tight-knit community we serve.

This enables Central Hawke's Bay to thrive through an efficient, innovative, and sustainable electricity distribution network.

4.2 Customer Experience

Our customer experience delivery is based on our core values outlined in Section 2 – Background and Objectives, Figure 2-1.

We are committed to keeping costs down for our customers through the careful use of resources and continuous improvement.

4.2.1 Complaints

We treat customer enquiries and complaints as valuable insights that support our commitment to help our business to continuously improve the services and experiences we provide. When customers feel strongly enough to make a complaint, we see their feedback as valuable insights and opportunities for learning. These insights help improve our business. Key learnings we have taken from enquires and complaints about us, our business, and operations include:

- people expect us to respect their property and personal assets and to leave things as we found them
- customers want to be heard and express their needs and feelings
- customers value open and transparent communication, and
- customers want more active communication around potential disruptions and notification around work happening in their community.

4.2.1.1 Complaints Handling

Our Centralines office administrators are responsible for managing customer complaint resolution. These are managed in accordance with the guidelines set by the Energy Complaints Scheme under Utilities Disputes Ltd (UDL). Customer complaints provide valuable insights into our broader operations, helping to identify areas for improvement.

When a complaint is received, it is recorded in our system and issued to the appropriate team member for follow-up. Findings and outcomes are recorded back into the system. A senior manager is delegated to resolve or contact the customer with the findings of any investigation or resolution decision.

The office administrator evaluates each complaint and assigns it a low, medium, or high-risk classification, depending on urgency and severity. This classification guides the team's response approach. They also assess the complaint based on the Consumer Guarantees Act (CGA) to ensure that any claims made are reasonable and that applicable exclusions are adhered to. The team aims to respond appropriately to the urgency of each complaint within seven working days. If more time is needed, they issue a 20-day extension notice, with a potential further 40-day extension if necessary.

If we cannot resolve a complaint within 40 days, we inform the customer about UDL options for external guidance or dispute resolution. Clear timelines and risk assessments guide this structured approach. It ensures that complaints are handled consistently and transparently, while offering customers the option to escalate issues for further resolution, if needed. Our internal customer complaint process is outlined in Table 4-1.

Process	What We Do
Understand	Make sure we understand the customer, their situation, the circumstances, and their expectations. We record the complaint and any associated information in our system.
Acknowledge	We confirm receipt of the complaint and outline the next stages within two business days.
Investigate	We conduct due diligence research and the collection of background information to form a fully informed view of what has happened. We assess the issue against the CGA rules and regulations.
Open Communication	We maintain open communication throughout the process, offering a safe space for customers to voice their concerns or complaints. We aim to resolve all complaints efficiently, however at times additional time may be required to conduct a thorough investigation.
Resolve	On completion of the investigation, we will explain the findings. If we cannot agree, and the matter is not resolved within 40 days, the complaint is deemed in 'deadlock'. The complaint will be referred to the Utilities Disputes Limited (UDL) Utilities Disputes Ltd Complaints Process (udl.co.nz)
Learn	We take the opportunity to review complaints against our processes to identify areas where improvements can be made.

Table 4-1: Internal Customer Complaint Process

4.2.2 Outage Communication

We are committed to keeping customers informed about both planned and unplanned outages to minimise inconvenience and ensure transparency. The following outlines our communication processes for these events.

4.2.3 Planned Outages

Planned outages are necessary for network repairs, maintenance, or upgrade projects. Our process in Table 4-2 ensures clear and timely communication with customers.

Process	What we do
Project Scoping and Planning	Our engineers scope network projects, incorporating input from our managed services provider's Network Operations Centre (NOC) to identify: • required outages • timing constraints, and • customers impacted.
Design and Notification Preparation	Project scopes are forwarded to the Centralines' Design Team for design and planning.

Process	What we do
	Once methodologies are finalised, NOC produces switching plans in our managed services provider's Advanced Distribution Management System (ADMS). This system includes detailed outage reports specifying affected customers.
Customer Notifications	For most planned outages, notifications are sent to energy retailers via an information exchange protocol. Retailers then forward these notices to their customers. Outages are automatically displayed on our outage webpage, which features: • a map of affected areas, and • a table outlining outage times and durations.

Table 4-2: Planned Outages Process

4.2.4 *Unplanned Outages*

Our processes for managing unplanned outages (refer to Table 4-3) prioritise rapid incident reporting, customer updates, and scalable communication.

Process	What We Do
Incident Identification	Our managed services provider's ADMS automatically generates incident reports based on: • Supervisory Control and Data Acquisition (SCADA) outputs, or • manual device statuses. These incidents are immediately published on our outage webpage, which includes: • the number of affected customers • the outage location, and • estimated restoration times, which are updated as new information becomes available.
Customer Communication	For significant outages, our 0800 fault number provides an interactive voice response (IVR). • Customers are informed if they are part of a known outage. • If their location is not part of a known outage, they can report faults to a customer representative through our website or to their energy retailer.
Scalable Communication for Major Events	During large-scale outages, such as those caused by Cyclone Gabrielle, we activate our Public Information Management (PIM) function under the Coordinated Incident Management System (CIMS). Updates are provided via multiple channels, including:

Process	What We Do
	• our website and social media platforms • local and national radio • television and local print media, and • community meetings are held in person.
Tailored Communication	The frequency, detail, and scope of information provided are adjusted based on the size, type, and duration of the outage event. This ensures customers receive timely, relevant updates tailored to the situation.

Table 4-3: Unplanned Outages Process

4.2.5 Voltage Quality

This section details our practices and processes for:

- monitoring network voltages
- addressing voltage non-compliance issues, and
- communicating with customers and stakeholders.

4.2.5.1 Voltage Quality Monitoring and Mitigation

We employ robust modelling practices to ensure voltage quality across our network.

Our Modelling Practices	
Network Modelling	The distribution network is modelled based on assumed voltage regulation schemes and transformer tap settings. These models enable the prediction of voltage issues by incorporating growth projections and assessing their potential impact.
Verification	Model outputs are verified against actual voltage measurements from the network to ensure accuracy.
Constraints Management	When voltage excursions are identified, constraints are raised and integrated into our Network Development Planning process, as described in Section 6 – Network Development Plans.
Future Integration of Smart Meter Data	As technology advances, we plan to incorporate data from smart meters into our monitoring and modelling processes to enhance voltage quality management.

Table 4-4: Voltage Quality Monitoring and Mitigation

4.2.5.2 Responding to and Reporting Low Voltage Non-Compliances

We have established a structured process to respond to external voltage quality queries or complaints, ensuring timely and effective resolution. We manage these complaints through an enhanced customer complaints process.

Process	What We Do
Acknowledgement of Queries	Upon receiving a voltage quality query or complaint from a customer or stakeholder that cannot be immediately rectified, we acknowledge receipt within 24 hours, and always within 48 hours.

Process	What We Do
	The acknowledgement includes: • a clear explanation of the process Centralines will follow to address the issue • confirmation that an investigation and response will be completed within seven working days, and • details of the Utility Disputes resolution service, a free independent service available if the issue cannot be resolved to the customer's satisfaction.
Initial Assessment and Investigation	An engineer, through our managed services partner, generates a work request forwarded to our Field Team for an initial site assessment. This assessment includes: • on-site testing, connection evaluation, and voltage measurements at the transformer and the customer's point of supply, and • immediate rectification if the issue is straightforward and can be resolved on-site.
Extended Monitoring (if required)	If no immediate issue is identified, a data logger is installed for a seven-day period to monitor voltage levels. During this period, the customer is informed of the extended investigation and provided with an updated timeline for resolution.
Data Analysis and Resolution	Our managed services provider's Future Networks Team reviews the logger data to determine the root cause of the issue. • If the issue is customer-related, a report is provided to the customer with recommendations for their electrician. • If the issue originates within our network, a work order is issued to our Field Team to undertake remedial action.
Customer Engagement	Throughout the process, we maintain open communication with the customer, providing updates and discussing findings as required.
Handling Network-Initiated Voltage Issues	When voltage quality issues are identified through internal monitoring or other means, the following process is followed. • The issue is referred directly to our managed services provider's Future Networks Team for investigation. • Once the investigation confirms a network-related problem, corrective actions are undertaken in alignment with the mitigation process outlined above. • As this process is internally driven, no formal customer query-related correspondence is initiated unless required.

Table 4-5: External Voltage Quality Queries or Complaints Process

4.3 Customer Connections

We have a dedicated team that receives and manages all new connection or alteration requests from customers.

A specific section on our website provides information on getting a new connection or alteration. Information is provided to customers on the processes to follow for both new connections, including distributed generation and alterations to existing connections.

4.3.1 Planning and Management of New Connections

We adopt our managed services provider's Network Connection Standard (CM2001) that sets out the technical and operational requirements for connecting to our network.

For all new connection requests to our network, an application form (NC1) is completed by the customer and submitted to us and a nominated retailer. Application forms and further information are available:

- on our website, or
- by contacting us directly, or the nominated retailer.

On receipt of the Connection Request Form, we will:

- advise the proposed retailer of the request for connection, and
- request the retailer's approval for us to create a new point of supply (ICP).

As part of the connection process, the consumer is requested to specify their required maximum demand. We will assess the availability of network capacity to accommodate the customer's proposed load. Should the existing network capacity be insufficient, we will assess the options available to facilitate the connection. This includes identifying network investment options to provide additional capacity. We may require the customer to fund these investments, in part or in full, as a capital contribution. The capital contribution is determined by our Capital Contributions Policy (CL-FN004). Depending on the complexity of the job, the request may need to go through a detailed design process. We will complete an assessment of the application to:

- determine any costs to establish the supply and any easement requirements, and
- provide an estimated cost to the customer.

Once the estimate is accepted and the work is subsequently completed, an ICP number is issued, and an 'Approval to Liven' notification is sent to the customer's chosen retailer.

We also have specific information and application forms on our website on the processes required to connect distributed generation to our network.

4.3.1.1 Commonly Encountered Issues

Delays can occur on both the network and customer side of the new connection process. Network-related delays are typically related to:

- construction resourcing caused by the variability of work volumes, and
- long lead time materials, such as transformers and ring main units.

Delays can also be caused by:

- incomplete information being provided regarding the connection, as well as changes to the scope or the installation
- not being ready to be connected on the agreed date
- project roadblocks, and
- essential documents, such as the installation's certificate of compliance, not being completed or provided.

We work collaboratively with customers, contractors and suppliers to identify roadblocks early to mitigate delays. This is done by:

- continuously monitoring the works pipeline
- identifying process improvements, and
- communicating regularly with customers through their connection journey.

4.3.2 Planning and Management of Alterations to Existing Connections

The process for alterations to existing connections is managed in a similar way to new connections. Similarly, our website sets out the requirements and principles of upgrading, downgrading or disconnecting from the network.

Our customers are required to consult with their electrician and us when adding additional load. This is because the load can overload network assets, such as transformers and cables, resulting in:

- power quality issues
- asset failures, and
- risks of damage to property and injury to people.

4.3.3 Optimising Customer Costs for New or Altered Connections

Capital contributions required from customers for new or altered connections are calculated in different ways depending on the type of connection (either standard or complex). Customer capital contributions are outlined in our Capital Contributions Policy.

4.3.4 Communicating with Customers About New or Altered Connections

Information about new connections and alterations to existing connections is published and easily accessible on our website. Enquiries from customers, electricians and developers are managed by our Planning Team.

On receipt of a new connection or alteration request, the customer will receive an email. The email will confirm the details of the application and include a copy of the completed Connection/Alteration Request Form.

A key element of communication with customers is setting clear expectations early in the connection process, including timeframes and the customer's responsibilities. Our Planning Team manages these expectations.

4.3.4.1 Timeframes and Delays for Different Connections

We acknowledge and communicate that two types of connections determine the potential timeframes for connection: standard and complex connections. We provide estimated timeframes for customers. Upon receipt of a connection application, we will update and confirm these if known. We will always endeavour to provide timely and detailed information throughout the process.

Common delays could include long lead times for items required for the connection, e.g., distribution transformers. Other delays may be due to the complexity of the connection request and the requirement to consider upstream network capacity constraints.

In the event of a significant external event, e.g., Cyclone Gabrielle, we provide updates to customers through our website and directly on any potential delays or impacts.

4.3.5 Practices

4.3.5.1 Continuous Improvement

The objectives of the customer operations continuous improvement programme are to:

- ensure customers have an excellent experience whenever they interact with us, promote affordability and efficiency in our processes, and
- enable us to readily adapt to changing customer, regulatory, and technological landscapes.

We are focusing on developing new capabilities to meet customers' evolving needs, alongside continuous improvements to remove wastage and adopt customer feedback. This programme combines customer feedback, employee input, and digital enhancements to provide effective, affordable, sustainable, and user-friendly solutions.

We have invested in digitising many of our service requests to streamline the customer experience and improve internal processing efficiency. This investment has reduced the need for customer phone interactions and saved considerable internal processing time by eliminating manual processes.

We have invested in our outage communication and service tracking capabilities to provide richer and more informative interactions during outages. Customers now have greater visibility for both planned and unplanned outages, including being able to search their property address for accurate information.

Our goal is to transform the customer experience by enabling improved self-service and multi-channel options for our customers, while also ensuring affordability and sustainability. Table 4-6 outlines the continuous improvement outcomes.

Continuous Improvement Theme	Outcomes
Excellence	• Design processes that deliver quality outcomes for our customers. • Opportunities identified to improve quality.
Easy to deal with	• Complexity and effort reduced for customers. • Transparency of process improved.
Consistent	• Processes standardised to drive consistent customer experiences.
Affordable	• Waste eliminated. • Efficiency increased.
Effortless digital interactions	• New technology leveraged to provide effortless digital interactions.
Adaptable	• Processes designed, tested and refined to efficiently adapt to changing industry, customer, community and resource priorities.

Table 4-6: Continuous Improvement Outcomes

4.3.5.2 *Digitalisation*

Section 5 – Data and Digital, Property, and Vehicles outlines how we utilise our managed services provider's digital approach to enable customer empowerment through digitalisation.

DATA AND DIGITAL, PROPERTY, AND VEHICLES

SECTION 5 / WĀHANGA 5

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5. DATA AND DIGITAL, PROPERTY, AND VEHICLES

5.1 Data and Digital Strategy

Our operational information systems are provided by our managed services provider. We do not own any material information technology assets.

Our managed services provider's Data and Digital strategies outline a comprehensive roadmap to enhancing technology and system capabilities to support our business transformation and growth. The approach is shaped by our:

- Customer and Community strategy (refer to Section 4 – Customer and Community)
- workforce needs
- core business goals, and
- industry trends.

They are also linked to the Cybersecurity strategy, which protects the integrity of assets, the confidentiality of information, and the availability of platforms. At the same time, this strategy enables strategic, risk-informed digital transformation. By leveraging advanced technologies, we aim to enable a smooth transition to distributed generation, electrification, and consumer-focused energy solutions.

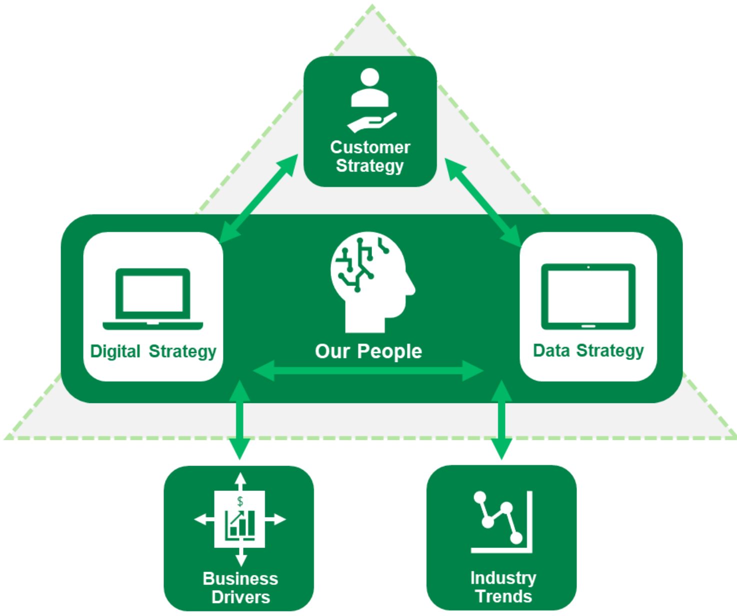

Figure 5-1: Customer, Digital and Data Triangle

5.2 Property

For the purposes of this Regulatory Asset Management Plan (RAMP), property assets exclude substations as these are classified as 'network assets'.

5.2.1 *Description of Assets*

Centralines owns a depot in Coughlan Road, Waipukurau and our former depot site in Peel Street, Waipukurau.

5.2.2 *Development, Maintenance and Renewal Policies*

The development, renewal and maintenance of property assets are on an ‘as required’ basis. There is an ongoing strategic review of property requirements to identify any changes needed to ensure our continued efficient operation.

Maintenance contracts are in place for scheduled and reactive maintenance activities on grounds and buildings, including air conditioning units, fire alarms and security systems. This ensures we remain compliant with building warrant of fitness requirements.

5.2.3 *Material Maintenance Activities Planned for the Next Five Years*

Routine property maintenance is planned and budgeted annually. No material maintenance activities are currently planned.

5.3 Vehicles

5.3.1 *Description and Quantity of Vehicle Assets*

For the purposes of the RAMP, vehicle assets are divided into three classes. The number of vehicles we own is detailed in Table 5-1.

Category	Description	Number
Heavy	All vehicles over 3.5 tonne excluding excavators, trailers, and generators.	14 vehicles
Light	All vehicles under 3.5 tonne excluding excavators, trailers, and generators.	30 vehicles
Other	Excavators, trailers, and generators, etc.	27 assets

Table 5-1: Description and Quantity of Vehicles

5.3.2 *Renewal Policy*

Centralines’ Motor Vehicle Policy (CL-PE-16) details the renewal criteria outlined in Table 5-2.

Vehicle Type	Replacement Criteria
Heavy	15 years or 300,000km
Light Commercial (Utes and Vans)	5 years or 150,000km
Light	3 years or 100,000km
Other	Specific to equipment type

Table 5-2: Vehicle Type and Replacement Criteria

5.3.3 Material Capital Expenditure Projects Planned for the Next Five Years

Centralines has an annual motor vehicle replacement plan based on its Motor Vehicle Policy. This reflects a preference for electric vehicles, where performance and whole-of-life costs are competitive with those of non-electric options. Expenditure includes charging infrastructure as Centralines' EV fleet grows.

5.3.4 Material Maintenance Activities Planned for the Next Five Years

Maintenance plans for all vehicles are as per the manufacturer's recommendations. No material maintenance activities are planned for this period.

CENTRALINES
LIMITED

NETWORK DEVELOPMENT PLANS

SECTION 6 / WĀHANGA 6

Our People Our Power

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6. NETWORK DEVELOPMENT PLANS

As an electricity distribution business (EDB), our role is to deliver safe, reliable, and cost-effective electricity supply, while incorporating new technologies to meet the evolving needs of our customers. This is accomplished through a structured approach of stakeholder engagement, forecasting, evaluation and execution. Throughout the process, we ensure compliance with regulatory standards and remain responsive to the changing energy landscape.

6.1 Introduction

Our vision is to enable a future-ready electricity network that supports the energy transition, improves resilience and fosters economic growth across the Central Hawke's Bay region. Our Network Development Plan (NDP) for 2026-2036 details our strategy to maintain a secure, flexible and sustainable network that adapts to:

- rising electrification
- the adoption of renewable energy, and
- the growing demands of our community.

Our planning approach is informed by comprehensive stakeholder engagement (outlined in Section 2 – Background and Objectives). This engagement ensures alignment with local growth projections, customer expectations, and industry trends. Feedback from customer surveys, along with insights from major industrial and agricultural users, highlights the increasing importance of grid resilience and climate adaptation. These insights are shaping our investment strategy and long-term network planning approach.

Figure 6 1: Key Objectives of the NDP

The NDP is critical for delivering our long-term objectives. We are ensuring that our network is future-proofed while continuing to deliver affordable and reliable energy to our customers by integrating:

- distributed generation (DG)
- battery storage
- demand-side management, and
- advanced automation.

The integration of these technologies enhances flexibility within the distribution network, reinforcing our commitment to sustainability, operational efficiency and network resilience.

6.1.1 Network Characteristics

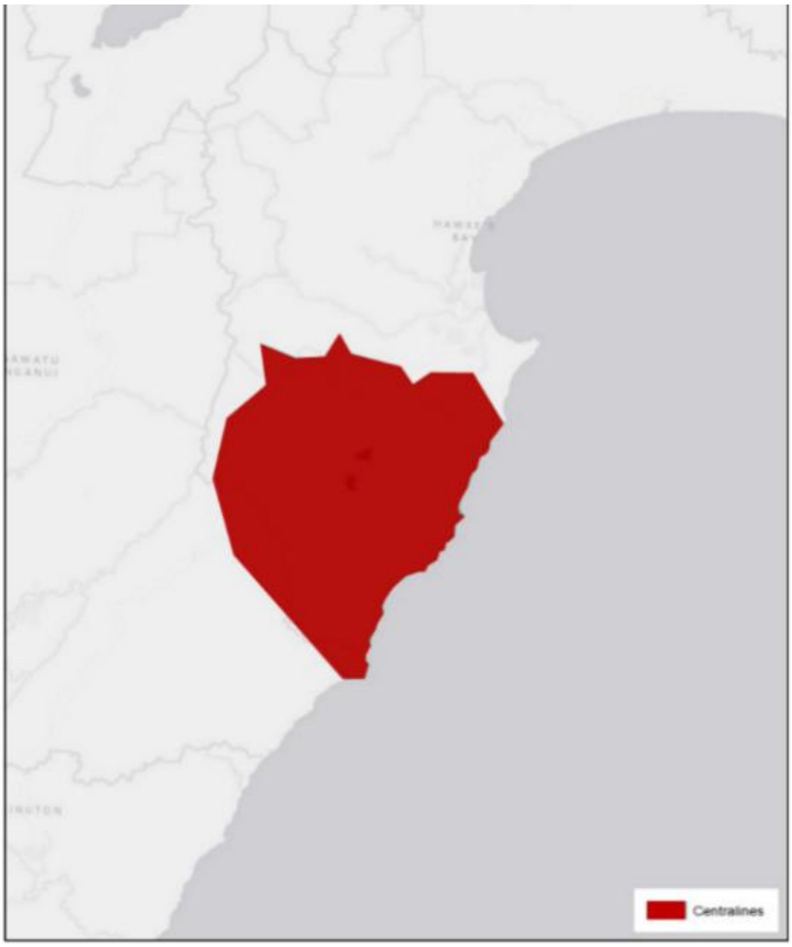

Figure 6 2: Map of the Centralines' Network

Our Central Hawke's Bay network spans 3,334 km², serving approximately 9,500 customers through a single grid exit point (GXP) at Ongaonga. The load characteristics of the network are a mix of agricultural, industrial, residential and commercial. Because of the hot, dry summers, the system nominally experiences a substantial summer peak, driven by irrigation load. The winter peak has traditionally been lower but not significantly so. In recent years, this trend has modified with a standard residential winter peaking curve observed due to wet summers, reducing irrigation loading. Approximately 1% of customers currently have DG connected to the grid. At this level, it does not have a material impact on the load.

6.1.2 Supply Points and Embedded Generation

There is no significant embedded generation, and the network is supplied from a single GXP at Ongaonga. The GXP is connected by four separate, overhead 110kV circuits: two from Dannevirke to the south and two from Fernhill to the north. The lines from Dannevirke normally supply the GXP. A single 110kV bus supplies a 20MVA and 30MVA transformer bank. At the same site, an 11kV supply is provided by a single, Transpower-owned 33/11kV transformer. The supply point is the terminals of the 11kV switchgear owned by Transpower.

6.1.3 Peak Demand, Total Energy Delivered and Firm Capacity

Peak demand and total energy delivered are measured at the GXP. As there is only one GXP, it also represents total network demand. As this is a GXP measurement, the total energy delivered is net of generation.

Supply	Peak Demand (MVA)	Total Energy Delivered (GWh)	Firm Capacity Winter (MVA)
Waipawa GXP	21	125	26

Table 6-1: Peak Demand and Total Energy Delivered Measured at GXP

6.1.4 Sub-Transmission Network

Urban areas are supplied by a meshed sub-transmission network that provides a high level of security (n-1). Rural areas are supplied by a radial sub-transmission network providing an acceptable level of security (n). Table 6-2 lists the capacity and security of the zone substations across the network, and Figure 6-3 provides geographical views of the sub-transmission network.

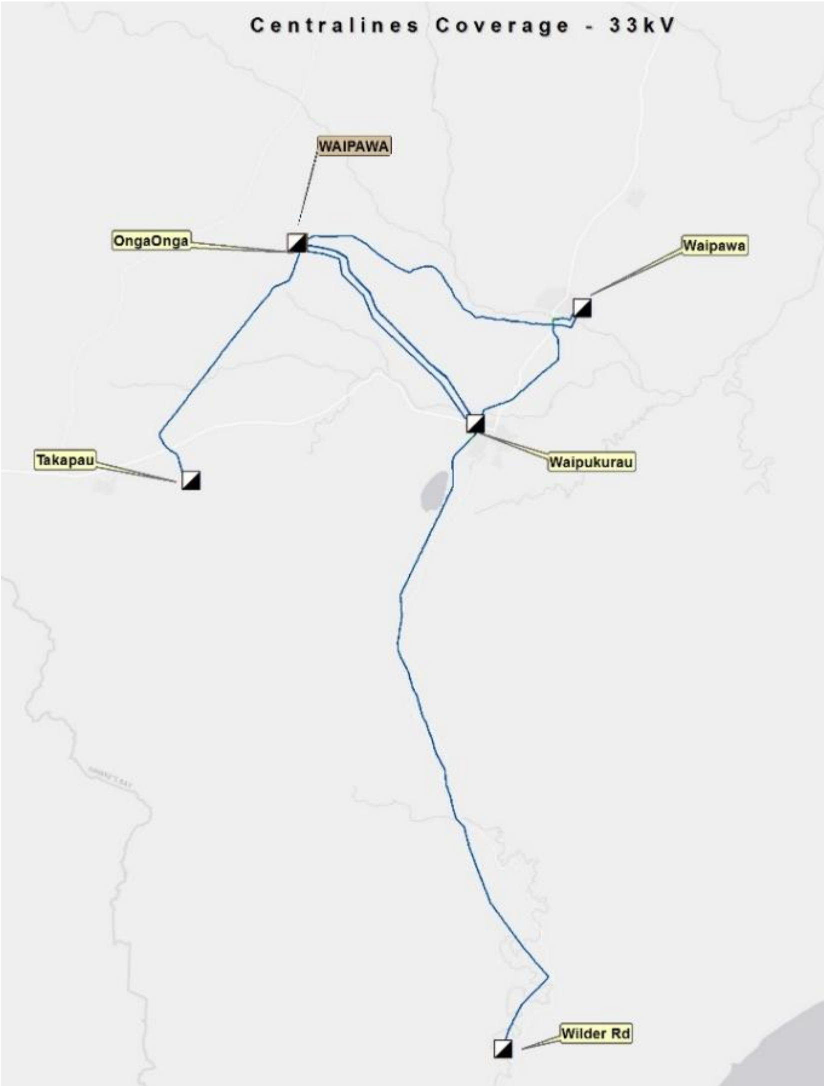

Figure 6-3: 33kV Sub-Transmission and Point of Supply Network

Zone Substation	Supply Voltage	Sub–transmission Security	Firm Capacity (MVA)	Power Transformer Security
Waipukurau	33kV	n-1	10	n-1
Waipawa	33kV	n-1	9	n-1
Wilder Road	33kV	n(1)	0	n(1)
Takapau	33kV	n(1)	9	n-1
(1) Security currently provided by the 11kV network for the failure of this asset.				

Table 6-2: Firm Capacity and Security of the Zone Substations

6.1.5 Distribution Network

Undergrounding across the distribution (11kV and 400V) networks is undertaken when appropriate as part of our Lifecycle Asset Management process. Table 6-3 details the total network length by type and Table 6-4 details the current portion of the networks that are underground and overhead.

Network Type	Network Length
33kV Network	96 km
11kV Network	1454 km
400V Network	318 km

Table 6-3: Total Distribution Network Length (by V)

Network Voltage	Type of Network	Total Length	% of Total
Underground			
400V	Underground	118 km	71%
11kV	Underground	47 km	28%
33kV	Underground	2 km	1%
Overhead			
400V	Overhead	200 km	12%
11kV	Overhead	1407 km	83%
33kV	Overhead	94km	5%

Table 6-4: Underground and Overground Distribution Network Percentage

6.1.5.1 11kV Network

The 11kV network in urban areas has a high level of interconnectivity and provides considerable flexibility during contingency events. This results in a high level of security in these areas.

The 11kV network in rural areas is predominantly overhead radial feeders with concrete poles and timber crossarms. There is limited 11kV interconnectivity, and the supply can be compromised during a single contingency event.

Network loads are generally small and spread across large geographical areas.

6.1.5.2 400V Network

The 400V network in the urban area has interconnectivity between adjacent distribution transformers.

The 400V network in the rural and remote areas is predominantly radial overhead conductors with concrete poles and timber crossarms. Transformers are sized to the customer's requirements.

6.1.6 Secondary Assets

6.1.6.1 Fibre Network (Primary Communication Network)

The primary or backbone medium for our electricity network communications is a carrier-grade fibre optic cable network. This network is a mixture of leased and Centralines-owned circuits. The network links:

- our Head Office in Waipukurau
- the Waipukurau and Waipawa Zone Substations
- Transpower's Waipawa GXP, and
- to our managed services provider's 24/7 Network Operations Centre (NOC) in Hastings, from which our network is controlled.

The fibre link between Hastings and Waipukurau includes:

- circuits leased from two service providers in the section between Hastings and Ongaonga, and
- the Centralines-owned fibre between Ongaonga and Waipukurau.

Redundancy for this communication network is by way of an alternative, leased communication link. In a contingency event, our network can also be controlled from our Waipukurau offices.

The fibre network between our Office, the Waipawa and Waipukurau Zone Substations and the Waipawa GXP is all radial feeds, and there is currently no redundancy. A break in any of these fibres would:

- result in communications being lost, and
- require field staff to be dispatched to the zone substations to operate equipment manually.

Service and traffic separation across the Supervisory Control and Data Acquisition (SCADA) network (via the fibre network) is maintained using industry-recognised protocols to prioritise data and maintain system security.

The fibre network enables a range of network-related functionality, including:

- SCADA, which allows our entire electrical network to be monitored and operated from our managed services provider's head office in Hastings
- the monitoring and enabling of a 33kV sub-transmission ring circuit, differential protection scheme, and
- engineering access to Intelligent Electronic Devices (IEDs) and other equipment installed in substations, including:
    - protection relays that can be interrogated remotely, and
    - the downloading of fault logs to assist with post-fault analysis.

6.1.6.2 VHF Radio Communications

VHF is used for the transmission of voice communication between our managed services provider's NOC in Hastings and our field staff. Two VHF data channels are also used for SCADA functions to control:

- the Wilder Road Substation
- pole-mounted reclosers
- load break switches, and
- some regulators.

The use of VHF radio communications is being evaluated by SCADA and Communications network strategy.

6.1.6.3 Supervisory Control and Data Acquisition (SCADA)

SCADA is a generic term that covers the system that our managed services provider uses to:

- monitor and control network operations
- obtain system information, and
- create historical records of events.

Our managed services provider uses an integrated Advanced Distribution Management System (ADMS). The ADMS is a software platform that provides SCADA functionality across the distribution network. It includes:

- outage management
- call and dispatch, and
- integrated network reliability reporting.

It also provides mobile crew management and network visibility to the workforce.

Additional modules within the ADMS enable network optimisation and analysis. This provides the ability to optimise the state of the network by identifying the optimal configuration, which will:

- reduce the number of losses, and
- ensure effective asset utilisation.

The ADMS incorporates a training simulator that is used to:

- test our systems and processes during simulated crisis events, and
- train new and existing controllers to maintain required competency standards.

The previously described communication platforms are used for the ADMS to communicate with Remote Terminal Units (RTUs) located in substations and field equipment. The RTUs provide the communication interface that allows for central control commands to be conveyed to appropriate equipment and for network data to be returned.

The current Centralines RTU infrastructure vendor will cease product manufacturing in 2027 and support in 2032. From 2027, we will be unable to purchase new equipment from this vendor and will receive support only until 2032. Afterwards, there will be no updates or issue resolutions.

We rely on field automation for maintaining service levels. Future improvements will require fast and reliable communication systems. A seven-year plan is in place to upgrade the SCADA and Voice communications network, aiming to reduce the risk of systemic failures.

The upgrade will be implemented in multiple phases over several years to manage costs. There is an emphasis on transitioning to digital SCADA communications to enhance resilience and potentially transition to digital VHF voice in the future.

6.1.6.4 Protection Relays

A protection relay is a device designed to trip a circuit breaker when a fault is detected. The first protection relays were electro-mechanical devices that relied on coils operating on moving parts to provide detection of abnormal operating conditions. These included transformer differential, over-current, earth fault, over- and under-voltage, and frequency.

Modern numeric relays are far superior to these early electro-mechanical relays. They operate extremely quickly and offer increased functionality. We have standardised on SEL-manufactured protection relays due to their high quality, reliability, ten-year warranty period and after-sales technical and training services.

Standardising on one manufacturer also has some advantages for field technicians who only have to be familiar with one product range. This approach speeds up and simplifies relay configuration, testing and commissioning and the downloading and interpretation of power system fault logs.

Given the unique agricultural, industrial, and residential load profile of our network, we take a targeted, risk-based approach to network planning. This ensures that investments deliver the greatest value for customers while maintaining compliance with regulatory requirements.

Through our proactive planning process, we continue to build a resilient, customer-focused, and future-ready network that can adapt to emerging challenges and opportunities. This process ensures we remain a trusted and innovative electricity distributor in the region.

6.2 Our Network Development Planning Methodology

We employ a comprehensive and structured approach to network planning, ensuring that the electricity distribution network meets current and future demands efficiently and sustainably. The methodology includes several key stages as detailed in Figure 6-4.

Figure 6-4: Network Development Planning Methodology

The methodology behind network development planning focuses on data collection and analysis, load forecasting, scenario planning, and the integration of resilience measures. We identify trends that inform planning decisions by leveraging:

- real-time monitoring
- smart meter data, and
- historical network performance.

Scenario-based modelling helps to anticipate capacity constraints, ensuring that network expansion aligns with future demand. Additionally, the incorporation of resilience measures, shaped by experiences such as Cyclone Gabrielle, enhances the robustness of the network against extreme weather events.

To further strengthen the resilience of the network, we have adopted a phased investment approach that ensures flexibility in adapting to evolving demand patterns. This allows for investment decisions to be adjusted based on real-time data, emerging industry trends, and regulatory requirements.

6.3 Stakeholder Engagement

As outlined in Section 2 – Background and Objectives, stakeholder engagement is a fundamental component of our Network Development Planning process. By fostering collaboration with a wide range of stakeholders, we ensure our plans align with:

- community needs
- regulatory requirements, and
- New Zealand's energy transition goals.

This engagement helps identify shared priorities and tailor solutions that deliver long-term benefits for all.

We actively engage with customers, local councils, industry bodies, and government agencies to align network development with regional growth projections, infrastructure planning, and evolving energy needs.

This ensures our network remains fit for purpose now and into the future. Our key stakeholder engagement activities include:

- Customers – understanding future demand, new connections, and changing energy use patterns
- Local Councils' Long-Term Plans (LTPs) – aligning network investments with urban and industrial growth
- Government-led Decarbonisation Studies (e.g., DETA Study) – integrating electrification and sustainability targets into our network strategy
- Large Energy Users and Developers – ensuring network capability aligns with commercial and industrial growth plans, and
- Distributed Generation Developers – facilitating integration through transparent hosting capacity assessments and ongoing collaboration.

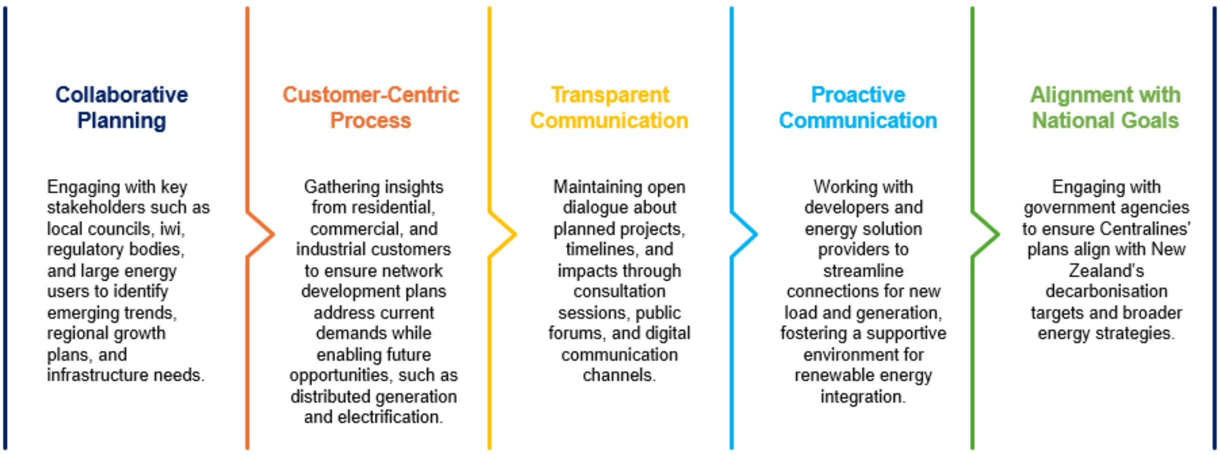

Figure 6-5: Key Aspects of our Stakeholder Engagement Approach

Large commercial and industrial customers, those with peak loads exceeding 1MVA, are critical drivers of network development. Currently, two major industrial consumers, Silver Fern Farms Takapau and Ovation Limited Waipukurau, account for approximately 25% of network demand. Their specific network needs and tailored connection agreements directly impact:

- capacity planning
- security of supply, and
- investment in resilience measures.

As these customers expand or electrify their processes, we ensure that network infrastructure evolves to meet their requirements.

Stakeholder engagement plays a crucial role in identifying and prioritising investments that deliver value for customers while supporting community resilience and sustainability. This ongoing process enables us to adapt our NDPs to dynamic stakeholder needs and emerging industry challenges, ensuring a resilient and future-ready network.

6.4 Network Constraint Forecasting

Our Network Constraint Forecasting process helps identify and mitigate risks associated with network performance, ensuring we remain proactive in addressing future demand challenges. The key elements of the process are in Figure 6-6.

Load Forecasting:
We use smart meter data and historical load measurements to estimate future demand. The After Diversity Maximum Demand (ADMD) methodology is applied where data gaps exist, providing a robust forecast for future load growth.

Constraint Identification and Risk Analysis:
Through model simulations, constraints like voltage non-compliance and thermal overloading are identified and assessed based on their likelihood and consequence.

Low Voltage (LV) and High Voltage (HV) Modelling:
Centralines builds LV and HV models to simulate network constraints and identify potential issues with voltage or thermal overloading.

Verification and Evaluation:
Each identified constraint is verified using real-time data from smart meters and other sources to ensure accuracy before proceeding to the solution development stage.

Figure 6-6: Network Constraint Forecasting Process

6.4.1 Load Forecasting and Planning

To ensure that our network can accommodate both current and future energy needs, we incorporate stakeholder insights and utilise advanced forecasting and scenario-based modelling to predict demand growth, assess network constraints, and plan for capacity expansion. Our planning incorporates:

- Customer connection forecasts – anticipating new loads and distributed generation connections
- Regional growth trends – integrating insights from councils' LTPs and developer engagement
- Electrification and decarbonisation insights – factoring in the outcomes of industry-led studies such as the DETA study, and
- Smart Meter and Low Voltage (LV) Data – leveraging data to refine our network models and anticipate localised constraints.

Load forecasting is a critical element of network constraint forecasting, enabling us to:

- anticipate future energy demand, and
- ensure that network investments align with evolving usage patterns.

We develop comprehensive demand forecasts by leveraging:

- historical consumption data
- real-time smart meter insights, and
- regional growth projections.

These forecasts consider factors such as:

- population growth
- changes in customer energy use, and
- electrification trends, including electric vehicle (EV) adoption and process decarbonisation in industrial sectors.

The current load forecasting growth trends are driven by:

- industrial electrification in Waipukurau
- residential zones in Waipukurau, and
- residential zones in Waipawa (Otane).

Scenario-based forecasting is also employed to assess different potential futures, ensuring we can adapt to emerging industry developments and policy shifts. A summary of ten-year demand projections (MVA) by zone substation is provided below. These forecasts guide constraint identification, investment prioritisation, and flexibility in network solutions.

6.4.1.1 Load Forecasting Tool (LFT) Outputs

The LFT forecast extends out to a 40-year horizon for each substation,11kV feeder, and distribution transformer. The Network Development Planning process considers the:

- first ten-year outlook of load forecasts for planning purposes, and
- ten-year-plus outlook for longer-term trend consideration.

Table 6-5 sets out the expected zone substation loads in MVA for Centralines.

Known As	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Waipukurau	10.0	10.2	10.4	10.6	11.3	12.0	12.6	13.4	13.7	14.0
Waipawa	5.4	5.7	5.9	6.2	6.3	6.6	6.8	7.1	7.4	7.7
Takapau	6.6	6.7	6.7	6.8	6.8	6.9	7.0	7.1	7.1	7.2
Ongaonga	5.2	5.3	5.5	5.7	6.0	6.3	6.6	6.9	7.1	7.3
Wilder Road	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4

Table 6-5: Expected Zone Substation Loads In MVA

6.4.1.2 LV and HV Modelling

To accurately assess network capacity and potential constraints, we employ advanced low-voltage (LV) and high-voltage (HV) modelling techniques. These models allow us to simulate the performance of the network under various operating conditions, including:

- peak demand periods
- contingency events, and
- the integration of distributed generation (DG).

Enhanced visibility at the LV level, enabled by smart meters and remote monitoring systems, allows us to detect localised constraints that may not be apparent in traditional high-level network assessments. At the HV level, detailed system modelling supports long-term capacity planning. This ensures that grid infrastructure can accommodate expected load growth while maintaining reliability and resilience.

6.4.1.3 *Distributed Generation (DG) Integration*

We actively support the connection of DG, including solar and battery storage, into the network. Our current processes streamline DG connections, ensuring safe and efficient integration without compromising network stability. Our efforts include:

- Hosting Capacity Assessments – publishing updated hosting capacity data to provide clear insights into integration potential
- Proactive Engagement with Developers – working with DG providers to facilitate smooth interconnection processes
- Flexible Connection Solutions – implementing dynamic connection agreements to optimise network use while maintaining stability
- Support for Community-Scale Generation – enabling local energy solutions, such as microgrids and shared solar installations, to enhance energy resilience, and
- Data-led Analytics – platforms integrating smart meter data allow DG connections to be assessed to the maximum allowable level. Volt/Var control methods to ensure compliant voltage in dynamic load and generation profiles.

By embedding stakeholder engagement, forecasting, resilience, and DG integration within our core activities, we ensure our network:

- remains adaptable and resilient, and
- meets the evolving energy needs of our customers.

6.4.2 *Constraint Identification and Risk Analysis*

The constraint identification and risk analysis process involves systematically evaluating network segments to determine where capacity limitations or operational challenges may arise. Key indicators of potential constraints include:

- voltage fluctuations
- thermal limits on network assets, and
- increased congestion due to high levels of DG penetration.

By integrating data from our LV and HV models and hosting capacity studies, we identify areas where targeted reinforcements or alternative solutions, such as demand-side management, may be required. Risk analysis is also conducted to assess the likelihood and impact of identified constraints, prioritising investments based on the severity of potential network issues.

6.4.2.1 *Power Quality*

Power quality is considered over both short and long-term planning horizons to ensure solutions to current power quality constraints are appropriate long-term solutions.

As power quality issues can result from problems on both our network and our customers' own installations or equipment designs. To assist us, we use our managed services provider's Network Connection Standard (CM2001), which is published on our website. This Standard outlines the responsibilities of the company and the customer to ensure all connection parties receive electricity supply to appropriate quality and performance standards.

The Standard is also referenced in:

- our Use of System Agreement with all retailers, and
- the Customer Connection Agreement with each customer.

We use our managed services provider's Quality of Supply Standard (NK2001) and asset design standards. The Quality of Supply Standard specifies the limits of key power quality parameters on:

- voltage regulation
- voltage unbalance
- harmonic distortion
- flicker, and
- voltage fluctuation.

The specified limits are summarised in Table 6-6. Of these, voltage regulation and unbalance are monitored proactively using in-situ data and modelling tools. In contrast, the others are managed on a reactive ad-hoc basis as issues are identified.

Power Quality	Specified Limits
Voltage regulation	230V +/- 10%
Voltage unbalance	Less than 2%
Total harmonic distortion voltage	Less than or equal to 5%
Flicker	Short term – less than 1.0, Long term – less than 0.8
Voltage fluctuation	Various limits specified in the respective design standards

Table 6-6: Power Quality Parameters and Limits

We are also working with Metering Equipment Providers (MEPs) to source voltage data from smart meters to enable proactive voltage monitoring of the low-voltage network. Voltage data trials have been carried out with MEPs to test end-to-end processes. The data obtained has been analysed, voltage issues identified and prioritised, and mitigation plans put in place. The solutions to these issues range from simple tap position changes at local distribution transformers to upgrades of transformers and the low-voltage network.

6.4.2.2 Security of Supply

To ensure the network meets its agreed performance targets and obligations, we apply a set of security of supply criteria based on the established framework set out in Table 6-7 and Table 6-8. The framework defines the level of security for different customer load types and load sizes. The criteria are used to:

- identify network security constraints when contingency events occur, and
- guide the selection of solutions to mitigate these constraints.

We review these criteria and adjust our network restoration approach using:

- smart network technologies
- network demand profiles, and
- customer expectations (as identified in customer surveys).

This is to ensure these criteria remain appropriate and continue to meet network performance targets.

Security of Supply Restoration Times	
Class D – Single large customer	Agreed individually with the customer
Class C – CBD	N-1 – 50% restored within 15 minutes remainder within 45 mins N-2 – 50% restored within 60 minutes remainder within 3 hours Bus fault – 50% restored within 60 minutes remainder within 3 hours
Class B – Urban	N-1 – 50% restored within 45 minutes remainder within 2 hours N-2 – 50% restored within 3 hours
Class A2 – Rural up to 1MVA	N-1 – 50% restored within 2 hours
Class A1 – Rural up to 500kVA	No targets

Table 6-7: Summary of Non-Regulatory Planning Criteria and Standards

Substation	Target	Compliant	Comments
Waipukurau (Urban)	Class C	Yes	
Waipukurau (Rural)	Class B	Yes	Possible from backfeeding or transferring load
Waipawa (Urban)	Class C	Yes	
Waipawa (Rural)	Class B	Yes	Possible from backfeeding or transferring load
Takapau	Class A2 Class D	Yes	Substation supplies one large customer and the surrounding rural area
Ongaonga 11kV	Class A2	Yes	Due to automation in the area
Wilder Road	Class A1	Yes	Due to automation in the area

Table 6-8: Designed Security of Supply Classification and Current Compliance by Substation

We apply robust security of supply criteria to ensure the network meets reliability expectations. The N-1 security standard is maintained at key urban substations, while rural areas operate on a radial configuration with contingency planning in place.

The current compliance status of each zone substation against security-of-supply classifications is detailed in Table 6-9. Where substations do not meet the N-1 standard, targeted investments may be planned to enhance resilience, improve restoration times, and mitigate risk.

Substation	Current Security of Supply Classification
Waipukurau	N-1
Waipawa	N-1
Takapau	N-1 switched
Ongaonga	N-1 switched

Substation	Current Security of Supply Classification
Wilder Road	N-1 switched

Table 6-9: Security of Supply (N-1) Classification by Substation

In addition to managing restoration times, other aspects of network performance also need to be managed in contingency conditions. These include:

- ensuring the safety of people
- the security of zone substations
- maintaining system voltages, and
- not exceeding network element loading and protection relay operating limits.

All must be managed to ensure we achieve an optimal balance between customer expectations and performance targets, without any adverse effects on assets.

6.4.3 Resilience Enhancements

As detailed in Section 9 – Capability to Deliver, our commitment to building resilient and sustainable infrastructure is central to our NDP. This includes leveraging lessons from recent events like Cyclone Gabrielle to enhance our network.

We continue to invest in strengthening the resilience of our network, particularly in response to the increasing frequency of extreme weather events:

- Infrastructure Hardening – strengthening critical assets such as substations and key feeders to withstand extreme weather events
- Real-Time Monitoring and Automation – deploying sensors and automation technology to improve network responsiveness and outage management, and
- Flexible Response Systems – implementing rapid-response tools such as mobile substations and adaptive restoration protocols.

6.4.4 Verification and Evaluation

To ensure the accuracy and effectiveness of our forecasting process, we conduct rigorous verification and evaluation procedures. This includes:

- cross-validating model outputs with actual network performance data
- refining forecasting assumptions based on observed trends, and
- incorporating feedback from field operations teams.

Periodic reviews of forecasting methodologies are conducted to integrate emerging best practices and advancements in predictive analytics. Additionally, post-investment evaluations assess the effectiveness of constraint mitigation measures. This ensures that lessons learned inform future planning decisions and enhance the overall resilience of the network.

As part of this forecasting, we are actively refining our modelling to incorporate increased electrification impacts, including EV adoption, industrial decarbonisation, and demand-side flexibility. This allows for a more responsive and resilient grid.

6.5 Optioneering

The Solution Development process ensures that identified network constraints are addressed with optimal engineering solutions that balance cost, risk, and performance (see Figure 6-7). A risk-based approach guides our investments. This approach ensures that high-impact projects deliver value for money while addressing critical resilience and capacity needs. We are committed to delivering affordable energy solutions to all our customers, including vulnerable households, by prioritising:

- cost-effective investments in network upgrades, and
- energy efficiency.

Figure 6-7: Optioneering – Key Activities

6.5.1 Risk-Based Solutions

Solutions are developed based on the specific risks identified in constraint forecasting. This involves considering both network reinforcement and non-network options, such as demand-side management. Traditional network reinforcement, such as upgrading lines, transformers, and substations, remains a key approach where necessary to maintain reliability and address capacity constraints. However, alternative solutions are increasingly being considered to enhance network flexibility and cost efficiency. The potential of non-network solutions, such as energy storage, demand response, and flexibility services, is actively explored to provide adaptable and scalable solutions. These solutions optimise network performance while reducing reliance on large capital investments.

6.5.2 Solutions Analysis

Engineers evaluate a range of solutions, identifying synergies across different network constraints and clustering projects where possible to maximise efficiency. This process involves a detailed cost-benefit analysis that integrates both traditional and emerging technologies. Battery energy storage, dynamic pricing mechanisms, and advanced demand response programmes are assessed alongside conventional network reinforcements. This helps to determine the most effective and sustainable approach. Solutions are evaluated based on their:

6.5.3 Quality of Supply Standard Execution and Specification

Each solution is fully specified to ensure that network upgrades and enhancements are delivered on time, within budget, and to the highest quality standards. The selected solutions are integrated into our Asset Management Plan (AMP) to ensure alignment with:

- broader network objectives, and
- long-term investment strategies.

This integration process includes formal approvals, project scoping, detailed engineering design, and procurement planning. Risk mitigation strategies are embedded within execution plans to ensure resilience against potential implementation challenges, including:

- supply chain constraints, and
- evolving market conditions.

6.5.4 Continuous Improvement

Ongoing feedback loops from project outcomes help refine our solution development approach, ensuring continuous improvement across the network.

Performance monitoring and post-implementation reviews are conducted to:

- assess whether solutions are meeting expected outcomes, and
- identify lessons learned that can be applied to future projects.

This iterative approach ensures that the network remains adaptable to changing demand patterns, technological advancements, and regulatory shifts. Ultimately, it supports a more efficient and resilient electricity distribution system.

6.5.5 Non-Traditional Solutions

When load-based constraints are identified, our engineering and planning teams undertake detailed analysis of the depth and duration of at-risk periods. This analysis determines whether non-network solutions can resolve or defer the constraint. We have successfully used permanent and reactive offloading initiatives to balance loads and avoid premature network reinforcement.

Today, this approach is evolving through:

- co-creation with customers and technology partners
- integrating distributed energy resources (DER)
- planning the deployment of battery storage, and
- dynamic load management to optimise both customer and network outcomes.

Through our connections and planning processes, we work collaboratively with customers to tailor solutions (such as time-based management, controllable load, or local generation). These solutions minimise connection costs and reduce stress on legacy assets.

Leveraging data-driven insights from smart meters and advanced analytics, we can now:

- identify flexibility potential at a more granular level, and
- deploy targeted interventions before constraints materialise.

This partnership-based model represents a shift toward a digital, flexible, and customer-centred network, delivering improved affordability and resilience for our communities.

6.6 Evaluation

Evaluation involves a structured assessment of potential solutions to ensure they effectively address identified risks and constraints. This process integrates the principles outlined in our Solution Development process, focusing on cost, risk, and performance drivers. Key activities are detailed in Figure 6-8.

Low Voltage (LV) and High Voltage (HV) Modelling

Centralines builds LV and HV models to simulate network constraints and identify potential issues with voltage or thermal overloading.

Load Forecasting

We use smart meter data and historical load measurements to estimate future demand. The After Diversity Maximum Demand (ADMD) methodology is applied where data gaps exist, providing a robust forecast for future load growth.

Constraint Identification and Risk Analysis

Through model simulations, constraints like voltage non-compliance and thermal overloading are identified and assessed based on their likelihood and consequence.

Figure 6-8: Solution Evaluation

The evaluation process ensures alignment with our Asset Management Objectives (AMOs) while maintaining a focus on delivering customer value. Solutions are assessed based on their ability to:

- enhance network resilience
- support future energy demand, and
- provide a cost-effective approach to infrastructure investment.

The key components for the evaluation framework are listed below.

6.6.1 Load Forecasting

Accurate load forecasting is fundamental to the evaluation process, ensuring that network investments align with future demand growth. We use smart meter data, historical load measurements, and predictive analytics to estimate future network capacity requirements. The After Diversity Maximum Demand (ADMD) methodology is applied where data gaps exist, allowing for a robust and informed approach to demand projections. We ensure that proposed solutions can accommodate expected network evolution by integrating:

- electrification trends
- distributed generation uptake, and
- regional development plans.

6.6.2 Low Voltage (LV) and High Voltage (HV) Modelling

Network modelling plays a crucial role in evaluating the feasibility of proposed solutions. We build LV and HV models to simulate network constraints, identifying potential issues with:

- voltage non-compliance
- thermal loading, and
- contingency performance.

These simulations help validate whether the recommended investment options will effectively mitigate constraints and improve overall network reliability. We ensure that our investments are both technically and operationally sound by leveraging real-time network data and scenario-based testing.

6.6.3 *Constraint Identification and Risk Analysis*

Through detailed model simulations, potential constraints such as voltage violations, overloading, and fault-level exceedances are identified and assessed. The risk analysis process evaluates these constraints based on their likelihood and consequence, ensuring that solutions prioritise the most critical issues.

Risk assessments also incorporate climate resilience considerations. This ensures that proposed investments strengthen the network's ability to withstand extreme weather events and long-term environmental shifts.

6.6.4 *Solution Justification and Cost-Benefit Analysis*

Each proposed investment undergoes a thorough cost-benefit analysis to determine its economic viability. We apply a structured evaluation framework that balances capital expenditure, operational efficiency, and long-term cost savings. Solutions are compared against alternative approaches, including non-network solutions such as demand-side management and energy storage. This ensures the most cost-effective and sustainable option is selected. Additionally, solutions are evaluated based on their contribution to broader industry goals, including decarbonisation, electrification, and customer affordability.

The evaluation process ultimately ensures that our network investments are:

- strategically prioritised
- technically justified, and
- aligned with our long-term asset management objectives.

By maintaining a rigorous and transparent evaluation methodology, we can deliver infrastructure solutions that enhance network performance. This approach also ensures adaptability to future energy system transformations.

By combining network performance data, digital visibility, and asset-condition insights (refer to Sections 5 – Data and Digital, Property, and Vehicles and 7 – Asset Management Planning), we are strengthening the link between customer collaboration and investment optimisation. Advanced analytical models enable us to evaluate multiple scenarios that reflect customer behaviour, DG and flexibility uptake, and localised network conditions. These data-driven insights support:

- precise timing of renewals
- targeted or deferred investment, and
- consistent delivery of affordable and resilient outcomes.

This approach ensures that every investment decision aligns with our managed services provider's long-term objectives – balancing customer value, risk, and performance across the full asset lifecycle.

6.7 Solution Recommendation

The recommended solution is developed through a collaborative, evidence-based approach, ensuring that all proposed investments are:

- technically sound
- financially viable, and
- strategically aligned with our long-term objectives.

This stage integrates cross-functional insights, leveraging data from network constraint forecasting, scenario analysis, and risk-cost optimisation. This ensures that solutions are practical, scalable, and future-ready.

The key components of the Solution Recommendation process are detailed in Figure 6-9.

Figure 6-9: Solution Recommendation Process

6.7.1 Risk-Cost Optimisation

We apply a risk-based decision-making framework to balance immediate network needs with long-term resilience and performance. By leveraging insights from the Constraints Map and scenario planning tools, we ensure that the selected solutions address critical constraints while remaining cost-effective. Solutions are prioritised based on their ability to:

- mitigate operational risks
- reduce customer impact, and
- improve network reliability.

This approach ensures that investments deliver sustainable value to stakeholders.

6.7.2 Clustered Approaches

Where possible, we group related network constraints into project clusters to maximise efficiency and minimise disruptions. This approach reduces the need for repeated works in the same geographic areas and improves overall delivery timelines. Clustering projects also allows for:

- better integration of distributed generation
- demand-side management, and
- non-network alternatives.

This approach ensures a more holistic approach to network development.

6.7.3 Comprehensive Justification

Each recommended solution undergoes a detailed financial and operational evaluation, ensuring alignment with our Asset Management Plan (AMP) and broader strategic goals. This assessment includes:

- Net Present Value (NPV) and cost-benefit analysis, ensuring financial viability
- operational efficiency gains, considering asset lifecycle impacts, and
- regulatory alignment, ensuring compliance with industry standards and evolving policy requirements.

By applying a structured recommendation process, we ensure that each network investment is:

- future-ready
- adaptable to emerging energy trends, and
- capable of delivering long-term benefits for our customers and stakeholders.

6.8 Review and Approval

To maintain high standards, all solutions undergo rigorous internal and external review. This structured process ensures that each proposed investment is technically feasible, strategically aligned, and delivers value to customers and stakeholders. The review and approval framework consists of the following key elements:

6.8.1 Technical Validation

Our engineers and strategic leads verify the technical feasibility of proposed solutions, ensuring they align with network performance objectives, resilience goals, and regulatory requirements. This validation process ensures that investments are practical, effective, and capable of addressing network constraints in a cost-efficient manner.

6.8.2 Stakeholder Collaboration

Engagement with external stakeholders, including local authorities, large customers, and industry partners, plays a crucial role in refining and validating proposed solutions. This collaboration helps confirm that project assumptions align with regional development plans, customer needs, and broader infrastructure goals. By incorporating stakeholder feedback, we enhance transparency and strengthen confidence in investment decisions.

6.8.3 Governance Framework

All recommendations are presented to our Senior Leadership Team (SLT) for approval, ensuring strategic alignment with the AMP and long-term network development objectives.

The governance process includes formal investment reviews, risk assessments, and cost-benefit analysis validations. The process ensures that selected solutions represent the best value for both the business and customers. This structured review process safeguards transparency and reinforces our commitment to customer satisfaction, regulatory compliance, and long-term network sustainability.

6.9 Execution

Once a solution is approved, the execution phase ensures precise implementation while maintaining alignment with our AMP. This phase ensures that projects are delivered on time, within budget, and to the highest quality standards. It achieves this through structured coordination, risk management, and performance tracking.

6.9.1 Resource Coordination

We coordinate internal and external resources to meet project requirements efficiently. This includes:

- Contractor and Supplier Coordination – ensuring materials and labour are secured in a timely manner to prevent delays
- Scheduling and Phasing – structuring project timelines to align with operational priorities and minimise disruption to customers, and
- Workforce Planning – assigning the appropriate personnel to oversee project delivery and compliance.

6.9.2 Detailed Specifications

Once a project moves into execution, work packages are developed that reflect the approved design, technical requirements, and site-specific conditions.

This process ensures that:

- technical requirements are fully documented for seamless integration into the network
- environmental and operational constraints are accounted for, including geographic and weather-related risks, and
- synergies with other projects are identified to improve efficiency and cost-effectiveness.

6.9.3 Integrated Implementation

To ensure network stability during execution, we collaborate with our managed service provider's Network Operations Team to coordinate implementation. This includes:

- Outage Planning and Customer Communication – minimising service disruptions through strategic scheduling and stakeholder engagement
- Live Network Considerations – implementing safety protocols and contingency measures to manage risks in real-time, and
- Cross-functional coordination – ensuring seamless collaboration between project teams, asset managers, and operations staff.

6.9.4 Monitoring and Performance Tracking

To ensure projects remain on schedule and within budget while maintaining quality standards, we apply:

- Milestone Tracking – regular progress reviews and status updates to ensure adherence to planned schedules
- Annual Works Plan (AWP) Integration – ensuring that all approved projects are incorporated into structured delivery plans, and
- Governance and Reporting – conducting formal investment reviews, cost oversight assessments, and risk evaluations to maintain accountability.

By following these structured execution processes, we ensure that network investments:

- are implemented effectively
- deliver long-term value, and
- enhance network resilience.

6.10 Solution Validation

Solution validation is the final step in our Network Development Planning process, ensuring each solution achieves its intended outcomes and delivers value for customers and stakeholders. This process is critical to maintaining accountability, optimising network investments, and continuously improving future planning and execution.

6.10.1 Performance Benchmarking

We measure outcomes against predefined performance metrics and operational benchmarks. Key indicators such as voltage stability, thermal loading, and power quality are monitored to ensure infrastructure upgrades function as intended. Comparing actual performance to expected results allows for adjustments where necessary, optimising network reliability and efficiency.

6.10.2 Feedback Integration

Lessons learned from completed projects are leveraged to refine future solution development processes, fostering a culture of continuous improvement. Post-implementation reviews assess whether projects have met their intended objectives in terms of improving network capacity, resilience, and operational efficiency. Where deviations occur, root-cause analysis is conducted to enhance forecasting and decision-making in future investments.

6.10.3 Stakeholder Reporting

Providing transparent updates to stakeholders and regulatory bodies reinforces accountability and trust. We ensure that outcomes of major projects and network developments are communicated effectively, aligning with regulatory requirements and industry expectations. Stakeholder feedback is also incorporated to refine planning assumptions and investment strategies.

By ensuring that all projects are rigorously validated, we maintain a high standard of accountability, reinforcing our commitment to delivering reliable, cost-effective, and future-proof network solutions. This structured validation process ensures that network investments deliver sustainable value, supporting the transition to a flexible and resilient energy system.

6.11 Strategic Approach: Future Vision

Our Network Development Plans (NDP) balance today's operational priorities with the transition to a smarter, more resilient, and customer-centred energy system. They set the pathway for how we will continue to adapt to:

- new technologies
- regulatory change, and
- evolving customer expectations over the coming decade.

Looking forward, our planning approach is guided by four themes:

- digital enablemen
- flexibility
- collaboration, and
- sustainability.

We are combining real-time data, predictive analytics, and customer partnerships to:

- co-create solutions that optimise investment
- accelerate decarbonisation, and
- maintain affordability.

The NDP provides a ten-year narrative linking these strategic themes to tangible projects and non-traditional solutions. Collectively, they demonstrate how we are evolving from traditional network growth toward a data-driven, participatory model of energy planning. In this model, customers, communities, and industry partners work together to shape the energy future.

6.11.1 What We Are Moving Towards

We are in the midst of transitioning to a network that not only supports current demand but is also equipped to meet future energy challenges, including:

- climate-related risks, and
- High-Impact, Low-Probability (HILP) events such as Cyclone Gabrielle.

These events underscore the importance of a resilient and adaptive network that maintains reliability under stress and enables rapid recovery. The following sections outline the strategy, innovation initiatives, and progress that underpin this transition.

As electricity use continues to evolve over the next 30, 50, and 70 years, our network will move from serving primarily as a means of supply to becoming a platform for interaction and participation. Through greater automation, visibility, and flexibility, we will keep the network operating within design parameters. This will enable customers to connect faster, maximise the value of their distributed energy resources (DER), and contribute to system reliability. This digital and flexible network will deliver benefits for:

- customers through improved speed and cost of connection, and
- the network by deferring growth-related investment and maintaining affordability across generations.

6.11.1.1 Network Flexibility

We are deploying technologies that enable greater flexibility in the network, such as battery storage systems and demand-side management tools. This will allow for more responsive and dynamic energy distribution.

We have partnered with Gridsight to integrate smart meter data and advanced network analytics. This integration will:

- provide deeper visibility of consumer-owned technologies, and
- improve how we forecast, plan, and manage demand across the network.

This data-driven insight strengthens our ability to:

- identify flexibility potential
- optimise investment timing, and
- deliver a more reliable and affordable service for customers.

6.11.1.2 Scenario-Based Processes

We have adopted advanced scenario-based planning, as highlighted in Section 9 – Capability to Deliver, to navigate uncertainties in:

- future energy demand, and
- the increasing frequency of HILP events.

These scenarios encompass potential future states, including:

- widespread adoption of electric vehicles
- the decentralisation of energy through renewable sources, and
- the impact of severe weather events.

By integrating climate change projections and risk modelling, we identify vulnerabilities and prioritise investments to mitigate risks effectively.

6.11.1.3 LV Network Visibility

Improved low-voltage (LV) visibility is a cornerstone of our approach to resilience and reliability. We are building a near real-time view of network performance and customer demand by integrating multiple data sources, including:

- Network Operational Data (NOD)
- five-minute interval data from Blue Connect, and
- advanced analytics through our partnership with Gridsight.

This enhanced visibility enables faster and more precise responses to network disruptions, particularly in areas exposed to climate-related risks or serving critical infrastructure. It also supports affordability by allowing us to target maintenance and upgrades. This allows unnecessary investment to be deferred through improved situational awareness and predictive analytics.

Over time, these capabilities will support greater customer interaction and participation. They will inform the development of operating envelopes and flexibility zones. These will enable customer-owned technologies, such as EVs, batteries, and rooftop solar, to respond dynamically to network needs. Together, these initiatives strengthen our ability to plan, operate, and adapt the network in ways that deliver value for customers while maintaining resilience and performance across the system.

6.11.1.4 Opportunity Engineering

We are actively exploring innovative solutions to enhance flexibility and reliability in the network. These include leveraging DERs, battery storage, and demand-side management tools to reduce peak demand. These solutions not only improve reliability during normal operations but also enable the network to adapt and recover quickly from unexpected events, such as HILP scenarios.

6.11.1.5 Sustainability, Resilience, and Climate Change Adaptation

Sustainability is at the core of our future strategy. We are focused on reducing the carbon footprint of our operations and enabling customers to adopt low-carbon technologies. Simultaneously, we are strengthening the resilience of the network to withstand future climate-related risks and HILP events. This includes:

- Infrastructure Hardening – strengthening critical assets, such as substations, feeders, and overhead lines, to withstand extreme weather events, including high winds, floods, and storms. This includes building flood-resistant substations in high-risk areas
- Flexible Response Systems – developing rapid-response protocols and systems to minimise downtime during disruptions. This includes deploying mobile substations and advanced restoration tools to support faster recovery after events like Cyclone Gabrielle, and

- Climate Risk and HILP Modelling – integrating detailed climate and risk modelling into our network planning.

This includes evaluating the likelihood of HILP events, assessing their potential impact on energy infrastructure, and identifying areas requiring pre-emptive mitigation. By modelling these risks, we can allocate resources more effectively to reduce vulnerabilities and enhance preparedness.

6.11.2 Hosting Capacity and Distributed Generation

We are working with customers, installers, and industry partners to enhance the network's hosting capacity for both load and generation. This work, supported by national changes to voltage standards and the AS/NZS 4777 inverter framework, increases customers' ability to export renewable generation safely and efficiently.

We publish capacity maps for both network capacity and DG hosting and are exploring internal and external providers to automate the assesment of routine connections.

6.12 Distributed Generation (DG)

We recognise the critical role of distributed generation (DG) in enabling New Zealand's transition to a low-carbon, flexible, and customer-centric energy system. With the growing adoption of renewable technologies such as solar, battery storage, and electric vehicles, we are developing an intelligent network. This network integrates DG while maintaining reliability, stability, and affordability. Listed below are our key initiatives.

- Future-Focused and Intelligent DG Integration – we are enhancing our network infrastructure, data systems, and operational processes to support higher volumes of DG. This includes upgrading low-voltage (LV) hosting capacity using:
  - advanced analytics, and
  - spatial data from our digital platforms.

  This enables a more dynamic and accurate understanding of connection potential. Increased penetration of smart meters and monitoring data allows us to plan proactively and optimise DG integration at both the grid and local levels.

- Automated DG Processes – to streamline connections and improve customer experience, we are automating the DG application and approval process. This will enable faster, more transparent, and consistent assessments of small- and medium-scale DG connections, reducing manual handling and improving turnaround times for customers.

- Flexible Connection Options – we are introducing flexible and conditional connection arrangements to manage capacity constraints in areas with high DG uptake. These agreements allow DG providers to connect with export flexibility, such as curtailment or time-of-day management, ensuring safe and efficient operation without compromising network performance. The AS/NZS 4777.2 inverter standard remains the baseline configuration for mass-market DG. It allows each connection to achieve maximum export capability while maintaining system stability.

- Dynamic LV Visibility and Variable Export Profiles – enhanced LV network visibility through NOD, Blue Connect, and Gridsight enables us to move from a static to a variable export model. This will maximise customer value while maintaining the integrity of the network. This data-driven capability ensures that customer-owned DERs can contribute to grid support when needed, creating a smarter and more adaptive network.

6.13 Resiliency and Sustainability

Our NDPs prioritise resilience and sustainability to meet the challenges posed by a rapidly changing energy landscape and increasing climate risks. The devastating impact of Cyclone Gabrielle in 2023 underscored the importance of planning for extreme weather events. As highlighted in Section 9 – Capability to Deliver, this includes:

- phased investments in substation rebuilds, and
- adaptive strategies to ensure the network can withstand and recover from similar events in the future.

Our commitment to sustainability aligns with the objectives outlined in Section 2 – Background and Objectives. These plans integrate renewable energy sources, support DERs, and adopt advanced technologies that enable a flexible and intelligent network. By doing so, we are proactively addressing climate change impacts while supporting the transition to a low-carbon economy. Listed below are our key initiatives.

- Investments in Climate-Resilient Infrastructure – strengthening critical assets to reduce vulnerability to extreme weather events.
- Integration of Renewable Energy – facilitating the connection of solar, wind, and energy storage to create a smarter, greener network.
- Adaptive Planning Processes – leveraging scenario-based planning to prepare for uncertainty and rapidly evolving conditions.

These initiatives ensure our network remains reliable and adaptable, safeguarding our customers' needs while advancing long-term sustainability goals.

6.14 Ten-Year View and Non-Traditional Solutions

Ten-year View

Central Hawke's Bay's network continues to experience steady but spatially concentrated load growth. Residential subdivisions are expanding near Waipawa and Waipukurau, while rural irrigation and processing loads drive strong summer peaks. The region remains predominantly rural, with long 11kV feeders and limited meshing, making voltage management and fault restoration key priorities.

Demand growth is expected to average 1.1–1.3 % p.a. over the next decade, with pockets exceeding this where new horticultural and agri-processing developments occur.

Industrial growth is centred in Waipukurau, and we are actively seeking flexible load solutions with these connections.

Climate-driven weather variability and high soil saturation events remain material risks, influencing our resilience planning focus.

Growth and Major Customers

Local government planning identifies multiple rural-residential developments and irrigation expansion along the Ruataniwha Plains. Several commercial and processing customers (> 0.5MVA) are investigating process-heat electrification and on-site solar. This is contributing to new load while affecting voltage profiles on shared feeders. Coordination with developers is essential to stage connection timing and minimise reinforcement overlap. We are working with major load customers to codesign flexible solutions with benefits to both parties. These will enable customers to install more cost-effective dedicated supplies and Centralines to defer investment in major network assets.

Non-Traditional Solutions

- Offloading and network balancing – applying operational switching and phased conductor upgrades to manage peak irrigation corridors while deferring major substation augmentation.

- Flexibility and co-creation – actively working with large connections to understand loading profiles and the capability to manage peaks to avoid network constraints.

- Dynamic connections – conditional export limits and voltage-dependent control on new distributed generation to preserve hosting capacity.

- LV visibility – Deployment of smart-meter voltage analytics across key rural feeders to pre-empt undervoltage during irrigation peaks.

- Resilience measures – targeted automation of high-risk rural feeders (auto-sectionalisers and remote reclosers) to reduce outage duration and improve restoration speed.

- Collaboration with our managed services provider – continued alignment of sub-transmission design standards and emergency-support protocols under the Management Services Agreement (MSA), ensuring interoperability of control and communications systems.

Key Drivers or Projects

The following material and non-material projects focus on:

- reinforcing rural feeders with sustained irrigation growth
- enhancing voltage regulation through automation and dynamic control
- strengthening supply security for Waipukurau GXP and Waipawa Zone, and
- improving restoration performance through modular switchgear and targeted vegetation management.

These initiatives directly implement the regional growth and resilience themes outlined in this section.

6.15 Material Projects and Compliance

Previous RAMP plans included several major investments in the Waipukurau and Waipawa 33 kV network. However, customer engagement and offloading initiatives have reduced the anticipated loading on these assets. To further defer these works, we are implementing a fast-transfer scheme between Waipawa and Waipukurau (see project 215777 below). This solution has allowed significant projects to be postponed to the latter part of the ten-year planning horizon, resulting in a reduction in forecast expenditure. To support this mitigation, we are actively seeing flexible solutions, especially with industrial customers undergoing expansion or decarbonisation activities.

Our material projects are developed and delivered in full compliance with all regulatory and legislative requirements, ensuring alignment with performance standards and industry best practices. This includes meeting SAIDI and SAIFI reliability benchmarks to provide customers with an uninterrupted, high-quality electricity supply.

These projects also support New Zealand's net-zero carbon emissions target by 2050, facilitating the adoption of renewable energy and low-carbon technologies. Our Asset Management Policy (CL-AMS-0001) and Risk Management Framework (CL-RM-1001) guide our risk-based planning approach. This ensures investments are prioritised to address high-consequence risks, such as ageing infrastructure and climate-related vulnerabilities.

Beyond compliance, these projects deliver significant value for customers and stakeholders by enhancing the network's reliability and resilience, particularly during adverse conditions. Increased hosting capacity for renewable energy empowers communities to contribute to New Zealand's energy transition actively. Optimised investments strike a balance between cost-effectiveness and long-term network performance. Further details on our material projects can be found in the subsections below.

6.15.1 Material Projects for 2026/2027

There are no Material Projects for 2027.

6.15.2 Non-Material Projects for 2026/2027

Constraint Description	Options	Costs ($000)	Solution
208275 - CL 86 - Upgrade LV Network in Otane			
Transformer B4-230 has been identified as overloaded, with additional voltage issues identified.	Network – Upgrade transformer B4-230 and rebuild LV conductor.	100	B4-266 was recently installed and has spare capacity. If the LV conductor is upgraded, B4-230 can be offloaded and will not require upgrading.
	Network – Reinforce LV and offload to B4-266.		
	Non-Network – Procure flexibility. Flexibility resources are unlikely to be derived in this area.		

Table 6-11: Non-Material Projects for 2026/2027

6.16 Material Projects for 2027/2028 to 2030/2031

Material projects for the 2027/28 to 2030/31 years are outlined below. These projects have had constraints verified based on predicted growth forecasts, existing planning philosophies and the resultant network model.

Projects in this period have had high-level options analysis and the most probable solution identified.

Constraint Description	Options	Costs ($000)	Solution
206178 – Upgrade 33kV Cable at Waipawa Substation			
Predicted overload on 33kV cable supplying Waipawa Substation. The existing circuit is constrained by a 70mm Aluminium cable at the Waipawa substation and at the bridge crossing the Waipawa River. This asset is constrained for shared structure failures on the Waipukurau 33kV circuits, where Waipawa is required to provide contingency support to Waipukurau.	Network – Upgrade 33kV cable. Upgrade 320 metres of 33kV Al cable at Waipawa substation and 405 metres at the Waipawa River bridge.	560	Upgrade 33kV cable
	Network – Reinforce 11kV offloads. Local 11kV conductors are rebuilt and automated to enable a fast transfer scheme. Limited effect as the 11kV offload to Waipukurau would primarily be supplied by Waipukurau.		
	Non-network – Procure flexibility. There are likely flexibility resources in Waipukurau that could be leveraged to reduce the observed risk for this fault. Flexibility and DER will be explored to defer this investment, but a network solution is still required in the five-year period for predicted loading.		
208274 – Feeder 4 – 11kV Conductor Upgrade			
Existing backfeed capability between CL 04 and adjacent CL 75 is limited by 6km of Gopher conductor along SH2.	Network – Reconductor. Reconductor 6 km of line.	900	Reconductor
	Network – Build a new backfeed. Significant construction of new 11kV assets to connect CL 04 to CL 75.		
	Non-Network – Accept risk. Security levels breached for customers in Ashley Clinton.		

Constraint Description	Options	Costs ($000)	Solution
208292 – Create Backfeed Between Feeder 74 and 75			
A security review has highlighted CL74 and CL75 as requiring mitigation for network faults.	Network – New Route. Install 1.7km of overhead line between CL74 and CL75 along SH2.	450	Establish a new Route
	Non-network – Accept risk. Security criteria for CL 74 and CL 75 are breached.		
215777 Waipukurau to Waipawa fast transfer scheme			
Growth at Waipukurau (residential and industrial) and Waipawa (residential) is predicted to overload the 33kV system supplying Waipukurau and the transformers at Waipukurau and Waipawa for security configurations. While an 11kV interconnection exists between sites, this is not sufficient to offload more than 1MVA of load. A reinforced offload allows Centralines to defer multiple major reinforcement projects.	Network – Upgrade 33kV circuits supplying Waipukurau. Upgrade Waipukurau Transformers, and upgrade Waipawa Transformers.	500	While procurement of flexibility is the initial mitigation, a high-capacity backfeed is additionally required to ensure Waipawa and Waipukurau can provide 4MVA of mutual support for security events. Increasing this transferability allows the deferral or resolution of multiple capital projects.
	Network – Install a voltage regulator to reinforce backfeed capabilities.		
	Network – Establish a dedicated express feeder between Waipawa and Waipukurau.		
	Non-network – Procure flexibility in the Waipukurau industrial precinct.		

Table 6-12: Material Projects for 2027/2028 to 2030/2031

6.17 Material Projects for 2031/2032 to 2035/2036

While a range of potential system growth projects have been identified across the ten-year planning horizon (2031/2032 to 2035/2036), the likelihood of all these projects materialising is considered to be very low. These projects are currently at the early identification stage, with high-level solutions and indicative cost estimates prepared. However, the actual need for these investments will depend on how demand unfolds over time.

In recognition of this uncertainty, we have provisioned approximately $10 million over the ten-year period for system growth. This funding will be apportioned as specific projects materialise and as constraints are confirmed through our annual planning process. Each year, identified constraints and proposed solutions will be reassessed to confirm whether they remain valid and whether their timing has changed. More detailed investigation and design will be undertaken only when the project triggers are met.

Customer feedback indicates that the current balance between price and reliability is appropriate. As such, future investment in growth-related upgrades will be modest and targeted, with a focus on minor improvements to underperforming feeders. This ensures we continue to address localised reliability issues without over-investing ahead of need. Safety-driven upgrades are also expected to remain relatively limited throughout the planning period. This reflects the overall robustness of the network, favourable asset age profiles, and the ongoing investment in asset renewals and replacements outlined in Section 7 – Asset Management Planning.

Constraint Description	Options	Cost ($000)
206173 – Upgrade Waipukurau 33kV Lines 1 and 2		
Predicted growth will exceed the rating of the Waipukurau 33kV circuits during contingency and normal operation. Currently, this line is being redesigned at 75°C, allowing the constraint to be deferred to the 2031-2036 period. The recent downturn in residential growth has reduced the network-normal risk. Project 215777 is predicted to defer this project to the end of the ten-year period or beyond.	Network – Reconductor	6,000
	Network – Build new circuits	
	Non-Network – Flexibility and offload schemes	
208283 – Waipukurau Zone Substation - N-1 rating exceeded – Upgrade substation		
Long-term growth projections from council (residential) and near-term industrial intensification will result in loads above the existing Waipukurau Substation rating. While this constraint was initially managed via load balancing to Waipawa on the 11kV network, continued growth will exceed the ability of the 11kV network to mitigate this risk. Project 215777 is predicted to defer this project to the end of the ten-year period or beyond.	Network – Upgrade transformer only. The primary constraint can be resolved initially by upgrading the 33:11kV transformers.	3,000
	Network – Establish a new zone substation. The industrial and residential customers of Waipukurau are split via the establishment of a 'Waipukurau East' residential substation.	

Constraint Description	Options	Cost ($000)
	Network – Upgrade existing substation. The existing Waipukurau Substation is rebuilt as a full 28MVA site.	
	Non-network – Flexibility and offload schemes.	

Table 6-13: Material Projects for 2031/2032 to 2035/2036

6.18 Summary

Our NDPs are not only focused on meeting today's operational needs but are a critical part of shaping a future-ready electricity network. As we navigate the transition to a low-carbon, more decentralised energy system, our planning approach ensures that we are enabling a resilient, flexible, and customer-centric network.

We are preparing the network to accommodate emerging technologies and new patterns of electricity use by:

- enhancing network flexibility
- improving visibility across the low-voltage network, and
- supporting the integration of distributed energy resources such as solar and battery storage.

These efforts ensure that we remain well-positioned to respond to increasing electrification, evolving customer expectations, and the challenges posed by climate change. Our commitment is to maintain a safe, reliable, and affordable electricity supply. At the same time, we enable innovation, empower our communities, and support the region's long-term energy resilience and sustainability.

CENTRALINES LIMITED

ASSET MANAGEMENT PLANNING

SECTION 7 / WĀHANGA 7

Our People Our Power

Contents

7. ASSET MANAGEMENT PLANNING

7.1 Introduction to this Section

This section provides an overview of our approach to asset management planning. The specific planning processes covered within this section are:

- Asset Renewal Planning
- Maintenance Planning, and
- Vegetation Planning.

These planning processes are critical to provide assurance that risks to our asset portfolio are effectively managed and opportunities for improvement are realised.

This section also contains summary information on assets, including:

- asset descriptions and quality
- asset condition and performance assessments
- age profile graphs
- maintenance plans
- relevant Asset Management Objectives (AMOs) and associated replacement and refurbishment drivers
- tables detailing asset maintenance and renewal expenditure projections, and
- lists of known renewal projects over the planning period.

A table mapping the requirements of the Electricity Distribution Information Disclosure Determination 2024 to the information provided is included in Appendix B.

Our managed services provider is certified to ISO 55001, which is the international standard that contains the requirements specification for an integrated, effective asset management system. Key asset management planning processes and continuous improvements developed through this certification, including asset renewal and maintenance planning, will be fully adopted over time to manage our asset fleet. This will result in the enhancement of processes described in this section.

7.2 Overview of Asset Management Planning

7.2.1 What is Asset Management Planning?

Asset management planning is the process that develops and manages the plans that specify future work on the asset portfolio over a ten-year planning horizon. These processes use asset information and apply risk management principles to ensure that decision-making is robust and fact-based.

All work proposals submitted to the Asset Management Plan (AMP) must meet certain information requirements, including assessment against the AMP Risk Schema. This ensures that:

- an acceptable balance between cost, risk and performance can be achieved, and
- resources can be efficiently and prudently deployed.

The outputs are plans that specify clear tasks and projects to be initiated and scheduled to:

- maximise the efficiency of resource utilisation, and
- capitalise on any synergies to effectively manage asset-related risks.

The desired outcome of asset management planning is to achieve our AMOs (refer to subsection 2.3.4).

Our Asset Management Planning System is represented in Figure 7-1. The planning processes covered in this section are highlighted in orange.

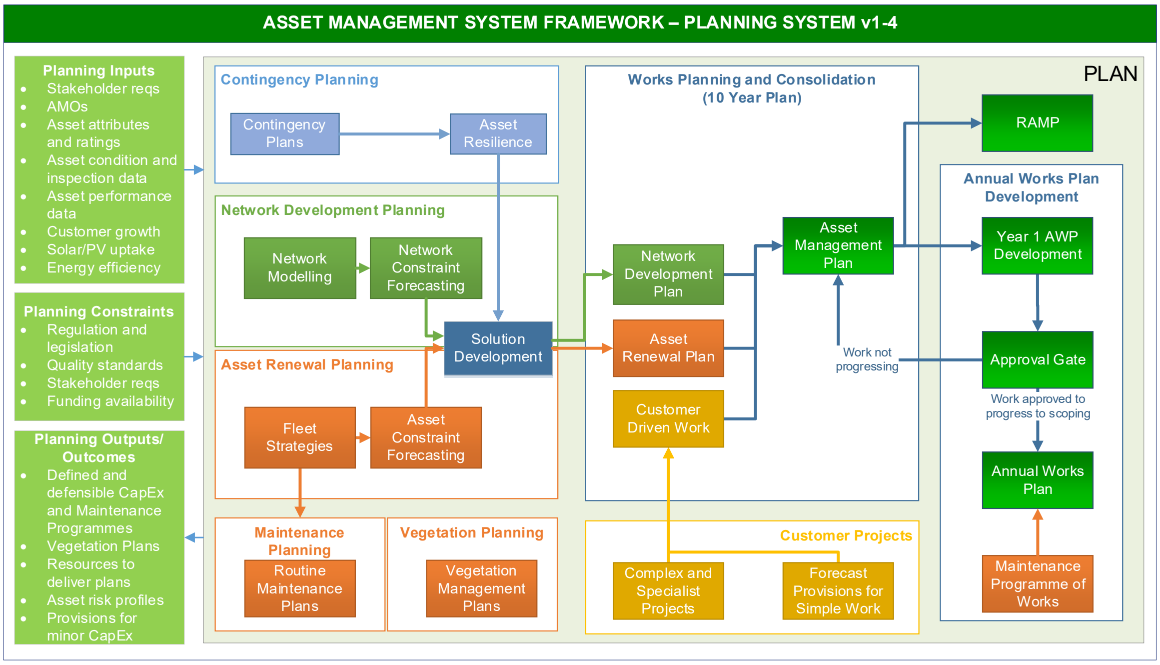

Figure 7-1: Asset Management System Framework – Planning Systems

7.2.2 Key Elements of Asset Management Planning

Table 7-1 provides a brief description of the key elements of the Asset Management Planning processes covered in this section.

Asset Management Planning Process – Key Processes	Description
Maintenance Planning	Establishment of annual routine maintenance plans, including: • preventive maintenance programmes, and • asset inspection and monitoring programmes.
Asset Renewal Planning	Identify and quantify risks in the asset portfolio relating to asset condition and capture these as constraints in the AMP. Consider options, develop solutions, and specify project proposals (including asset risk profiles and associated risk costs) to: • address high-priority asset condition risks, and • submit these proposals to the AMP.

Asset Management Planning Process – Key Processes	Description
	These project proposals may include solutions to other types of identified constraints, i.e., capacity-related issues in the same geographical confines. Specify project proposals to improve the resilience of the asset portfolio based upon requirements from enterprise risk management and contingency planning processes.
Vegetation Planning	Establishment of annual plans for the management of vegetation, including trees encroaching the line corridor, that represent risk to the asset portfolio.

Table 7-1: Asset Management Planning – Key Elements

7.2.3 Key Asset Management Planning Objectives and Drivers

As previously mentioned, the desired outcome and drivers of asset management planning are to achieve our AMOs. Processes associated with asset management planning, therefore, have been developed to align and enable the AMOs in Section 2 – Background and Objectives, Table 2-3.

Affordability remains a central objective in our asset management planning, but it is never pursued at the expense of safety or reliability. Our approach is to ensure that all initiatives and investments progressively improve the resilience of our network. This is balanced with maintaining cost-effectiveness and ongoing delivery of safe and reliable service.

One such approach for improving the affordability is to make better use of the existing infrastructure we already have. This notion is not new and is a challenge that many infrastructure managers face in New Zealand. The network has to be renewed and needs to accommodate regional growth. However, the cost of doing work continues to grow, and network investment needs to be sustainable and affordable for the communities we serve. This means:

- improving maintenance to lengthen the useful life of assets
- optimising the performance and capacity of existing assets before considering new investments, and
- considering other non-asset options to offset short-term peak asset usage.

We are committed to maximising the utilisation of our assets, but never at the expense of increased risk. Our planning and operational decisions are always made with careful consideration of health and safety, as well as overall performance. This ensures that while we strive for higher asset utilisation, we do not compromise on the standards that protect our people, the public, and the reliability of our network.

For the last few years, focus has been drawn to the asset fleets which have carried the greatest risk, such as overhead conductors, poles and associated hardware. It is anticipated that the outlook of risk will change in the coming years, and there will be a greater dependence on the low-voltage (LV) network, particularly for the urban centres of Central Hawke's Bay. As part of this changing dependency, it is anticipated that the architecture of the low-voltage network will also evolve to suit the:

- needs of a decentralised electrical network, and
- uptake of distribution energy resources (DERs) and consumer energy resources (CERs).

We expect this may include opportunities to rationalise certain asset fleets as components of the LV network.

As the future unfolds and CER becomes a more common feature of the network architecture, new opportunities will emerge. These opportunities will enable a review of the value proposition in network areas where many assets span large geographical areas to serve only a small number of customers. Existing assets with high ongoing lifecycle maintenance costs to maintain, or assets due for renewal, will be able to be evaluated against non-traditional network solutions. This may offer more cost-effective energy distribution to the communities served.

7.2.4 Asset Management System (AMS)

Figure 7-1 depicts, at a high level, our Asset Management System (AMS), which ensures 'line of sight' and alignment across the organisation.

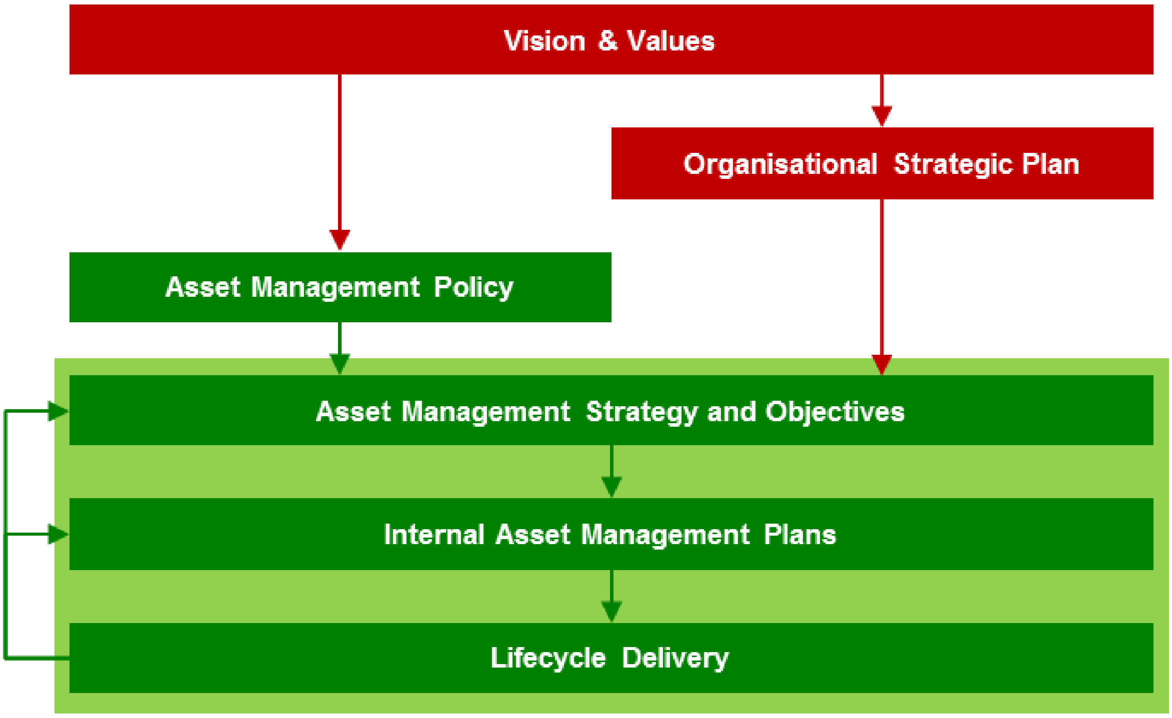

Figure 7-2: Asset Management System

7.3 Maintenance Planning

7.3.1 Maintenance Overview

Maintenance planning is undertaken to ensure that our assets can support the achievement of our AMOs. Maintenance activities are designed to support an asset effectively, continuing to perform its intended function until it requires renewal. This is achieved by understanding the condition of assets and how the condition changes over time by:

- inspecting and testing
- preventatively maintaining the assets, and
- correcting defects as they are identified.

7.3.2 Maintenance Planning Drivers

Maintenance is targeted to ensure that our assets can support the achievement of AMOs while optimising the balance between cost, risk, and performance. Supplementary, aligned, maintenance drivers are outlined in Table 7-2. Many of these drivers are integral and encompassed in our AMOs.

Driver	Driver Descriptions
Public, Employee and Contractor Health and Safety	Ensuring assets are fit for purpose and in a condition that allows them to be safely operated by our employees.
	Ensuring assets are physically secure and will not cause harm or be easily accessed under normal circumstances by our customers or members of the public.
	Taking all practicable steps to ensure any asset failures do not: • cause harm to our customers, contractors, members of the public and the environment, or • cause damage to third-party property.
	Taking all practicable steps to ensure our assets operate as intended and designed, e.g., a recloser or circuit breaker will operate correctly in the event of a fault and safely isolate the faulted section of the network.
	Ensuring maintenance policies, programmes and practices align and are consistent with our Public Safety Management System (PSMS).
Legislative and Regulatory Compliance	Ensuring our maintenance planning, policies and programmes meet all legislative and regulatory requirements.
	Where appropriate, ensuring our maintenance planning practices as a minimum conform to: • industry best practice • relevant standards and guidelines, and • original equipment manufacturers' (OEM) specifications.
Asset Information Gathering	Invasive and non-invasive testing, inspections, and diagnostics of assets to ascertain their status and condition. This information is essential in asset management decision-making. It is used to drive much of the asset renewal programme and the planned and corrective maintenance programmes.
Managing Risks of In-service Failures	Ensuring assets are fit for purpose and are adequately maintained to function as intended, over their useful lives.
	Ensuring our maintenance practices keep assets functioning at a level that meets the current Statement of Corporate Intent (SCI) network reliability performance targets.
	Extracting optimal value (including life extension) from our assets by timely, efficient, and cost-effective maintenance interventions.

Driver	Driver Descriptions
	Ensuring asset testing and maintenance inspections are effective by: • obtaining relevant, accurate, and reliable, fit-for-purpose condition assessment data, and • transforming this data and information into knowledge that supports optimal asset management decision-making.
Cost/Efficiency	Focusing on optimising costs by implementing appropriate maintenance strategies that proactively identify and address potential asset/network issues before they become faults, i.e., planned, and proactive versus reactive maintenance.
	Ensuring the best decisions are made between different modes of maintenance (repair, refurbish, or replacement) using: • sound engineering judgement • existing tools, and • the development and enhancement of expert decision support systems.
	Working with our managed services provider to: • identify and monitor efficiency measures, and • make continuous improvements to procedures, processes, and practices, to improve the efficiency and delivery of our maintenance programme.
Manufacturer Specifications and Recommendations	Ensuring published guidelines on the maintenance of equipment are met (where appropriate) to ensure best practice.

Table 7-2: Centralines' Detailed Maintenance Drivers and Descriptions

7.3.3 Maintenance Planning Assumptions

Our current maintenance strategies and plans have been developed and are being executed based on the assumptions detailed in Table 7-3.

Centralines' Maintenance Planning Assumptions
Data being used in asset management decision-making is fit for purpose.
No significant changes in legislative, regulatory, or statutory requirements, e.g., health and safety, are expected to require major changes in focus or priorities.
Current network reliability performance targets are maintained, i.e., there is no material change to SCI SAIDI/SAIFI targets.

Table 7-3: Centralines' Maintenance Planning Assumptions

7.3.4 Maintenance Planning Process

Our current maintenance planning approach is shown and explained in Figure 7-3 and Table 7-4.

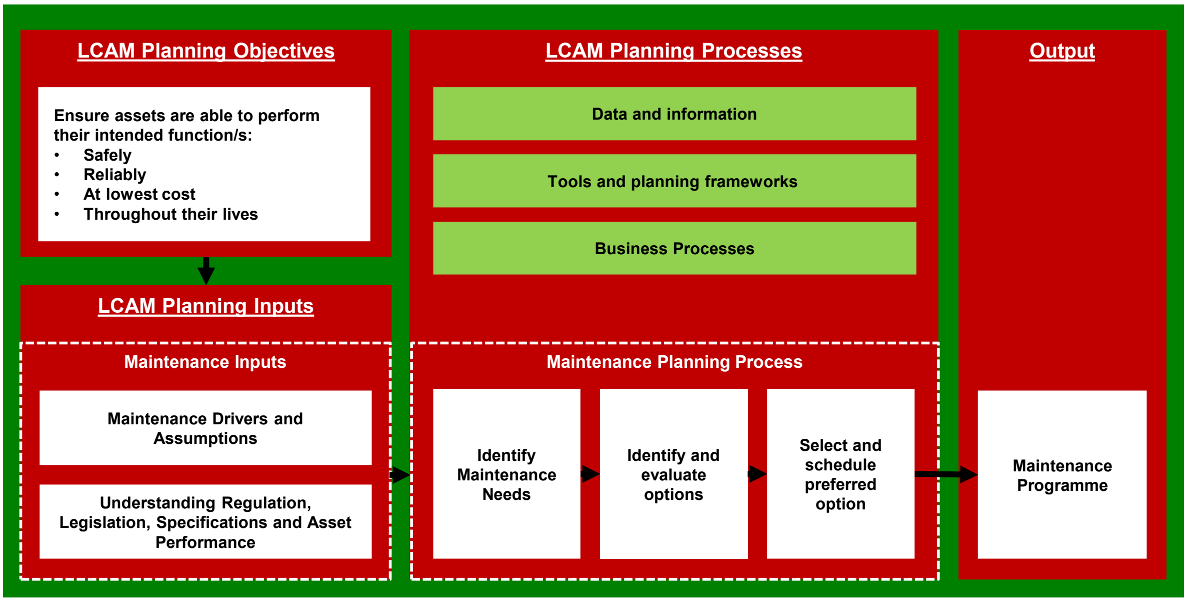

Figure 7-3: *Maintenance Planning Approach*

Group	Element	Description
Maintenance Inputs	Drivers and Assumptions	Maintenance drivers and assumptions are balanced qualitatively by asset engineers to develop recommended, planned maintenance activities for each asset class.
	Regulations, Legislation, Specifications and Asset Performance Expectations	Asset engineers review relevant regulations and legislation, as well as manufacturers' specifications/recommendations for asset maintenance. Asset engineers weigh these requirements against the asset's performance expectations and any associated risks to determine the required maintenance types and levels.
Maintenance Planning Process	Identify Maintenance Needs	Our asset engineers identify maintenance requirements. The asset engineers are tasked with assessing relevant regulations and legislation, and the manufacturers' specifications for recommended maintenance types/levels. These 'base' requirements are then blended with: • the asset engineers' requirements for asset information gathering, and • the asset's individual performance requirements and history.
	Identify and Evaluate Options	The types of maintenance activities performed are driven primarily by: • the requirements of the maintenance programme, and • the availability of technology/equipment and contractor resources. Asset engineers determine what maintenance type will best meet the requirements and can be delivered.

Group	Element	Description
	Select and Schedule Preferred Option	A formal process of recommendations, challenge, review, and finalisation is followed to ensure outputs are optimal and deliverable. It is during this challenge and review process that contractor resourcing and budgeting are taken into consideration.
Maintenance Output	Maintenance Programme	The maintenance programme is the combined output of the maintenance planning process. It is an annually updated programme of work to maintain assets over the coming ten-year period. Types of maintenance included in the maintenance programme are described in subsection 7.3.5.

Table 7-4: Centralines' Maintenance Planning Process

7.3.5 Maintenance Approaches

We employ a combination of methods to maintain, inspect and test our asset portfolio through our planned and reactive/corrective maintenance programmes. These include age, time, condition, reliability, and risk-based approaches.

7.3.5.1 Age-Based Maintenance

While asset age is becoming less of a driver in determining when a maintenance intervention should occur.

Maintenance regimes and influences on the renewal programmes will be influenced by:

- age-related factors such as insulating materials in circuit breakers, e.g., oil vs vacuum or gas,
- the cost and availability of spares and asset functionality.

7.3.5.2 Time-Based Maintenance

Time-based maintenance includes inspections and testing conducted at a predetermined frequency or interval. This frequency is influenced by drivers such as:

- regulatory and statutory requirements
- industry guidelines and best practice
- our engineering experience, and
- original equipment manufacturers (OEM) specifications.

7.3.5.3 Condition-Based Maintenance

Condition-based maintenance occurs when it has been determined that the most effective action is a maintenance intervention based on an asset's current condition. Condition-based maintenance occurs through effective asset condition monitoring, including inspections and testing, or as identified by other means such as our asset defect process (refer to subsection 7.3.7).

7.3.5.4 Risk-Based Maintenance

We continue to move towards Condition Based Risk Management (CBRM), which considers:

- the condition of an asset, and
- the consequences and associated risks of that asset failing.

CBRM, over time, will become more influential in the identification and prioritisation of maintenance and renewal programmes and tasks.

7.3.5.5 Reliability Centred Maintenance

Reliability centred maintenance focuses on maintaining system reliability and performance. In our context, this includes:

- the identification of failure modes through Failure Mode and Effects Analysis (FMEA), or
- analysis of reported defects and the subsequent identification of maintenance or potential renewal strategies to mitigate these failures.

7.3.6 Maintenance Categories

Our asset-specific maintenance programmes and related activities, incorporating the above approaches, are classified into the following categories. These categories are aligned to the Determination definition.

7.3.6.1 Service Interruption and Emergency Maintenance (Urgent Reactive Maintenance)

This is reactive maintenance undertaken in the immediate or short-term in response to an unplanned event. Typically, these events relate to network faults caused by asset failures, vegetation, adverse weather, and third-party damage, etc.

We generally break this category down into two levels of response.

1. First Response – This is categorised as the initial response to:
    - find and isolate the fault
    - mitigate any health and safety risks, and
    - subsequently fully or partially restore the supply if possible.
2. Second Response – This is further reactive maintenance work required beyond the scope of First Response to undertake either temporary or permanent repairs and restore supply. All the above relate to operational expenditure. A reasonable portion of the second response activities will involve renewal of capital items. They will be carried out as capital expenditure under 'Asset Replacement and Renewal'.

7.3.6.2 Vegetation Management

Vegetation management includes the inspection, liaison and cutting activities (planned and reactive) associated with the control of vegetation for the primary purpose of compliance with the Electricity (Hazards from Trees) Regulations 2003. Our vegetation control programme is determined by the:

- outputs of routine feeder inspection programmes, and
- vegetation-related defects identified on the network through several other ways, including customer and staff notifications.

We are constantly reviewing and developing our vegetation control programme to:

- improve the efficiency of the cutting programme, and
- to mitigate the issues created by vegetation both within and outside the powerline corridor.

An example of this is the introduction of an herbicide application programme and the optimisation of the programme using aerial feeder inspections when undertaken.

7.3.6.3 Routine and Corrective Maintenance and Inspection (Planned/Preventative Maintenance)

This category encompasses prescribed, budgeted maintenance tasks (maintenance baseline) carried out to an agreed schedule and typically includes:

- routine asset maintenance and servicing
- inspections
- testing, and
- condition assessments.

A significant portion of this maintenance is prescribed by maintenance standards and related service codes adopted by Centralines.

This category also includes:

- non-urgent remedial work carried out as planned activities after service interruption and emergency work, or
- maintenance identified by our defect process, asset condition assessments, testing, inspections, and field observations.

7.3.6.4 Asset Replacement and Renewal Maintenance

Asset replacement and renewal maintenance relate to the replacement or renewal of non-capital items. This covers planned remedial work on assets, including replacement of asset components and asset refurbishment. Typically, this maintenance is initiated because of asset inspections and testing, condition assessments and defect reporting.

7.3.7 Defect Process

We have a defect process that will be incorporated into our managed services provider's Enterprise Asset Management System (EAMS).

The process details how identified network asset defects are reported, prioritised, and remediated. All identified defects are categorised in terms of urgency based on the rationale outlined in Table 7-5.

Note: The examples given below are indicative only and will be subject to the criticality of the asset and severity of the defect. These factors will be considered by the competent person raising the defect and will determine the priority.

Priority	Defect Type	Description	Response	Indicative Examples
P5	Minor Defect	Defects that do not affect the operational security of the network or present a safety hazard, as determined by a competent person on site. Level of deterioration that will not result in functional failure before the next scheduled preventive maintenance or inspections and monitoring work.	Defect to be reported to be considered for inclusion in the AMP as part of a broader body of work in the future.	Graffiti on a pole, transformer, pillar, etc. A danger sign is missing on a pole. Pollution or moss build-up on an insulator. Missing possum guard. Cable riser duct with slight ultraviolet (UV) damage. Insulation breakdown on the LV overhead conductor. Deteriorating paintwork on substation building. Lost connection to the weather station or thermal resistivity sensor. A discovered design issue with a specific model or age range of equipment that can be opportunistically resolved. Minor software/firmware issue.
P4	Non-urgent defect (12 months)	Defects that do not affect the operational security of the network or present an immediate safety hazard, as determined by a competent person on site. Level of deterioration that should not remain for more than 12 months.	Work is to be raised as 'Corrective Work' and scheduled for an opportune time.	A staywire fence is broken or missing in a sheep paddock. Ring main unit (RMU) has minor cracks in the concrete foundation.

Priority	Defect Type	Description	Response	Indicative Examples
P3	Non-urgent defect (3 months)	Defects that do not affect the operational security of the network or present an immediate safety hazard, as determined by a competent person on site. Level of deterioration that should not remain for more than three months.	Work is to be raised as 'Corrective Work' and scheduled.	An air break switch (ABS) is difficult to operate, or has a broken or bent handle. A leaning pole exceeding design limits. Overhead conductor clearance issue to road/building. Bent mounting bracket for overhead equipment.
P2	Urgent Defect (1 month)	Defects that mean: • the network will be operated in an abnormal configuration until repairs can be made, or • that failure of the asset is possible, but does not present an immediate safety hazard as determined by a competent person on site. Level of deterioration that should not remain for more than four weeks.	Work is to be raised as 'Corrective Work' and scheduled for the current month.	High partial discharge is recorded on an insulator. A pole with loose foundations. A high temperature detected on a connection compared to adjacent equipment. One earth missing or broken, but the other earthing on nearby assets is still present, and the Multiple Earthed Neutral (MEN) system is not compromised. Bent cooling fins on a transformer.
P1	Critical Defect	Defects that affect the operational security of the network, and/or are a safety hazard as determined by a competent person on site. Level of deterioration that requires immediate action.	Defect is to be addressed immediately. Work is to be raised in EAMS after 'Corrective Work' is complete.	Is unsafe and requires immediate rectification. Branch or other material on the overhead conductor. Missing screws due to vandalism. Heavily frayed overhead conductor. Pillar is unsecured, allowing access to the internals. Arcing equipment. Cracked insulator.

Table 7-5: Defect Priority Descriptions

7.4 Asset Renewal Planning (ARP)

7.4.1 ARP Purpose

The purpose of Asset Renewal Planning (ARP) is to identify and prioritise assets for replacement or corrective maintenance. This planning is based on the condition-related risk of in-service failure and the likely consequences should a failure occur.

The ARP process culminates in the creation of a risk-based, ten-year asset renewal plan. Years one and two are very detailed in terms of specific:

- verified constraints
- risk scoring
- options analysis
- optimal solution
- project scope, and
- cost.

Years three to five are less detailed. While constraints may be identified with defined risks, not all will be verified or specific solutions identified, and costings will be high-level.

Years five to ten are again less detailed. All constraints are reviewed and updated on at least a six-monthly basis to:

- incorporate the latest asset information, and
- ensure any new constraints are identified and appropriately managed.

7.4.2 ARP Overview

ARP involves balancing the risk of assets failing in service and the subsequent consequences against the cost of renewal or other life-extending interventions. ARP accesses diverse sources of information and is reliant on determining and understanding the physical condition of assets. This information is transformed into knowledge and actionable priorities by decision support tools such as Condition Based Risk Management (CBRM). The outputs of these models are supplemented by:

- the application of expert engineering judgements, and
- the verification by experienced field and specialist personnel who have detailed knowledge and experience of specific asset classes.

Where possible and available, standard information relevant to asset attributes and lifecycle information is stored in asset fleet strategies. These strategies recommend:

- the monitoring and inspections required to ascertain asset health, and
- asset-specific considerations for the scope and timing of asset renewals.

Asset attribute and condition information, including most inspection results and test data, is predominantly recorded within our managed services provider's Enterprise Asset Management System (EAMS). This information supports the establishment of asset condition indices, which represent the likelihood of an asset failing within a given timeframe.

Another important risk factor to be considered is the consequence should an asset fail. A consequence framework has been developed. This framework provides an output for each identified asset constraint and is combined with the likelihood factor (asset condition indices). This enables the establishment of a holistic risk assessment for each asset constraint, which facilitates the prioritisation of issues across the asset portfolio within the AMP. A risk cost can also be derived to support the justification of the work.

We have adopted our managed services provider's Risk Management Framework (AMS-0003). This document provides guidance on managing risk within the AMS. This document describes four key activities:

1. Identify risk
2. Analyse risk
3. Evaluate risk, and
4. Treat risk.

The ARP process is set out in Figure 7-4 and shows the mapping to AMS-0003 activities. Submitting asset risks to the AMP is not considered part of risk analysis. Still, it is an important part of the process that culminates in projects being developed and included in agreed AMP work programmes.

1. ARP has four key components:
2. Asset Condition Analysis (identify risk)
3. Asset Risk Analysis (analyse and evaluate risk)
4. Solution Development (treat risk), and
5. AMP Submission.

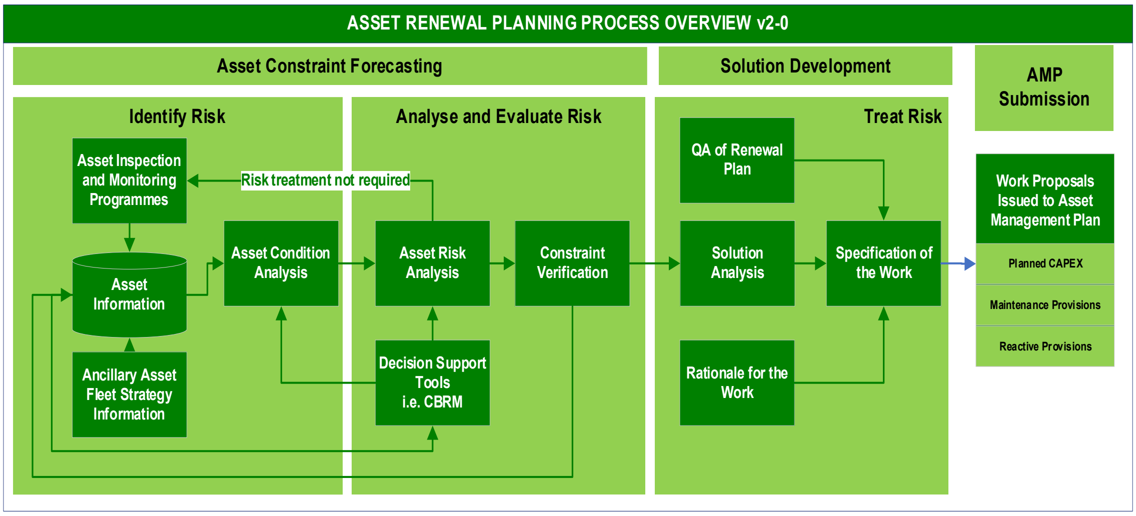

Figure 7-4: Asset Renewal Planning Overview

7.4.3 Asset Constraint Forecasting

7.4.3.1 Purpose

The purpose of Asset Constraint Forecasting is to identify risks based on asset condition. On completion of the condition analysis, a likelihood of failure is derived. This is used to rank assets based on condition across our asset portfolio.

7.4.3.2 Overview

Assets in poor condition have an increased likelihood of in-service failure and, therefore, present an elevated risk to the business. Once identified, these assets are 'tagged' for replacement or corrective maintenance. This stage is aided by decision support tools such as CBRM. Critical inputs to determine asset condition are the asset's:

- age
- type
- inspection/test results
- work/defect and operational history, and
- any relevant environmental factors that influence the condition of the asset.

Figure 7-5 outlines an overview of the Asset Constraint Forecasting process.

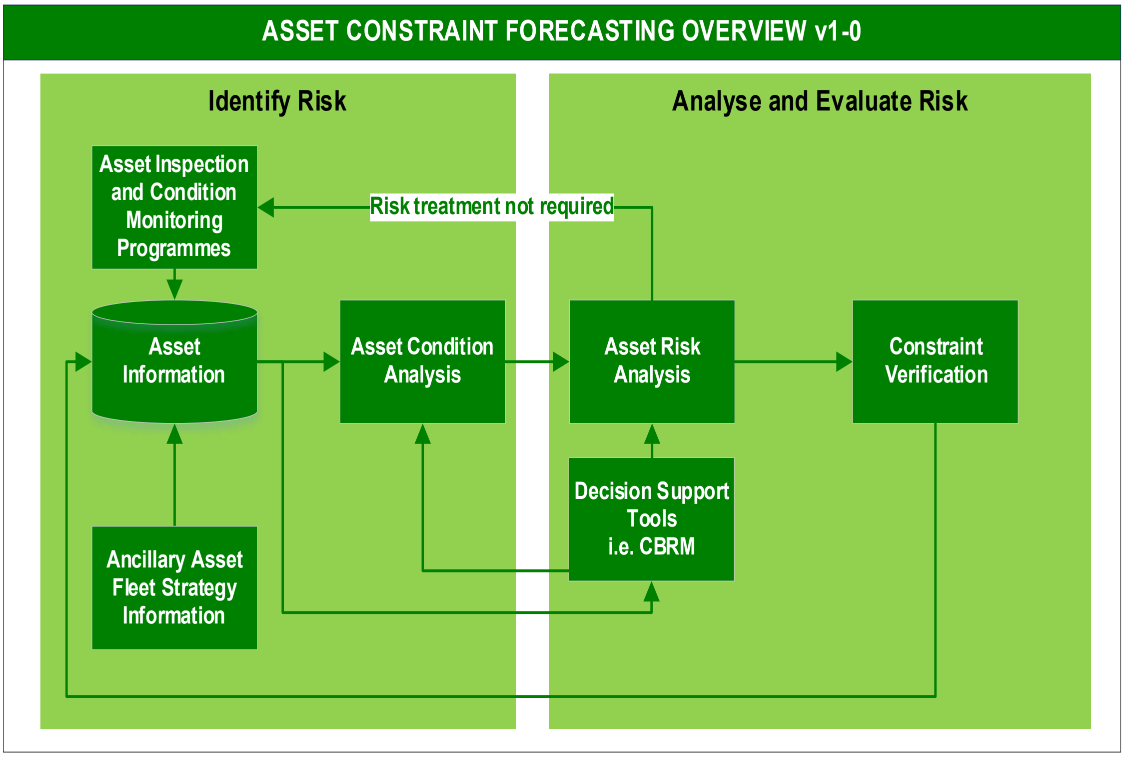

Figure 7-5: Asset Constraint Forecasting Overview

7.4.3.3 Stages of Asset Constraint Forecasting

Each stage of the Asset Constraint Forecasting process is summarised in Table 7-6. There is a further document available, Asset Constraint Forecasting Process (AMS-1007), that contains detailed information on this process.

Stage	Description
1. Asset Inspection and Condition Monitoring Programmes	Inspection and testing programmes are in place for respective asset fleets to: • understand the condition of their constituent assets, and • ensure individual assets can fulfil their functional requirements.
2. Asset Information	Attributes and test points for each asset are captured in either the EAMS or an auxiliary condition database.

Stage	Description
3. Ancillary Asset Fleet Strategy Information	Inputs regarding asset lifecycle strategy, such as information from Safety Alerts, resilience planning, or internal audit findings.
4. Asset Condition Analysis	The review of the asset information and grading the condition of the asset to determine the likelihood of failure.
5. Asset Risk Analysis	This combines the likelihood of failure with the consequence factors such as safety, network performance, financial, and environmental impacts to determine the overall risk of failure of an asset.
6. Decision Support Tools	Tools such as CBRM are used to prioritise asset renewals based on the consequence and likelihood of an asset failure.
7. Constraint Verification	Validation of the asset risk to ensure risk models are functioning as expected. This can be performed through a site visit or desktop evaluation using available information in corporate systems.

Table 7-6: Asset Constraint Forecasting Stages

7.4.4 Solution Development

7.4.4.1 Purpose

The purpose of Solution Development is to identify and specify the preferred engineering solution to mitigate risks in the network. These risks are identified by the Asset Constraint Forecasting process for inclusion in the AMP.

Solution Development requires an:

- understanding of the risk, the physical asset, and its surrounds, and
- awareness of network constraints, available options, other planned work, and cost/estimating.

Solution Development commences when:

- a constraint has been identified
- the risk has been quantified, and
- the risk is sufficient that action should be taken to control it.

Solution Development involves identifying the most optimal control for the risk, considering the key asset management drivers of cost, risk, and performance.

Solution Development is completed when:

- an appropriate solution has been identified, and
- this solution has been proposed as a capital project to the AMP, or work has been issued out of an OPEX provision.

7.4.4.2 Solution Development Process

Figure 7-5 outlines the key elements of Solution Development.

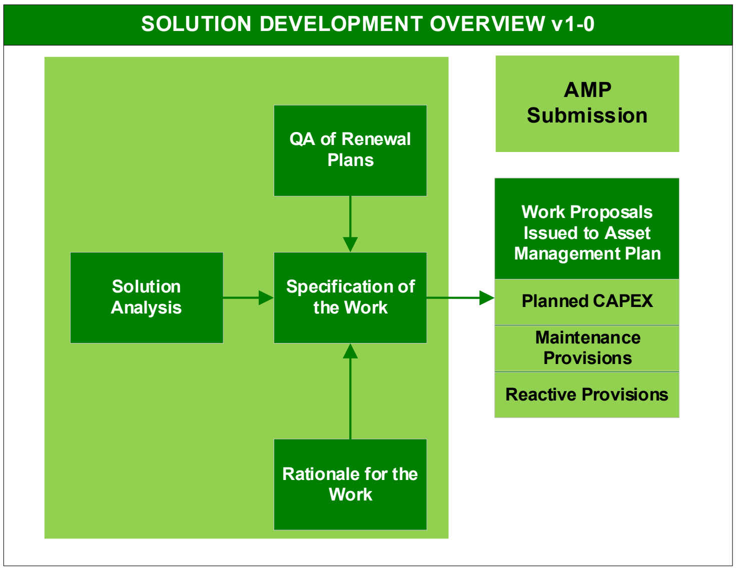

Figure 7-6: Solution Development Workflow

The key steps in Solution Development are:

1. Solution analysis
2. Specification of the work
3. Rationale for the work, and
4. Submission to the AMP.

These are explained in detail below.

7.4.4.3 Solution Analysis

Solution analysis involves the evaluation of all the AMP issues spanning years three to ten of the planning horizon to form a combined ten-year view of work. While issues arising in years one and two of the planning horizon form part of the overall process, they are not reviewed in the solution analysis stage. Year one and two issues are scoped and approved to proceed before they reach the year's one and two planning horizon.

Our managed services provider's Network Development and Asset Management Teams work together to ensure proposed solutions benefit from:

- potential timing, and
- the consolidation synergies that may be achieved across both constraint types.

The same level of systematic and optimised decision-making is practised during a combined evaluation to ensure alignment with the AMOs. This results in clusters of issues that can be assigned to a specification of work.

7.4.4.4 Specification of the Work – Scope Solution

An assigned engineer completes a specification of work and considers:

- the context of each cluster (applying knowledge from supporting systems)
- the potential packaging of solutions, preparation of the specification for work to meet the key drivers of asset management, and
- generation of a project in the AMP to resolve the identified issues.

Work specified as part of ARP outlined in this section will be the primary driver for identifying optimum solutions. However, constraints identified by Network Constraint Forecasting (refer to Section 6 – Network Development Plans, subsection 6.4) and synergies with other identified work will be considered to ensure the optimisation and efficiency of identified solutions.

Specifications will detail:

- the asset(s) to be installed, maintained, removed, or renewed the work requirement, including installation and construction or in the case of maintenance, references to the appropriate standards defined in the project, and
- relevant issues registered against the project.

This specification provides the basis for estimating the project value.

7.4.4.5 Rationale for the Work

This provides the justification for the selected solution, including a rationale where the solution is mitigating more than one identified constraint or issue. The level of detail will vary depending on the complexity of the solution. Typically includes the description, supporting calculations and other relevant information. The developed rationale forms part of the executive summary, which is submitted against the issue or constraint in the AMP.

7.4.4.6 Submission to the AMP

Every six months, projects are submitted to the AMP for quality assurance and final approval.

Quality assurance of the AMP submissions involves:

- frequent reviews throughout the year by our managed services provider's Technical Leads to ensure the objectives of the rationale and specification of works are met, and
- a full review by our managed services provider. This review is completed by their Asset Strategy and Future Networks Manager, and Innovative Solutions Manager, one month prior to the bi-annual Works Planning and Consolidation submission.

7.4.5 Asset Renewal Planning Drivers

Asset renewal planning is undertaken to ensure that our assets can support the achievement of our AMOs.

Our renewal drivers incorporate cost, risk, and performance aspects. The challenge of quantifying and combining all relevant variables is, in many cases, complex. In practice, our renewal plan is regularly influenced by a combination of the drivers outlined in Table 7-7.

Centralines' Renewal Drivers
Reducing the likelihood of in-service failures (generally based on asset condition).
Mitigating or reducing the consequences and risks (staff and public safety, environmental, reputational damage, etc.) associated with an in-service failure and any cost-effective non-renewal mitigations that may be available.
Consideration of the availability and cost of spares and skilled resources.
The benefits of increased functionality, i.e., the ability to provide network or asset condition information, etc., lower maintenance costs and increased performance of modern equivalents.
The difference in cost between a planned vs reactive asset replacement.

Centralines' Renewal Drivers
Synergies, including both practical and economic considerations with other renewal projects, may result in the acceleration or deferral of asset renewals.
Integration synergies of asset renewal projects with other programmes of work, including system growth, reliability, safety, environment and customer-driven projects.

Table 7-7: Centralines' Renewal Drivers

7.4.6 Renewal Expenditure Modelling Assumptions

The key assumptions underlying our approach to modelling renewals are outlined in Table 7-8.

Renewal Expenditure Modelling Assumptions
Network assets become less reliable as they age.
There is a risk cost trade-off between replacing assets preventatively, such as pre-failure, and replacing assets reactively, i.e., post-failure.
Network assets' condition will not be affected by the onset of DER other than through loading over defined ratings.

Table 7-8: Renewal Expenditure Modelling Assumptions

7.4.7 Top-down Planning

We use top-down planning to complement and inform bottom-up requirements. Top-down planning is age-based renewal planning, looking at:

- the expected lives of specific asset classes, and
- the required expenditure by class to achieve the desired expected lives.

Bottom-up planning takes asset-specific data and condition information (where available) to calculate the risk and intervention year of each asset. The results are then aggregated to produce a renewal expenditure profile. A balanced view from the two approaches helps to:

- bridge and gaps in modelling, and
- refine any of the needs for short-term intervention.

7.5 Vegetation Management and Planning

The impact of vegetation is one of the key external risks faced by New Zealand electricity distribution businesses (EDBs). Effective and efficient management of vegetation across the network is strategically important as a key control to reducing the risk of network outages and faults.

It is estimated that EDBs across the country spend over $30 million per annum on vegetation management to meet the requirements of the Electricity (Hazards from Trees) Regulations 2003. This represents approximately 17% of all works owner maintenance costs.

Generally, vegetation budgets are limited and therefore require effective management to ensure:

- the greatest risks are mitigated, and
- the work is undertaken efficiently.

Any outage to the network affects SAIDI and SAIFI, and the costs of repairing vegetation-related damage are high. Therefore, a systematic risk management approach to vegetation is required to ensure a safe and reliable electricity network.

Historically, vegetation management was conducted using periodic inspections to identify issues and subsequently schedule remedial work. This was typically undertaken without the support of a specific enterprise vegetation management system. We have moved to a more data-driven, analytical, and risk-based approach to manage our asset portfolio, which includes protecting assets from vegetation-related impacts.

The vegetation management risk-based prioritisation approach ensures the vegetation work programme and vegetation spend are specifically targeted to the right areas. This focuses vegetation resources where vegetation poses the most significant risk to the network.

The Electricity (Hazards from Trees) Regulations 2003 outline:

- how close vegetation is allowed to get to electrical assets, and
- who is responsible for maintaining clearances between vegetation and electricity networks.

The purpose of the Tree Regulations can be categorised into four sections:

1. Prescribed distances between trees and power lines to minimise risk
2. Responsibilities for trimming and cutting
3. Liability Assignment for breaches, and
4. Dispute Resolution

In October 2024, the Central Government amended the Electricity (Hazards from Trees) Regulations 2003 in response to the significant damage caused by trees impacting power lines during Cyclone Gabrielle. Outages caused by out-of-zone trees interrupted electricity supply to 68,000 households in the most severely affected areas.

The Tree Regulation amendments intended to target trees directly surrounding the existing Growth Limit Zone (GLZ) by creating a ‘clear to the sky’ zone to prevent vegetation hanging over lines. The Regulations also extend the ‘notice zone’ by one metre around the GLZ.

In summary, the amendments include:

- **Growth Limit Zone (shown in area A)** – the minimum distance a tree must be kept clear of overhead power lines
- **Cut Back Zone (shown in area C)** – a new cut-back zone was introduced 1m around the GLZ. Trees that grow into the GLZ must now be cut or trimmed so they are outside this zone, and
- **Notice Zone (areas C+B)** extended by 1m for all lines, allowing for early notification of hazards.

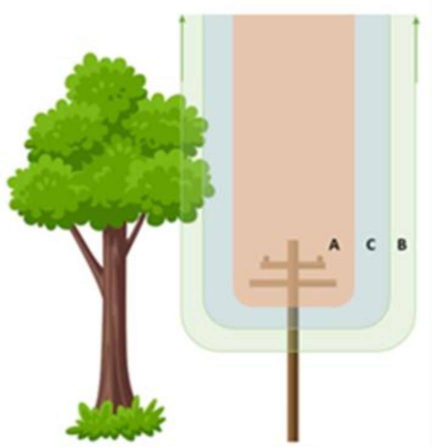

Figure 7-7: Vegetation Zones

Exemptions from the 'Clear to the Sky' requirement include insulated or low-voltage lines with spans of 150 metres or less and trees protected within a Council's District Plans.

While the Tree Regulations define the responsibilities of the various parties to maintain clearances between vegetation and electricity networks, these requirements are limited in their scope. For example, trees within falling distance of overhead lines are not covered by the Tree Regulations. These trees cause the highest proportion of damage to our network, particularly during storms and high winds.

Therefore, vegetation planning and management must carefully optimise the execution of inspection, planning, liaison, coordination, and cutting activities, both planned and reactive. This should be based on a risk prioritisation framework to appropriately manage vegetation both within and outside the growth limit zones.

7.6 Asset Lifecycle Management by Asset Category

7.6.1 General Section Overview and Format

The assets that we manage throughout their lifecycle are summarised in this section. The classes of assets covered in this section are listed in Table 7-9. These categories are consistent with the minimum requirements prescribed by the Determination. Asset categories have been expanded in some instances to provide further clarity on lifecycle activities undertaken on groups of assets in each category.

Asset Class	Section Reference
Sub–transmission: 33kV Overhead Lines	7.8
Sub-transmission: 33kV Underground Cables	7.9
Zone Substation: Power Transformers	7.11
Zone Substation: 33kV Circuit Breakers	7.12
Zone Substation: 11kV Circuit Breakers and Switchboards	7.13

Asset Class	Section Reference
Zone Substation: Buildings	7.14
Zone Substation: Ripple Injection/Load Control Plants	7.15
Poles: All Voltages	7.16
Distribution and Low-voltage Overhead Lines	7.17
Distribution and Low-voltage Underground Cables	7.18
Distribution Transformers	7.19
Voltage Regulators	7.20
Overhead Distribution Switchgear	7.21
Ground Mounted Distribution Switchgear	7.22

Table 7-9: Asset Class Descriptions and Section References

Detailed information is provided on each of the above asset categories. Table 7-10 summarises the sub-sections included and describes the information provided under those sub-sections.

Sub-section Heading	Information Provided
Asset Group Category Description	Where a group of assets has been broken down, a general description of the high-level category is provided.
Asset Description	Describes at a high-level each asset class, its function and voltage and provides details on the total number or length of assets included in the asset category.
Asset Condition and Performance	A high-level commentary is provided on the overall condition and performance of the asset category. Any systemic issues that have led to the premature replacement of assets are identified, as well as mitigations to address these issues.
Asset Condition Assessment	For each asset category, the relevant excerpt from Schedule 12A has been included. This provides a general asset category condition overview based on 2025 information. The condition grade of an asset is as described in the determination and detailed in the table below. Note: Each asset class has different expected lives (for example, communications assets typical lifecycle will span 15 years, whereas concrete poles may span 100 years). Accordingly, the spread of asset classes with shorter lives may appear much worse relative to others with longer lives.

<table>
<tr><th>Sub-section Heading</th><th>Information Provided</th></tr>
<tr><td></td><td>
<table>
<tr><th>Condition Grade</th><th>Condition Description</th></tr>
<tr><td>H1</td><td>Replacement recommended.</td></tr>
<tr><td>H2</td><td>End of life drivers for replacement present, high asset-related risk.</td></tr>
<tr><td>H3</td><td>End of life drivers for replacement present, increasing asset-related risk.</td></tr>
<tr><td>H4</td><td>No drivers for replacement, normal in-service deterioration.</td></tr>
<tr><td>H5</td><td>As new condition – no drivers for replacement.</td></tr>
</table>
In addition, an assessment on the accuracy of the data used to grade the asset condition is included based on the determination descriptions in the table below.
<table>
<tr><th>Data Accuracy</th><th>Data Accuracy Description</th></tr>
<tr><td>1</td><td>Good quality data is not available for any of the assets in the category, and estimates are likely to contain significant error.</td></tr>
<tr><td>2</td><td>Good quality data is available for some assets but not for others. The data provided includes estimates of uncounted assets within the category.</td></tr>
<tr><td>3</td><td>Data is available for all assets, but includes a level of estimation where there is understood to be some poor-quality data for some of the assets within the category.</td></tr>
<tr><td>4</td><td>Good quality data is available for all the assets in the category.</td></tr>
</table>
</td></tr>
<tr><td>Asset Age Profiles</td><td>Asset age profile graphs based largely on 2025 disclosure information are included. These graphs identify the quantity or length of assets and their corresponding installation or manufacture dates. There may be minor differences between the disclosure information and the graphs provided. This is due to data improvements, which have enhanced the accuracy of the original information.</td></tr>
<tr><td>Maintenance Plan</td><td>Our general approach to inspecting and maintaining each asset category is outlined together with a detailed description of the types of inspections, tests, and condition monitoring undertaken, including the frequency. It can be assumed for all asset classes that corrective maintenance is carried out on an ‘as required’ basis following condition monitoring, tests, and inspections or because of our defect process.</td></tr>
<tr><td>Asset Replacement and Refurbishment</td><td>Renewal and refurbishment drivers are discussed.</td></tr>
<tr><td>Innovations</td><td>A description of any asset-specific innovations that have deferred asset replacements is provided.</td></tr>
</table>

Sub-section Heading	Information Provided
Controlled Documents (CDs)	A table listing the relevant controlled documents (CD) for each asset class is provided in this subsection. A suite of controlled documents governs LCAM activities and tasks for each asset class. These documents include design, construction and operational standards, service codes and procedures. They specify the asset-specific requirements of tasks and activities that need to be undertaken throughout the asset's lifecycle, including the collection of relevant asset condition information.

Table 7-10: Asset Sub-Section Headings and Information Provided

7.7 Sub-transmission: Asset Group Overview

Our sub-transmission network carries electricity from Transpower's Waipawa Grid Exit Point (GXP) in Ongaonga to our zone substations. This network also provides the interconnectivity between substations using a combination of predominantly overhead lines and some underground cables. Our standard sub-transmission voltage is 33kV. Supply is also taken at 11kV (four feeders) directly from Transpower's Waipawa GXP.

We have several 33kV sub-transmission lines and cables installed on Transpower's site. These assets are covered by our Access and Occupation Schedule Agreement. This agreement sets out the terms and conditions associated with our assets on Transpower's site.

7.8 Sub-transmission: 33kV Overhead Lines

7.8.1 Asset Description: 33kV Overhead Lines

Our sub-transmission network incorporates 94 kilometres of 33kV overhead lines. These sub-transmission lines are predominantly ACSR Dog (100mm^2) conductor with some copper conductor in zone substation switch yards.

7.8.2 Asset Condition and Performance: 33kV Overhead Lines

The overhead sub-transmission system is generally reliable, and current levels of maintenance are supporting favourable network performance. The relatively dry Central Hawke's Bay environment, combined with low levels of airborne pollution provide for very low levels of natural degradation of the overhead network. The majority of the network is well insulated from the effects of coastal salt spray. No systemic issues have been identified with this asset class.

7.8.3 Asset Condition Assessment: 33kV Overhead Lines

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Sub-transmission: 33kV conductor		2%	45%	47%	6%	2	0%

Table 7-11: Asset Condition Assessment: 33kV Overhead Lines

7.8.4 Asset Age Profile: 33kV Overhead Lines

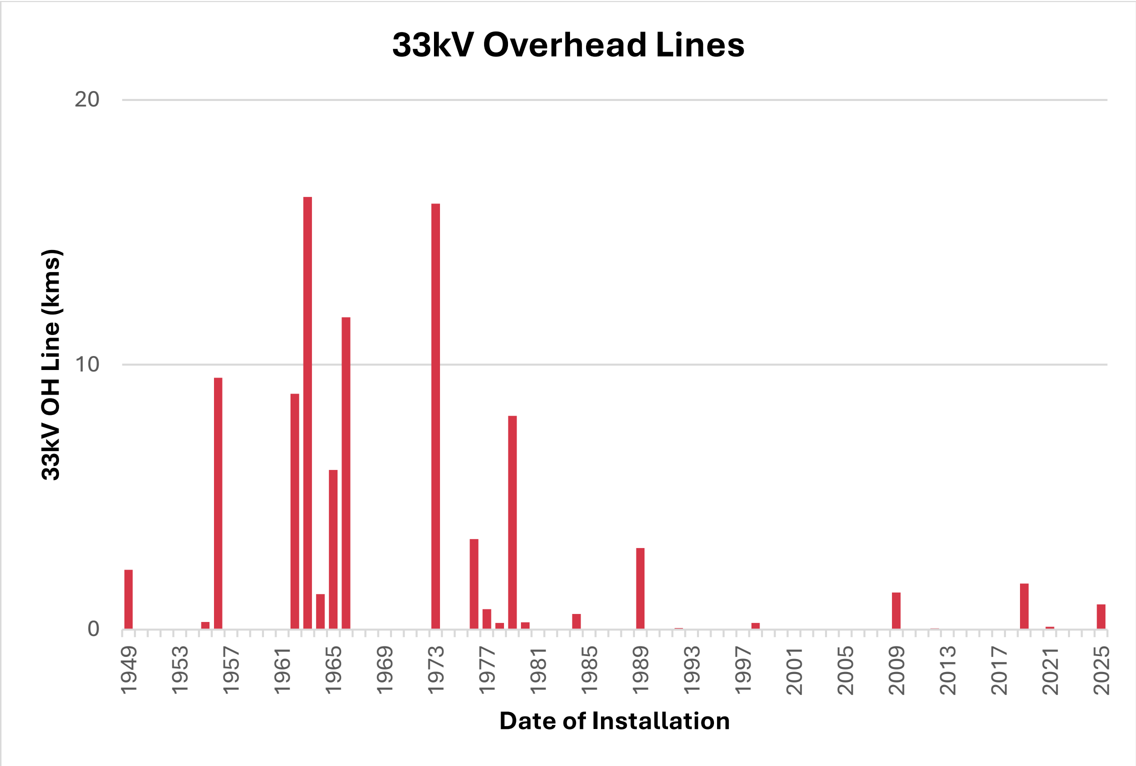

Figure 7-8: Asset Age Profile: 33kV Overhead Lines

7.8.5 Maintenance Plan: 33kV Overhead Lines

We take a proactive approach to inspecting and maintaining overhead sub-transmission lines. Table 7-12 details the maintenance undertaken on this asset class.

Condition Monitoring/Testing	Frequency
Ground based visual inspection of all components on all 33kV overhead lines. This includes the use of thermo-vision technology to check for 'hot' connections or joints.	2-year cycle
Ground based feeder surveys cover all overhead network assets. Aerial surveys are no longer used (apart from fault response) as ground-based inspections have proven to be more effective in identifying asset issues. This includes the use of thermo-vision technology to check for 'hot' connections or joints.	5-year cycle

Condition Monitoring/Testing	Frequency
We use acoustic surveys on sub-transmission feeders to check for a range of potential issues, including cracked insulators, conductor damage and suspect joints and terminations.	Risk-based prioritisation

Table 7-12: Maintenance Plan: 33kV Overhead Lines

7.8.6 Asset Replacement and Refurbishment: 33kV Overhead Lines

33kV line renewals are primarily based on known asset condition. The current understanding of the condition sees no 33kV lines planned for replacement in the planning period. Current non-invasive technologies and methods to cost-effectively and accurately determine the condition of overhead conductors are inconclusive and still evolving. We will continue to work with the industry to develop and adopt best practice in this area. Current replacement and refurbishment drivers are outlined in Table 7-13.

Replacement/Refurbishment Drivers
• Asset condition is based primarily on feeder inspection data. • Conductor type, design, age, and criticality. • Historical conductor performance records and trend analysis. • Results of specially commissioned laboratory conductor analysis. • Specific asset location and environmental considerations. • The Condition Based Risk Management (CBRM) model is being used to inform and assist in the identification and prioritisation of sub-transmission conductor replacement programmes.

Table 7-13: Asset Replacement and Refurbishment Drivers: 33kV Overhead Lines

7.8.7 Controlled Documents: 33kV Overhead Lines

CD Reference	Controlled Document Description
NK3002	Line Design Loadings
NK3022	Network Fusing Standard
NK3030	Design Requirements for Public Safety Standard
NK3041	Earth Manual – Standard Earths
NK5011	Inspection and Testing of Standard and SWER Earths Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK5080	Thermo-Vision Inspection Standard
NK5115	Re-Sagging Conductor Standard
OS1004	Switching Plan Application and Approval Standard
OS1006	Live Line Work Operational Practices Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
NK5080	Thermo-Vision Inspection Standard

CD Reference	Controlled Document Description
SOP-112	SOP – Testing Corrosion on Conductors

Table 7-14: Controlled *Documents: 33kV Overhead Lines*

7.9 Sub-transmission: 33kV Underground Cables

7.9.1 Asset Description: 33kV Underground Cables

The sub-transmission cable network consists of 1.7 kilometres of cross-linked polyethylene (XLPE) insulated, aluminium underground cable. Sizes range from 35mm² to 400mm² and include both single- and three-core cables.

7.9.2 Asset Condition and Performance: 33kV Underground Cables

Our sub-transmission underground cable is in good condition, and no systemic issues have been identified.

7.9.3 Asset Condition Assessment: 33kV Underground Cables

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Sub-transmission: 33kV XLPE cable			2.5%	82.5%	15%	3	0%

Table 7-15: Asset Condition Assessment: 33kV Underground Cables

7.9.4 Age Profile: 33kV Underground Cables

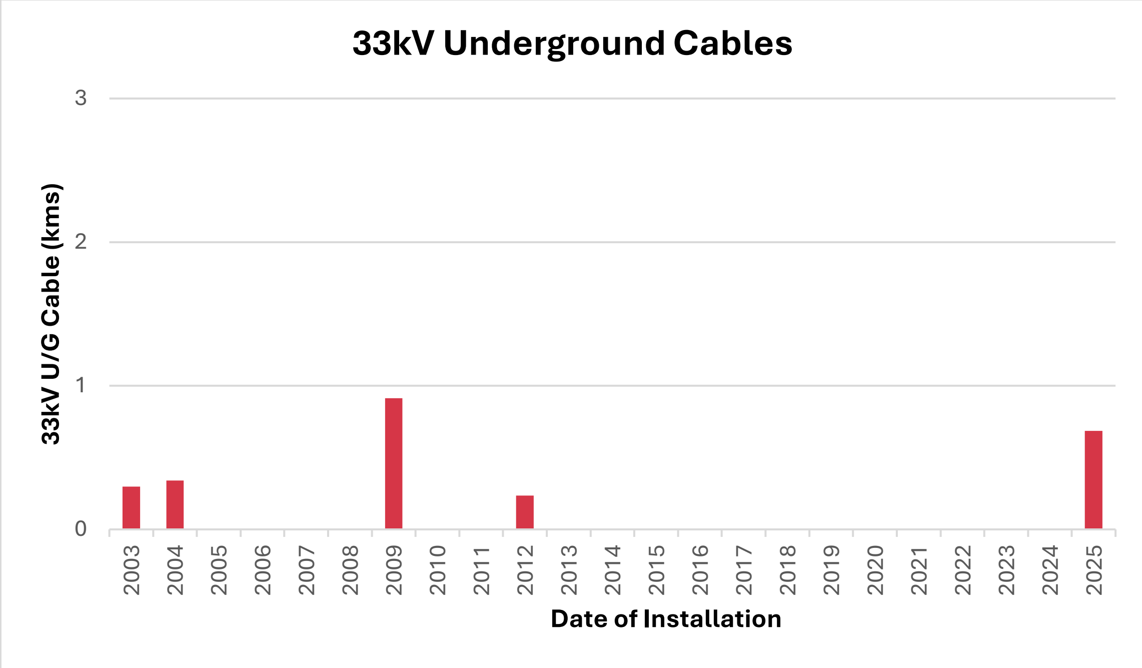

Figure 7-9: Asset Age Profile: 33kV Underground Cables

7.9.5 Maintenance Plan: 33kV Underground Cables

Table 7-16 details the maintenance undertaken on 33kV underground cables.

Condition Monitoring/Testing	Frequency
Visual inspections, corona detection, thermo-scanning and non-invasive partial discharge testing of 33kV cable terminations within zone substations.	Annually
Visual inspection of accessible, above-ground cabling, including pole cable risers as part of overhead line feeder surveys. Includes thermo-vision monitoring of 33kV connections.	2-year cycle
Diagnostic cable testing is currently being undertaken on 33kV underground cables to determine: • the baseline condition for future comparison, and • the frequency for future testing.	6-year cycle

Table 7-16: Maintenance Plan: 33kV Underground Cables

7.9.6 Asset Replacement and Refurbishment: 33kV Underground Cables

Due to the 33kV sub-transmission cable on our network being reasonably new and in good condition, no cable replacements are planned in the current RAMP planning period. Any future 33kV cable renewals will be based on the drivers detailed in Table 7-17.

Replacement/Refurbishment Drivers
• Cable type, design, age, and criticality. • Historical cable performance records and trend analysis.

Replacement/Refurbishment Drivers
• Asset condition based on diagnostic test results and inspection data. • The CBRM model will be introduced in future to inform and assist in the identification and prioritisation of sub-transmission cable replacement programmes.

Table 7-17: Asset Replacement and Refurbishment Drivers: 33kV Underground Cables

7.9.7 Controlled Documents: 33kV Underground Cables

CD Reference	Controlled Document Description
NK3001	Underground Design
NK3022	Network Fusing Standard
NK3023	Underground Cable Specifications and Standards
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK4015	Underground Cable Installation Standard
NK4020	Cable Testing Standard
NK5011	Inspection and Testing of Standard and SWER Earths Standard
NK5020	Feeder Survey and Condition Monitoring Standard
OS1004	Switching Plan Application and Approval Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-101	SOP – Identifying Cables Prior to Spiking

Table 7-18: Controlled Documents: 33kV Underground Cables

7.10 Zone Substations: Asset Group Overview

Zone substations encompass a range of network assets, including:

- buildings
- power transformers
- 33kV and 11kV switchgear
- load control plant, and
- associated control, protection, and communications equipment.

The key function of a zone substation is to house the required network assets to convert sub-transmission voltage (33kV) to distribution voltage (11kV). This allows for the safe and efficient distribution of electricity to our customers.

We have four zone substations situated at Waipukurau, Waipawa, Takapau and Wilder Road. In addition, we have an 11kV switching station (four pole mounted reclosers and two ring main units) outside Transpower's Waipawa GXP.

7.11 Zone Substation: Power Transformers

7.11.1 Asset Description: Zone Substation Power Transformers

Power transformers convert the 33kV sub-transmission voltage to 11kV, which is more suitable for network distribution. They are filled with mineral insulating oil, which provides both insulation and cooling for the transformer. Transformer cooling is enhanced by cooling fans fitted to radiators. Some transformers also have oil pumps to more effectively circulate the oil to increase the transformer's rating. All our substations incorporate bunded transformer foundations to mitigate failures which have the potential to result in significant oil spills.

Substation power transformers typically include an automatic on-load tap changer, which maintains the output voltage within defined limits. Most of the older tap changers operate in a separate oil-filled compartment within the transformer. As the tap changer operates to keep the output voltage constant, the contacts arc in the oil and therefore the oil and the contacts require frequent maintenance.

We have a total of seven three-phase power transformers. The two power transformers installed at Waipukurau, Waipawa and Takapau zone substations are rated at ~7.5MVA, while a single ~2MVA transformer is installed at the Wilder Road site.

7.11.2 Asset Condition and Performance: Zone Substation Power Transformers

Our fleet of power transformers is relatively modern or has been fully refurbished. Both transformers at Waipukurau were manufactured in 2008. The transformers at Takapau were manufactured in 1977 and were fully refurbished in 2009. The Waipawa transformers were manufactured in 1966 and were fully refurbished in 2010, and the Wilder Road unit was manufactured and installed in 1994.

Effective condition monitoring, maintenance, and load management practices over the years have ensured they all remain in good condition and are providing reliable performance.

7.11.3 Asset Condition Assessment: Zone Substation Power Transformers

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Zone Substation: Power Transformers			28.6%	71.4%		3	0%

Table 7-19: Asset Condition Assessment: Zone Substation Power Transformers

7.11.4 Asset Age Profile: Zone Substation Power Transformers

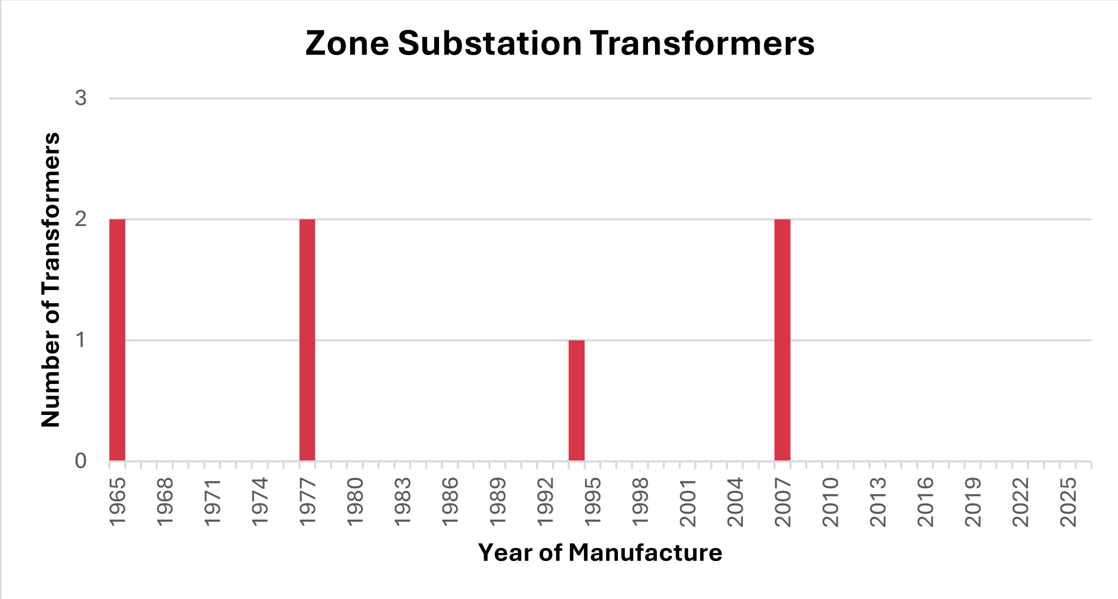

Figure 7-10: Asset Age Profile: Zone Substation Power Transformers

7.11.5 Maintenance Plan: Zone Substation Power Transformers

Due to the criticality of these assets, we employ a range of inspection, testing, condition monitoring and maintenance programmes. These activities ensure this asset fleet continues to perform reliably. This includes dielectric frequency response testing, which measures the amount of moisture in transformer winding paper insulation. If not remedied, high moisture levels can reduce the dielectric strength or accelerate the ageing of the cellulose and lead to eventual failure. In addition, dynamic resistance testing of selected tap changers is carried out to test for abnormal or high resistance connections.

Oil samples are taken from each transformer annually for analysis. Dissolved Gas Analysis (DGA) testing provides information on any build-up of dissolved gases. Furan Analysis is also undertaken to enable an estimation of the degree of polymerisation (DP) of insulation paper in our transformers.

Table 7-20 details the maintenance activities currently undertaken on power transformers.

Condition Monitoring/Testing	Frequency
Detailed visual inspection looking for oil leaks or any unusual noises or vibration, etc. This inspection also includes minor maintenance work, including silica gel checks, tap changer operational checks and counts. This maintenance occurs fortnightly at the three major substations and monthly at Wilder Road.	Fortnightly/Monthly
Preventative maintenance on power transformers and associated protective devices (Buchholz relays and temperature sensors), including insulation resistance and dielectric frequency response testing.	2-year cycle
Preventive maintenance is undertaken on all tap changers with frequency dependent on the make, type, age, switching insulation medium and OEM specifications. Turns ratio testing post maintenance.	2-10-year cycle

Condition Monitoring/Testing	Frequency
Detailed DGA and oil condition tests, including moisture, acidity and dielectric breakdown is undertaken at least annually. More frequent sampling can be carried out, subject to any suspected fault within a specific transformer.	As required, but at least annually
Furan Analysis to estimate the degree of polymerisation (DP) of paper insulation.	2-year cycle
Inspection of transformer and conductor terminations using thermo-vision, corona cameras and partial discharge sensing technology.	Annually

Table 7-20: Maintenance Plan: Zone Substation Power Transformers

7.11.6 Asset Replacement and Refurbishment: Zone Substation Power Transformers

Based on the current condition of our power transformers, there are no planned replacements in the current RAMP planning period. Current and future replacement and refurbishment drivers are outlined in Table 7-21.

Replacement/Refurbishment Drivers
• Transformer age, criticality and asset condition based on diagnostic test results and inspection data. • DGA oil results and outputs of Furan Analysis. • Historical transformer performance records and trend analysis. • DP test results. • The CBRM model will be introduced in future to inform and assist in the identification and prioritisation of transformer replacement programmes.

Table 7-21: Asset Replacement and Refurbishment Drivers: Zone Substation Power Transformers

7.11.7 Controlled Documents: Zone Substation Power Transformers

CD Reference	Controlled Document Description
NK1021	Using Calisto 2 and 9 Monitors
NK3030	Design Requirements for Public Safety Standard
NK3050	Zone Substation General Specifications
NK4013	Testing of Non-Cable Assets
NK4020	Cable Testing Standard
NK5012	Station Level 1 Inspections Standard
NK5013	Station Level 2 Inspections Standard
NK5035	Station Outdoor Instrument Transformer Maintenance Standard
NK5043	Insulating Oil Maintenance Standard
OS1013	Station Entry Procedure
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-10	SOP – Establishing a Permit Area in a Zone Substation

CD Reference	Controlled Document Description
SOP-42	SOP – Calisto 2 Online Transformer Oil Monitor

Table 7-22: Controlled Documents: Zone Substation Power Transformers

7.12 Zone Substation: 33kV Circuit Breakers

7.12.1 Asset Description: 33kV Circuit Breakers

Circuit breakers (CB) are automatically operated electrical switches. They are designed to interrupt electrical power circuits. This protects upstream and downstream electrical assets from damage caused by a shorted or overloaded circuit. Additionally, they ensure the safety of the public and EDB employees and provide electrical discrimination on the network, reducing the outage impact of faults.

Their basic function is to interrupt power by an initiated control command or automatically by protective sensing devices that detect abnormal or fault conditions. They are designed to interrupt circuits repeatedly and safely, both under normal load and fault conditions. A circuit breaker can be:

- reset manually or automatically (and remotely) to resume normal operation after a fault, and
- programmed to auto-reclose under certain circumstances.

We have standardised on 33kV circuit breakers that use sulphur hexafluoride (SF_6) gas as the contact arc quenching medium. We have eleven in-service sub-transmission outdoor 33kV circuit breakers, all of which use SF_6 gas as the arc-suppressing insulating medium.

7.12.2 Asset Condition and Performance: 33kV Circuit Breakers

Our modern fleet of outdoor 33kV circuit breakers, 11 in total, are in good condition with no systemic issues being identified.

7.12.3 Asset Condition Assessment: 33kV Circuit Breakers

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Zone substation: 33kV Outdoor CBs			9%	50%	41%	3	0%

Table 7-23: Asset Condition Assessment: 33kV Circuit Breakers

7.12.4 Asset Age Profile: 33kV Circuit Breakers

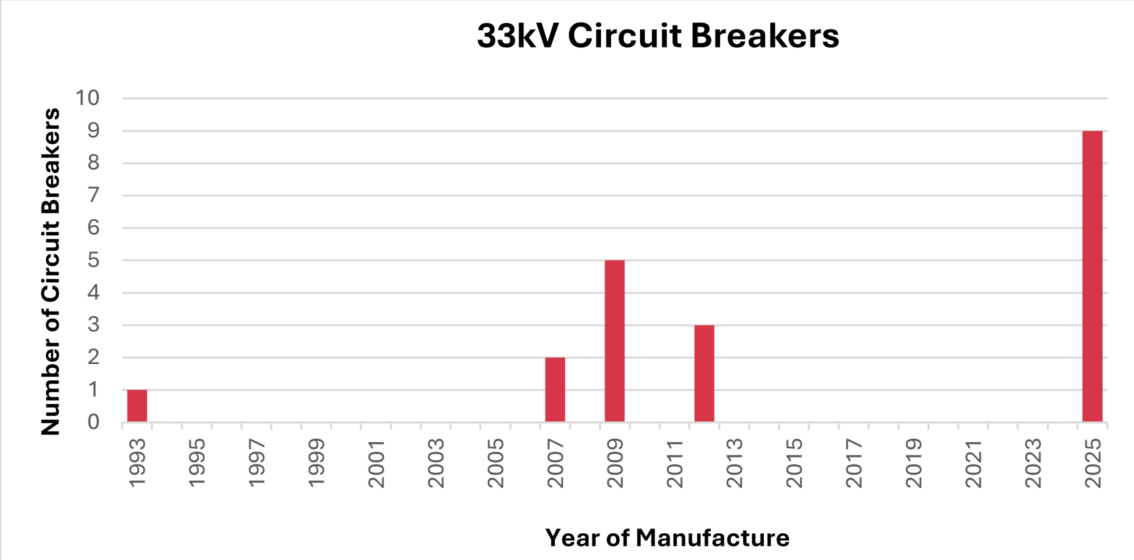

Figure 7-11: Asset Age Profile: 33kV Circuit Breakers

7.12.5 Maintenance Plan: 33kV Circuit Breakers

To ensure reliability, 33kV circuit breakers are subject to a cyclic maintenance programme based on:

- OEM recommendations
- industry practice, and
- our own engineering judgement and operational experience.

Table 7-24 outlines our current maintenance programme for 33kV circuit breakers.

Condition Monitoring/Testing	Frequency
Visual inspection of all 33kV substation circuit breakers, including operational counter checks and any required minor maintenance.	Fortnightly/Monthly
Routine inspection, testing and servicing, including diagnostic tests and functional operational checks. These encompass cleaning, Ductor^{TM} testing, insulation resistance, circuit breaker timing tests and checking the contact erosion indicators.	3-year cycle
Thermo-vision, corona, and partial discharge testing of circuit breakers.	Annually

Table 7-24: Asset Replacement and Refurbishment Drivers: 33kV Circuit Breakers

7.12.6 Asset Replacement and Refurbishment: 33kV Circuit Breakers

Due to the age and condition of this asset fleet, there are no scheduled replacements for the current RAMP planning period. Future replacement and refurbishment drivers are outlined in Table 7-25.

Replacement/Refurbishment Drivers
• Circuit breaker, design, insulating medium, age, condition, and criticality. • Historical circuit breaker performance records and trend analysis. • Diagnostic circuit breaker testing.

Replacement/Refurbishment Drivers
• Health and safety, and environmental considerations. • The CBRM model will be introduced in future to inform and assist in the identification and prioritisation of replacement programmes.

Table 7-25: Asset Replacement and Refurbishment Drivers: 33kV Circuit Breakers

7.12.7 Controlled Documents: 33kV Circuit Breakers

CD Reference	Controlled Document Description
NK3001	Underground Design
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK3050	Zone Substation General Specifications
NK4013	Testing of Non-Cable Assets
NK5012	Station Level 1 Inspections Standard
NK5013	Station Level 2 Inspections Standard
NK5038	Metalclad Switchgear Maintenance Standard
NK5040	Outdoor Circuit Breaker Maintenance Standard
NK5043	Insulating Oil Maintenance Standard
NK5070	Sulphur Hexafluoride (SF_6) Use and Handling Standard
OS1013	Station Entry Procedure
SOP-10	SOP – Establishing a Permit Area in a Zone Substation
SOP-28	SOP – Schneider Merlin Gerin 400/FG4 33kV Indoor Circuit Breaker
SOP-30	SOP – ABB UniSafe Indoor Circuit Breaker – Awatoto, Fernhill and Irongate Substations
SOP-31	SOP – Brown Boveri Indoor Circuit Breaker
SOP-32	SOP – Brown Boveri Outdoor Circuit Breaker
SOP-33	SOP – Areva GL107 Outdoor Circuit Breaker
SOP-34	SOP – AEI GEC JB424 Outdoor Circuit Breaker
SOP-35	SOP – Schneider Dog Box Outdoor Circuit Breaker
SOP-36	SOP – Takaoka Outdoor Circuit Breaker
SOP-63	SOP – ABB UniGear ZS2 Indoor Circuit Breaker

Table 7-26: Controlled Documents: 33kV Circuit Breakers

7.13 Zone Substation: 11kV Circuit Breakers and Switchboards

7.13.1 Asset Description: 11kV Circuit Breakers and Switchboards

We have a total of 28 indoor, ground mounted, 11kV circuit breakers installed in zone substations. In addition, there are two pole mounted outdoor units installed at the Wilder Road site. These circuit breakers use either oil or a vacuum as the contact breaking medium.

Refer to the asset description for 33kV circuit breakers for details of the function of this asset class.

7.13.2 Asset Condition and Performance: 11kV Circuit Breakers and Switchboards

Our fleet of 11kV substation circuit breakers are in good condition. The main condition and performance issues being experienced relate to the:

- deterioration and wear of contacts and mechanical mechanisms, and
- ongoing requirement for oil treatment in older units.

There are no current systemic issues that have been identified with this asset class. However, it is acknowledged that older indoor oil circuit breakers:

- are maintenance-intensive
- have lower fault current ratings, and
- present elevated risks due to the oil and lack of arc flash containment and protection.

Operationally, the circuit breakers have been loaded well below their capacity and fault ratings and are maintained under a comprehensive maintenance programme. This has ensured ongoing, reliable performance.

7.13.3 Asset Condition Assessment: 11kV Circuit Breakers and Switchboards

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
ZS: 11kV Ground Mounted CBs		33.3%	33.3%	29.7%	3.7%	3	33.3%

Table 7-27: Asset Condition Assessment: 11kV Circuit Breakers and Switchboards

Forecast replacement percentage is higher than H1 percentage as assets replaced to achieve synergies with other replacement projects within Zone Substations e.g. protection upgrades, etc.

7.13.4 Asset Age Profile: 11kV Circuit Breakers and Switchboards

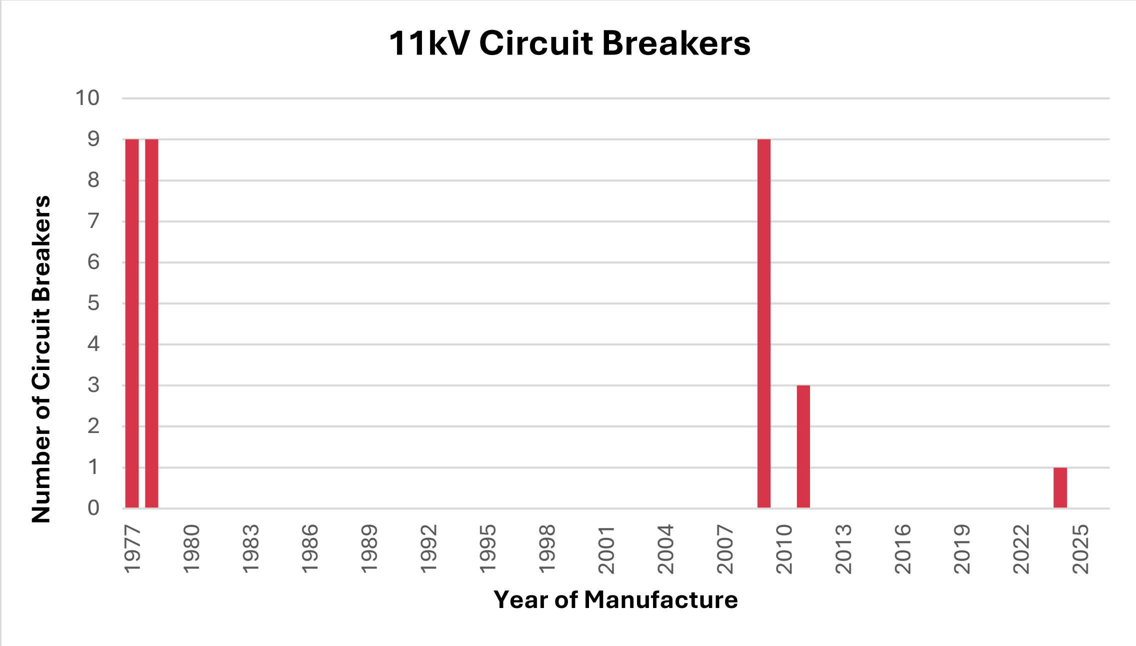

Figure 7-12:: Asset Age Profile: 11kV Circuit Breakers

7.13.5 Maintenance Plan: 11kV Circuit Breakers and Switchboards

To ensure reliability, 11kV circuit breakers and switchboards are subject to a cyclic maintenance programme based primarily on:

- the breaking medium (oil or vacuum)
- OEM recommendations
- industry practice, and
- our own engineering judgement and operational experience.

Maintenance practices are also influenced by the:

- number of fault operations for oil-insulated circuit breakers, and
- location and criticality of the circuit breaker.

Oil circuit breakers require more intensive maintenance than vacuum-insulated circuit breakers. This is because insulating oil in circuit breakers is at risk of contamination from carbon deposits due to breaking fault currents and from moisture ingress.

Table 7-28 outlines our current maintenance programme for 11kV circuit breakers.

Condition Monitoring/Testing	Frequency
Visual condition assessment and asset inspection of all substation circuit breakers, including operational counter checks and minor maintenance.	Fortnightly/Monthly

Condition Monitoring/Testing	Frequency
Routine inspection, testing and servicing, including diagnostic tests and functional operational checks. These encompass cleaning, Ductor™ testing, insulation resistance, circuit breaker timing tests and oil voltage breakdown tests. Vacuum – including checking the contact erosion indicators. Oil – including oil testing and invasive maintenance to inspect the condition of contacts. Oil – fault service.	Every 3-years Every 2-years After every fault operation
Thermo-vision, corona, and partial discharge inspection of outdoor circuit breakers.	Annually
Non-invasive partial discharge testing of indoor circuit breakers.	1 – 2-year cycle depending on previous test results

Table 7-28:Maintenance Plan: 11kV Circuit Breakers and Switchboards

7.13.6 Asset Replacement and Refurbishment: 11kV Circuit Breakers and Switchboards

There are no existing circuit breaker replacements scheduled for the planning period. Current replacement and refurbishment drivers are outlined in Table 7-29.

Replacement/Refurbishment Drivers
• Circuit breaker design, age, insulating medium, condition, and criticality. • Historical circuit breaker performance records and trend analysis. • Health and safety considerations. • Current and future maintenance requirements. • Protection considerations. • Availability of spare parts. • Diagnostic circuit breaker testing. • Functionality. • Synergies with other asset replacement or augmentation projects. • Specific circuit breaker location and environmental considerations. • The CBRM model will be introduced in future to inform and assist in the identification and prioritisation of replacement programmes.

Table 7-29: Asset Replacement and Refurbishment Drivers: 11kV Circuit Breakers and Switchboards

7.13.7 Controlled Documents: 11kV Circuit Breakers and Switchboards

CD Reference	Controlled Document Description
NK3001	Underground Design
NK3030	Design Requirements for Public Safety Standard

CD Reference	Controlled Document Description
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK3050	Zone Substation General Specifications
NK4020	Cable Testing Standard
NK5012	Station Level 1 Inspections Standard
NK5013	Station Level 2 Inspections Standard
NK5038	Metalclad Switchgear Maintenance Standard
NK5040	Outdoor Circuit Breaker Maintenance Standard
NK5043	Insulating Oil Maintenance Standard
OS1013	Station Entry Procedure
SOP-10	SOP – Establishing a Permit Area in a Zone Substation
SOP-23	SOP – Reyrolle Oil Indoor Circuit Breaker

Table 7-30: Controlled Documents: 11kV Circuit Breakers and Switchboards

7.14 Zone Substation: Buildings

7.14.1 Asset Description: Zone Substation Buildings

Zone substation 'buildings' include grounds and buildings used to securely house the range of electrical and non-electrical equipment required for a fully functional zone substation.

We have four zone substations situated at Waipukurau, Waipawa, Takapau and Wilder Road, and except for Wilder Road, all have buildings.

7.14.2 Asset Condition and Performance: Zone Substation Buildings

Following the Canterbury earthquakes and the learnings from this event, a substation building seismic strengthening programme was completed. This programme strengthens all our substation buildings to building importance Level 4 of the new building standard. This category relates to structures with special post-disaster recovery functions.

7.14.3 Asset Condition Assessment: Zone Substation Buildings

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Zone Substation Buildings			33%	67%		3	0%

Table 7-31: Asset Condition Assessment: Zone Substation Buildings

7.14.4 Asset Age Profile: Zone Substation Buildings

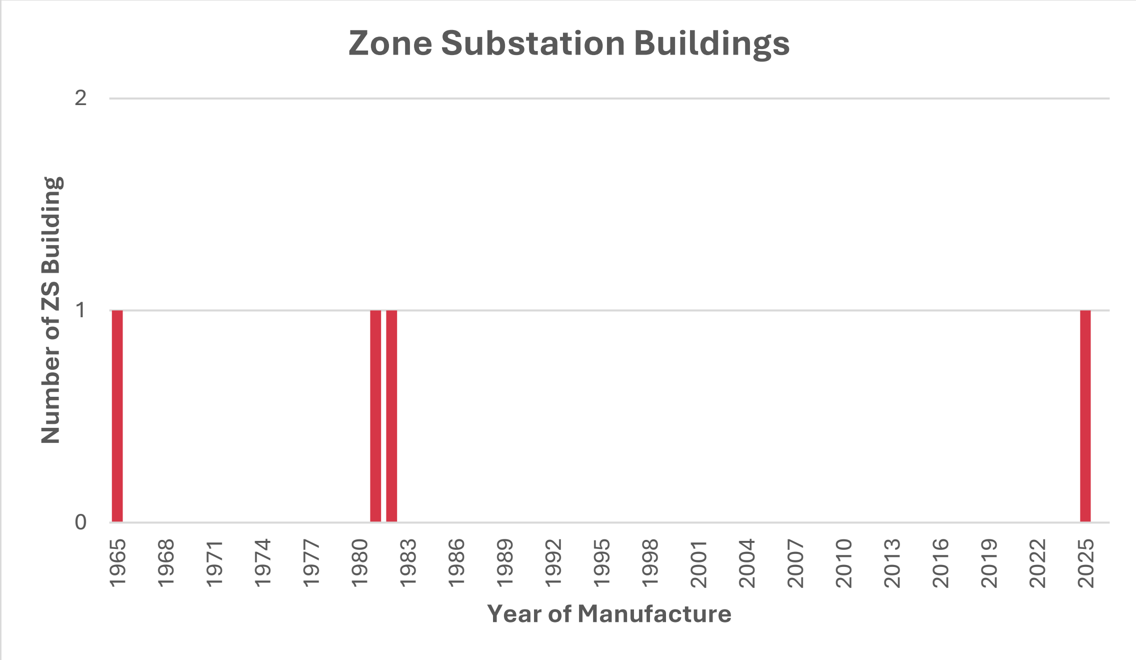

Figure 7-13: Asset Age Profile: Zone Substation Buildings

7.14.5 Maintenance Plan: Zone Substation Buildings

Buildings, fences, and grounds are regularly inspected to ensure they remain in good condition to maintain site security and asset integrity. Our maintenance standards provide detailed requirements for substation inspections, including:

- buildings and other asset condition monitoring, and
- inspections as described in other sections.

Regular maintenance is undertaken to ensure the integrity of our substation buildings.

Condition Monitoring/Testing	Frequency
A security and detailed visual inspection, including any required minor maintenance and housekeeping, is completed fortnightly at all substations (except Wilder Road, which is done monthly). This inspection ensures the integrity and security of the substation.	Fortnightly/Monthly

Table 7-32: Maintenance Plan: Zone Substation Buildings

7.14.6 Asset Replacement and Refurbishment: Zone Substation Buildings

There are no substation building replacements scheduled during the current RAMP planning period. Current replacement drivers are detailed in Table 7-33.

Replacement/Refurbishment Drivers
• Seismic considerations. • Building code requirements. • Age, condition, and criticality. • Health and safety considerations.

Replacement/Refurbishment Drivers
• Current and future maintenance requirements.

Table 7-33: Asset Replacement and Refurbishment Drivers: Zone Substation Buildings

7.14.7 Controlled Documents: Zone Substation Buildings

CD Reference	Controlled Document Description
NK1011	As-Built Recording Manual
NK1402	Zone Substation Drawings Management and Records
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3050	Zone Substation General Specifications
NK5012	Station Level 1 Inspections Standard
NK5013	Station Level 2 Inspections Standard
NK5014	Substation Grounds Maintenance Standard
OS1013	Station Entry Procedure

Table 7-34: Controlled Documents: Zone Substation Buildings

7.15 Zone Substation: Ripple Injection/Load Control Plants

7.15.1 Asset Description: Ripple Injection/Load Control Plants

A load control ripple injection plant is used within the network to provide load control and management functions for various types of equipment. Load management allows EDBs to reduce electricity demand during peak times, which can, in turn, defer asset capacity upgrades. Equipment controlled includes:

- customer hot water and heating systems, and
- Council-owned security, street, and under-verandah lighting.

We have one ripple injection plant operating on our network. This plant injects a high-frequency signal, which is superimposed over the high-voltage network. This signal can be received by specially tuned relays in the low-voltage network to provide specific control activities. The plant consists of:

- a solid-state 400-volt frequency generator
- high-voltage coupling equipment consisting of voltage transformers and capacitors to tune and inject the frequency signal into the network, and
- control and signal equipment that provides the controls and functions for the signals.

Across our network footprint, we inject a frequency of 475 Hz onto the 33kV network.

We own several network load control ripple relay receivers, which predominantly control hot water pilot and street lighting. We have limited ability to maintain the integrity of the overall system, as the control receivers on customer switchboards are owned by the meter equipment providers.

7.15.2 Asset Condition and Performance: Ripple Injection/Load Control Plants

The plant was installed new in 2012/13 and is being regularly maintained. Its condition and performance are excellent.

7.15.3 Asset Condition Assessment: Ripple Injection/Load Control Plants

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Load Control Plant					100%	3	0%

Table 7-35: Asset Condition Assessment: Ripple Injection/Load Control Plants

7.15.4 Asset Age Profile: Ripple Injection/Load Control Plants

We have only one ripple injection plant, which is located at the Waipukurau Zone Substation and was installed in the 2012/13 financial year.

7.15.5 Maintenance Plan: Ripple Injection/Load Control Plant

Our ripple plant is subject to fortnightly and annual maintenance regimes. Routine inspection of the load control plant is scheduled in conjunction with fortnightly zone substation maintenance. Annual maintenance is subcontracted to Landis+Gyr (L+G).

Load control relays in the field are subject to reactive maintenance only. Current ripple plant maintenance is outlined in Table 7-.

Condition Monitoring	Frequency
A security and functional check of the ripple plant is undertaken as part of fortnightly substation inspections.	Fortnightly
Our ripple plant is maintained annually as part of the Landis+Gyr maintenance contract. The contract includes general maintenance, signal strength and capacitor testing.	Annually

Table 7-36: Maintenance Plan: Ripple Injection/Load Control Plant

7.15.6 Asset Replacement and Refurbishment: Ripple Injection/Load Control Plant

Due to this asset being reasonably new, there is no plan to replace it during the current RAMP planning period. Future replacement drivers for and influences on ripple injection and load control plan are outlined in Table 7-37.

Replacement/Refurbishment Drivers
• Asset condition is based primarily on inspections and factoring in asset age, criticality, capacity, and functionality. • Historical performance. • Availability of spare parts. • Equipment obsolescence.

Table 7-37: Asset Replacement and Refurbishment Drivers: Ripple Injection/Load Control Plant

7.15.7 Controlled Documents: Ripple Injection/Load Control Plant

CD Reference	Controlled Document Description
NK3030	Design Requirements for Public Safety Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations

Table 7-38: Controlled Documents: Ripple Control/Load Control Plant

7.16 Poles: All Voltages

7.16.1 Asset Description: Poles

Poles are physical structures used to keep overhead electrical conductors and ancillary equipment a safe distance from each other and from the ground. They are typically made of wood or concrete. Poles are available in a range of sizes and strengths to cater for site-specific requirements, factoring in:

- variables such as terrain
- required electrical clearances, and
- the mechanical load (weight, angle, and tensions) of conductors and ancillary equipment they need to support.

We have standardised on Busck concrete poles for use on our network. We have approximately 20,000 network poles, which are predominantly concrete.

Pole Type	Number
Wood	108
Concrete	19,869

Table 7-39: Pole Types and Numbers

7.16.2 Asset Condition and Performance: Poles

Concrete poles continue to perform well in the relatively dry Central Hawke’s Bay environment. While there have been very few in-service failures, past inspections have identified spalling occurring in steel-reinforced concrete poles. This has been more commonly seen on coastal feeders. Once these poles are identified, they will be replaced based on risk priority, and inspection regimes will be reviewed to ensure this risk is appropriately managed. Historical pole-related information is also being examined to try to determine any factors that may be contributing to the accelerated deterioration of the concrete on these poles.

Wooden poles are performing to expectations. When the condition deteriorates, or defects are identified, and replacement is required, most typically, they will be replaced by a concrete pole.

Systemic Issues	Mitigation
There have been some recent issues of concrete spalling on poles in coastal areas. This occurs when salt corrodes internal metal reinforcing, causing the surrounding concrete to break away.	There is no mitigation for spalling. Poles are replaced once they are identified and prior to the structural integrity of the pole being compromised.

Table 7-40: Systemic Issues and Mitigations: Poles

7.16.3 Asset Condition Assessment: Poles

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Poles: Concrete and steel structures	1.0%	4.5%	28.3%	33.2%	33.0%	3	1.5%
Poles: Wooden	3%	15%	38%	44%		3	15%

Table 7-41: Asset Condition Assessment: Poles

Forecast replacement percentage is higher than H1 percentage as wood poles are so infrequent on Centralines 11kV network that a conservative approach to replacement is undertaken.

7.16.4 Age Profile: Poles

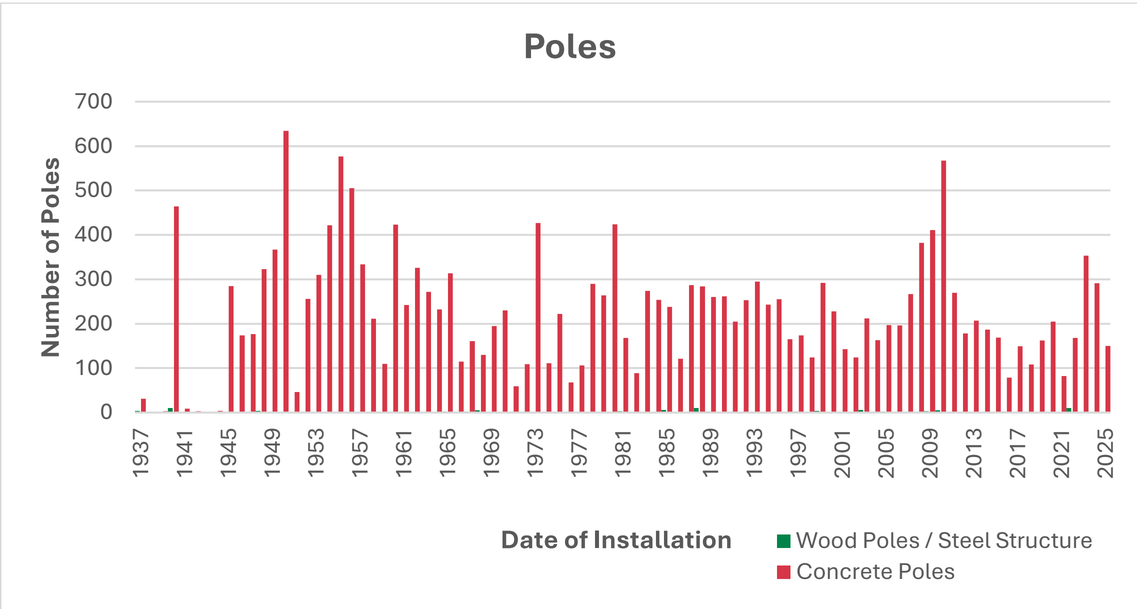

Figure 7-14: Age Profile: Poles

7.16.5 Maintenance Plan: Poles

Safety risks posed to the public and employees by pole failures are recognised by us as significant. Therefore, pole assets are proactively inspected at regular intervals and their condition assessed.

Condition Monitoring/Testing	Frequency
Visual inspection of 33kV poles.	2-year cycle
Feeder surveys cover all overhead network assets, including all poles. They consist of a combination of aerial and ground based visual inspections, subject to accessibility.	5-year cycle

Table 7-42: Maintenance Plan: Poles

7.16.6 Asset Replacement and Refurbishment: Poles

Poles are replaced when their structural integrity is irrevocably compromised, usually due to their condition. Reactive replacements of poles are also required because of damage from storms, vegetation, motor vehicles, etc. Current pole replacement drivers and influences are outlined in Table 7-43.

Replacement/Refurbishment Drivers
• Asset age, condition, and criticality. • Failures because of external damage, e.g., storms, trees, vehicles, etc. • Defects identified by visual inspections. • Conductor upgrades or replacements that necessitate higher pole top loadings and, therefore new poles.

Table 7-43: Asset Replacement and Refurbishment Drivers: Poles

7.16.7 Controlled Documents: Poles

CD Reference	Controlled Document Description
NK1011	As-Built Recording Manual
NK3005	Pole Blocking Calculator and Summary Sheet
NK3030	Design Requirements for Public Safety Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK5100	Re-stabilising In-Line Poles
NK6005	Crossarms Materials Standard
SOP-108	SOP – Pole Nailing of Defective Poles

Table 7-44: Controlled Documents: Poles

7.17 Distribution and Low-voltage Overhead Lines

7.17.1 Asset Description: Distribution and Low-voltage Overhead Lines

We have 1,407 kilometres of 11kV distribution lines and approximately 362 kilometres of low-voltage lines. Our overhead network includes Copper, ACSR, AAC, AAAC and galvanised steel conductor, ranging in size from No.8 ($9mm^2$) to Dingo ($160mm^2$).

7.17.2 Asset Condition and Performance: Distribution and Low-voltage Overhead Lines

The ACSR and AAC conductors are generally in good condition, with some localised coastal areas of ACSR approaching the end of life. AAAC has recently been installed and is in near-new condition. Some of the older, smaller copper and galvanised steel conductors are approaching end-of-life. The system is generally reliable, and current levels of maintenance are supporting satisfactory performance levels. No systemic issues have been identified regarding overhead lines.

7.17.3 Asset Condition Assessment: Distribution and Low-voltage Overhead Lines

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Distribution OH Open Wire Conductor	1%	3%	44.5%	47.5%	4%	2	2%
LV OH Conductor	0.5%	2.0%	42.8%	44.7%	10.0%	2	2%

Table 7-45: Asset Condition Assessment: Distribution and Low-voltage Lines

7.17.4 Asset Age Profile: Distribution and Low-voltage Overhead Lines

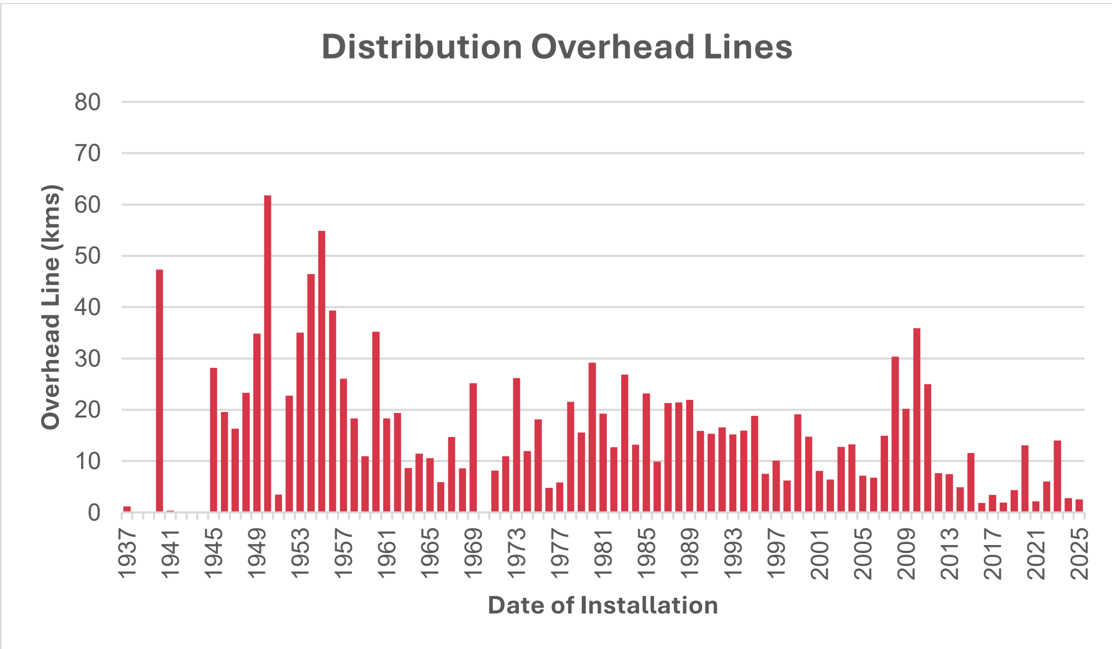

Figure 7-15: Asset Age Profile: Distribution Overhead Lines

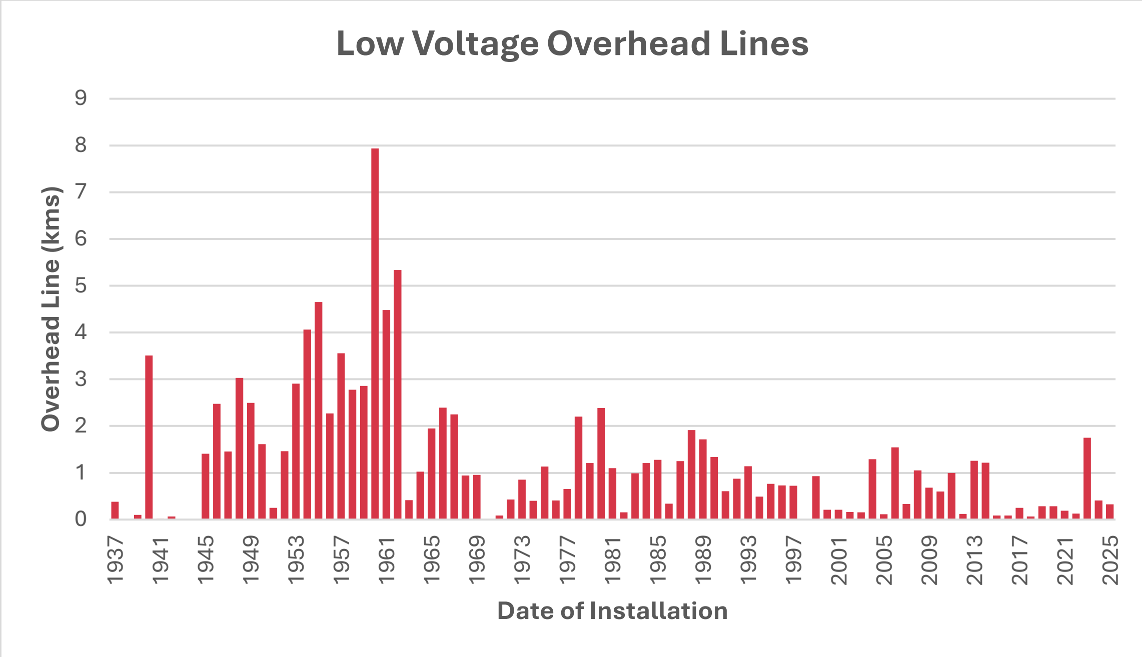

Figure 7-16: Asset Age Profile: Low-voltage Overhead Lines

7.17.5 *Maintenance Plan: Distribution and Low-voltage Overhead Lines*

The Feeder Survey and Condition Monitoring Standard govern the inspection and maintenance of our distribution and low-voltage lines. Maintenance is scheduled based on inspection results. Table 7-46 outlines our current maintenance programme for this asset class.

Condition Monitoring/Testing	Frequency
Our feeder surveys cover all overhead network assets and are a combination of aerial and ground based visual inspections, depending on access and terrain.	5-year cycle

Table 7-46: Maintenance Plan: Distribution and Low-voltage Overhead Lines

7.17.6 *Asset Replacement and Refurbishment: Distribution and Low-voltage Overhead Lines*

Distribution and low-voltage line renewals are primarily based on known asset condition from inspections. Currently, off-the-shelf non-invasive technologies and methods to cost-effectively and accurately determine the condition of overhead conductors are inconclusive and reasonably immature. For the copper conductor, we have been using the Conductor Condition Recognition (CCR) technology developed by our managed services provider. This technology uses drone technology to capture thousands of images of lines. The images are cut up to represent approximately 100mm of conductor. These images are then assessed using a machine learning algorithm to provide a very detailed assessment of the condition. This enables a very rich assessment of the trade-offs between maintenance and renewal interventions. We will continue to work with the industry to develop and adopt best practice in this area.

Current replacement drivers and influences are outlined in Table 7-47.

All of Centralines high-voltage 7/0.064 copper conductor has been flown and had CCR applied. This provided a rich view of timing for interventions required.

Replacement/Refurbishment Drivers
• Conductor type, design, composition, age, and criticality. • Historical conductor performance records and trend analysis. • Asset condition is based primarily on feeder inspection data. • CCR for copper conductor • Upgrades resulting from system growth initiatives. • Results of specially commissioned laboratory analysis. • Specific conductor location and environmental considerations, i.e., coastal areas. • The CBRM model is used to inform and assist in the identification and prioritisation of future conductor replacement programmes.

Table 7-47: Asset Replacement and Refurbishment Drivers: Distribution and Low-voltage Overhead Lines

7.17.7 Controlled Documents: Distribution and Low-voltage Overhead Lines

CD Reference	Controlled Document Description
NK3002	Line Design Loadings Standard
NK3022	Network Fusing Standard
NK3030	Design Requirements for Public Safety Standard
NK3041	Earthing Manual – Standard Earths
NK4022	Manufactured LV Aerial Bundled Conductor Construction Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK5080	Thermo-Vision Inspection Standard
NK5115	Re-sagging Conductor Standard
OS1004	Switching Plan Application and Approval Standard
OS1006	Live Line Work Operational Practices Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-112	SOP – Testing Corrosion on Conductors

Table 7-48: Controlled Documents – Distribution and Low-voltage Overhead Lines

7.18 Distribution and Low-voltage Underground Cables

7.18.1 Asset Description: Distribution and Low-voltage Underground Cables

The 11kV distribution network consists of approximately 44 kilometres, made up of 41km of XLPE and 3km of PILC cable. Both aluminium and copper conductors are used and are either single or three-core. Conductors range in size from approximately 16mm² to 400mm².

The low-voltage network consists of approximately 168 kilometres of cable. Cable sizes vary from 4mm² to 240mm².

7.18.2 Asset Condition and Performance: Distribution and Low-voltage Underground Cables

The condition of the distribution cabling is good, with very few defects and in-service failures in recent years. However, as more dynamic energy resources become available on the urban LV network, condition issues will arise as cables are utilised in a more dynamic manner. As this understanding is refined, it will inform and reshape our maintenance practices for LV cables.

7.18.3 Asset Condition Assessment: Distribution and Low-voltage Underground Cables

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Distribution UG XLPE and PVC	1%	1%	22.5%	22.5%	53%	3	2%
Distribution UG PILC		2.0%	44.0%	44.0%	10.0%	3	0.5%
LV UG Cable	0.5%	5.5%	23.5%	23.5%	47%	2	1.0%

Table 7-49: Asset Condition Assessment: Distribution and Low-voltage Underground Cables

7.18.4 Asset Age Profile: Distribution and Low-voltage Underground Cables

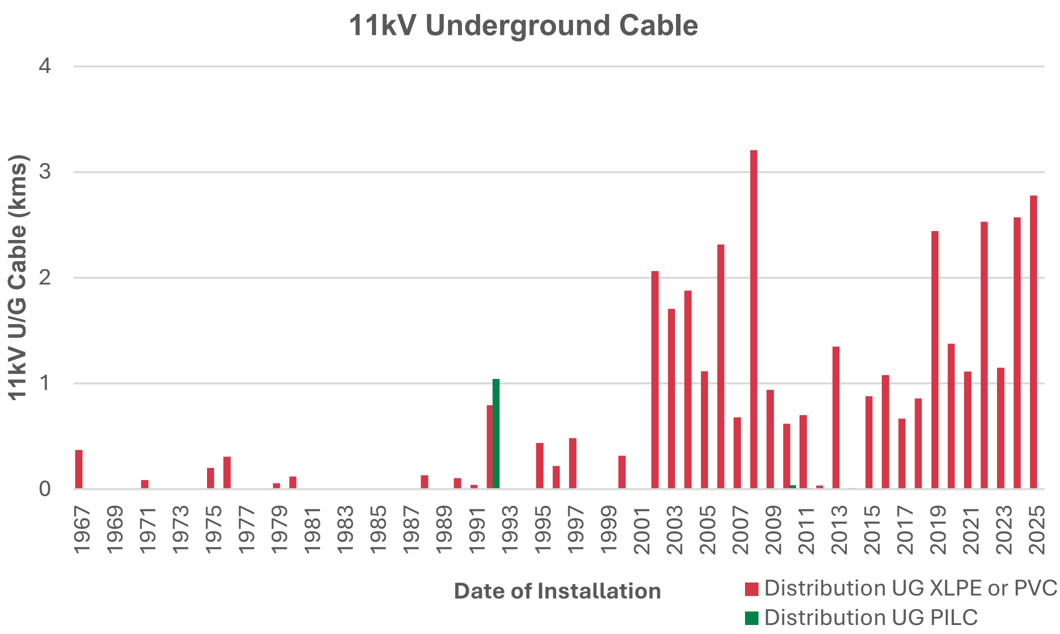

Figure 7-17: Asset Age Profile: Distribution Underground Cables

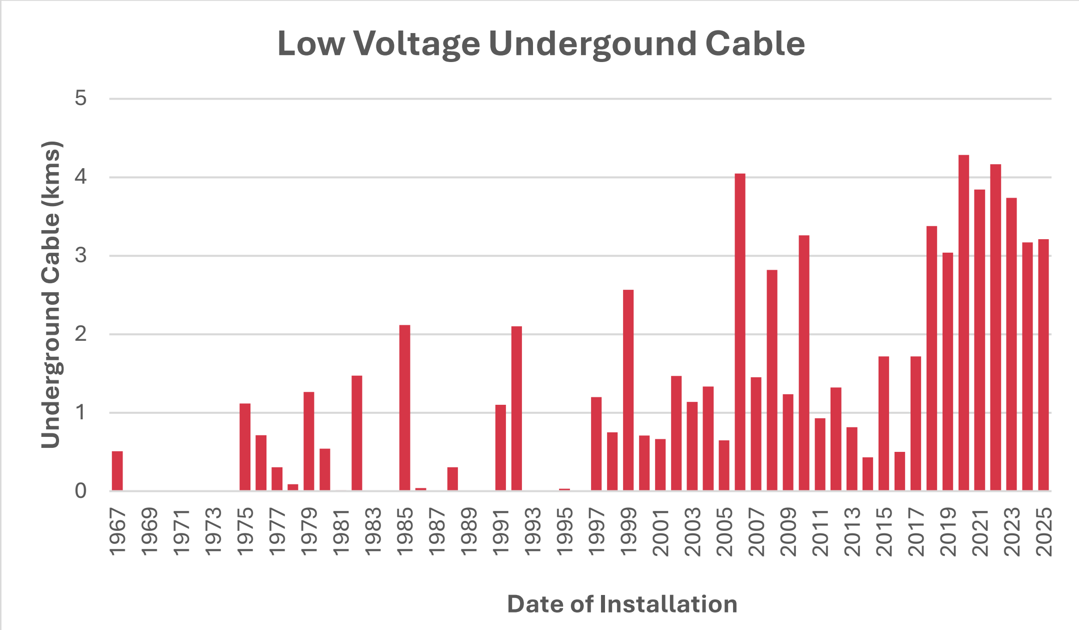

Figure 7-18: Asset Age Profile: Low-voltage Underground Cables

7.18.5 Maintenance Plan: Distribution and Low-voltage Underground Cables

Cable inspections are performed as part of the ground mounted inspection (GMI) and feeder survey programmes. This is limited to exposed cable, terminations, and connections. Diagnostic cable testing is currently only undertaken:

- because of a network fault, and
- on the substation incoming 11kV cables during transformer maintenance.

The defect process manages any maintenance requirements identified by inspections.

Condition Monitoring/Testing	Frequency
Distribution Cable	
Exposed cable, terminations and connections are inspected as part of the ground mounted distribution equipment inspection.	Annually
Exposed cable, terminations and connections are inspected as part of the overhead feeder survey and condition monitoring inspections.	5-year cycle
Diagnostic testing is undertaken because of any network incidents or faults, and on 11kV incomer cables during transformer maintenance.	As required
Low-voltage Cabling	
Exposed cable, terminations and connections are inspected as part of the ground mounted distribution equipment inspection.	Annually
Exposed cable, terminations and connections are inspected as part of the overhead feeder survey and condition monitoring inspections.	5-year cycle
No proactive low-voltage testing is currently undertaken.	

Table 7-50: Maintenance Plan: Distribution and Low-voltage Underground Cables

7.18.6 Asset Replacement and Refurbishment: Distribution and Low-voltage Underground Cable

Replacement of distribution and low-voltage cable is largely condition-based, but consideration is always given to future network development before any condition-based renewal project proceeds. Current replacement drivers and influences are outlined in Table 7-51.

Replacement/Refurbishment Drivers
• Cable type, design, composition, age, and criticality. • Historical cable performance records and trend analysis. • Results of diagnostic cable testing. • Cable failures. • Results of specially commissioned laboratory cable analysis. • Defects identified by visual inspections. • Specific cable location and environmental considerations. • The CBRM model will be introduced in future to inform and assist in the identification and prioritisation of future cable maintenance and replacement programmes.

Table 7-51: Asset Replacement and Refurbishment Drivers: Distribution Cable and Low-voltage Cable

7.18.7 Controlled Documents: Distribution and Low-voltage Cables

CD Reference	Controlled Document Description
NK3001	Underground Design
NK3022	Network Fusing Standard
NK3023	Underground Cable Specifications and Standards
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK4015	Underground Cable Installation Standard
NK4020	Cable Testing Standard
NK5011	Inspection and Testing of Standard and SWER Earths Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK6103	Material Specification – Polymeric Insulated HV Cable Standard
NK6105	Material Specification – Low-voltage Power Cables Standard
OS1004	Switching Plan Application and Approval Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-101	SOP – Identifying Cables Prior to Spiking

Table 7-52: Controlled Documents: Distribution and Low-voltage Cables

7.19 Distribution Transformers

7.19.1 Asset Description: Distribution Transformers

Distribution transformers are used to convert the 11kV distribution voltage to the lower voltage level of 415/230 volts, which is suitable for use by the customer. These transformers are installed across the entire network and are either pole or ground mounted.

Transformer size is determined by the number of customers connected or their estimated after-diversity load. They range from small pole-mounted 5kVA single-phase transformers up to large ground mounted 750kVA three-phase units.

Our network incorporates approximately 2,321 pole mounted and 209 ground mounted distribution transformers.

7.19.2 Asset Condition and Performance: Distribution Transformers

Our fleet of distribution transformers are in good condition and are providing a satisfactory level of performance. There are a few two-pole 'H' structures supporting distribution transformers. These are progressively being replaced as the wooden components decay and the structures lack appropriate seismic ratings.

Systemic Issues	Mitigation
In highly corrosive areas, including coastal zones, rust in cooling fins has resulted in oil leaks. Rust can also impact the integrity and security of transformers if not detected and treated promptly.	Any rust is proactively remediated when found. Use of corten steel in newly procured transformers to increase service life.
Two-pole H structures carrying overhead distribution transformers with low seismic resilience.	Replace with modern equivalent structures that are seismically rated or ground mount transformers.

Table 7-53: Systemic Issues and Mitigations: Distribution Transformers

7.19.3 Asset Condition Assessment: Distribution Transformers

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Transformers: Pole Mounted	2.7%	10.0%	19.0%	31.8%	36. 5%	3	3%
Transformers: Ground Mounted	1.0%	4.0%	5.0%	25.0%	65.0%	3	3.75%

Table 7-54: Asset Condition Assessment: Distribution Transformers

Forecast replacement percentage is higher than H1 percentage as deteriorated switches and ground mount transformers in Centralines are approaching end of life and some replacement will be made proactively to achieve project synergies including end of life kiosk buildings.

7.19.4 Asset Age Profile: Distribution Transformers

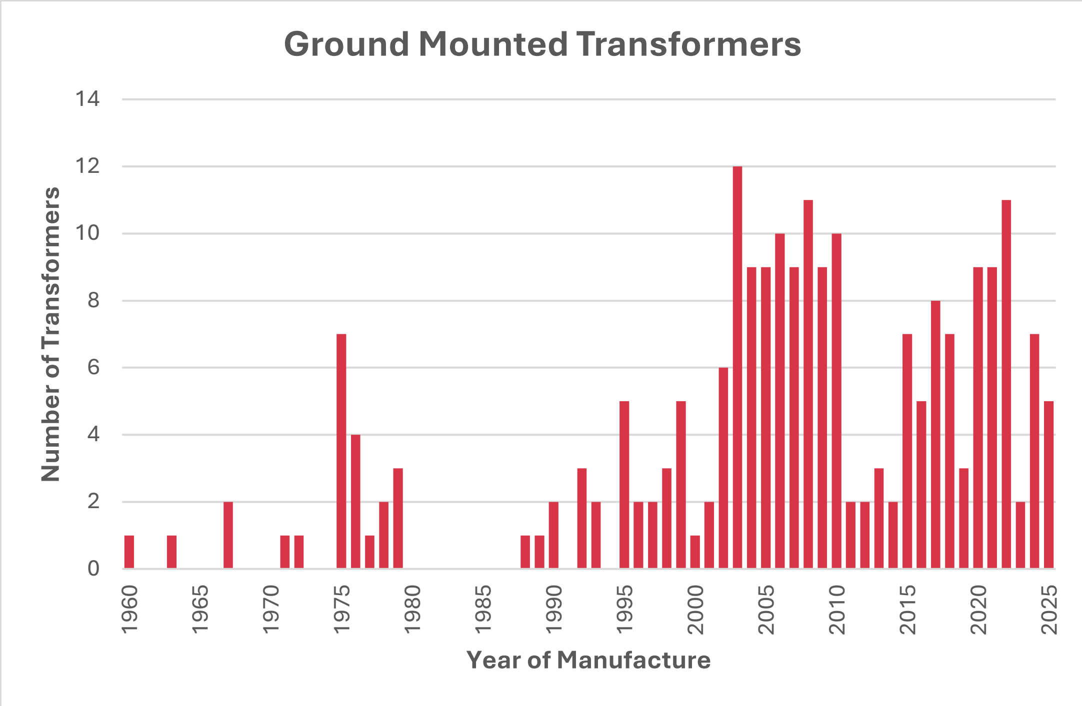

Figure 7-19: Asset Age Profile: Ground Mounted Distribution Transformers

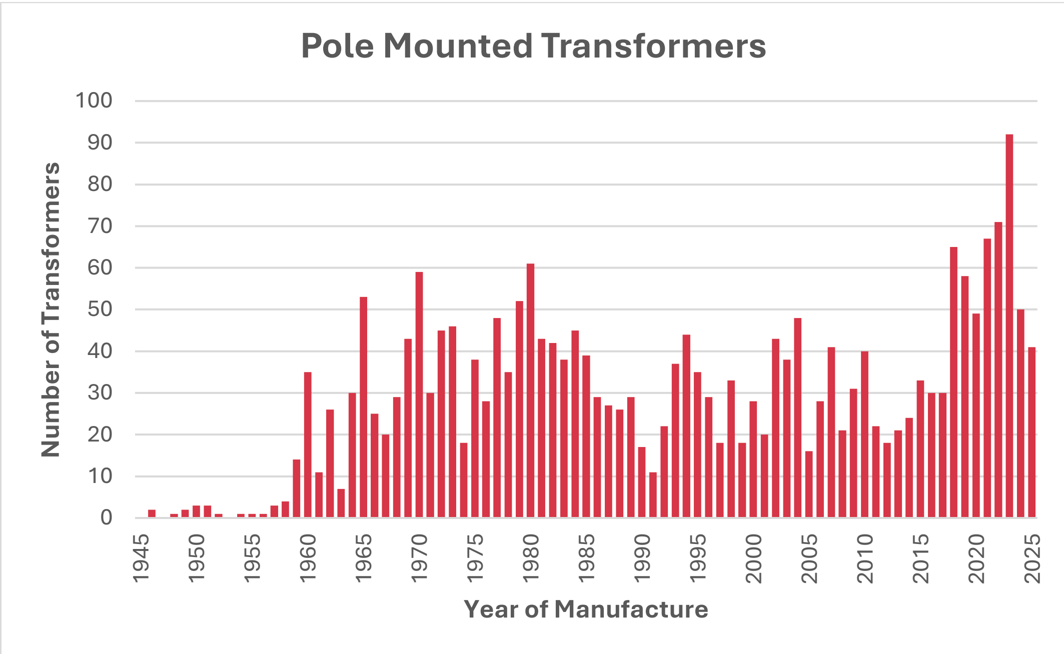

Figure 7-20: Asset Age Profile: Pole Mounted Distribution Transformers

7.19.5 Maintenance Plan: Distribution Transformers

We have programmes in place to inspect our fleet of distribution transformers. Corrective maintenance is carried out on an 'as required' basis following condition-monitoring inspections or because of issues identified by the defect process.

Condition Monitoring/Testing: Ground Mounted Transformers	Frequency
All ground mounted transformers are visually inspected as part of our ground mounted distribution equipment inspections (GMIs).	Annually
Inspection and testing of all distribution transformer earthing, including an earth site inspection and an earth resistance test. In addition, a visual inspection of all associated assets is undertaken while on site.	5-year cycle
A basic oil insulation test to measure dielectric (breakdown voltage) and moisture is carried out on unsealed transformers on all large industrial sites.	5-year cycle

Table 7-55: Maintenance Plan: Ground Mounted Distribution Transformers

Condition Monitoring/Testing: Pole Mounted Transformers	Frequency
A visual inspection of all pole mounted transformers is undertaken as part of our feeder surveys, which cover all overhead network assets. This is a combination of aerial and ground-based inspections, depending on access and terrain.	5-year cycle
Inspection and testing of all distribution transformer earthing, including an earth site inspection and an earth resistance test. In addition, a visual inspection of all associated assets is undertaken while on site.	5-year cycle

Table 7-56: Maintenance Plan: Pole Mounted Distribution Transformers

7.19.6 Asset Replacement and Refurbishment: Distribution Transformers

Several distribution transformers are proactively replaced each year due to condition assessments and testing from the various inspection programmes. Additionally, some reactive replacements are undertaken because of in-service failures due to third-party damage, lightning, storms, and age, etc.

The CBRM model is being used to better inform and assist in the identification and prioritisation of future pole and ground mounted transformer replacement programmes. Current replacement drivers are outlined in Table 7-57.

Replacement /Refurbishment Drivers
• Asset condition based primarily on GMI for ground mounted units and feeder inspection data for pole mounted units, and factoring in: ○ asset age ○ criticality, and ○ any available oil test results for ground mounted transformers. • Replacements resulting from system growth or customer-driven upgrades, and because of synergies with other renewal projects. • In-service transformer failures resulting from lightning, damage by third parties, other faults, etc.

Table 7-57: Replacement and Refurbishment Drivers: Distribution Transformers

7.19.7 Controlled Documents: Distribution Transformers

CD Reference	Controlled Document Description
NK3001	Underground Design
NK3022	Network Fusing Standard
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK4015	Underground Cable Installation Standard
NK4020	Cable Testing Standard
NK5011	Inspection and Testing of Standard and SWER Earths Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK5043	Insulating Oil Maintenance Standard
NK6003	Concrete Manufactured Products Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-39	SOP – Changing Taps in Distribution Transformers
SOP-50	SOP – Operating NX Fuses
SOP-56	SOP – Overhead Distribution Transformer Meter

Table 7-58: Controlled Documents: Distribution Transformers

7.20 Voltage Regulators

7.20.1 Asset Description: Voltage Regulators

Voltage regulators are electrical equipment designed to automatically maintain compliant voltages to customers, irrespective of how much power is being drawn from the line. Typically, they are installed at a substation or on long distribution lines. The output voltage is constantly monitored, and the units automatically change tap settings to maintain the output voltage within an acceptable range.

We have five, three-phase voltage regulators (fifteen regulator tanks) installed permanently on the network. In additional, we have a two-phase mobile regulator which is deployed as required across the network.

7.20.2 Asset Condition and Performance: Voltage Regulators

Our fleet of voltage regulators are in good condition and are performing reliably with no systemic issues identified.

7.20.3 Asset Condition Assessment: Voltage Regulators

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Voltage Regulators				50%	50%	3	0%

Table 7-59: Asset Condition Assessment: Voltage Regulators

7.20.4 Asset Age Profile: Voltage Regulators

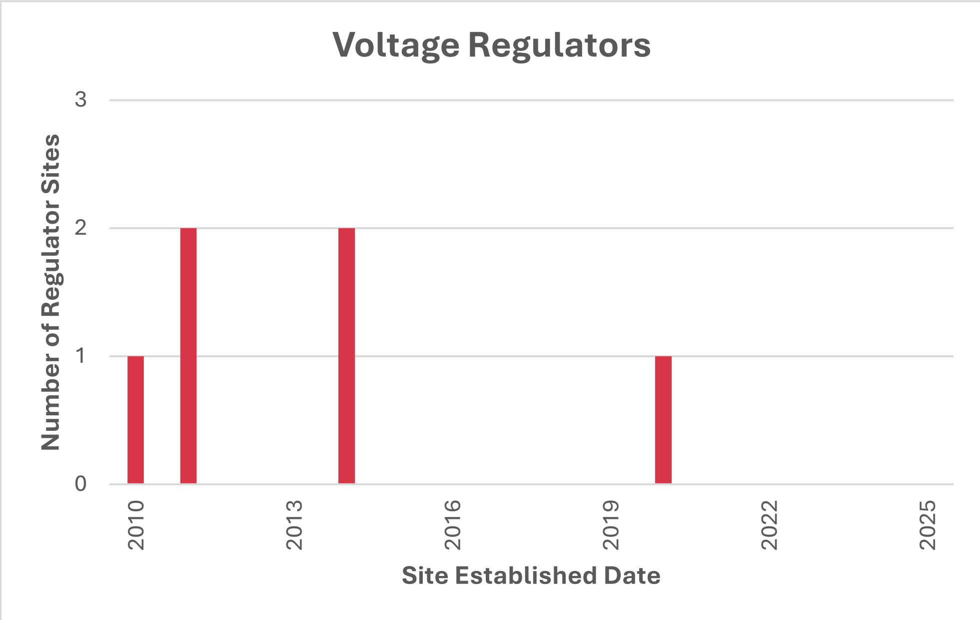

Figure 7-21: Asset Age Profile: Voltage Regulators

7.20.5 Maintenance Plan: Voltage Regulators

Regulators perform a critical operational function on our network. To ensure reliable performance, we have a tailored inspection and maintenance programme in place for this asset class.

Table 7-60 defines current inspection and maintenance activities.

Condition Monitoring/Testing	Frequency
Visual inspection of all regulators is undertaken as part of our feeder surveys. This inspection covers all overhead network assets and is a combination of aerial and ground-based inspections, depending on access and terrain.	5-year cycle
Inspection and testing of all regulators’ earthing, including an earth site inspection and an earth resistance test. In addition, a visual inspection of all associated assets is undertaken while on site.	5-year cycle
Visual inspections to ensure the integrity and security of the site, in addition to battery and operational checks to confirm the equipment is operating correctly.	Quarterly

Condition Monitoring/Testing	Frequency
We plan to adopt tap changer activity signature analysis (TASA) oil testing for our fleet of regulators. This provides a one to four rating of the oil condition. The score attained will dictate required maintenance activities.	A minimum of a 2-yearly cycle after 10-years of operation. Tests will be carried out as part of the inspections above.

Table 7-60: Maintenance Plan: Voltage Regulators

7.20.6 Asset Replacement and Refurbishment: Voltage Regulators

Due to the age profile and good condition of this asset fleet, there are no planned regulator replacements during the current RAMP planning period. Future replacement drivers are outlined in Table 7-61.

Replacement/Refurbishment Drivers
• Asset condition is based primarily on inspections and factoring in asset age, criticality, capacity and functionality. • TASA oil test results. • Historical performance. • Availability of spare parts.

Table 7-61: Asset Replacement and Refurbishment Drivers: Voltage Regulators

7.20.7 Controlled Documents: Voltage Regulators

CD Reference	Controlled Document Description
NK5015	Voltage Regulator Inspection Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK5043	Insulating Oil Maintenance Standard
NK5075	Cooper Voltage Regulator Maintenance Standard
SOP-19	SOP – Magtech Voltage Booster Regulator

Table 7-62: Controlled Documents: Voltage Regulators

7.21 Overhead Distribution Switchgear

7.21.1 Asset Description: Overhead Distribution Switchgear

Overhead distribution switchgear includes all electrical switching equipment on the medium voltage overhead network. This switchgear is used to protect, isolate, and connect sections of the network for operational purposes.

7.21.2 Asset Description: Air Break Switches/Disconnectors

Air break switches (ABS) or disconnectors are manually operated switches used for connecting or disconnecting different sections of 11kV or 33kV circuits. All phases of the switch are mechanically linked so that they operate together. Early model ABS were primarily intended for no-load switching. However, modern switches have flicker arc horns and/or load break attachments to allow limited on-load switching capability. There are a small number of predominantly 33kV disconnectors installed in zone substations to enable the isolation of equipment. We have approximately 300 ABSs on our network.

7.21.3 Asset Description: Isolation/Fuse Links

Single-phase isolation/fuse links are used on the overhead network to provide isolation and/or fusing functionality at specific points on the network. These links are manually operated with a 'hot stick' and can be either solid links or incorporate fuse elements. We have approximately 3,000 links on our network, predominantly of the expulsion drop-out fuse type.

7.21.4 Asset Description: Reclosers

Reclosers are automatically operated electrical switches installed on the overhead network. They are designed to interrupt the supply to electrical power circuits, thus protecting upstream and downstream electrical assets from damage caused by a shorted or overloaded circuit. Additionally, they ensure the safety of the public and EDB employees, and provide electrical discrimination on the network, reducing the outage impacts of faults.

Their basic function is to interrupt power by an initiated control command or automatically by protective sensing devices that detect abnormal or fault conditions. They are designed to interrupt circuits repeatedly and safely, both under normal load and fault conditions.

A recloser can be reset manually or automatically (and remotely) to resume normal operation after a fault. They can be programmed to auto-reclose under certain circumstances until they lock out if the fault remains after a predetermined number of operations.

7.21.5 Asset Description: Sectionalisers/Load Break Switches

Sectionalisers are like reclosers in operation, but they are not designed to open immediately when a fault is detected. Sectionalisers can be remotely operated and are able to switch load. Modern reclosers provide a wealth of network data, including voltages, currents, and fault passage information.

Sectionalisers can be programmed to operate autonomously with a recloser and other sectionalisers to isolate a faulty section of line. This allows the recloser to auto-reclose, limiting the impact of the fault.

We have 127 reclosers and sectionalisers on our network, including both three-phase and single-phase units.

7.21.6 Asset Condition and Performance: Overhead Distribution Switchgear

Overall, the condition of our overhead distribution switchgear is good, with few in-service failures.

There have been some cracked insulators identified on a certain type of ABS, with confirmation from other networks that they, too, have been experiencing similar issues. Acoustic testing has been used to condition assess these switches. A prioritised programme to retrofit alternative insulators has been implemented. We are now using an alternative ABS for all new installations.

We have had an issue with single-phase 11kV reclosers (peanuts). A prioritised replacement programme to replace all these switches has been undertaken over the past few years and is drawing to a close.

7.21.7 Asset Condition Assessment: Overhead Distribution Switchgear

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
Pole Mounted 11kV Switches and Fuses	2%	11%	19%	21%	47%	2	4%
Reclosers and Sectionalisers	0	6.0%	23.5%	23.5%	47.0%	3	3.8%

Table 7-63: Asset Condition Assessment: Overhead Distribution Switchgear

Forecast replacement percentage is higher than H1 percentage as emerging issues with a manufacturer of reclosers will likely necessitate replacements once remediation agreement is reached.

7.21.8 Asset Age Profile: Overhead Distribution Switchgear

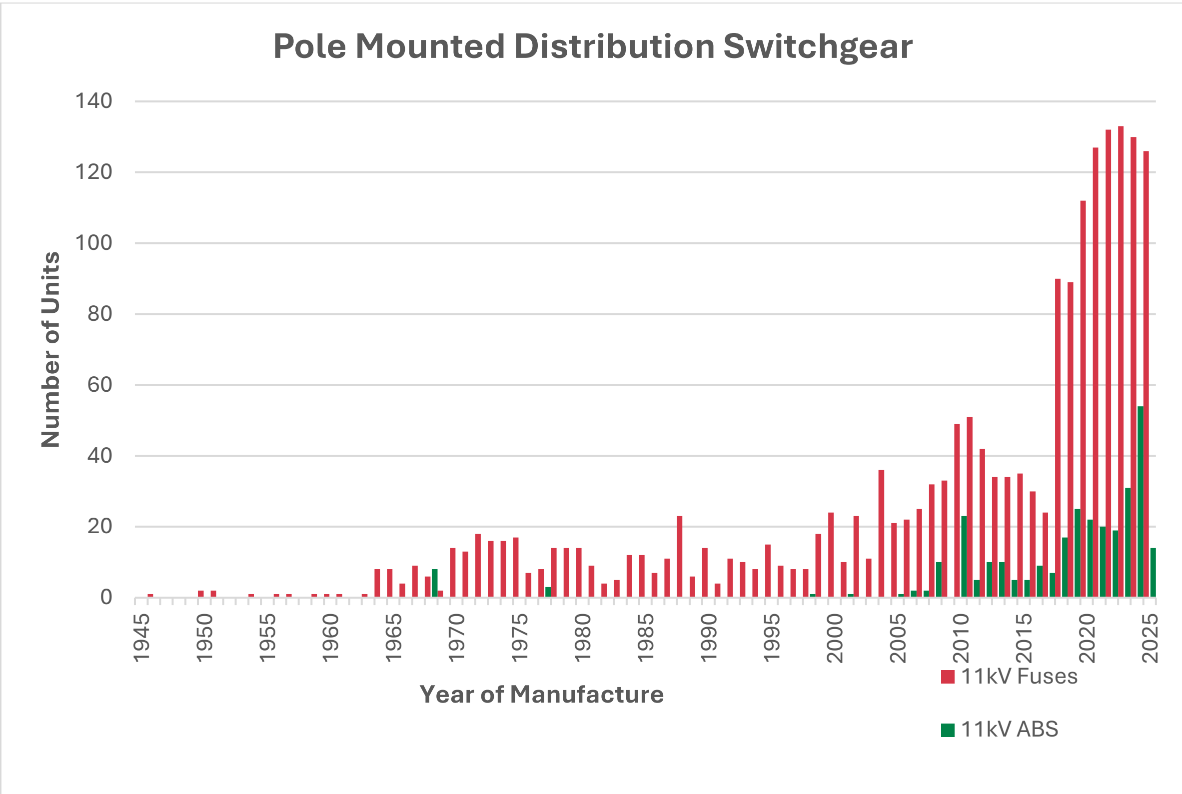

Figure 7-22: Asset Age Profile: Pole Mounted Distribution Switchgear

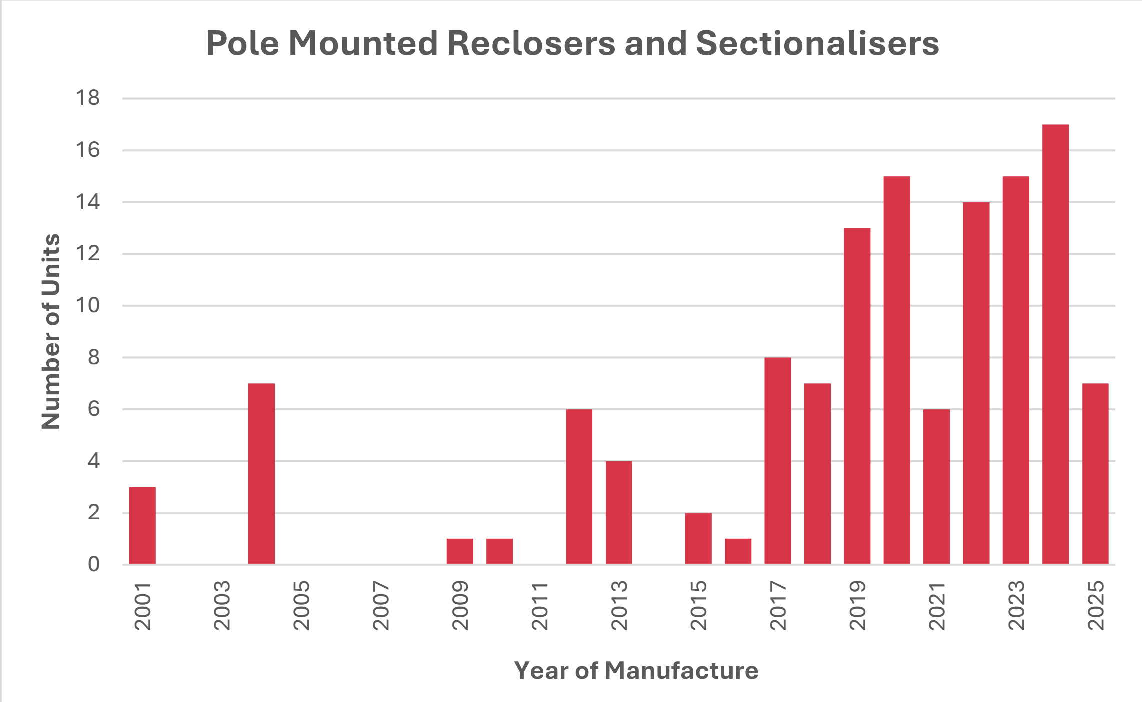

Figure 7-23: Age Profile: Pole Mounted Reclosers and Sectionalisers

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7.21.9 Maintenance Plan: Overhead Distribution Switchgear

The following maintenance activities are undertaken on overhead distribution switchgear.

Condition Monitoring/Testing	Frequency
Our feeder surveys cover all overhead network assets. They include overhead distribution switchgear and are a combination of aerial and ground based visual inspections, depending on access and terrain.	5-year cycle
Inspection and testing of all 11kV earthing installations include an earth site inspection and an earth resistance test. In addition, a visual inspection of all associated assets is undertaken while on site.	5-year cycle
In addition to the above, reclosers and sectionalisers are subject to an inspection and operational testing programme.	Annually, with quarterly battery checks
We carry out acoustic surveys on all 11kV ABS switches with insulators that are prone to cracking	3-year cycle
Zone substation disconnectors (ABS) have been included in this section. The following inspections and maintenance are specific to these switches:	
Detailed visual inspection of all switch yard equipment. Included is a check of all insulators to ensure they are in good condition and free of audible discharges or signs of tracking, etc.	Fortnightly
Thermo-vision, corona, and partial discharge inspection.	Annually

Condition Monitoring/Testing	Frequency
Complete shutdown with both visual and physical inspection of flexible connections, steel work, bolts, and earthing. Contacts, terminations, and insulators are all inspected and cleaned. The switches are opened and closed to ensure correct operation and alignment of all moving parts.	10-year cycle

Table 7-64: Maintenance Plan: Overhead Distribution Switchgear

7.21.10 Asset Replacement and Refurbishment: Overhead Distribution Switchgear

Current replacement and refurbishment drivers are essentially the same for all overhead distribution switchgear. These are outlined in Table 7-65.

Replacement/Refurbishment Drivers
• Asset condition is based primarily on feeder inspection data, asset-specific inspections and testing, factoring in asset age, functionality, capacity, and criticality. • In-service failures resulting from corrosion, lightning damage, and other faults, etc. • Upgrades resulting from system growth, power quality or customer projects. • Issues identified through the defect process. • Availability of spares.

Table 7-65: Asset Replacement and Refurbishment: Overhead Distribution Switchgear

7.21.11 Controlled Documents: Overhead Distribution Switchgear

CD Reference	Controlled Document Description
NK1011	As-Built Recording Manual
NK3022	Network Fusing Standard
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK5011	Inspection and Testing of Standard and SWER Earths Standard
NK5016	Line Recloser Inspections Standard
NK5020	Feeder Survey and Condition Monitoring Standard
NK5036	Disconnector, ABS and Earth Maintenance Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-003	SOP – Operating Liquid Fuses
SOP-004	SOP – Operating Fuse Cut Outs
SOP-005	SOP – Operating Air Break Switches
SOP-006	SOP – Working beyond Sectos and ENTEC 11kV Switches
SOP-007	SOP – Operating ENTEC 630A 11kV Switches
SOP-008	SOP – Operating Sectos 630A 11kV Switches

CD Reference	Controlled Document Description
SOP-14	SOP – Operating Capacitor Banks
SOP-15	SOP – Vacuum Capacitor Switch
SOP-16	SOP – McGraw Edison Recloser
SOP-17	SOP – Cooper Nova Recloser
SOP-40	SOP – Operating NX Arc Strangler Fuses

Table 7-66: Controlled Documents: Overhead Distribution Switchgear

7.22 Ground Mounted Distribution Switchgear

7.22.1 Asset Description: Ground Mounted Distribution Switchgear

Ground mounted distribution switchgear is used to protect, isolate, and connect sections of the 11kV network for operational purposes. Ground mounted switchgear, typically comprising three or four 11kV switches and/or fused switches, housed within a standalone unit enclosure, is commonly referred to as a ring main unit (RMU). An RMU typically can have a maximum of two fused switches.

Ground mounted distribution switchgear that encompasses a single switch or fused switch unit that can be:

- connected to an RMU by way of an 11kV busbar or cable, or
- a stand-alone unit is referred to as an 11kV switch.

RMUs and 11kV switches are designed to mechanically operate all three phases simultaneously. Most include earth switches, which allow individual switches to be earthed. Our older RMUs have switch contacts immersed in insulating oil to assist with arc suppression on opening. We have currently standardised on ABB Safelink arc-rated switches with SF_6 insulation with both manual and remote operating capability. We currently have 27 RMU and four 11kV switches on our network.

7.22.2 Asset Condition and Performance: Ground Mounted Distribution Switchgear

Our fleet of ground mounted distribution switchgear is in good condition and performing reliably. No systemic issues have been identified.

7.22.3 Asset Condition Assessment: Ground Mounted Distribution Switchgear

Asset Category	Grade H1	Grade H2	Grade H3	Grade H4	Grade H5	Data Accuracy	% Forecast to be Replaced in next 5-Years
11kV Ring Main Units	3.75%	11.25%	17.40%	28.10%	39.50%	3	15%
11kV Switches				100%		3	0%

Table 7-67: Asset Condition Assessment: Ground Mounted Distribution Switchgear

Forecast replacement percentage is higher than H1 percentage as deteriorated switches and ground mount transformers in Centralines are approaching end of life and some replacement will be made proactively to achieve project synergies including end of life kiosk buildings.

7.22.4 Asset Age Profile: Ground Mounted Distribution Switchgear

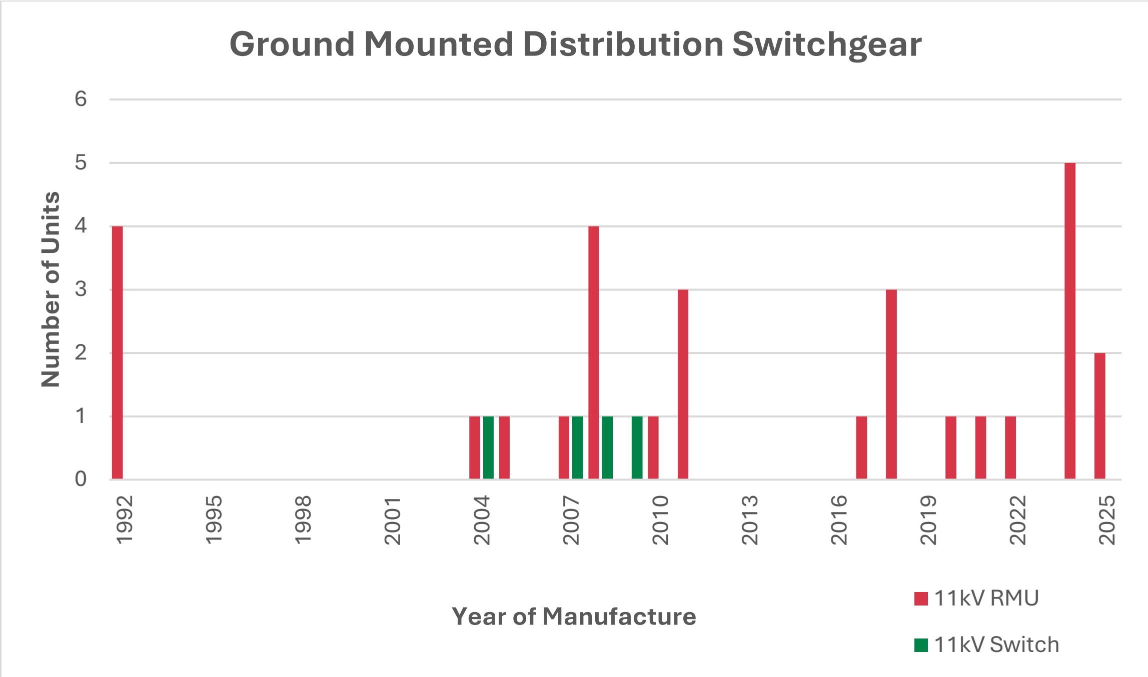

Figure 7-24: Asset Age Profile: Ground Mounted Distribution Switchgear

7.22.5 Maintenance Plan: Ground Mounted Distribution Switchgear

We take a proactive approach to inspecting and maintaining ground mounted distribution switchgear. Table 7-68 details the maintenance undertaken on this asset class.

Condition Monitoring/Testing	Frequency
All ground mounted distribution switchgear is visually inspected as part of our GMIs. These inspections include close visual examination, and from this year. The inspections will use partial discharge, corona, and infrared sensing technologies to assist in the detection of potential defects and faults.	Annually
Inspection and testing of all ground mounted distribution switchgear earthing includes an earth site inspection and an earth resistance test. In addition, a visual inspection of all associated assets is undertaken while on site.	5-year cycle

Table 7-68: Maintenance Plan: Ground Mounted Distribution Switchgear

7.22.6 Asset Replacement and Refurbishment: Ground Mounted Distribution Switchgear

Due to the condition and age profile of this asset class, only a small number of older, poorer condition RMUs are planned for replacement during the RAMP planning period. Current and future replacement and refurbishment drivers are outlined in Table 7-69.

Replacement/Refurbishment Drivers
• Switch design, insulating medium, age, condition, and criticality. • Historical switch performance records and trend analysis. • Results of diagnostic testing and visual inspections. • Health and safety considerations. • Current and future maintenance requirements. • Availability of spare parts. • Specific switch location and environmental considerations. • Manufacturer recommendations. • The CBRM model is used to inform and assist in the identification and prioritisation of maintenance and replacement programmes.

Table 7-69: Asset Replacement and Refurbishment Drivers: Ground Mounted Distribution Switchgear

7.22.7 Controlled Documents: Ground Mounted Distribution Switchgear

CD Reference	Controlled Document Description
NK1011	As-Built Recording Manual
NK3001	Underground Design
NK3014	11kV Ring Main Switch Specifications
NK3022	Network Fusing Standard
NK3023	Underground Cable Specifications and Standards
NK3030	Design Requirements for Public Safety Standard
NK3040	Earthing – Engineering Principles
NK3041	Earthing Manual – Standard Earths
NK4013	Testing of Non-cable Assets Standard
NK4015	Underground Cable Installation Standard
NK4020	Cable Testing Standard
NK5011	Inspection and Testing of Standard and SWER Earths Standard
NK5038	Metalclad Switchgear Maintenance Standard
NK5043	Insulating Oil Maintenance Standard
NK5070	Sulphur Hexafluoride (SF_6) Use and Handling Standard
NK6003	Concrete Manufactured Products Standard
OS1014	Process for Commissioning and Livening Equipment at Zone Substations
SOP-09	SOP – Operating a Safelink 12kV – SF_6 Insulated Ring Main Switch
SOP-11	SOP – Operating Small Dimension (SD) (ABB Andelect) Ring Main Switch
SOP-12	SOP – Long and Crawford Ring Main Switch

Table 7-70: Controlled Documents: Ground Mounted Distribution Switchgear

7.23 Overview of Secondary Assets

This section provides descriptions and high-level summaries of lifecycle asset management related information on our portfolio of secondary assets.

Information is provided on the asset categories detailed in Table 7-71.

Asset Class	Section Reference
Network Communications	7.24
Supervisory Control and Data Acquisition (SCADA)	7.25
Protection Relays	7.26
Zone Substation: Secondary Assets	7.27
Low-voltage Pillars	7.28

Table 7-71: Asset Class Descriptions and Section References

7.24 Network Communications

7.24.1 Fibre Network (Primary Communication Network)

As mentioned in Section 6 – Network Development Plans, the main medium for our electricity network communications is a carrier-grade fibre optic cable network. This network is a mixture of leased and Centralines-owned circuits. For more detail refer to Section 6 – Network Development Plans, subsection 6.1.6.1.

7.24.2 VHF Radio Communications

As mentioned in Section 6 – Network Development Plans, subsection 6.1.6.2, VHF is used for the transmission of voice communication between our managed services provider's NOC in Hastings and our field staff.

7.25 Supervisory Control and Data Acquisition (SCADA)

As mentioned in Section 6 – Network Development Plans, subsection 6.1.6.3, SCADA is the system that our managed services provider uses to:

- monitor and control network operations
- obtain system information, and
- create historical records of events.

7.25.1 Centralines RTU and Communications Upgrade

Our current RTU infrastructure vendor will cease product manufacturing in 2027 and support in 2032. From 2027, we will be unable to purchase new equipment from this vendor and will receive support only until 2032. Afterwards, there will be no updates or issue resolutions.

We rely on field automation for maintaining service levels. Future improvements will require fast and reliable communication systems. A seven-year plan is in place to upgrade the SCADA and Voice communications network, aiming to reduce the risk of systemic failures. The upgrade will be implemented in multiple phases over several years to manage costs. There is an emphasis on transitioning to digital SCADA communications to enhance resilience and potentially transition to digital VHF voice in the future.

7.26 Protection Relays

7.26.1 Asset Description: Protection Relays

A protection relay is a device designed to trip a circuit breaker when a fault is detected. Early protection relays were electro-mechanical devices that used coils operating on moving parts to detect abnormal operating conditions, such as:

- transformer differential
- over-current
- earth fault
- over and under voltage, and
- frequency.

Modern numeric relays are far superior to these early electromechanical relays. They operate extremely quickly, offer increased functionality, and provide detailed information on faults that can be remotely downloaded.

We have standardised on SEL-manufactured protection relays due to their high quality, reliability, ten-year warranty period and after sales technical and training services. Standardising on one manufacturer also has some advantages for field technicians who only need to be familiar with one product range. This simplifies and speeds up relay configuration, testing and commissioning and the downloading and interpretation of power system fault logs.

7.26.2 Asset Condition and Performance: Protection Relays

Our relay protection assets have been performing reliably. A fibre-enabled 33kV ring circuit differential protection scheme has been installed between the Waipawa and Waipukurau Zone Substations and Transpower's Waipawa GXP. Additionally, five transformer differential schemes have been implemented at Waipawa and Waipukurau zone substations.

Centralines, via our substation fibre communication network, currently have engineering access to approximately 22 protection relays across our network. This allows protection engineers to remotely download and analyse power system events to gain an understanding of the nature and magnitude of any event.

7.26.3 Maintenance Plan: Protection Relays

Protection relays are regularly checked as part of our fortnightly substation maintenance regime. Operational checks are carried out every ten-years.

7.26.4 Fast Protection Benefits: Protection Relays

There are many benefits to the protection upgrades that have been undertaken at Centralines. Some of these benefits are outlined below.

- Health and safety outcomes have improved. Fast protection reduces the risk and potential consequences to employees and the public resulting from network faults.
- Network reliability and security have improved due to unitised protection that:
  - reduces fault propagation
  - eliminates cascade tripping, and
  - mitigates the loss of discrimination, which sometimes occurs due to the slow operation of protection systems.
- Fast protection reduces the potential damage to network equipment as fault durations are significantly reduced.
- The quality of supply to our customers has been enhanced as fast operating protection significantly reduces voltage dips on our network.
- Remote engineering access is possible. This allows the remote interrogation of relays to analyse power system faults.
- Numeric relays enable SCADA serialisation, which eliminates discrete hard copper connections between equipment.

7.27 Zone Substation: Secondary Assets

In addition to the main zone substation asset classes covered earlier in this section, there are also secondary assets within a zone substation that provide other critical functions. Table 7-72 provides a high-level overview of these assets.

Asset	Asset Description	Maintenance
Voltage Transformers	Voltage transformers (VTs) are used to transform high-voltages to lower voltages that can be more safely used for protection, control, indication and metering. VTs may be located on both outdoor and indoor equipment and be either single-phase or three-phase units.	Visual inspection included in fortnightly substation inspections. Annual thermo-vision, corona, and partial discharge inspections. Six-yearly service, including a clean and lubrication of moving parts, visual inspection, insulating oil maintenance, insulation test, and a check of all LV/HV and earth connections and holding down arrangements.
Current Transformers	Current transformers (CTs) are used to transform high currents to lower levels that can be used for protection, control, indication and metering. Outdoor CTs are generally stand-alone, single-phase	Visual inspection included in fortnightly substation inspections. Annual thermo-vision, corona, and partial discharge inspections.

Asset	Asset Description	Maintenance
	oil-insulated units and usually form part of a circuit breaker. Indoor CTs are generally single-phase, solid insulation and located on each phase of a circuit breaker.	Six-yearly service, including a clean, visual inspection, insulation test (HT-E only), and a check of all LV/HV and earth connections and holding down arrangements.
Outdoor Structures	These consist of overhead support structures and conductive busbars constructed of either copper or aluminium. These busbars allow switchgear and power transformers to be connected. Typically, these structures incorporate disconnectors to provide isolation for maintenance.	Visual inspection included in fortnightly substation inspections. Annual thermo-vision, corona, and partial discharge inspections.
Direct Current (DC) Systems	DC systems at zone substations are used to provide an independent stand-alone power supply that can function if the main AC supply fails. The general arrangement is to have battery banks on continuous charge connected to critical control, protection, and communication equipment.	Visual inspection included in fortnightly substation inspections. Five-yearly substation battery replacements.
Substation Earthing Systems	Because of the high voltages and currents encountered in zone substations, earthing systems are designed at the time of construction to ensure the safety of personnel and equipment. The earthing systems generally comprise bare copper cables laid in the ground in a grid formation. All substation equipment is bonded to these earth grids, and the earth grids in turn are connected to earthing rods that are driven deep into the ground.	Visual inspection included in fortnightly substation inspections. Annual thermos-vision, corona, and partial discharge inspections. Substation earthing systems are independently tested every 5-years.
Oil Containment Systems	All substations have a bunded transformer foundation and oil containment system.	Visual inspection included in fortnightly/monthly substation inspections.

Table 7-72: Zone Substation: Secondary Asset Descriptions and Maintenance

7.28 Low-voltage Pillars

7.28.1 Asset Description: Low-voltage Pillars

Pillars are enclosures for the termination of buried cables and the mounting of fuses, control relays and other electrical equipment. Typically, low-voltage pillars are the isolation/demarcation point between the distribution network and the customer's service main. They are also used as group breaks to enable backfeeding capability on the low-voltage network.

We have approximately 1,250 low-voltage pillars installed on our network.

7.28.2 Asset Condition and Performance: Low-voltage Pillars

Pillars are ubiquitous assets that form part of the urban landscape. As such, they suffer from motor vehicle damage, vandalism, and occasionally unauthorised access.

Ultraviolet (UV) degradation, corrosion, burnt-up fuses, voltage tracking and moisture build-up are all issues that impact on this asset class. Recent innovations to defer replacement have included painting fibreglass pillars to reduce UV damage and prolong the assets' lives. The introduction of new PVC pillars with replaceable covers has reduced the need to replace the entire asset when the cover alone is damaged.

7.28.3 Maintenance and Replacement Plan: Low-voltage Pillars

Most pillar maintenance and replacement are reactive and in response to faults, condition assessments, network upgrades and reported defects.

Pillars are included in the five-yearly safety inspection programme for low-voltage ground mounted assets. These inspections have a public safety emphasis and focus on asset security and guarding against unauthorised public access. Any minor repairs are carried out at the time by asset inspectors, and other defects are logged for follow-up action.

7.29 Centralines' Assets installed on Bulk Electricity Supply Points

7.29.1 Transpower Grid Exit Points (GXPs)

We have a few assets installed at Transpower's GXP. These assets include:

- 33kV sub-transmission and 11kV distribution lines and cables, and
- communications equipment and protection relays.

These assets are covered by our Access and Occupation Schedule Agreement, which sets out the terms and conditions associated with our assets on Transpower sites.

7.30 Centralines' Owned Generators

7.30.1 Mobile Generation

We own a 50kVA mobile generator, which is used to temporarily maintain or restore supply to our customers during both planned and unplanned outages. An external contractor is engaged to maintain this generator.

7.31 Other Generation Plant

7.31.1 Centralines' Office

We own a 65kVA on-site diesel generator that maintains supply to our office and depot. This generator ensures continuity of supply to our complex, enabling business continuity when normal supply is lost to the site. We engage an external contractor to maintain this generator.

7.32 Asset Maintenance Expenditure Projections

Our maintenance expenditure projections for the RAMP planning period are presented by asset category in Table 7-73.

Asset Category	Asset Maintenance Expenditure Projections ($000)									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Overhead Lines	1,902	1,902	1,802	1,802	1,802	1,802	1,802	1,802	1,802	1,802
Underground Cables	178	178	178	178	178	178	178	178	178	178
Circuit Breakers	32	32	32	32	32	32	32	32	32	32
Zone Substation Buildings and Equipment	81	81	81	81	81	81	81	81	81	81
Power Transformers	57	57	57	57	57	57	57	57	57	57
Distribution Transformers and Regulators	83	83	83	83	83	83	83	83	83	83

Asset Category	Asset Maintenance Expenditure Projections ($000)									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Distribution Switchgear	80	80	80	80	80	80	80	80	80	80
Vegetation	628	628	628	628	628	628	628	628	628	628
SCADA and Communications	45	45	45	45	45	45	45	45	45	45

Table 7-73: Asset Maintenance Expenditure Projections for RAMP Planning Period

7.33 Asset Renewal Expenditure Projections

Our renewal expenditure projections for the RAMP planning period are presented by asset category in Table 7-74.

Asset Category	Asset Renewal Expenditure Projections ($000)									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
11kV GM Circuit Breakers	-	-		-	-	-	-	-	-	-
Poles	643	707	714	721	729	736	743	751	758	766
11kV PM Reclosers and Sectionalisers	41	41	41	41	41	41	41	41	41	41
11kV PM Switches and Fuses	249	249	249	249	249	249	249	249	249	249
Distribution and LV OH Conductor	1,640	1,640	1,640	2,153	2,153	2,608	2,608	2,608	2,608	2,608
Distribution and LV cable	358	358	358	358	358	358	358	358	358	358
Pole Mounted Transformers	599	599	599	599	629	692	726	726	726	726

Asset Category	Asset Renewal Expenditure Projections ($000)									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Zone Substation Transformers	-	0	0	0	0	0	0	0	0	0
Zone Substations	-	0	0	0	0	0	0	0	0	0
11kV RMU	93	93	93	93	93	93	93	93	93	93
Ground Mounted Distribution Transformers	151	151	151	151	151	151	151	151	151	151
Other Assets	187	161	154	134	97	72	30	22	515	507

Table 7-74: Asset Renewal Expenditure Projections for RAMP Planning Period

7.34 Renewal Project List 2026-2027

Renewal Project List 2026/27			
Project Number	Asset Category	Project Description	Project Budget ($000)
211500	SCADA and communications	SCADA Digital Upgrade (FY27-Waipawa)	178
211335	SCADA and communications	SCADA Digital Upgrade (FY27-Mesh)	42
206147	Distribution switchgear	Replace RMU 7011/7012/CB7014/7013 - CL	140
215803	Distribution switchgear	165 - South Serv Lane Waip REP RMU 7031.	240
215786	Distribution switchgear	Replace RMU 7001/7002/CB7003 - CL	140
215800	LV Line	BLACKHEAD RD PORANGAHAU 925112 - 925188	670
216795	Distribution switchgear	CL 15 - Replace RMU 7021 and TX C4/174	240
213431	LV Line	CL 19 - 11kV Conductor Upgrade (Stage 2)	520
215024	LV Line	CL 75 - Replace No 8 GS Conductor	156

Renewal Project List 2026/27			
Project Number	Asset Category	Project Description	Project Budget ($000)
215018	LV Line	CL 86 - Replace 7/.064 Cu Conductor	115
215025	LV Line	CL 04 - Replace No 8 GS conductor	153

Table 7-75: Renewal Project List 2026-2027

7.35 Renewal Project List 2027/28 to 2030/31

In addition to the projects listed below, our EAMS includes a significant number of other asset constraints. These are currently being evaluated by our managed services provider's Constraints Team. Once the evaluation is complete, our managed services provider's Solutions Team will consider and identify the optimal solution to resolve each constraint. As specific projects are identified, these will be added to our AMP.

Renewal Project List 2027/28 to 2030/31	
Financial Year	Project Description
2029	Reconductor 7/0.064 11kV Copper Nelsons Road
2030	Reconductor 7/0.064 11kV Copper Vaughan Road

Table 7-76: Renewal Project List 2027/28 to 2030/31

7.36 Renewal Project List 2031/32 to 2035/36

As mentioned in subsection 7.35, the same applies to our renewal project list for 2031/32 to 2035/36. Our EAMS includes a significant number of other asset constraints. These are currently being evaluated by our managed services provider's Constraints Team. Once the evaluation is complete, our managed services provider's Solutions Team will consider and identify the optimal solution to resolve each constraint. As specific projects are identified, these will be added to our asset management plan.

EVALUATION OF PERFORMANCE

SECTION 8 / WĀHANGA 8

Our People Our Power

Contents

8. EVALUATION OF PERFORMANCE

8.1 Introduction to this Section

This section provides information to enable stakeholders to understand how well we are performing as an asset management organisation. The key performance dimensions covered are:

- physical and financial progress against the plans set out in the last disclosed Regulatory Asset Management Plan (RAMP)
- performance against service level targets
- summary and assessment of network performance, and
- assessment under the Asset Management Maturity Assessment Tool (AMMAT).

Evaluation of performance for the 2025/26 financial year is undertaken using year-end forecast information where this is available.

8.2 Review of Progress Against Plan

In this section, our performance in delivering the plans set out in the RAMP disclosed in March 2025 is reviewed in terms of:

- physical progress (commissioning of works), and
- financial progress (cost and performance).

This evaluation is undertaken for the 2024/25 and 2025/26 financial years, for both capital and maintenance programmes.

8.2.1 Planned CAPEX

Capital projects proposed for each financial year, as published in our 2025 RAMP, are detailed below and include the status of each project as at February 2026.

An update is provided for all 2024/25 projects and previous years not completed at the time of publishing of the 2025/26 RAMP.

8.2.1.1 CAPEX Programme of Works 2019/20 and 2020/21

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
42269	Harris Street rationalisation, underground existing overhead LV (sub to 41858)	Quality of Supply	Completed	50	58.5	
42847	Feeder 45 11kV Porangahau/Wallingford - MAPT CAPEX	Other Reliability, Safety and Environment	Completed	178	168	

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
42848	Feeder 46 11kV Porangahau/Wallingford - MAPT CAPEX	Other Reliability, Safety and Environment	Completed	178	455	Budget estimate was prepared prior to feeder inspection data being available.

Table 8-1: Physical Progress of Planned Network CAPEX Projects – 2019/20 and 2020/21

8.2.1.2 CAPEX Programme of Works 2021/22

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
43663	Wilder Road Stage 7 of 8	Asset Replacement and Renewal	Deferred to 2024/25	150		Due to alignment with council works completed in the 24/25 year under 46195.
43664	Working at Heights - Waipukurau T1	Zone Substation Transformers	Deferred	27		Due to Silver Fern Farms future load requirements resulting in power transformer replacements.
43666	Waipukurau ZS Security Fence Upgrade	Zone Substations up to 66kV	Completed	125	131	
43667	Recloser Replacement. R24 River Road South, Centralines	11kV CB (pole mounted) - reclosers and sectionalisers	Completed	65	72	
43672	Replace 2 Pole Mounted 100kVA Transformer C4/108 with a New Pole Mounted 200kVA transformer structure in Svenson Road, Feeder 15	Pole Mounted Transformer	Completed	128	105	

Table 8-2: Physical Progress of Planned CAPEX Projects – 2021/22

8.2.1.3 CAPEX Programme of Works 2023/24

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
10596 / 45364	Replace 7/0.064 copper 11kV conductor in Blackburn Road, 5km of Feeder 1	Distribution OH Open Wire Conductor	Completed	1,200	1,000	
45362	RCS replacement programme. Five per year. Centralines. RCS 59 Wakarara Road RCS 96 Wakarara Road RCS 34 Otawhao Road RCS 37 Ormondville Road RCS 58 Porangahau Road / Ugly Hill Road	11kV CB (pole mounted) - reclosers and sectionalisers	Completed	400	360	
45363	Replace 15 Mahanga ABSs	11kV Switches and Fuses (Pole Mounted)	Completed	225	172.5	
3032	Takapau seismic strengthening of transformer mounts	Zone Substation Transformers	Deferred	25		Due to Silver Fern Farms future load requirements resulting in power transformer replacements.
204512 / 45346	Replace corroded ACSR conductor Tautane Road	Distribution OH Open Wire Conductor	Completed	700	367	
203380 / 44924	Waipawa GXP ODID	System Growth	Work in progress	1,500	1,100	Target completion date of June 2026.
201565 / 45359	Feeder 18 - Establish a new 200kVA Ground Mount transformer in Porangahau Road	System Growth	Completed	95	109	
206165 / 45361	Otane mid-town switch	Security of Supply	Completed	80	70	
201371 / 45348	Feeder 46 - Replace ABS 647 with RCS on Pole 913074	Security of Supply	Completed	80	64	
205193 / 45349	Feeder 46 - Install Sectionaliser on Pole 913936	Security of Supply	Completed	80	67	
205200 / 45350	Feeder 83 - Convert the Kairakau Temporary Regulator site to a Sectionaliser	Security of Supply	Completed	80	70	

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
201386 / 45351	Feeder 83 - Replace ABS 646 with a Remote-Control Switch	Security of Supply	Completed	80	80	
201445 / 45352	Feeder 83 - Replace ABS 464 with RCS on Pole 906315	Security of Supply	Completed	80	50	
201497 / 45353	Feeder 83 - Replace ABS 466 with Sectionaliser on Pole 919754	Security of Supply	Completed	80	77	
201562 / 45354	Feeder 46 - Replace ABS 506 with RCS on Pole 913301	Security of Supply	Completed	80	59	
201728 / 45355	Feeder 4 - Replace ABS 550 with RCS on Pole 910190	Security of Supply	Completed	80	72	
205343 / 45356	Feeder 1 - Replace ABS 545 with RCS on Pole 910166	Security of Supply	Completed	80	60	
205386 / 45357	Feeder 1 - Replace ABS 542 with a Remote-Control Switch (RCS) on Pole 923701	Security of Supply	Completed	80	62	
205395 / 45358	Feeder 91 - Replace ABS 498 with a Remote-Control Switch (RCS) on Pole 906009	Security of Supply	Completed	80	66	

Table 8-3: Physical Progress of Planned CAPEX Projects – 2023/24

8.2.1.4 CAPEX Programme of Works 2024/25

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
203380 / 44924	Waipawa GXP ODID	System Growth	Work in progress	3,000	2,700	Target completion date of June 2026.
46239	Waipukurau ZS - Additional CB (Ovation)	System Growth	Completed	50	52	
46240	Feeder 14 - Close ring pole 900237 & RMU - River Tce	Reliability, Safety and Environment	Completed	100	110	
46241	Feeder 14 - Install isolation point Mount Herbert Road pole 900718	Reliability, Safety and Environment	Completed	85	75	
46242	Feeder 15 install Gaisford Terrace ring.	Reliability, Safety and Environment	Completed	665	731	

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
46243	Feeder 76 - Install new Sectionaliser on Pole 907189	Reliability, Safety and Environment	Completed	85	75	
46244	Feeder 76 - Replace RCL R155	Reliability, Safety and Environment	Completed	85	75	
46245	Feeder 15 - Replace RMU 7517-7521-7516-7522 with Remote RMU	Reliability, Safety and Environment	Completed	85	71	
46246	Feeder 86 - Upgrade Sub B4/201	Reliability, Safety and Environment	Completed	350	413	
46247	Feeder 19 ABS 455 replace with RCS	Reliability, Safety and Environment	Completed	85	74	
46248	Feeder 13 replace 523 with RCS	Reliability, Safety and Environment	Completed	85	71	
46249	Feeder 13 Replace 556 with new RCS	Reliability, Safety and Environment	Completed	85	83	
46141	Feeder 85 - Replace ABS 541 with RCS on Pole 904972 - Abbotsford	Reliability, Safety and Environment	Completed	85	83	
46142	Feeder 85 - Replace ABS 423 with RCS on Pole 904840 - Church St	Reliability, Safety and Environment	Completed	85	68	
46250	Peanut replacement programme Centralines RCS57, RCS 58, RCS68 & RCS 63	Asset Replacement and Renewal	Completed	255	275	
46184	Replace Transformer C4/1 and associated 2 pole structure with wood bearers. 200kVA 1966 transformer. Structure in poor condition and does not meet modern seismic requirements.	Asset Replacement and Renewal	Completed	60	74	
46185	Wilder Road 33kV stage 7 of 8. Rebuild line and convert line to delta configuration from pole 902001 to pole 902046	Asset Replacement and Renewal	Completed	1,080	1124	Project carried over into 2025/26 year and completed May 2025.
46143	Feeder 46 11kV Cooks Tooth/Herbertville Stage 2	Asset Replacement and Renewal	Completed	200	164	
46144	Replace Sub A7/14	Asset Replacement and Renewal	Completed	60	58	

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
46145	Wilder Road 33kV stage 8 of 8. Rebuild line and convert line to delta configuration from pole 901850 to pole 901896	Asset Replacement and Renewal	Completed	1,350	171	Initiation desktop budget assumed all poles would be replaced. Detailed design identified this was not required.
46146	Replace RCS 428 GNS Sectionaliser	Asset Replacement and Renewal	Completed	85	75	
46147	Replace RCS 546 GNS Sectionaliser	Asset Replacement and Renewal	Completed	85	90	
46812	Feeder 19 - 11kV Conductor upgrade Hatuma Rd	Asset Replacement and Renewal	Completed	230	230	
46626	Feeder 45 - Omakere/Pourerere - MAPT CAPEX	Asset Replacement and Renewal	Completed	650	748	
46234	Pole Replacements 24/25	Asset Replacement and Renewal	Completed	500	449	
46238	Mahanga ABS Replacements	Asset Replacement and Renewal	Completed	200	196	
46190	MAPT CAPEX	Asset Replacement and Renewal	Completed	750	742	
46231	Asset Relocations	Asset Relocations	Completed	0	56	No budget allowed for.
46235	Power Quality	Reliability, Safety and Environment	Completed	105	0	No power quality jobs arose.
46236	Reactive and Unplanned Renewals	Asset Replacement and Renewal	Completed	263	301	
46237	Unplanned Reliability, Safety and Environment	Reliability, Safety and Environment	Completed	21	0	No Reliability, Safety and Environment jobs arose.
46232	Customer Connections Contribution	Customer Connection	Completed	1,500	1,024	

Table 8-4: Physical Progress of Planned CAPEX Projects – 2024/25

8.2.1.5 CAPEX Programme of Works 2025/26

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
203380 / 44924	Waipawa GXP ODID	System Growth	Work in progress	2,505	1,715 YTD	Target completion date of June 2026.
212782 / 46349	Replace Tx B4/15 Bibby St Waipawa	Asset Replacement and Renewal	Completed	160	122	
212783 / 46348	Replace Tx C4/21 Cook St Waipukurau	Asset Replacement and Renewal	Completed	140	124	
206162 / 47047	CL 86 - Upgrade Undersized Conductor - SH2 Waipawa	Quality of supply	Work in progress	500	22 YTD	Will be completed end of March 2026.
208255 / 47048	Upgrade LV Network in Otane (Phase 2) & Replace B4/58 with 300kVA GM Tx	Quality of supply	Work in progress	150	50 YTD	Will be completed end of March 2026.
208267 47049 /	CL 83 - Pourerere Rd - Replace ABS 4041 with RCS	Reliability, Safety and Environment	Work in progress	85	3 YTD	Will be completed end of Feb 2026.
208271 / 47050	Waipukurau ZS - Install ION Meter	Reliability, Safety and Environment	Work in progress	100	39 YTD	Will be completed mid March 2026.
208277 / 46913	CL 1 - SH50 Ongaonga - Repl ABSs 410 635 619 with RCSs	Reliability, Safety and Environment	Completed	255	217	
208281 / 47051	CL 85 - High St Wpa - Replace ABS 457 with RCS	Reliability, Safety and Environment	Work in progress	85	3 YTD	Will be completed end of March 2026.
208282 / 47052	CL 14 - 11kV Conductor Upgrade - Underground 11kV Northumberland St	Quality of supply	Completed	200	229	
211062 / 47053	SCADA Digital Upgrade (FY26-Mesh)	Reliability, Safety and Environment	Work in progress	54	70	Will be completed end of May 2026.
211499 / 47054	SCADA Digital Upgrade (FY26-Waipukuraru)	Reliability, Safety and Environment	Work in progress	200	0	Will be completed end of March 2026.
211533 / 47055	Fdr 15 Close Gaisford Tce Ring (Stage 2)	Reliability, Safety and Environment	Completed	350	402	
212654 / 47008	CL 13 - Mt Herbert Rd - Replace ABS 516 with Sectionaliser	Reliability, Safety and Environment	Completed	85	75	
212656 / 46912	CL 1 - Makaretu Rd - Replace ABS 411 with RCS	Reliability, Safety and Environment	Completed	85	77	

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
212870 / 47059	CL 14 - Russell St - Replace RMU 7503 with auto RMO	Reliability, Safety and Environment	Work in progress	85	7 YTD	Will be completed end of March 2026.
212305 / 47060	Feeder 91 Tod Rd Otane - Replace Cu Conductor poles 906141 - 906154,925717	Asset Replacement and Renewal	Completed	163	90	
212307 / 47056	Replace Tx F6/44, Dundas St. Porangahau	Asset Replacement and Renewal	Completed	120	145	
212309 / 47057	Replace Tx C4/114, Tavistock Rd. Waipukurau	Asset Replacement and Renewal	Completed	120	145	
209132 / 47058	Feeder 19 - Middleton Rd - replace cu conductor 902860 to 902884, 902908	Asset Replacement and Renewal	Deferred	500	35	Following CCR, reconductoring not required within 5 year horizon. Reallocated budget to other reconductoring jobs.
47407	CL 75 - Black Rd - replace cu conductor	Asset Replacement and Renewal	Completed	120	121	
47408	CL 86 - Boundary Rd - replace cu conductor	Asset Replacement and Renewal	Work in progress	114	0 YTD	Carryover to first quarter of 2026/27.
47409	CL 75 - Nelsons Rd - replace cu conductor	Asset Replacement and Renewal	Work in progress	156	0 YTD	Carryover to first quarter 2026/27.
47410	CL 4 - Parsons Rd - replace cu conductor	Asset Replacement and Renewal	Work in progress	153	0 YTD	Carryover to first quarter 2026/27.
47028	MASTER - Mahanga ABS Replacements	Asset Replacement and Renewal	Work in progress	240	16 YTD	Will be completed end of March 2026.
47022	MASTER - Uplanned asset relocations	Asset Relocations	Work in progress	30	0 YTD	Will be completed end of March 2026.
47023	MASTER - Power Quality	Reliability, Safety and Environment	Work in progress	150	0 YTD	Will be completed end of March 2026.
47026	MASTER - Unplanned RS&E	Reliability, Safety and Environment	Work in progress	40	0 YTD	Will be completed end of March 2026.
47025	MASTER - Unplanned & Reactive Renewals	Asset Replacement and Renewal	Work in progress	350	395 YTD	Will be completed end of March 2026.

Project Number	Constraints and Projects	Category	Status	AMP Budget ($000)	Actual Spend ($000)	Comments
47027	MASTER - Pole Replacements	Asset Replacement and Renewal	Work in progress	550	169 YTD	Will be completed end of March 2026.
47029	MASTER - Bucket CAPEX MAPT Jobs	Asset Replacement and Renewal	Work in progress	800	995 YTD	Will be completed end of March 2026.
47024	MASTER - Customer Contribution	Customer Connection	Work in progress	900	1225 YTD	Will be completed end of March 2026.

Table 8-5: Physical Progress of Planned CAPEX Projects – 2025/26

8.2.2 Planned OPEX

Maintenance programmes described in Section 7 – Asset Management Planning are detailed in Table 8-5 and include the status of the programme as at the end of each financial year.

The programme has been impacted by the large amount of technician resource required to deliver the 2024/25 CAPEX works programme and an industrial customer project. Over the last year, we have increased the in-house technician resource by having two existing Line Mechanics successfully achieve their Electricians registration. With some additional training, these staff members will be able to assist in catching up with and maintaining the annual asset inspection and condition assessment programme.

8.2.2.1 Planned Maintenance 2024/25 and 2025/26

Asset Inspection/Condition Assessment	Progress 2024/25	Progress 2025/26
Annual 33kV Line Visual Inspection	Complete	New two-year inspection programme implemented.
5-yearly Overhead Line Feeder Inspections	Behind schedule. Programme re-phasing plan being developed.	On track for completion by 31 March 2026 due to implementation of catchup aerial inspections.
33kV Annual Aerial Inspection	Complete	Replaced by new two-year inspection programme.
Annual Ground Mounted Inspection	Complete	Complete.
Level 1: Fortnightly Substation Visual Inspections	Complete	Complete.
Level 2: 3-monthly Substation Detailed Inspections	Complete	Complete.
Zone Substation Earth Tests – 5-yearly	Not due until 2028	Not due until 2028.

Asset Inspection/Condition Assessment	Progress 2024/25	Progress 2025/26
Zone Substation Thermo-vision – Annually	Complete	On track for completion by 31 March 2026.
Power Transformer – Annual DGA Oil Tests	Complete	Completed.
Partial Discharge – 2-yearly test for Circuit Breakers	Complete	Will be completed by 31 March 2026.
4-monthly Detailed Inspections of Voltage Regulators	Complete	On track.
Recloser and Remote-Control Switch – 2-yearly Detailed Inspection and Operational Tests	Complete	On track.
Distribution Equipment Earth Tests – 5-yearly	Complete	On track.
5-yearly Inspection of Ground-Mounted Low Voltage Distribution Equipment (including Minor Repairs)	Not due until 2028	Not due until 2028.

Table 8-5: Physical Progress of Asset Inspection/Condition Assessment

Routine and Corrective Maintenance	Progress 2024/25	Progress 2025/26
Vegetation Control	On schedule	On schedule
Transformer – 2-yearly Service	4 Overdue	Behind schedule
Tap Changers – 2-yearly or 6-yearly Service, depending on Tap Changer Type	Not Due	Not due
Station Regulators – 2-yearly, 5-yearly, or 10-yearly Service, depending on Make and Model	Not due	Completed
Circuit Breaker SF_6 – 3-yearly Service	10 Overdue	Behind Schedule
Circuit Breaker Vacuum – 3-yearly Service	Complete	Completed
Circuit Breaker Oil – 2-yearly Service	Complete	Complete
Circuit Breaker Oil – Fault Service after every Fault Operation	Complete	On track
Disconnectors and Earth Switches – 10-yearly	10 Overdue	Behind Schedule
Annual Ripple Plant Service	Complete	Complete
Zone Substation Batteries – 3-monthly General Service, 6-monthly Discharge Tests	Complete	Complete
Zone Substation – Electro-Mechanical (4-yearly), Electronic (6-yearly) and Microprocessor (6-yearly)	8 Overdue	On track

Routine and Corrective Maintenance	Progress 2024/25	Progress 2025/26
Voltage Regulators, Reclosers and Sectionalisers – 2-yearly or 5-yearly Service	Behind schedule	On track

Table 8-6: Physical Progress of Routine and Corrective Maintenance

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8.3 Review of Financial Progress Against Plan

In this section, our performance in delivering the plans set out in the RAMP is reviewed in terms of financial progress (cost performance). This evaluation is undertaken for the 2024/25 and 2025/26 financial years for both capital and maintenance programmes. Explanations are provided in respect of works programmes with a variance of greater than 10%.

8.3.1 Network Spend Financial Summary 2024/25

Category	Forecasted Expenditure from 2025 RAMP ($000s)	Actual Expenditure ($000s)	Variance %
CAPEX			
Consumer Connection	1,500	856	-42.9%
System Growth	3,050	2590	-15.1%
Asset Replacement and Renewal	4,888	4901	0.26%
Asset Relocations	0	56	100%
Reliability, Safety and Environment	2,006	1970	-1.8%
Total Network CAPEX	**11,444**	**10374**	**-9.35%**
OPEX			
Service Interruptions and Emergencies	500	545	9%
Vegetation Management	792	577	-27.1%
Routine and Corrective Maintenance and Inspections	127	135	6.3%
Asset Replacement and Renewal	1,500	1428	-4.8%
Total Network OPEX	**2,919**	**2685**	**-8%**

Table 8-7: Financial Progress CAPEX and OPEX 2024/25

8.3.1.1 Variance Explanation Consumer Connection

Customer-initiated work over the period has reflected the overall downturn in the New Zealand economy, with very little residential subdivision work being undertaken. One large industrial customer increased their connection requirement and required the installation of an additional 2.5MVA of capacity.

8.3.1.2 Variance Explanation System Growth

The knock-on effect from the early delays associated with the detailed design of the Ongaonga ODID project is primary reason for the underspend in this category. The proposed November 2025 commissioning and completion has also been pushed back to June 2026 to align with network loadings.

8.3.1.3 Variance Explanation Asset Relocation

No expenditure was budgeted for this category. However, due to a customer complaint about the position of a low-voltage pole on Dominion Road, Waipawa, it was identified that the pole was installed in 2019, before the section driveway location was known. Once the driveway was formed, the pole location was at high risk of being hit by vehicles. The pole has now been relocated.

8.3.1.4 Variance Explanation Vegetation Management

During the period, our external vegetation contractor permanently withdrew services to Centralines at the end of the contract period, due to being unable to secure suitably qualified staff. To manage the ongoing vegetation programme progress, we have increased internal resources in this division by one qualified Arborist Foreperson and one Arborist cadet.

8.3.2 Network Spend Financial Progress 2025/26

Category	Budgeted Expenditure from 2025 RAMP ($'000s)	Forecasted Year End Expenditure ($'000s)	Variance %
CAPEX			
Consumer Connection	900	1600	77.8%
System Growth	2505	2400	-4.1%
Asset Replacement and Renewal	3343	2525	-24.5%
Asset Relocations	30	0	-100%
Reliability, Safety and Environment	2424	2360	-2.6%
Total Network CAPEX	**9202**	**8885**	**-3.4%**
OPEX			
Service Interruptions and Emergencies	575	585	1.7%
Vegetation Management	628	570	-9.2%
Routine and Corrective Maintenance and Inspections	105	400	281%

Category	Budgeted Expenditure from 2025 RAMP ($'000s)	Forecasted Year End Expenditure ($'000s)	Variance %
Asset Replacement and Renewal	1638	1200	-26.7%
Total Network OPEX	**2982**	**2745**	**-7.95%**

Table 8-8: Financial Progress OPEX and CAPEX 2025/26

8.3.2.1 Variance Explanation Consumer Connection

Customer-initiated work over the period has reflected the overall upturn contrary to the downturn in the New Zealand economy, with a few new subdivisions and new builds around the area. This resulted in an overspend of the Consumer Connection budget.

8.3.2.2 Variance Explanation Asset Replacement and Renewal CAPEX

The uptake in customer work and a reduction in staff numbers resulted in an underspend of the Asset Replacement and Renewal budget.

8.3.2.3 Variance Explanation Asset Relocations

No unplanned asset relocation jobs came up this year causing an underspend of the asset relocations budget.

8.3.2.4 Variance Explanation Routine, and Corrective Maintenance and Inspections

Over the past 5 years our inspection programme has consistently been behind where it needs to be. This is largely due to the interruptions of the Covid pandemic and a change of asset management systems. Therefore, it was decided that the use of helicopter aerial surveys on the 11kV network as a one off, was needed to catch up to where we need, to be resulting in an overspend of the Routine, and Corrective Maintenance and Inspections budget.

8.3.2.5 Variance Explanation Asset Replacement and Renewal OPEX

Less than anticipated amount of remedial work came out of the routine inspections resulting in an underspend of the asset replacement and renewal budget.

8.4 Performance Evaluation

8.4.1 Purpose

The purpose of performance evaluation is to monitor key metrics that ensure the effectiveness, efficiency, performance, and continuous improvement of our AMS and related processes.

Performance evaluation includes determining:

- what needs to be monitored and measured
- the best frequency and method of measurement, and
- how and when the results will be analysed and evaluated.

Performance evaluation covers the evaluation and reporting of:

- asset performance
- asset management performance, and
- the effectiveness of the Asset Management System (AMS).

In summary, performance evaluation reports on whether the needs and expectations of stakeholders of the AMS are met.

8.4.2 *Principles*

Listed below are the requirements that must be adhered to for all performance evaluation activities.

1. Reports must be provided regularly on performance trends of the AMS to:
    - the General Manager Centralines – as the role with overall accountability for the AMS, and
    - all employees who contributed to the data being reported on.
2. There must be a specified use for all information collected. This will be to support an approved AMS measure.
3. All relevant Centralines employees and contractors must support the collection of performance evaluation measures approved by the General Manager Centralines. Those impacted by data collection for performance evaluation of the AMS will be provided with an explanation of the use and purpose of the data.
4. The collection of performance evaluation measures must be done in a way that minimises the impact on staff.
5. A balanced set of measures must be used to avoid skewing measures towards one outcome at the expense of another outcome. For example, focusing on network performance at the expense of cost.
6. Data captured for performance evaluation of the AMS must be aggregated so it is not used to measure the performance of individuals. It must not be linked to any Human Resources performance management system.

Performance evaluation will comply with the following external requirements:

- Regulatory Asset Management Plan (RAMP) Reporting Requirements – Performance reporting must comply with RAMP reporting requirements. It is therefore aligned with requirements specified by the Commerce Commission.
- ISO 55001:2024 Asset Management-Management Systems-Requirements – Performance evaluation must comply with ISO 55001 requirements so that it meets certification obligations intended to be achieved by our managed services provider.

8.4.3 *Performance Evaluation Procedure*

The diagram in Figure 8-1 shows the overall process flow for performance evaluation along with the key inputs and outputs.

The overall process flow is applied to:

- establish the Performance Indicator Framework (PIF)
- develop performance measures
- report on AMS performance, and
- investigate/evaluate AMS non-conformity.

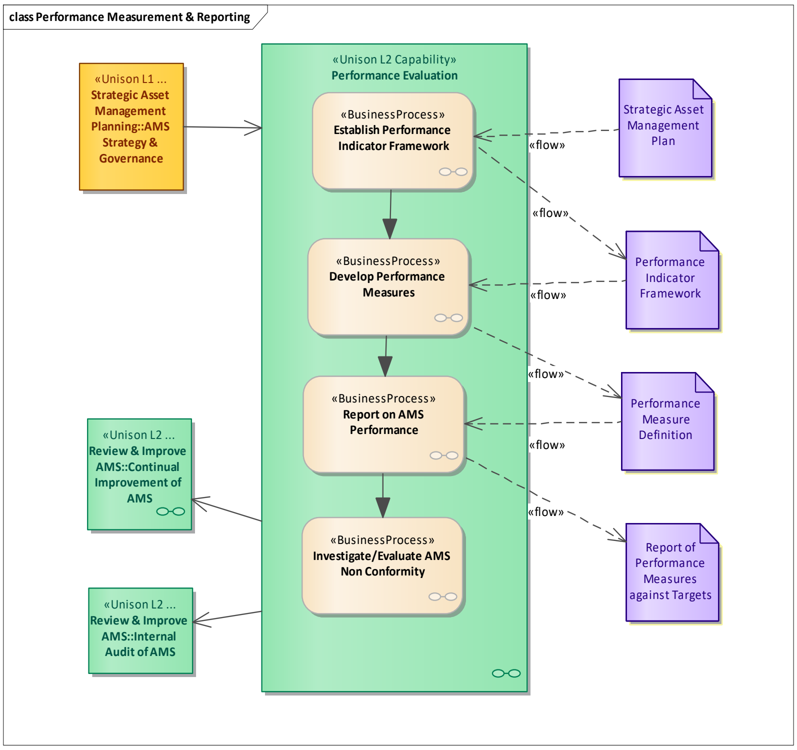

Figure 8-1: Performance Measurement and Reporting

8.4.4 *Further Detail on Service Levels*

The PIF provides a portfolio of performance indicators. These indicators can be used to conduct a quantitative measurement of AMS performance. It is intended that at any time, a subset of these performance indicators will be implemented.

The General Manager Centralines selects performance indicators to be used over a given period. This selection is reviewed annually through the business planning process. This approach:

- provides the General Manager Centralines with a basis for directing organisational attention towards issues of strategic importance
- supports the organisation to tailor the extent of performance measurement to the internal and external context of the organisation over time, and
- recognises that performance measurement is a non-trivial cost to an organisation of Centralines' scale.

When the General Manager Centralines selects a new performance indicator for measurement, consultation with the relevant teams will be undertaken to decide the details for the performance measure.

The General Manager Centralines must approve the confirmation of appropriate performance levels and measurement systems for each team. Measurement and reporting against the performance indicator will then be adopted into the Performance Measurement Framework.

Outcomes of performance measurement may include:

- initiation of an internal audit, and
- the subsequent implementation of recommended corrective actions.

8.4.5 Development of Performance Measures

When a new performance indicator is selected for measurement by the General Manager Centralines, the relevant teams are required to agree to:

- the performance level to be achieved
- the business rules for measurement, including responsibilities for measurement, where applicable
- the review process, where the performance is assessed using the agreed measures, and
- how corrective actions will be initiated to address any gaps, including through the Continual Improvement process.

8.4.6 AMS Performance Reporting

Reporting on the performance of the AMS:

- provides information on each team's capability to contribute to the achievement of the AMOs relevant to their function, and
- enables the organisation to drive improvement through the Continual Improvement process effectively.

8.5 Performance Measures

Our performance measures are provided below and are aligned to the nine Strategic Asset Management Objectives, specified in Section 2 – Background and Objectives. The information listed below is provided for each performance measure implemented.

1. The measurement approach for the performance indicator.
2. Performance targets.
3. The justification for the measure and targeted level of performance.
4. Historical performance levels, where available over the last five years.

8.5.1 Ensure People are Safe Around Centralines' Assets

8.5.1.1 Measurements

- Number of asset failures resulting in an injury (serious harm) or fatality to the public.
- Number of severity 1, field crew, health and safety internal audit findings.
- Percentage of priority 1, 2, and 3 asset defects completed within required timeframes.

8.5.1.2 Performance Targets

Measurements	Targets 2026/27
Number of asset failures resulting in an injury (serious harm) or fatality to a member of the public.	0
Number of severity 1, field crew, health and safety internal audit findings.	0
Priority 1, 2, and 3 asset defects completed within required timeframes.	100%

Table 8-9: Performance Targets – Ensure People are Safe Around Centralines' Assets

8.5.1.3 *Justification for Targeted Level of Performance*

Ensuring the safety of our staff, contractors and members of the public is the most important priority in asset management. This objective aligns with and complements the objectives of our Health and Safety Management System (HSMS) and Public Safety Management System (PSMS).

Any asset failure resulting in harm to members of the public would be totally unacceptable, and subsequently, we are totally committed to managing risks to ensure this does not eventuate.

The number of severity 1 findings from our field crew internal health and safety audits is set at zero, as serious harm to any field staff member is deemed totally unacceptable. Any severity 1 audit finding could indicate a potential process failure, which would be a major concern and require investigation and corrective actions.

Priority 1, 2 and 3 asset-related defects in the asset portfolio have the potential to cause harm to people and property. Once identified, these defects must be prioritised and actioned through existing processes to ensure they are corrected within the required timeframes.

8.5.1.4 *Historic Performance*

Financial Year Ending	Target	Actual	Target Met
2020	= 0	0	✓
2021	= 0	0	✓
2022	= 0	0	✓
2023	= 0	0	✓
2024	= 0	0	✓
2025	= 0	0	✓

Table 8-10: Historic Performance – Number of Asset Failures Resulting in Serious Harm or Fatality to Member of the Public

Financial Year Ending	Target	Actual	Target Met
2020	= 0	0	✓
2021	= 0	0	✓
2022	= 0	0	✓
2023	= 0	0	✓
2024	= 0	0	✓
2025	= 0	0	✓

Table 8-11: Historic Performance – Number of Severity 1 Non-Conforming Field Crew Internal Health and Safety Audit Findings

Historical performance for priority 1, 2, and 3 asset defects followed up within required timeframes is a new measure.

8.5.2 Deliver a Reliable and Compliant Electricity Supply to Customers

8.5.2.1 Measurements

- Statement of Corporate Intent (SCI) unplanned SAIDI target.
- SCI unplanned SAIFI target.
- Number of annual, verified power quality complaints.

8.5.2.2 Performance Targets

Measurements	Targets 2026/27
SCI unplanned SAIDI target.	< 75.00
SCI unplanned SAIFI target.	< 2.48
Number of annual verified power quality complaints.	≤ 5

Table 8-12: Performance Targets – Deliver a Reliable and Compliant Electricity Supply to Customers

8.5.2.3 Justification for Targeted Level of Performance

Electricity is an essential service. Stakeholders, customers, and regulators expect Centralines to provide a reliable supply that meets agreed service levels and all legislative requirements.

While no longer required to meet regulated quality targets, unplanned SAIDI and SAIFI targets were developed and included within our Statement of Corporate Intent (SCI). These targets ensure that there is a sustained focus on ensuring a reliable electricity supply is provided to customers.

Current targets for the number of verified power quality complaints are based on the historic annual performance of Centralines. The processes being used for network development planning will, over time, result in a reducing likelihood of power quality issues on the network. It is anticipated that such issues are unlikely to occur with any frequency by the end of the planning period. This assumes that there is no significant change to patterns of demand and energy use intensity.

8.5.2.4 Historic Performance

Financial Year Ending	Target	Actual(1)	Target Met
2021	< 62.83	38.46	✓
2022	< 62.83	68.64	x
2023	< 62.83	72.81	X
2024	<75.00	80.43	X
2025	<75.00	59.28	✓

(1) *Normalised*

Table 8-13: Historic Performance – SCI Target for Unplanned SAIDI

Financial Year Ending	Target	Actual[(1)]	Target Met
2021	< 3.16	1.49	✓
2022	< 3.16	1.645	✓
2023	< 3.16	2.2	✓
2024	<2.48	2.13	✓
2025	<2.48	1.41	✓

(1) Normalised

Table 8-14: Historic Performance – SCI Target for Unplanned SAIFI

8.5.3 *Improve the Customer Experience Rating for Asset Management Services*

8.5.3.1 *Measurements*

- Percentage of planned shutdowns finishing outside notified outage windows.
- Centralines responses not completed within Utilities Disputes (UDL) time limits.
- Timeframe to complete standard low voltage customer connection.
- Timeframe to complete investigation of power quality issue.

8.5.3.2 *Performance Targets*

Measurement	Target 2026/27
Percentage of planned shutdowns finishing outside notified outage windows.	< 15%
Centralines responses not completed within Utilities Disputes (UDL) time limits.	0
Timeframe to complete standard low-voltage customer connection.	< 15 business days
Timeframe to complete investigation of power quality issue.	< 20 business days

Table 8-15: Performance Target – Improve the Customer Experience Rating for Asset Management Services

8.5.3.3 *Justification for Targeted Level of Performance*

While a requirement to ensure the asset portfolio remains fit for purpose, planned shutdowns are often disruptive and inconvenient to customers. To minimise this disruption and allow customers to prepare appropriately, adherence to notified outage windows is very important.

UDL offers a service to resolve complaints that have been unable to be resolved between utilities such as Centralines and their customers. The UDL resolution process prescribes time limits for responses to customer complaints, which we seek to meet in all cases to ensure any issues are resolved in a timely manner.

Delivery of and adherence to a schedule of standard low-voltage customer connections is important:

- for our reputation, and
- to provide assurance and confidence to customers that a supply will be available within agreed timelines.

When power quality issues are raised, there is an expectation that these issues will be investigated and resolved efficiently within agreed timeframes.

8.5.3.4 *Historic Performance*

Financial Year Ending	Target	Actual	Target Met
2020	0	0	✓
2021	0	0	✓
2022	0	0	✓
2023	0	0	✓
2024	0	0	✓
2025	0	0	✓

Table 8-16: Historic Performance – Centralines Responses Not Completed Within Defined UDL Time Limits

8.5.4 *Improve the Financial Performance of the Asset Management Plan without Compromising Network Performance and Asset Integrity*

8.5.4.1 *Measurements*

- Network CAPEX is within ±10% of total budget.
- Network OPEX is within ±10% of total budget.

8.5.4.2 *Performance Targets*

Measurements	Targets 2026/27
Network CAPEX	< ± 10%
Network OPEX	< ± 10%

Table 8-17: Performance Targets – Improve the Financial Performance of the Asset Management Plan without Compromising Network Performance and Asset Integrity

8.5.4.3 *Justification for Targeted Level of Performance*

The investment requirements of our Asset Management Plan have a direct link to the cost and affordability of the service. Accordingly, all network investments must be prudent and effective. This applies to both CAPEX and OPEX.

Less than 10% variance to the total CAPEX and OPEX budgets is deemed an acceptable level of variance to support effective management of the organisation. This level of variance recognises the fact that there are uncertainties in the delivery of annual Network CAPEX and OPEX programmes of work that cannot be completely managed down.

8.5.4.4 Historic Performance

Financial Year Ending	Target %	Actual	Target Met
2023	± 10	-19.7	X
2024	± 10	-13%	X
2025	± 10	-9.35%	✓

Table 8-18: Historic Performance – Network CAPEX

Financial Year Ending	Target %	Actual	Target Met
2023	± 10	3.9	✓
2024	± 10	-6%	✓
2025	± 10	-8%	✓

Table 8-19: Historic Performance – Network OPEX

8.5.5 Improve Delivery Performance of the Annual Works Plan

8.5.5.1 Measurements

- Delivery of the annual network capital works programme.
- Delivery of the annual planned network maintenance programme.
- Delivery of non-standard customer projects outside of agreed scheduled date.
- Number of severity 1 and 2 work practice and quality outcomes from internal field audits.

8.5.5.2 Performance Targets

Measurements	Targets 2026/27
Delivery of the annual network capital works programme	Programme completed in full
Delivery of the annual planned network maintenance programme.	Programme completed in full
Delivery of non-standard customer projects outside of agreed scheduled date.	0
Number of severity 1 and 2 work practice and quality outcomes from internal field audits.	0

Table 8-20: Performance Targets – Improve Delivery Performance of the Annual Works Plan

8.5.5.3 Justification for Targeted Level of Performance

The safe, efficient, and cost-effective delivery of our Annual Works Plans ensures that:

- network risks are managed appropriately, and
- assets will remain fit for purpose to deliver electricity distribution services safely and effectively.

Delivery of and adherence to a schedule of non-standard customer projects is important to our reputation. It also provides assurance and confidence to customers that projects will be delivered as agreed.

The number of severity 1 and 2, non-conforming internal audit findings of work practices and quality outcomes is set at zero, as any significant quality breaches that could lead to major incidents are deemed unacceptable.

8.5.5.4 Historic Performance

Financial Year Ending	Target	Actual	Target Met
2020	≤ 0	0	✓
2021	≤ 0	0	✓
2022	≤ 0	2	x
2023	≤ 0	2	X
2024	≤ 0	2	X
2025	≤ 0	0	✓

Table 8-21: Historic Performance – Number of Severity 1 and 2 Non-Conforming Internal Audit Findings of Contractor Work Practices and Quality Outcomes

8.5.6 Improve the Asset Management Capability to Support the Development and Implementation of the Asset Management Strategies and Plans

8.5.6.1 Measurements

- Delivery of the Asset Management Capability Plan.
- Our managed services provider maintains ISO 55001 certification.

8.5.6.2 Performance Targets

Measurements	Targets 2026/27
Delivery of the Asset Management Capability Plan.	100%
Centralines' managed services provider maintains ISO 55001 certification.	ISO 55001 Certification maintained for our managed services provider

Table 8-22: Performance Targets – Improve the Asset Management Capability to Support the Development and Implementation of the Asset Management Strategies and Plans

8.5.6.3 Justification for Targeted Level of Performance

Sufficient and appropriate asset management maturity, staff engagement, capability and continuous improvement are required to achieve AMOs. Continually improving our asset management maturity and capabilities is necessary to:

- appropriately manage risk, and
- respond to the challenges and opportunities created by a changing electricity sector.

8.5.6.4 Historic Performance

Financial Year Ending	Target	Actual	Target Met
2020	ISO 55001 Certification	ISO 55001 Certification	✓
2021	ISO 55001 Certification	ISO 55001 Certification	✓
2022	ISO 55001 Certification	ISO 55001 Certification	✓
2023	ISO 55001 Certification	ISO 55001 Certification	✓
2024	ISO 55001 Certification	ISO 55001 Certification	✓
2025	ISO 55001 Certification	ISO 55001 Certification	✓

Table 8-23: Historic Performance – Centralines' Asset Management Services Provider Maintains ISO 55001 Certification

8.5.7 Improve the Communication of the Asset Management strategy to all Centralines' Teams

8.5.7.1 Measurements

- Percentage of new Centralines' staff who received an asset management induction within three months of commencing employment.
- Percentage of Centralines' staff receiving an annual asset management briefing.

8.5.7.2 Performance Targets

Measurements	Targets 2026/27
Percentage of new Centralines' staff who received an asset management induction within three months of commencing employment.	100%
Percentage of Centralines' staff receiving an annual asset management briefing.	100%

Table 8-24: Performance Targets – Improve the Communication of the Asset Management strategy to all Centralines' Teams

8.5.7.3 Justification for Targeted Level of Performance

Sufficient and appropriate staff engagement is critical to ensure the success of an organisation. Providing asset management 'line of sight' to all staff facilitates a common understanding of:

- what is required to achieve asset management and organisational strategic objectives, and
- how progress will be measured.

8.5.8 Improve the Environmental Sustainability, Performance and Resilience of the Asset Management Activities

8.5.8.1 Measurements

- Number of environmental breaches resulting in environmental contamination due to the failure or an asset, asset system or associated containment.
- Our network resilience maturity is assessed on an annual basis through the EEA's Resilience Management Maturity Assessment Tool (RMMAT).

8.5.8.2 Performance Targets

Measurements	Targets 2026/27
Number of environmental breaches resulting in environmental contamination due to the failure or an asset, asset system or associated containment.	0
Centralines' network resilience maturity is assessed on an annual basis through the EEA's Resilience Management Maturity Assessment Tool (RMMAT).	Completed

Table 8-25: Performance Targets – Improve the Environmental Sustainability, Performance and Resilience of the Asset Management Activities

8.5.8.3 Justification for Targeted Level of Performance

We are committed to sound environmental management, which is reflected throughout our business values, systems, and operations. A key aspect of this is that our assets do not cause harm to their physical environment through the discharge of contaminants.

We manage a significant number of network assets, the majority of which are exposed and susceptible to a wide range of extreme events. Our network resilience maturity must continue to improve to ensure we are able to:

- respond appropriately to these events, and
- meet our regulatory obligations and customer expectations.

8.5.9 Maintain Compliance with all Applicable Requirements.

8.5.9.1 Measurements

- Percentage of non-compliances, in relation to asset management identified through the Legislative Compliance Programme, that have corrective plans in place.
- Instances of unanticipated legal challenge or government investigation.

8.5.9.2 Performance Targets

Measurements	Targets 2026/27
Percentage of non-compliances, in relation to asset management identified through the Legislative Compliance Programme, that have corrective plans in place.	100%
Number of instances of unanticipated legal challenge or government investigation occurring.	0

Table 8-26: Performance Targets – Maintain Compliance with all Applicable Requirements

8.5.9.3 Justification for Targeted Level of Performance

As an ethical, stakeholder-focused organisation, we are committed to complying fully with all relevant legislation. We actively manage down the risk of legal challenge or government investigation resulting from our acts or omissions.

8.6 Performance Measure Summary

Table 8-27 summarises the respective measurements for each Strategic Asset Management Objective and targets for the 2026/27 financial year.

Key Result Area	Strategic Asset Management Objective	Measurement	Targets 2026/2027
Health and Safety	Ensure people are safe around Centralines' assets.	Asset failures resulting in serious harm or fatality to a member of the public.	0
		Number of severity 1, field crew, health, and safety internal audit findings.	0
		Percentage of priority 1, 2, and 3 asset defects completed within required timeframes.	100%
Network Reliability	Deliver a reliable and compliant electricity supply to customers.	Unplanned SAIDI, less than SCI Target (minutes).	< 75.00
		Unplanned SAIFI, less than SCI Target (interruptions).	< 2.48
		Number of annual, verified power quality complaints.	≤ 5
Customer Service	Improve customers' experience in relation to asset management services.	Percentage of planned shutdowns finishing outside notified outage windows.	< 15%
		Centralines responses not completed within Utilities Disputes (UDL) time limits.	0
		Timeframe to complete standard low-voltage customer connection.	< 15 business days
		Timeframe to complete investigation of power quality issue	< 20 business days
Financial	Improve the financial performance of the asset management plan without compromising network performance and asset integrity.	Total annual network CAPEX is within ±10% of total budget.	< ± 10%
		Total annual network OPEX is within ±10% of total budget.	< ± 10%
Service Delivery	Improve delivery performance of the Annual Works Plan.	Delivery of the annual network capital works programme.	Programme completed in full.

Key Result Area	Strategic Asset Management Objective	Measurement	Targets 2026/2027
		Delivery of the annual planned network maintenance programme.	Programme completed in full.
		Delivery of non-standard customer projects outside of agreed scheduled date.	0
		Number of severity 1 and 2 work practice and quality outcomes from internal field audits.	0
Innovation and Continual Improvement	Improve the asset management capability to support the development and implementation of the asset management strategies and plans.	Delivery of Asset Management Capability Plan.	100%
		Centralines' asset management services provider maintains ISO 55001 certification.	ISO 55001 Certification
	Improve the communication of the asset management strategy to all Centralines' teams.	Percentage of new Centralines' staff who received an asset management induction within three months of commencing employment.	100%
		Percentage of Centralines' staff receiving an annual asset management briefing.	100%
	Improve the environmental sustainability performance and resilience of the asset management activities.	Number of environmental breaches resulting in environmental contamination due to the failure or an asset, asset system or associated containment.	0
		Centralines' network resilience maturity is assessed on an annual basis through the EEA's Resilience Management Maturity Assessment Tool (RMMAT).	Completed
Assurance	Maintain compliance with all applicable requirements.	Percentage of non-compliances identified through Legislative Compliance Programme in relation to Asset Management have a corrective plan in place.	100%
		Number of instances of unanticipated legal challenge or government investigation.	0

Table 8-27: Summary of Performance Measures and Targets

8.7 Service Level Performance

8.7.1 Service Level Performance 2024/25

The table below shows the service level framework and the forecasted information as per the 2025 RAMP compared to actual results for the 2024/25 Financial Year.

Key Result Area	Strategic Asset Management Objective	Measurement	Forecast 2024/2025	Actual 2024/2025	Comments
Health and Safety	Ensure people are safe around Centralines' assets.	Asset failures resulting in serious harm or fatality to a member of the public.	0	0	
		Number of severity 1, field crew, health, and safety internal audit findings.	0	0	
		Percentage of priority 1, 2, and 3 asset defects completed within required timeframes.	100%		Unable to be measured currently due to system limitations.
Network Reliability	Deliver a reliable and compliant electricity supply to customers.	Unplanned SAIDI, less than SCI Target (minutes).	<62.83	80.43	Refer to section 8.5 for further detail.
		Unplanned SAIFI, less than SCI Target (interruptions).	<3.16	2.13	Refer to section 8.5 for further detail.
		Number of annual, verified power quality complaints.	≤ 5	1	
Customer Service	Improve customers' experience in relation to asset management services.	Percentage of planned shutdowns finishing outside notified outage windows.	< 15%		There is currently no process in place to measure this objective.
		Centralines responses not completed within Utilities Disputes (UDL) time limits.	0	0	

Key Result Area	Strategic Asset Management Objective	Measurement	Forecast 2024/2025	Actual 2024/2025	Comments
		Timeframe to complete standard low-voltage customer connection	<15 business days	100%	
		Timeframe to complete investigation of power quality issue	<20 business days	100%	
Financial	Improve the financial performance of the asset management plan without compromising network performance and asset integrity.	Total annual network CAPEX is within ±10% of total budget.	< ± 10%	-9.35%	Refer to Section 8.3.1.
		Total annual network OPEX is within ±10% of total budget.	< ± 10%	-8%	Refer to Section 8.3.1.
Service Delivery	Improve delivery performance of the Annual Works Plan.	Delivery of the annual network capital works programme.	Programme completed in full.	100%	
		Delivery of the annual planned network maintenance programme.	Programme completed in full.	100%	
		Delivery of non-standard customer projects outside of agreed scheduled date.	0	0	
		Number of severity 1 and 2 work practice and quality outcomes from internal field audits.	0	0	
Innovation and Continual Improvement	Improve the asset management capability to support the development and implementation of the asset management strategies and plans.	Delivery of Asset Management Capability Plan.	100%	100%	
		Centralines' asset management services provider maintains ISO 55001 certification.	ISO 55001 Certification	ISO 55001 Certification	

Key Result Area	Strategic Asset Management Objective	Measurement	Forecast 2024/2025	Actual 2024/2025	Comments
	Improve the communication of the asset management strategy to all Centralines' teams.	Percentage of new Centralines' staff who received an asset management induction within three months of commencing employment.	100%	100%	Delivered on March 4 2024.
		Percentage of Centralines' staff receiving an annual asset management briefing.	100%	100%	Delivered on March 4 2024.
	Improve the environmental sustainability performance and resilience of the asset management activities.	Number of environmental breaches resulting in environmental contamination due to the failure or an asset, asset system or associated containment.	0	0	
		Centralines' network resilience maturity is assessed on an annual basis through the EEA's Resilience Management Maturity Assessment Tool (RMMAT).	Completed	Completed	
Assurance	Maintain compliance with all applicable requirements.	Percentage of non-compliances identified through Legislative Compliance Programme in relation to Asset Management have a corrective plan in place.	100%	100%	
		Number of instances of unanticipated legal challenge or government investigation.	0	0	

Table8-28: Service Level Performance 2024/25

8.7.2 *Service Level Performance 2025/26*

Table 8-29 shows the 2025/2026 service level framework with targets for 2025/26 RAMP and the year-end forecasted values as at February 2026.

Key Result Area	Strategic Asset Management Objective	Measurement	Targets 2025/2026	Forecasted 2025/26	Comments
Health and Safety	Ensure people are safe around Centralines' assets.	Asset failures resulting in serious harm or fatality to a member of the public.	0	0	
		Number of severity 1, field crew, health, and safety internal audit findings.	0	0	
		Percentage of priority 1, 2, and 3 asset defects completed within required timeframes.	100%		Unable to be measured currently due to system limitations.
Network Reliability	Deliver a reliable and compliant electricity supply to customers.	Unplanned SAIDI, less than SCI Target (minutes).	<75.00	50.73	
		Unplanned SAIFI, less than SCI Target (interruptions).	<2.48	1.18	
		Number of annual, verified power quality complaints.	≤ 5	2	
Customer Service	Improve customers' experience in relation to asset management services.	Percentage of planned shutdowns finishing outside notified outage windows.	< 15%		Unable to be measured currently due to system limitations.
		Centralines responses not completed within Utilities Disputes (UDL) time limits.	0	0	
		Timeframe to complete standard low voltage customer connection.	<15 business days	100%	

Key Result Area	Strategic Asset Management Objective	Measurement	Targets 2025/2026	Forecasted 2025/26	Comments
		Timeframe to complete investigation of power quality issue.	<20 business days	100%	
Financial	Improve the financial performance of the asset management plan without compromising network performance and asset integrity.	Total annual network CAPEX is within ±10% of total budget.	< ± 10%	-3.4%	
		Total annual network OPEX is within ±10% of total budget.	< ± 10%	-7.95%	
Service Delivery	Improve delivery performance of the Annual Works Plan.	Delivery of the annual network capital works programme.	Programme completed in full.	95%	
		Delivery of the annual planned network maintenance programme.	Programme completed in full.	100%	
		Delivery of non-standard customer projects outside of agreed scheduled date.	0	0	
		Number of severity 1 and 2 work practice and quality outcomes from internal field audits.	0	0	
Innovation and Continual Improvement	Improve the asset management capability to support the development and implementation of the asset management strategies and plans.	Delivery of Asset Management Capability Plan.	100%	100%	
		Centralines' asset management services provider maintains ISO 55001 certification.	ISO 55001 Certification	ISO 55001 Certification	

Key Result Area	Strategic Asset Management Objective	Measurement	Targets 2025/2026	Forecasted 2025/26	Comments
	Improve the communication of the asset management strategy to all Centralines' teams.	Percentage of new Centralines' staff who received an asset management induction within three months of commencing employment.	100%	100%	
		Percentage of Centralines' staff receiving an annual asset management briefing.	100%	100%	
	Improve the environmental sustainability performance and resilience of the asset management activities.	Number of environmental breaches resulting in environmental contamination due to the failure or an asset, asset system or associated containment.	0	0	
		Centralines' network resilience maturity is assessed on an annual basis through the EEA's Resilience Management Maturity Assessment Tool (RMMAT).	Completed	Completed	
Assurance	Maintain compliance with all applicable requirements.	Percentage of non-compliances identified through Legislative Compliance Programme in relation to Asset Management have a corrective plan in place.	100%	100%	
		Number of instances of unanticipated legal challenge or government investigation.	0	0	

Table 8-29: Forecasted Service Level Performance 2025/26

8.8 Evaluation of Network Performance

8.8.1 Network Performance Summary

Though we have been exempted from the Commerce Commission's price-quality path since the 2021/22 financial year, network performance is still measured and reported on internally. This is to maintain consistency with previous years and facilitate comparisons between other EDBs.

Note: The 2025/26 figures presented in this section are provisional and subject to review and audit at the end of the disclosure period.

8.8.1.1 Unplanned Network Performance

Network performance for the 2024/25 year has been comparable to historical levels, with metrics surpassing Statement of Corporate Intent (SCI) targets.

Network performance for 2025/26 has shown mixed results compared to previous years. However, projections indicate that performance metrics will meet all SCI SAIDI and SAIFI targets for unplanned outages. Refer to Table 8-30 for further details.

Network Reliability Measure	2024/25 Actual	2025/26 Forecasted	SCI & Internal Targets	
Unplanned SAIDI	59.3	50.73	75.00	✓
Unplanned SAIFI	1.40	1.18	2.48	✓

Table 8-30: 2024/25 SCI Network Performance

8.9 Evaluation of Asset Management Maturity

8.9.1 Background

In 2012, the Commerce Commission included an Asset Management Maturity Assessment Tool (AMMAT) as part of the information Electricity Distribution Businesses (EDBs) are required to disclose in their annual information disclosures. The AMMAT consists of a self-assessment questionnaire containing 31 questions and accompanying guidance notes. The maturity assessment questions are designed to cover the full range of asset management system components and activities while taking into account information already disclosed in RAMPs.

Figure 8-2 details the maturity scales upon which the AMMAT scoring is based.

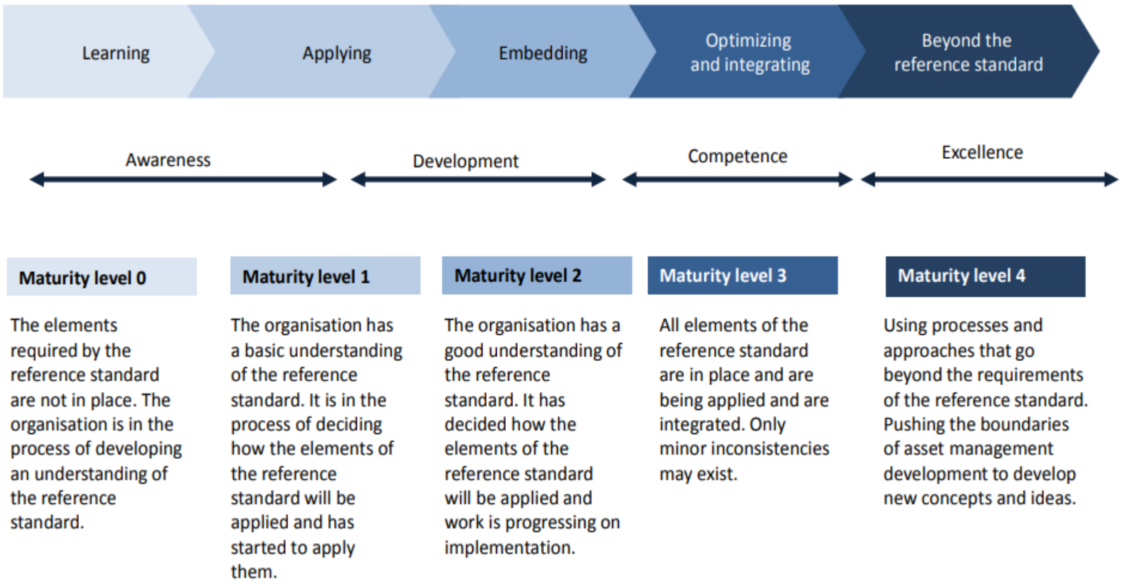

Figure 8-2: AMMAT Maturity Levels

8.9.2 *2025/26 AMMAT Results*

We are committed to continually improving our asset management capabilities. Our managed services provider is ISO 55001 certified, and many of their asset management processes and practices have been adopted and implemented at Centralines. This has resulted in an increase in maturity levels across some areas over recent years.

For the 2025/26 year, our AMMAT was self-assessed. However, where our managed services provider's key asset management processes have been fully adopted by us, maturity levels from our managed services provider's externally assessed AMMAT have been used.

Maturity scoring for individual AMMAT questions is provided in Figure 8-3.

Figure 8-3: 2025/26 Centralines' AMMAT Results

These AMMAT functions, including our managed services provider's scores, can be further consolidated into six main capability areas. These grouped capability areas, scoring for individual questions and a rounded summary score for each area, are provided in Table 8-31.

Capability Area	Question	Asset Management Capability Sub-Area	Score	Average Score
Asset Strategy and Delivery	10	Asset Management Strategy Alignment	2	2.6
	11	Asset Management Strategy – Asset Lifecycle	2	
	26	Asset Management Plan	3	
	33	Contingency Planning	3	
	69	Lifecycle Management of Risks	3	
	91	Corrective and Preventative Action	2	
	109	Asset Maintenance and In-service Support	3	

Capability Area	Question	Asset Management Capability Sub-Area	Score	Average Score
Documentation, Controls and Review	45	Outsourcing	3	2.7
	59	Asset Management System Documentation	2	
	82	Legal/Regulatory/Statutory Compliance	3	
	88	Asset Creation and Refurbishment	3	
	95	Performance and Condition Monitoring	2	
	105	Auditing	3	
	113	Continuous Improvement	3	
Systems, Integration, and Information Management	31	Issue of Work from the Asset Management Plan	2	2.75
	62	Effectiveness of Asset Information Systems	3	
	63	Currency of Asset Information	3	
	64	Asset Information System Relevance	3	
Communication and Participation	3	Asset Management Policy	2	2
	27	Communicating the Asset Management Plan	2	
	42	Asset Management Awareness and Leadership	2	
	53	Communication of Asset Management Information	2	
Structure, Capability and Authority	29	Responsibilities to Act on the Asset Management Plan	3	3
	37	Management Delivering Asset Management	3	
	99	Defect Investigation	3	
	115	Advanced Technology and Practices	3	
Competency and Training	40	Resourcing Asset Management	2	2.6
	48	Development of Human Resources in Asset Management	3	
	49	Competency Development in Asset Management	3	
	50	Training	3	
	79	Risk Based Improvement of Teams	2	

Table 8-31: AMMAT Scoring per Asset Management Capability Area

8.9.3 Assessment of Asset Management Practices 2016-2026

An overview of the scores in 2016 and 2026 for each asset management function is provided in Figure 8-4.

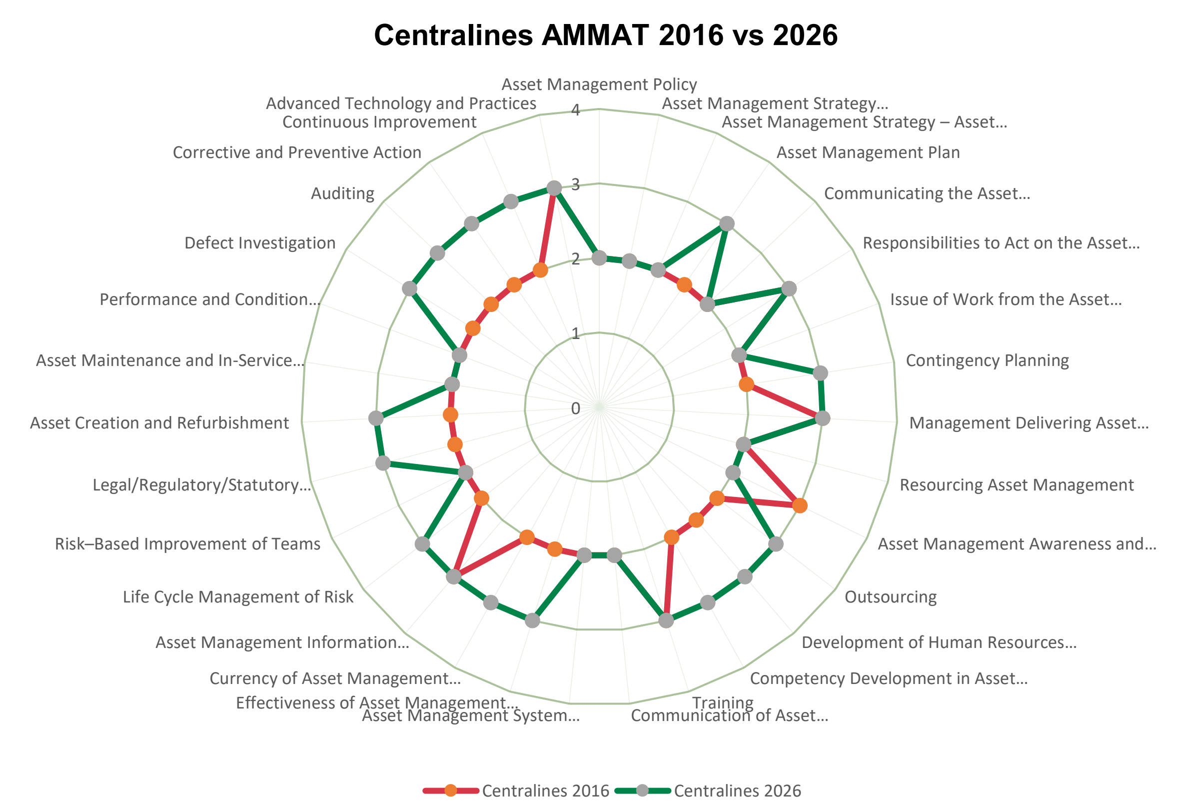

Figure 8-4: 2016 and 2026 Centralines AMMAT Results Comparison

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8.9.3.1 Improvement 2016-2026

Consistent improvement from 2016 to 2026 can be seen in our risk and information management functions. This is consistent with the effort we, and our managed services provider, have put in over recent years to improve these functions. As a result, scores in the asset management functions are being maintained (such as risk management processes and asset management plans).

We recognise that there is still room for improvement, and we remain committed to achieving this through our Continual Improvement processes.

CENTRALINES LIMITED

CAPABILITY TO DELIVER

SECTION 9 / WĀHANGA 9

Our People Our Power

Contents

9. CAPABILITY TO DELIVER

9.1 Introduction to this Section

Our Asset Management Plan (AMP) serves as a comprehensive framework for maintaining, renewing, and developing our electricity distribution network. This plan is delivered primarily through Centralines' in-house service provider. To ensure flexibility and scalability, subcontracting is utilised to address short-term resource needs. Specialised external expertise is engaged through the Managed Services Agreement (MSA) for highly technical projects, such as zone substation upgrades. This delivery model allows us to maintain efficiency while meeting the evolving demands of our network.

The AMP was significantly revised following Cyclone Gabrielle in February 2023, which caused extensive damage to the Central Hawke's Bay network. The updated plan incorporates how Centralines can enhance resilience and maintain the reliability of the network while balancing affordability and meeting customer demands, including decarbonisation and electrification. This revision reflects our commitment to sustainability, resilience, and climate adaptation. It ensures our network can withstand future challenges while continuing to deliver reliable and affordable service to our customers.

Our ability to deliver on our AMP objectives is underpinned by a robust Asset Management System (AMS). The AMS is designed to integrate key processes, including:

- Network Development Planning (NDP)
- Asset Renewal Planning (ARP), and
- Works Planning and Consolidation (WPC).

These processes ensure that network investments are risk-prioritised, cost-effective, and aligned with both operational and regulatory requirements. Regular updates to the AMP, conducted on a six-monthly basis, provide us with the agility to adapt to:

- real-time needs, and
- external constraints, such as supply chain challenges and contractor availability.

9.1.1 Workforce Capability and Training

A skilled and capable workforce is essential to the successful execution of the AMP. The MSA guarantees we have access to highly qualified and experienced engineering specialists. It ensures the right talent is available and equipped to meet the organisation's needs.

We are challenged in attracting qualified line mechanics to the Central Hawke's Bay area, therefore we have implemented an annual intake of local talent as trainee line mechanics. This initiative has been underway for several years. It is proving to be successful in increasing the number of qualified line mechanics in the workforce, and the retention rate is high.

By focusing on workforce growth and retention, we ensure that our workforce remains future-proof, ready to deliver on our strategic objectives.

9.1.2 Collaborative and Transparent Delivery Model

Our contracting model emphasises efficiency and transparency. Our in-house workforce operates as the primary service provider with additional subcontracting capacity engaged as needed. For specialised projects, such as high-voltage engineering and substation upgrades, we utilise the MSA to access the required skills, knowledge and experience.

9.1.3 *Risk-Based Planning and Cost Management*

A rigorous Work Planning and Consolidation (WPC) process ensures that proposals for network investment are prudent, efficient, and aligned with our Asset Management Objectives (AMOs). The WPC process consolidates inputs from NDP and ARP, allowing us to prioritise risk-based projects and minimise customer interruptions. By identifying synergies between projects, the WPC also enhances contractor efficiency and reduces costs. This process provides visibility into contractor capacity, enabling better forward planning for recruitment, subcontracting, and cost forecasting.

Our AMP is periodically updated to reflect emerging needs and external constraints. This dynamic approach ensures that the plan remains achievable while delivering long-term financial and operational benefits.

9.1.4 *Standards and Quality Assurance*

We adhere to stringent quality control standards across all stages of project delivery, from design and procurement to construction and commissioning. These standards ensure the safety, reliability, and longevity of assets while minimising premature maintenance. High standards are particularly critical for complex projects, such as zone substation upgrades, which require precise execution to manage technical and operational risks effectively.

9.1.5 *Resilience and Climate Adaptation*

The AMP incorporates resilience measures to address the increasing frequency and severity of climate-related events. Cyclone Gabrielle highlighted the importance of a resilient network, prompting us to integrate phased investments in infrastructure upgrades and climate adaptation strategies. These measures are designed to balance costs with long-term community and environmental benefits. This approach ensures that our network remains robust and sustainable in the face of future challenges.

9.1.6 *Governance and Financial Oversight*

Our governance framework supports the effective implementation of the AMP through robust oversight and accountability mechanisms. The Board of Directors reviews and approves the annual Business Plan, which encompasses both capital and operating expenditures. Financial controls, supported by a comprehensive Delegations Policy (CL-WP-001), ensure compliance and transparency. High-value approvals exceeding $1 million require detailed business cases and approval by the Board of Directors. This requirement provides additional assurance that investments align with our strategic goals.

9.2 Ensuring the Plan is Realistic

We define a realistic Asset Management Plan (AMP) as one that:

- achieves a high degree of accuracy
- is achievable within resource constraints, and
- maintains the optimal balance between cost, risk, and performance.

To ensure the AMP meets these standards, we employ robust processes, systems, and inputs that are tested for consistency and repeatability. This approach ensures the outputs are both reliable and actionable, enabling the delivery of our AMOs.

Our AMS provides the framework for developing and executing the AMP.

The following core processes within the AMS development are integral to producing a realistic plan:

- Network Development Planning (NDP)
- Asset Renewal Planning (ARP)
- Works Planning and Consolidation (WPC), and
- Annual Works Plan (AWP).

These processes are supplemented by:

- our workforce management
- contracting arrangements
- Service Level Agreements, and
- the use of decision-support tools such as Condition-Based Risk Management (CBRM).

NDP underpins long-term planning by integrating inputs such as demand forecasts, network capacity, and external data from local council development plans. These inputs are rigorously reviewed and refined annually to ensure the accuracy of short- and long-term plans. Similarly, ARP employs a risk-based approach to assess asset condition and prioritise maintenance or replacement. This ensures timely interventions on critical assets, aligning with our overall risk management strategy.

The WPC process plays a pivotal role in integrating and prioritising proposals from NDP and ARP into a deliverable plan. This process incorporates mechanisms to verify data quality, align teams, and enhance contractor efficiency. Regular updates to the AMP, conducted semi-annually, provide an accurate and dynamic view of the network's needs. WPC drives operational efficiency and cost savings by:

- identifying project synergies
- refining subcontracting strategies, and
- enabling proactive resource planning.

We also ensure that the AWP is achievable by carefully prioritising projects using a risk-based framework and applying financial and resource constraints. The AWP includes allowances for minor capital works, such as pole replacements, arising from inspections, ensuring flexibility to address emergent needs.

To further validate the realism of the plan, we emphasise workforce capability and resource planning.

Quality assurance measures, including the verification and closeout of completed work, underpin the integrity of the AMP. Internal audits, stakeholder reporting, and real-time updates enable us to adapt to evolving challenges, such as supply chain disruptions and unforeseen climatic events.

Through these comprehensive and interrelated processes, we ensure that our AMP is not only realistic but also aligns with its commitment to delivering sustainable, resilient, and cost-effective energy solutions to our customers.

9.3 Achieving the Objectives of the Plan

The requirements for the RAMP include descriptions of processes used by the EDB to ensure that:

- the RAMP is realistic, and the objectives set out in the plan can be achieved, and
- the organisation structure and the processes for authorisation and business capabilities will support the implementation of the RAMP plans.

We interpret these requirements as:

- providing information on how we ensure the plan is reasonable. This includes demonstrating that it is efficient and effective in building, maintaining and operating networks optimally and sustainably to deliver reliable services to consumers, and
- having the business processes and capabilities to deliver the plan.

As noted in Section 2 – Background and Objectives, we operate a mixed model that maintains capability in-house (field-staff), while outsourcing management services and some capital works to third parties. We also insource contracting resources to support programme delivery through competitive tenders and negotiation.

9.3.1 Work Planning and Consolidation (WPC)

The purpose of the WPC process within our AMS is to establish and maintain a prudent and efficient AMP, from the proposals for work submitted from NDP and ARP.

The key requirements of WPC are:

- that quality proposals entering the AMP will support the achievement of our AMOs
- the AMP supports effective prioritisation of competing proposals of work
- high integrity of the critical information maintained within the AMP
- stakeholders are aware of their requirements in relation to the WPC process and can access the information they require, and
- that work completed on the asset portfolio is verified and closed out of the AMP in a timely manner.

WPC draws together proposals of work from various sources. They are risk-prioritised and organised into a plan that can be delivered by the organisation, at the lowest overall cost, subject to external constraints. The AMP is updated on a six-monthly basis to provide the business with an accurate, up-to-date view. The aim of this is to bring about efficiency gains through:

- identification of project synergies to minimise customer interruptions and increase contractor efficiency
- improved visibility for workforce planning on where recruitment or attrition may need to be applied
- improved visibility of workforce and contractor capacity to enable forward planning for resource and subcontracting requirements, which may enable refinement of rates and costs
- alignment of business units to this plan – Asset Management, Network Development, Commercial, Procurement and Logistics, Network Operations Centre, and other support functions
- improved financial benefits, including:
  - better cost and debt forecasting
  - the ability to organise exchange hedging for large material procurement
  - revenue and cost implications, and
  - analysis of variations, and
- the ability to respond fast and be agile.

9.3.2 Annual Works Plan (AWP) Development

The AWP is a carefully crafted, one-year network investment plan that addresses the network's needs. It is designed to resolve issues identified through the ARP and NDP while also accommodating necessary maintenance activities. This ensures that the network operates reliably and efficiently.

The development of the AWP begins with the proposed projects outlined in the AMP. These projects are reviewed and strategically prioritised using our risk assessment framework. Financial and resource constraints are then applied to ensure the plan is both feasible and aligned with the company's strategic goals. Additionally, the AWP includes provisional allowances for minor capital work that may arise during the financial year. Such work often results from annual asset inspections, such as the replacement of poles identified through our pole testing programme.

Once the projects are confirmed for inclusion in the AWP, a detailed scope of work is developed for each one. This scope outlines the specific tasks required and includes an estimated cost of completion. These detailed scopes are then provided to our in-house service provider, who are responsible for executing the work as planned. This structured approach ensures that we effectively address the network's evolving needs while managing resources and maintaining operational excellence.

9.4 Organisation Structure, Processes for Authorisation and Business Capabilities

9.4.1 Organisation Structure

Our organisational structure (refer to Section 2 – Background and Objectives) is specifically designed to ensure the optimal development of the investment portfolio through to completion of the AMP. A specific function of our managed services provider's Network Investment and Delivery Team supports the achievement of this. Their role is to:

- oversee, coordinate, and optimise at a programme level, the outputs of NDP and ARP, and
- manage and ensure the delivery of the AWP and AMP.

In addition, the in-house service provider is specifically focused on completing our AWP each financial year while balancing the requirements of all stakeholders. This balance will remain a focus in the upcoming financial year. We work to apportion appropriate levels of resources to the respective programmes of work to meet asset management and business objectives.

9.4.2 Process for Authorisation

Our Board of Directors reviews and approves the annual Business Plan, which includes forecasts for both capital and operating expenditure.

A Delegations Policy (CL-WP-001) is in place, defining the levels of Delegated Financial Authority (DFA) granted by the Board to specific roles within our organisation. This policy is supported by our financial management system, which incorporates robust controls and auditing mechanisms to:

- ensure compliance with the authorisation process, and
- identify any instances of non-compliance.

For approvals exceeding the highest delegation threshold of $1 million, a detailed business case and accompanying Board report must be prepared and submitted for Board consideration and approval. When material variations to agreed work contracts arise due to unforeseen circumstances, a formal variation process is followed to ensure proper authorisation of any changes.

9.4.3 Business Capabilities

Figure 9-1 illustrates the Lifecycle Delivery processes that we use to deliver our asset management activities. Each of these activities can be mapped to a required business capability. We aim to meet all recurring capabilities through the MSA. We will only outsource those capabilities where there are insufficient levels of work to ensure full utilisation.

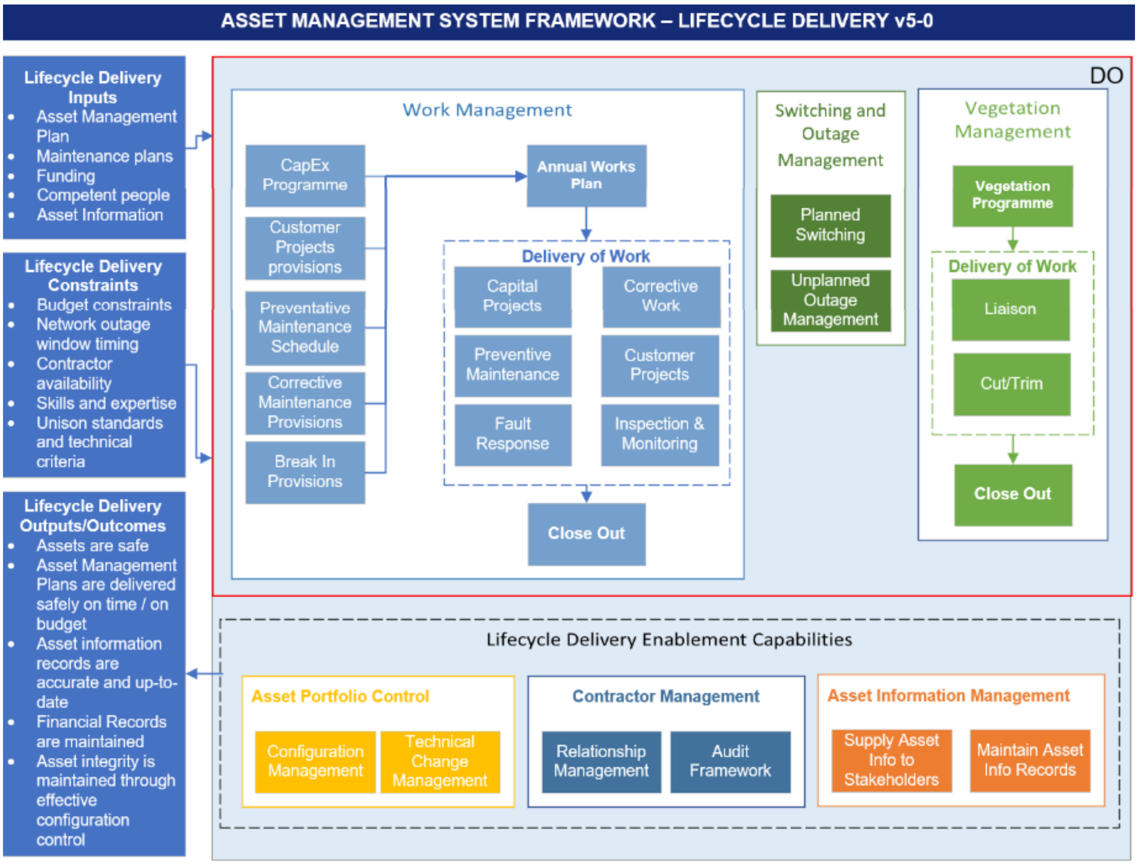

Figure 9-1: Lifecycle Delivery Processes

Table 9-1 specifies each of the lifecycle processes in Figure 9-1.

Lifecycle Process	Description
Work Management	• The process by which project and maintenance are undertaken across the network. It assists the in-house service provider to be productive and effective in maximising equipment, safety, and reliability.
Vegetation Management	• Identify vegetation issues and secure landowner consent for cutting work through the liaison process. • Vegetation is cut and trimmed to ensure line corridors are clear.
Workforce and Contractor Management	• Engage appropriately competent resources to undertake work on assets. • Determine resource requirements over and above those available in-house. Engage appropriately competent and cost-effective outsourced contracting service providers. • Issue work to in-house service providers and contracting service providers. • Manage the relationship between us and our contracting businesses to ensure effective collaboration. • Measure the performance of contracting service providers under contractual frameworks.
Switching and Outage Management	• Develop switching plans to enable work on the network to proceed.

Lifecycle Process	Description
	• Identify the occurrence of unplanned outages and coordinate the response, including the dispatch of the first responder.
Asset Portfolio Control	• Maintain the configuration of the asset portfolio to ensure integrity. • Technical Change Management processes to ensure that risk of change in the asset portfolio is effectively managed.
Asset Information Management	• Record asset information generated from Lifecycle Delivery activities within asset information systems, including EAMS and GIS. • Respond to requests for asset information from our teams, contracting service providers, and third parties such as other utilities.

Table 9-1: Lifecycle Delivery Processes

9.4.4 Capability Development

Our managed services provider undertakes capability projects to enhance our Asset Management System (AMS), ensuring the company remains innovative, cost-effective, and efficient in delivering electricity distribution services. These projects are designed to address strategic needs, implement new technologies, and improve operational processes to meet the evolving demands of the energy sector.

9.4.4.1 Why We Run Capability Projects

Capability projects are a key component of our continual improvement strategy, as outlined in the Strategic Asset Management Plan (SAMP). These projects aim to:

- enhance operational efficiency and network reliability
- integrate innovative technologies to future-proof the distribution network
- respond proactively to emerging industry trends and regulatory requirements, and
- drive cost-effectiveness by streamlining processes and optimising resource utilisation.

9.4.4.2 How We Run Capability Projects

We follow a structured, four-stage process to ensure the effective delivery of capability projects. Table 9-2 describes each of these process stages.

Process	Description
Scoping	Projects begin with strategic alignment to our AMS objectives, identifying clear motivations, deliverables, and benefits. A scoping team is assembled with expertise in functional, technical, and asset management areas.
Planning	A detailed Project Management Plan is developed, specifying deliverables, milestones, risks, resource requirements, and success metrics. The plan aligns with the Lean Six Sigma methodology, where applicable, to ensure quality and efficiency.
Execution	The project team executes the plan, actively managing risks and maintaining regular communication with stakeholders.

Process	Description
	Mid-project reviews are conducted to adjust deliverables or approaches as needed based on ongoing insights.
Closeout	The project deliverables are verified against objectives, and a post-project review identifies lessons learned for continuous improvement. Opportunities for future projects are captured in the Continual Improvement Register.

Table 9-2: Capability Projects Four-Stage Process

9.4.4.3 Monitoring Project Delivery

We employ rigorous monitoring and reporting mechanisms throughout the project lifecycle, including:

- regular progress updates to project sponsors
- internal audits to ensure adherence to objectives, timelines, and budgets, and
- comprehensive reviews at mid-project and closeout stages to validate outcomes and inform future initiatives.

We plan and deliver a range of capability projects focused on innovation and new technology.

Examples of our capability projects in FY26 are listed in Table 9-3.

Project	Description
Scenario-Based Planning	To address future energy demand uncertainties, we have adopted processes to help us: • consider multiple potential future states, and • plan the best network investments.
Flexibility Services	We are developing strategies to: • access high-impact loads to provide flexibility services, alleviate congestion, and • reduce the investment required to meet growing demand.
Acoustic Ultrasonic Detection	This technology enables early detection of electrical faults by ‘listening’ for issues that are not visible. This helps with swift problem resolution, lowers maintenance expenses, improves safety, and reduces power disruptions.
LiDAR and Satellite Imagery	Using lasers and satellite data, we map vegetation risks, enabling proactive tree trimming. This imagery helps to prevent potential outages and reduces the labour costs of traditional inspections.
Network Monitoring	Our network uses clever technology to continuously monitor the power grid, enabling quick power rerouting during issues to minimise outage impacts and boost reliability.
Conductor Condition Recognition (CCR)	Drones equipped with cameras evaluate the condition of power lines. Artificial intelligence identifies which lines need maintenance, avoiding unnecessary replacements and saving costs.

Project	Description
Fault Location, Isolation and Supply Restoration (FLISR)	Network controllers currently control remote operable switches on our network. The controllers open/close these switches after faults to restore customers via alternative supplies. We plan to implement a system that will have ADMS handle the remote restoration process, enabling customers to be restored faster for faults (aiming for 1 minute).

Table 9-3: Capability Projects in FY26

9.4.5 *Knowledge Management Framework*

Our managed services provider's Knowledge Management Framework (Figure 9-2) is a first step to meet the requirements of ISO 55001:2024 Asset Management System, released in July 2024. Under the MSA, we have our controlled documents (explicit knowledge) managed by our managed services provider. We will follow their framework to ensure knowledge is available to the right people, in the right format, at the right time.

During 2025/26, our managed services provider transitioned from a document management system to a component content management system (CCMS), which we will use for our controlled documents. This initiative provides efficiency in:

- content curation
- the reuse of content, and
- the automation in content publication.

It ensures that both our people and technology can access accurate, reliable content and knowledge, enabling better-informed decision-making.

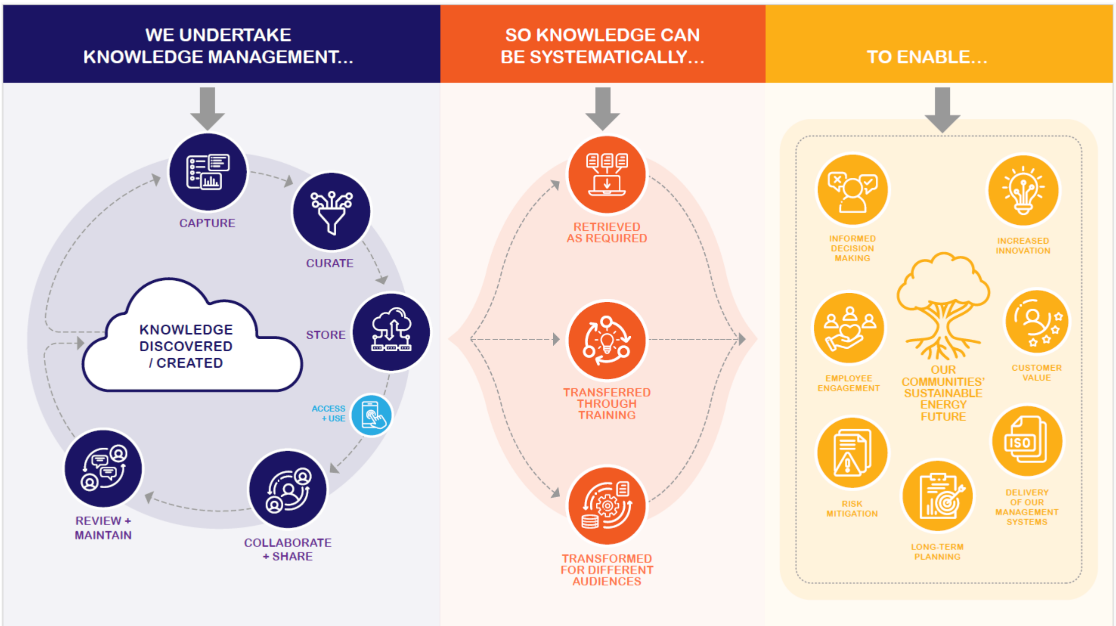

Figure 9-2: Managed Services Provider's Knowledge Management Framework

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Our People Our Power

CONTENTS

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.

11a(i): Expenditure on Assets Forecast

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
	for year ended	**31 Mar 26**	**31 Mar 27**	**31 Mar 28**	**31 Mar 29**	**31 Mar 30**	**31 Mar 31**	**31 Mar 32**	**31 Mar 33**	**31 Mar 34**	**31 Mar 35**	**31 Mar 36**
		$000 (in nominal dollars)										
	Consumer connection	1,600	1,640	1,301	1,381	1,625	1,657	1,691	1,724	1,759	1,794	1,830
	System growth	2,400	-	521	531	542	552	564	575	586	4,119	4,201
	Asset replacement and renewal	2,525	4,044	4,165	4,248	4,875	4,972	5,635	5,748	5,863	6,578	6,710
	Asset relocations	-	1,100	30	31	31	32	33	33	34	35	35
	Reliability, safety and environment:											
	Quality of supply	909	150	-	-	-	-	-	-	-	-	-
	Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
	Other reliability, safety and environment	1,451	280	272	277	283	288	294	300	306	312	318
	Total reliability, safety and environment	**2,360**	**430**	**272**	**277**	**283**	**288**	**294**	**300**	**306**	**312**	**318**
	Expenditure on network assets	**8,885**	**7,213**	**6,289**	**6,468**	**7,355**	**7,502**	**8,216**	**8,380**	**8,547**	**12,838**	**13,094**
	Expenditure on non-network assets	**597**	**975**	**1,003**	**747**	**809**	**894**	**912**	**930**	**949**	**968**	**987**
	Expenditure on assets	**9,482**	**8,188**	**7,292**	**7,214**	**8,165**	**8,396**	**9,127**	**9,310**	**9,496**	**13,805**	**14,081**
plus	Cost of financing		70									
less	Value of capital contributions	1,000	2,218	859	911	1,072	1,094	1,116	1,138	1,161	1,184	1,208
plus	Value of vested assets											
	Capital expenditure forecast	**8,482**	**6,041**	**6,433**	**6,303**	**7,092**	**7,302**	**8,012**	**8,172**	**8,335**	**12,621**	**12,873**
	Assets commissioned	9,697	5,970	6,623	6,091	6,875	7,302	8,012	8,172	8,336	8,502	9,756
		$000 (in constant prices)										
	Consumer connection	1,600	1,606	1,250	1,300	1,500	1,500	1,500	1,500	1,500	1,500	1,500
	System growth	2,400	-	500	500	500	500	500	500	500	3,444	3,444
	Asset replacement and renewal	2,525	3,961	4,000	4,000	4,500	4,500	5,000	5,000	5,000	5,500	5,500
	Asset relocations	-	1,077	29	29	29	29	29	29	29	29	29
	Reliability, safety and environment:											
	Quality of supply	909	147	-	-	-	-					
	Legislative and regulatory	-	-	-	-	-	-					
	Other reliability, safety and environment	1,451	274	261	261	261	261	261	261	261	261	261
	Total reliability, safety and environment	**2,360**	**421**	**261**	**261**	**261**	**261**	**261**	**261**	**261**	**261**	**261**
	Expenditure on network assets	**8,885**	**7,065**	**6,040**	**6,090**	**6,790**	**6,790**	**7,290**	**7,290**	**7,290**	**10,734**	**10,734**
	Expenditure on non-network asset	597	955	963	703	747	809	809	809	809	809	809
	Expenditure on assets	**9,482**	**8,020**	**7,003**	**6,793**	**7,537**	**7,599**	**8,099**	**8,099**	**8,099**	**11,543**	**11,543**
Subcomponents of expenditure on assets (where known)												
	Energy efficiency and demand side management, reduction of energy losses											
	Overhead to underground conversion											
	Research and development											

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	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	**31 Mar 26**	**31 Mar 27**	**31 Mar 28**	**31 Mar 29**	**31 Mar 30**	**31 Mar 31**	**31 Mar 32**	**31 Mar 33**	**31 Mar 34**	**31 Mar 35**	**31 Mar 36**
Difference between nominal and constant price forecasts	$000										
Consumer connection	-	34	51	81	125	157	191	224	259	294	330
System growth	-	-	21	31	42	52	64	75	86	675	757
Asset replacement and renewal	-	83	165	248	375	472	635	748	863	1,078	1,210
Asset relocations	-	23	1	2	2	3	4	4	5	6	6
Reliability, safety and environment:											
Quality of supply	-	3	-	-	-	-	-	-	-	-	-
Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
Other reliability, safety and environment	-	6	11	16	22	27	33	39	45	51	57
Total reliability, safety and environment	**-**	**9**	**11**	**16**	**22**	**27**	**33**	**39**	**45**	**51**	**57**
Expenditure on network assets	**-**	**148**	**249**	**378**	**565**	**712**	**926**	**1,090**	**1,258**	**2,104**	**2,361**
Expenditure on non-network assets	-	20	40	44	62	85	103	121	140	159	178
Expenditure on assets	**-**	**168**	**289**	**421**	**628**	**797**	**1,029**	**1,211**	**1,397**	**2,262**	**2,539**

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

	Current Year	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	**31 Mar 26**	**31 Mar 27**	**31 Mar 28**	**31 Mar 29**	**31 Mar 30**	**31 Mar 31**
Consumer types defined by EDB*	$000 (in constant prices)					
All Customers	1,600	1,606	1,250	1,300	1,500	1,500
Consumer connection expenditure	**1,600**	**1,606**	**1,250**	**1,300**	**1,500**	**1,500**
less Capital contributions funding consumer connection	1,000	1,124	825	858	990	990
Consumer connection less capital contributions	**600**	**482**	**425**	**442**	**510**	**510**

11a(iii): System Growth

	Current Year	CY+1	CY+2	CY+3	CY+4	CY+5
Subtransmission	2,400					
Zone substations						
Distribution and LV lines		-	500	500	500	500
Distribution and LV cables						
Distribution substations and transformers						
Distribution switchgear						
Other network assets						
System growth expenditure	**2,400**	**-**	**500**	**500**	**500**	**500**
less Capital contributions funding system growth						
System growth less capital contributions	**2,400**	**-**	**500**	**500**	**500**	**500**

11a(iv): Asset Replacement and Renewal

	Current Year	CY+1	CY+2	CY+3	CY+4	CY+5
Subtransmission	224	-	679	364	409	409
Zone substations		-	-	-	-	-
Distribution and LV lines	1,406	2,290	1,728	2,007	2,331	2,411
Distribution and LV cables	80	328	74	83	93	93
Distribution substations and transformers	720	752	552	623	700	747
Distribution switchgear	95	384	221	125	93	93
Other network assets		206	747	799	873	747
Asset replacement and renewal expenditure	**2,525**	**3,961**	**4,000**	**4,000**	**4,500**	**4,500**
less Capital contributions funding asset replacement and renewal						
Asset replacement and renewal less capital contributions	**2,525**	**3,961**	**4,000**	**4,000**	**4,500**	**4,500**

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11a(v):Asset Relocations

for year end	*Current Year CY* 31 Mar 26	*CY+1* 31 Mar 27	*CY+2* 31 Mar 28	*CY+3* 31 Mar 29	*CY+4* 31 Mar 30	*CY+5* 31 Mar 31
Project or programme*	**$000 (in constant prices)**					
T33	-	1,048				
All other asset relocations projects or programmes		29	29	29	29	29
Asset relocations expenditure	**-**	**1,077**	**29**	**29**	**29**	**29**
less Capital contributions funding asset relocations		1,048				
Asset relocations less capital contributions	**-**	**29**	**29**	**29**	**29**	**29**

11a(vi):Quality of Supply

Project or programme*						
Feeder 86 - Upgrade Undersized Conductor - SH2 Waipawa	500					
Upgrade LV Network in Otane & Replace B4/58 with 300kVA GM Tx	180					
CL 14 - Underground 11kV Northumberland St	229					
All other quality of supply projects or programmes		147				
Quality of supply expenditure	**909**	**147**	**-**	**-**	**-**	**-**
less Capital contributions funding quality of supply						
Quality of supply less capital contributions	**909**	**147**	**-**	**-**	**-**	**-**

11a(vii): Legislative and Regulatory

Project or programme*						
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*						
CL 83 - Pourerere Rd - Replace ABS 4041 with RCS	90					
Waipukurau ZS - Install ION Meter	100					
CL 1 - SH50 Ongaonga - Repl ABSs 410 635 619 with RCSs	217					
CL 85 - High St Wpa - Replace ABS 457 with RCS	90					
SCADA Digital Upgrade (FY26-Mesh)	100					
SCADA Digital Upgrade (FY26-Waipukuraru)	200					
Fdr 15 Close Gaisford Tce Ring (Stage 2)	402					
CL 13 - Mt Herbert Rd - Replace ABS 516 with Sectionaliser	75					
CL 1 - Makaretu Rd - Replace ABS 411 with RCS	77					
CL 14 - Russell St - Replace RMU 7503 with auto RMU	100					
All other projects or programmes - other reliability, safety and environment		274	261	261	261	261
Other reliability, safety and environment expenditure	**1,451**	**274**	**261**	**261**	**261**	**261**
less Capital contributions funding other reliability, safety and environment						
Other reliability, safety and environment less capital contributions	**1,451**	**274**	**261**	**261**	**261**	**261**

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11a(ix): Non-Network Assets

		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
Routine expenditure	*for year end*	**31 Mar 26**	**31 Mar 27**	**31 Mar 28**	**31 Mar 29**	**31 Mar 30**	**31 Mar 31**
Project or programme*		**$000 (in constant prices)**					
Motor Vehicles		318	266	272	283	301	326
Plant, Equipment and Tools		202	331	338	352	374	405
Office Furniture and Equipment		47	64	65	68	72	78
Land and Buildings		30					
Intangible Assets			294	288	-	-	-
All other projects or programmes - routine expenditure							
Routine expenditure		**597**	**955**	**963**	**703**	**747**	**809**
Atypical expenditure							
Project or programme*							
All other projects or programmes - atypical expenditure							
Atypical expenditure		**-**	**-**	**-**	**-**	**-**	**-**
Expenditure on non-network assets		**597**	**955**	**963**	**703**	**747**	**809**

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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.

EDBs must provide explanatory comment on the difference between constant price and nominal dollar operational expenditure forecasts in Schedule 14a (Mandatory Explanatory Notes). EDBs must express the information in this schedule (11b) as a specific value rather than ranges. If EDBs wish to provide any supporting information about these values, this may be disclosed in Schedule 15 (Voluntary Explanatory Notes).

This information is not part of audited disclosure information.

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	31 Mar 26	31 Mar 27	31 Mar 28	31 Mar 29	31 Mar 30	31 Mar 31	31 Mar 32	31 Mar 33	31 Mar 34	31 Mar 35	31 Mar 36
Operational Expenditure Forecast	**$000 (in nominal dollars)**										
Service interruptions and emergencies	600	588	600	612	624	636	649	662	675	689	703
Vegetation management	614	641	654	667	680	694	708	722	736	751	766
Routine and corrective maintenance and inspection	150	510	521	425	433	442	451	460	469	478	488
Asset replacement and renewal	1,840	1,411	1,439	1,468	1,497	1,527	1,558	1,589	1,620	1,653	1,686
Network Opex	**3,204**	**3,151**	**3,213**	**3,171**	**3,235**	**3,299**	**3,365**	**3,433**	**3,501**	**3,571**	**3,643**
System operations and network support	557	650	663	677	690	704	718	732	747	762	777
Business support	4,384	4,525	4,615	4,707	4,801	4,897	4,995	5,095	5,197	5,301	5,407
Non-network solutions provided by a related party or third party	-	-	-	-	-	-	-	-	-	-	-
Non-network Opex	**4,941**	**5,175**	**5,278**	**5,383**	**5,491**	**5,601**	**5,713**	**5,827**	**5,944**	**6,063**	**6,184**
Operational expenditure	**8,145**	**8,326**	**8,491**	**8,555**	**8,726**	**8,900**	**9,078**	**9,260**	**9,445**	**9,634**	**9,827**
	$000 (in constant prices)										
Service interruptions and emergencies	600	576	576	576	576	576	576	576	576	576	576
Vegetation management	614	628	628	628	628	628	628	628	628	628	628
Routine and corrective maintenance and inspection	150	500	500	400	400	400	400	400	400	400	400
Asset replacement and renewal	1,840	1,382	1,382	1,382	1,382	1,382	1,382	1,382	1,382	1,382	1,382
Network Opex	**3,204**	**3,086**	**3,086**	**2,986**	**2,986**	**2,986**	**2,986**	**2,986**	**2,986**	**2,986**	**2,986**
System operations and network support	557	637	637	637	637	637	637	637	637	637	637
Business support	4,384	4,432	4,432	4,432	4,432	4,432	4,432	4,432	4,432	4,432	4,432
Non-network solutions provided by a related party or third party											
Non-network Opex	**4,941**	**5,069**	**5,069**	**5,069**	**5,069**	**5,069**	**5,069**	**5,069**	**5,069**	**5,069**	**5,069**
Operational expenditure	**8,145**	**8,155**	**8,155**	**8,055**	**8,055**	**8,055**	**8,055**	**8,055**	**8,055**	**8,055**	**8,055**
Subcomponents of operational expenditure (where known)											
Energy efficiency and demand side management, reduction of energy losses											
Direct billing*											
Research and Development											
Insurance	368	388	398	408	418	429	440	451	463	475	487
***Direct billing expenditure by suppliers that direct bill the majority of their consumers**											
Difference between nominal and real forecasts	**$000**										
Service interruptions and emergencies	-	12	24	36	48	60	73	86	99	113	127
Vegetation management	-	13	26	39	52	66	80	94	108	123	138
Routine and corrective maintenance and inspection	-	10	21	25	33	42	51	60	69	78	88
Asset replacement and renewal	-	29	57	86	115	145	176	207	238	271	304
Network Opex	**-**	**65**	**127**	**185**	**249**	**313**	**379**	**447**	**515**	**585**	**657**
System operations and network support	-	13	26	40	53	67	81	95	110	125	140
Business support	-	93	183	275	369	465	563	663	765	869	975
Non-network solutions provided by a related party or third party	-	-	-	-	-	-	-	-	-	-	-
Non-network Opex	**-**	**106**	**209**	**314**	**422**	**532**	**644**	**758**	**875**	**994**	**1,115**
Operational expenditure	**-**	**171**	**336**	**500**	**671**	**845**	**1,023**	**1,205**	**1,390**	**1,579**	**1,772**

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 operational expenditure for the current disclosure year and a 10 year planning period in Schedule 15.

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.

				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
All	Overhead Line	Concrete poles / steel structure	No.	1.00%	4.50%	28.25%	33.25%	33.00%	-	3	1.50%
All	Overhead Line	Wood poles	No.	3.00%	15.00%	38.00%	44.00%		-	2	15.00%
All	Overhead Line	Other pole types	No.	-	-	-	-	-	-	N/A	-
HV	Subtransmission Line	Subtransmission OH up to 66kV conductor	km	-	2.00%	45.00%	47.00%	6.00%	-	2	-
HV	Subtransmission Line	Subtransmission OH 110kV+ conductor	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)	km	-	-	2.50%	82.50%	15.00%	-	3	1.00%
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission submarine cable	km	-	-	-	-	-	-	N/A	-
HV	Zone substation Buildings	Zone substations up to 66kV	No.	-		33.00%	67.00%		-	3	-
HV	Zone substation Buildings	Zone substations 110kV+	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	22/33kV CB (Indoor)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	22/33kV CB (Outdoor)	No.		-	9.00%	50.00%	41.00%	-	3	-
HV	Zone substation switchgear	33kV Switch (Ground Mounted)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	33kV Switch (Pole Mounted)	No.	-	5.00%	15.00%	70.00%	10.00%	-	3	3.00%
HV	Zone substation switchgear	33kV RMU	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	50/66/110kV CB (Indoor)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	50/66/110kV CB (Outdoor)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)	No.	-	33.30%	33.30%	29.70%	3.70%	-	3	33.30%
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)	No.	-	-	-	-	-		N/A	-

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Voltage	Asset category	Asset class	Units	Asset condition at start of planning period (percentage of units by grade)							
				H1	H2	H3	H4	H5	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5-years
HV	Zone Substation Transformer	Zone Substation Transformers	No.			28.60%	71.40%		-	3	-
HV	Distribution Line	Distribution OH Open Wire Conductor	km	1.00%	3.00%	44.50%	47.50%	4.00%	-	2	2.00%
HV	Distribution Line	Distribution OH Aerial Cable Conductor	km	-	-	-	-	-	-	N/A	-
HV	Distribution Line	SWER conductor	km	-	-	-	-	-	-	N/A	-
HV	Distribution Cable	Distribution UG XLPE or PVC	km	1.00%	1.00%	22.50%	22.50%	53.00%	-	3	2.00%
HV	Distribution Cable	Distribution UG PILC	km	-	2.00%	44.00%	44.00%	10.00%	-	3	0.50%
HV	Distribution Cable	Distribution Submarine Cable	km	-	-	-	-	-	-	N/A	-
HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers	No.		6.00%	23.50%	23.50%	47.00%	-	3	3.75%
HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)	No.	-	-	-	-	-	-	N/A	-
HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)	No.	2.00%	11.00%	19.00%	21.00%	47.00%	-	2	4.00%
HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU	No.	-			100.00%		-	4	-
HV	Distribution switchgear	3.3/6.6/11/22kV RMU	No.	3.75%	11.25%	17.40%	28.10%	39.50%	-	3	15.00%
HV	Distribution Transformer	Pole Mounted Transformer	No.	2.65%	10.03%	19.03%	31.84%	36.45%	-	3	3.00%
HV	Distribution Transformer	Ground Mounted Transformer	No.	1.00%	4.00%	5.00%	25.00%	65.00%	-	3	3.75%
HV	Distribution Transformer	Voltage regulators	No.	-			50.00%	50.00%	-	3	
HV	Distribution Substations	Ground Mounted Substation Housing	No.	3.00%	10.00%	20.00%	50.00%	17.00%	-	2	5.00%
LV	LV Line	LV OH Conductor	km	0.50%	2.00%	42.75%	44.75%	10.00%	-	2	2.00%
LV	LV Cable	LV UG Cable	km	0.50%	5.50%	23.50%	23.50%	47.00%	-	2	1.00%
LV	LV Streetlighting	LV OH/UG Streetlight circuit	km	0.50%	5.00%	13.50%	13.50%	67.50%	-	2	2.00%
LV	Connections	OH/UG consumer service connections	No.	0.15%	-	-	-	99.85%	-	2	0.50%
All	Protection	Protection relays (electromechanical, solid state and numeric)	No.	-	-	16.67%	16.67%	66.67%	-	2	5.00%
All	SCADA and communications	SCADA and communications equipment operating as a single system	Lot	-	-	-	-	100.00%	-	2	-
All	Capacitor Banks	Capacitors including controls	No.	-	-	-	-	100.00%	-	4	-
All	Load Control	Centralised plant	Lot	-	-	-	-	100.00%	-	3	-
All	Load Control	Relays	No.	-	-	50.00%	50.00%	-	-	1	-
All	Civils	Cable Tunnels	km							N/A	

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.

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)
Waipukurau	8	Winter	10	N-1	No constraint	-0.5	Winter	-3.5	N-1
Waipawa	4.574	Winter	7.5	N-1	No constraint	2.9	Winter	1.4	N-1
Takapau	6.496	Summer	7.5	N-1 switched	No constraint	1	Summer	1	N-1 switched
Ongaonga POS	6	Summer	6	N-1 switched	No constraint	0	Summer	-0.7	N-1 switched
Wilder Road	1.042	Winter	2	N-1 switched	No constraint	1	Winter	1	N-1 switched

12b(i): System Growth - Zone Substations (continued...)

Existing Zone Substations	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
Waipukurau	Winter	-6.5	-6.5	N-1	Security	3	Zone substation transformer	Network upgrade	Planning stage	1 - 3 years	Substation upgrade is being considered as the default solution due to the high forecasted load growth. 11kV load transfer to Waipawa is possible to manage current overload risks.
Waipawa	Winter	-0.3	-0.3	N-1	Security	10+	Zone substation transformer	Not required	Planning stage	Not applicable	Waipawa substation supplies Waipawa and Otane towns which is targeted for residential development. Forecasted growth is marginally over the secure rating of the substation. Loading and growth will be monitored.
Takapau	Summer	1	1	N	Security	None	Subtransmission circuit	Not required	Planning stage	Not applicable	Takapau substation is supplied by a single 33kV circuit with security provided on the 11kV network. The 11kV network is monitored for capacity and voltage constraints when new connection requests are processed.
Ongaonga POS	Summer	-0.7	-0.7	N-1 switched	Security	8	Distribution back-up circuit capacity	Network upgrade	Planning stage	Not applicable	Existing security is provided by the 11kV network, with limited and slow growth forecasted. The 11kV network is monitored for capacity and voltage constraints when new connection requests are processed.
Wilder Road	Winter	1	1	N-1	Security	None	Distribution back-up circuit capacity	Network upgrade	Planning stage	Not applicable	Current security provided by 11kV network for a circuit or transformer outage. The 11kV network is monitored for capacity and voltage constraints when new connection requests are processed.

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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.

12c(i): Consumer Connections

Number of ICPs connected during year by consumer type

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	**31 Mar 26**	**31 Mar 27**	**31 Mar 28**	**31 Mar 29**	**31 Mar 30**	**31 Mar 31**
Consumer types defined by EDB*	**Number of connections**					
Residential	95	96	97	98	99	100
General	10	10	10	10	10	11
Commercial	2	2	2	2	2	2
Other	4	4	4	4	4	4
Connections total	**111**	**112**	**113**	**114**	**116**	**117**

**include additional rows if needed*

Distributed generation

	CY	CY+1	CY+2	CY+3	CY+4	CY+5
Number of connections made in year	68	73	69	74	70	75
Capacity of distributed generation installed in year (MVA)	1	1	1	1	1	1

12c(ii) System Demand

Maximum coincident system demand (MW) — for year ended	**Number of connections**					
GXP demand	21	21	22	22	22	22
plus Distributed generation output at HV and above	-	-	-	-	-	-
Maximum coincident system demand	**21**	**21**	**22**	**22**	**22**	**22**
less Net transfers to (from) other EDBs at HV and above	-	-	-	-	-	-
Demand on system for supply to consumers' connection points	**21**	**21**	**22**	**22**	**22**	**22**

Electricity volumes carried (GWh)

	CY	CY+1	CY+2	CY+3	CY+4	CY+5
Electricity supplied from GXPs	128	129	130	132	133	134
less Electricity exports to GXPs	-	-	1	2	3	4
plus Electricity supplied from distributed generation	2	2	2	2	2	2
less Net electricity supplied to (from) other EDBs	-	-	1	2	3	4
Electricity entering system for supply to ICPs	**130**	**131**	**131**	**130**	**129**	**129**
less Total energy delivered to ICPs	125	126	127	129	130	131
Losses	**5**	**5**	**3**	**1**	**(1)**	**(3)**
Load factor	**71%**	**71%**	**68%**	**67%**	**67%**	**67%**
Loss ratio	**4.0%**	**4.0%**	**2.5%**	**1.0%**	**(0.5%)**	**(2.0%)**

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.

	Current Year CY	*CY+1*	*CY+2*	*CY+3*	*CY+4*	*CY+5*
for year ended	**31 Mar 26**	**31 Mar 27**	**31 Mar 28**	**31 Mar 29**	**31 Mar 30**	**31 Mar 31**
SAIDI						
Class B (planned interruptions on the network)	34.4	86.0	86.0	86.0	86.0	86.0
Class C (unplanned interruptions on the network)	83.5	131.7	131.7	131.7	131.7	131.7
SAIFI						
Class B (planned interruptions on the network)	0.15	0.40	0.40	0.40	0.40	0.40
Class C (unplanned interruptions on the network)	1.00	2.00	2.00	2.00	2.00	2.00

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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	Why	Who	Record/documented Information	Maturity narrative for assessed score
3	Asset management policy	To what extent has an asset management policy been documented, authorised and communicated?	2	Centralines has an Asset Management Policy which is detailed in controlled document CL-AMS0001. The Asset Management Policy has been approved by the Centralines General Manager, Chief Executive and Board of Directors and is reviewed every two years to ensure it aligns with Centralines corporate objectives.	Widely used AM practice standards require an organisation to document, authorise and communicate its asset management policy (e.g., 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.	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.
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?	2	Centralines is in the process of implementing the strategies developed at Unison tailored for Centralines. Some of the linkages between the long-term asset management strategy and other organisational policies, strategies and stakeholder requirements are defined. The work is fairly well advanced but still incomplete.	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 (e.g., 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.	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.
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?	2	As part of the Management Services Agreement with Unison, Centralines will be implementing the strategies introduced at Unison at a level appropriate to Centralines. The long-term asset management strategy takes account of the lifecycle of some, but not all, of its assets, asset types and asset systems.	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.	The long-term asset management strategy takes account of the lifecycle of some, but not all, of its assets, asset types and asset systems.
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	Centralines produces a Regulatory Asset Management Plan (RAMP) document that contains an overview of its ten-year asset management plans for external stakeholders. Asset management plans for network developments and asset renewals are registered within an internal database and include a consistent risk assessment on all issues, an overview of project options, recommended timing and estimated cost. The capital plan is updated six-monthly. AMS-1001 Asset Management Planning Framework specifies the key asset planning standards, AMS-0003 AMS Risk Management Guidelines specifies how risk management is to be utilised in asset planning.	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).	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.

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Question No.	Function	Question	Score	Evidence—Summary	Why	Who	Record/documented Information	Maturity narrative for assessed score
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 asset management plans at Centralines are communicated to its field services team responsible for the delivery of the plans through its Enterprise Asset Management System and other supporting software systems.	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.	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.
29	Asset management plan(s)	How are designated responsibilities for delivery of asset plan actions documented?	**3**	Centralines has appropriate documentation in place defining the responsibility for delivery of Capital and Maintenance Plans. For capital projects, project scope documents are established in alignment with Centralines field services information requirements. The annual works plan which contains all work for the forthcoming financial year is issued to field services to enable programming of work and issuing to relevant teams.	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.	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.
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**	A number of tools have been developed to prioritise and schedule works, which then leads to resource requirement assessments, including identifying gaps to be filled to meet the planned programme of works. More work is required to adequately meet these gaps.	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.	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.
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**	Centralines has established a crisis and emergency management framework that includes contingency planning for HILP events, network emergencies, major weather events, and other impacts to business continuity. Centralines is collaborating with regional Lifelines groups, local councils, universities, and other stakeholders to develop credible HILP event scenarios and identify assets at risk to address in asset management plans. Centralines is in the process of aligning its crisis management framework with CIMS. Regular crisis event simulations are undertaken internally, and Centralines will participate in upcoming regional Lifelines exercises.	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.	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.

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Question No.	Function	Question	Score	Evidence—Summary	Why	Who	Record/documented Information	Maturity narrative for assessed score
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	Centralines has a Management Services Agreement with Unison. The Centralines General Manager is responsible to ensure that assets deliver the requirements of the asset management strategy, objectives and plans. Further support is provided through Unison's Networks and Operations Team lead by the General Manager Networks and Operations who is a member of the Executive Management Team.	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 e.g., 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.	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.
40	Structure, authority and responsibilities	What evidence can the organisation's top management provide to demonstrate that sufficient resources are available for asset management?	2	Centralines uses a basic scheduling tool to evaluate and plan works over time, which links to resource availability and requirements. When work is out-sourced to Unison contracting a software-based scheduling tool is used to evaluate and plan works over time, which links to resource availability and requirements. The tool enables an evaluation of resource gaps, so that priorities can be re-evaluated or additional resources sought.	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.	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.
42	Structure, authority and responsibilities	To what degree does the organisation's top management communicate the importance of meeting its asset management requirements?	2	The importance of meeting asset management requirements is communicated to select parts of the organisation. Centralines' business plan and RAMP approved by Directors specifies asset management goals and objectives. The plan is annually presented to the business by the Unison Group Chief Executive. The asset management objectives are documented in the asset management strategy and performance against the objectives are reported monthly to some stakeholders.	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 (e.g., 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.	Top management communicates the importance of meeting its asset management requirements but only to parts of the organisation.

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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	Centralines outsources the majority of its asset management activities to Unison under a Management Services Agreement apart from project delivery. Project delivery is predominantly undertaken by Centralines staff. Centralines "outsources" some network projects to external contractors. Regular auditing of work takes place. There is some collaboration over scheduling of works in order to deliver the planned programme.	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 (e.g., 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.	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.
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)?	3	Centralines' service provider has established a technical competency framework that covers all asset management roles and considers qualifications, work and industry experience, industry recognition, asset management role competencies (aligned with Institute of Asset Management competency framework) and role specific technical competencies. All staff are assessed against requirements and a development plan is established based upon this.	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.	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).
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?	3	Competency requirements are defined in the Network Competency Standard (SD0001) and the necessary training and refreshers are undertaken and tracked within controlled information systems. Competency requirements associated with new equipment and technical change are identified as part of NK1004-New Technology and Product Evaluation Procedure.	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. (e.g., 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.	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.

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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	Centralines identifies and assesses competency requirements through its technical competency framework and AMS-0009 AMS Competency Policy. Competency requirements are also defined in position descriptions and these requirements are used as part of recruitment processes. Field crew competencies are managed under SD-0001 Network Competency Standard. Evidence/records of training/refreshers is maintained within a software package called "Vault".	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.	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.
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?	2	Given the small size of the business, communication at Centralines is generally effective at most levels of the organisation.	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.	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.
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	Some of the main elements of the Asset Management System are documented in the Asset Management Policy, the Regulatory Asset Management Plan, Standards, and are reviewed at prescribed intervals. Gaps still exist.	Widely used AM practice standards require an organisation maintain up to date documentation that ensures that its asset management systems (i.e., the systems the organisation has in place to meet the standards) can be understood, communicated and operated. (e.g., 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.	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.

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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	Centralines has defined and documented information requirements for most of its asset management processes. As new requirements emerge the defined information requirements are augmented. A framework is in place to monitor the extent to which information requirements are currently addressed to enable planning for gaps to be closed. As part of planning for new asset information systems, a full external review of business requirements for asset information was undertaken. Asset information guide documents have been developed that set out what information is stored in which information systems for the benefit of stakeholders.	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.	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.
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?	3	Centralines service provider has established a data quality dashboard that enables stakeholders to understand the current state of data quality, as measured against defined asset information requirements. Data collection standards have been established for the key processes that result in new data being registered in information systems. Automated daily data quality checks have been implemented. Critical issues are flagged to asset information managers to address. Asset information technicians provide a final check on data entering asset information systems.	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 (e.g., 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.	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.
64	Information management	How has the organisation's ensured its asset management information system is relevant to its needs?	3	There is an Asset Information Governance Group (AIGG) is responsible for ensuring asset management information systems are fit for purpose. AIGG commissioned external review of information systems which identified that the current enterprise system (ACTIVA) was becoming incompatible with its asset management strategy. As a result, a new information system solution was selected and has been implemented. The new system will be better integrated across business functions, offer improved user friendliness and enhanced mobility support.	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.	The organisation's asset management information system aligns with its asset management requirements. Users can confirm that it is relevant to their needs.
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	Centralines has a corporate risk management framework that has been effectively implemented. AMS-0003 AMS Risk Management Guidelines translates corporate risk management requirements for use within the asset management system and documents how risk management must be applied to the various asset management processes and asset lifecycle stages, including asset criticality, asset condition risk, defect prioritisation, assessment of issues in the asset management plan, and prioritisation of the asset management improvement plan.	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 (e.g., 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.	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.

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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?	2	Centralines maintains various risk registers in alignment with requirements specified in corporate risk management system documentation. Where appropriate, assessed risks may lead to new resources, training, and competency requirements. Inconsistencies do exist and are in the process of being addressed.	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.	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.
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	Centralines has a corporate legislative compliance process that identifies relevant requirements and assigns an owner to each of these to review compliance annually. FC1007 Legislative Compliance Handbook has been established to document corporate compliance requirements. An asset management objective that considers legal compliance has been established and associated performance evaluation processes track breaches. NK1004-New Technology and Product Evaluation Procedure includes a check on legal requirements before any technical change is approved. Draft Fleet Strategy documents record compliance requirements by asset class.	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 (e.g., 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	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.
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?	3	Centralines service provider has established a range of design and construction standards and procedures to control the creation and upgrade of assets which have been adopted by Centralines. Detailed designs completed by outsourced service providers are reviewed internally prior to projects progressing. Audits are conducted on capital projects. Commissioning procedures have been developed and specialist project engineers are assigned to the commissioning of high criticality plant. Asset information capture processes are effective and error rates and timeliness issues are being controlled through improved systems and processes and performance measurement and feedback.	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 (e.g., 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.	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.
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?	2	Processes and procedures to manage and control the implementation of asset management plans during this life cycle phase are mostly in place. However, systems and processes for the scheduling and tracking of maintenance are currently not fit for purpose, which is a key driver for the asset information system upgrade currently underway. These improvements are ongoing but yet to be implemented.	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 (e.g., 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.	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.

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95	Performance and condition monitoring	How does the organisation measure the performance and condition of its assets?	2	Some of Centralines asset management objectives consider asset performance from the perspectives of SAIDI and SAIFI. This information is recorded, analysed, and reviewed in various regular management review meetings. A range of asset condition monitoring programmes are in place with varying levels of sophistication. Current work to improve condition monitoring is prioritised by risk and recent focus has been on overhead conductor and underground cables.	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).	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.
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	A defect management process has been established for identification, registration, prioritisation, and rectification of asset defects identified through inspections and monitoring programmes or other feedback. The defects backlog is monitored through dashboard reporting. Continual Improvement process has been established to enable corrective and preventive actions to be registered and prioritised. Sources for such actions include audit programmes, assessments and reviews, incident investigations and post-project reviews.	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.	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.
105	Audit	What has the organisation done to establish procedure(s) for the audit of its asset management system (process(es))?	3	Centralines service provider has established an internal audit programme covering all asset management processes. A consistent audit template and framework is utilised. Audit frequency is risk-based. All auditors have received quality systems auditor training. Audits lead to corrective actions and opportunities for improvement being registered in a Continual Improvement Register. The audit programme is on schedule.	This question seeks to explore what the organisation has done to comply with the standard practice AM audit requirements (e.g., 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.	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.

Question No.	Function	Question	Score	Evidence—Summary	Why	Who	Record/documented Information	Maturity narrative for assessed score
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	A defect management process has been established for identification, registration, prioritisation, and rectification of asset defects identified through inspections and monitoring programmes or other feedback. The defects backlog is monitored through dashboard reporting. Continual Improvement process has been established to enable corrective and preventive actions to be registered and prioritised. Sources for such actions include audit programmes, assessments and reviews, incident investigations and post-project reviews.	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	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.
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	Centralines asset manager service provider achieves continual improvement through two plans, the Continual Improvement Plan and the Asset Management Capability Plan. The continual improvement plan enables all staff to raise improvement opportunities associated with assets and the asset management system. All opportunities are prioritised based upon their alignment with performance against asset management objectives. Rate of opportunities raised and closed out is tracked. Completed improvements are verified based upon benefits realised. Teams delivering best improvements are recognised by management. Asset Management Capability Plan is a programme of strategic improvements aligned with asset management strategy.	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.	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.
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	Centralines asset manager service provider's staff are involved in a wide range of industry working groups, including on future technology trends such as the Smart Technology Working Group. They attend conferences and seminars, e.g. Electricity Engineers Association and Electricity Authority events. Senior managers have strong contacts with large utilities abroad, e.g. in the United Kingdom. They have established their own capabilities in research and development and are implementing a Conductor Condition Recognition technology enabling machine vision condition assessment of older conductor types on its network. They are also implementing Fault Anticipation and Avoidance schemes using disturbances to electrical waveform to infer incipient asset failure.	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 (e.g., 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.	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.

Company Name	Centralines Limited
For Year Ended	31 March 2026

14a: Mandatory Explanatory Notes on Forecast Information

1. This Schedule requires EDBs to provide explanatory notes to reports prepared in accordance with clause 2.6.6.

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)

2. 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

There is no difference between constant and nominal values in the current disclosure year ended 31 March 2026.

The difference from 2026/27 to 2035/36 represents inflation. Inflation is based on the Reserve Bank February 2026 Monetary Policy Forecast.

2027	2028	2029-2036
2.1%	2.0%	2.0%

Commentary on difference between nominal and constant price operational expenditure forecasts (Schedule 11b)

3. 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
4. disclosed in Schedule 11b.

Box 2: Commentary on difference between nominal and constant price operational expenditure forecasts

2027	2028	2029-2036
2.1%	2.0%	2.0%

CENTRALINES LIMITED

GLOSSARY OF TERMS

APPENDIX A / ĀPITIHANGA A

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A. GLOSSARY OF TERMS

A	Amperes
AAC	All Aluminium Conductor
ABB	Supplier
ABS	Air Break Switch
AC	Alternating Current
ACC	Accident Compensation Corporation
ACSR	Aluminium Conductor Steel Reinforced
ADMD	After Diversity Maximum Demand
ADMS	Advanced Distribution Management System
AEI	Associated Electrical Industries
AI	Artificial Intelligence
AIGG	Asset Information Governance Group
AMC	Asset Management Council
AMMAT	Asset Management Maturity Assessment Tool
AMO	Asset Management Objective
AMP	Asset Management Plan
AMS	Asset Management System
AMSF	Asset Management System Framework
ARC	Audit and Risk Committee
ARP	Asset Renewal Planning
AUFLS	Automatic Under-Frequency Load Shedding
AWP	Annual Works Plan
BCM	Business Continuity Management
BCMS	Business Continuity Management System

BCP	Business Continuity Planning
BMSF	Business Management System Framework
BSI	British Standards Institution
CAD	Computer-Aided Design
CAPEX	Capital Expenditure
CB	Circuit Breaker
CBRM	Condition Based Risk Management
CCMS	Component Content Management System
CCR	Conductor Condition Recognition
CD	Controlled Document
CER	Consumer Energy Resources
CGA	Consumer Guarantees Act
CHBCPT	Central Hawke's Bay Consumers Power Trust
CI	Continual Improvement
CIMS	Coordinated Incident Management System
CP	Capability Projects
CRM	Customer Relationship Management
CSIRP	Cyber Security Incident Response Plan
CT	Current Transformer
DC	Direct Current
DER	Distributed Energy Resources
DFA	Delegated Financial Authority
DG	Distributed Generation
DGA	Dissolved Gas Analysis
DNO	Distribution Network Operator

DPP	Commerce Commission's Default Price Path
DSO	Distribution System Operator
DTG	Digital Technologies Group
EAMS	Enterprise Asset Management System
EDB	Electricity Distribution Business
EDSS	Expert Decision Support System
EEA	Electricity Engineers' Association
EMT	Executive Management Team
ENA	Electricity Networks Association
ENTEC	Supplier
ERC	Executive Risk Committee
ERM	Enterprise Risk Management
ERP	Enterprise Resource Planning
EV	Electric Vehicle
FLISR	Fault Location, Isolation and Supply Restoration
FMEA	Failure Modes and Effects Analysis
GEC	General Electric Company
GIS	Geo-spatial Information System
GLZ	Growth Limit Zone
GM	Ground Mounted
GMI	Ground Mounted Inspection
GWh	Giga Watt-hours
GXP	Grid Exit Point
H&S	Health and Safety
HILP	High Impact Low Probability
HR	Human Resources
HSMS	Health and Safety Management System

HV	High Voltage
IAM	Institute of Asset Management
ICP	Installation Control Point
IEDs	Intelligent Electronic Devices
IMS	Integrated Management System
ISO	International Organisation for Standardisation
IT	Information Technology
IVR	Interactive Voice Response
k	thousand
KPI	Key Performance Indicator
kW	Kilowatt
kV	kiloVolt
kVA	kiloVolt Amps
L+G	Landis + Gyr
LCAM	Lifecycle Asset Management
LCP	Legislative Compliance Programme
LFT	Load Forecast Tool
LTOS	Live Tank Oil Sampling
LTPs	Long-Term Plans
LV	Low Voltage
m	million
MAGTECH	Supplier
MDS	Master Data Services
MEN	Multiple Earthed Neutral
MEPs	Metering Equipment Providers
MoU	Memorandum of Understanding
MSA	Managed Services Agreement

MV	Medium Voltage
MVA	Mega Volt-Amps
MW	Megawatt
NDP	Network Development Planning
NOC	Network Operations Centre
NOD	Network Operational Data
NPV	Net Present Value
NVAM	Network Vulnerability Assessment Model
NZOQ	New Zealand Organisation for Quality
ODID	Oil-Filled Distribution
OEM	Original Equipment Manufacturers
OH	Overhead
OPEX	Operational Expenditure
ORD	Outage Reporting Database
PCP	Pentachlorophenol
PDCA	Plan, Do, Check, Act
PEANUT	Vacuum Capacitor Switch
PIF	Performance Indicator Framework
PILC	Paper Insulated Lead Covered
PIM	Public Information System
PPE	Personal Protective Equipment
PROP	Participant Rolling Outage Plan
PSMS	Public Safety Management System
PV	Photovoltaic
PVC	Polyvinyl Chloride
QA	Quality Analysis
RAB	Regulatory Asset Base
RAMP	Regulatory Asset Management Plan

RCS	Remote Controlled Switch
RMMAT	Resilience Management Maturity Assessment Tool
RMS	Ring Main Switchgear
RMU	Ring Main Unit
RTU	Remote Terminal Unit
RTUs	Remote Terminal Units
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SAMP	Strategic Asset Management Plan
SCADA	Supervisory Control and Data Acquisition
SCI	Statement of Corporate Intent
SEL	Schweitzer Engineering Laboratories
SF_6	Sulphur Hexafluoride
SLA	Service Level Agreement
SLT	Senior Leadership Team
SMART	Specific, Measurable, Achievable, Relevant, Timebound
SOP	Standard Operating Procedure
SOROP	System Operator Rolling Outage Plan
SSPs	Shared Socioeconomic Pathways
SWER	Single Wire Earth Return
TASA	Tap (changer) Activity Signature Analysis
UDL	Utilities Disputes Ltd
UG	Underground
UniSafe	A model of ABB switchgear
Unison	Unison Networks Limited
UV	Ultraviolet

VHF	Very High Frequency
VM	Vegetation Management
VT	Voltage Transformer
WPC	Works Planning and Consolidation
WSMP	Workplace Safety Management Practices
XLPE	Cross-Linked Polyethylene
ZS	Zone Substation

CENTRALINES LIMITED

DETERMINATION REFERENCE MAPPING TABLE

APPENDIX B / ĀPITIHANGA B

Our People Our Power

Contents

B. DETERMINATION REFERENCE MAPPING TABLE

Our RAMP has been deliberately structured to cater for all audiences. Below is the reference mapping table to help the reader navigate to the relevant clause/s as required by the Electricity Distribution Information Disclosure Determination.

Section	Section Reference	Determination Reference
1 - Summary of the Plan	1.1 Introduction 1.2 What is Centralines' Regulatory Asset Management Plan? 1.3 Structure of the RAMP 1.4 About Centralines 1.5 How our Environment is Changing 1.6 Our Asset Management Approach 1.7 Our Approach to Adapting to Challenges and Embracing Opportunities 1.8 Key Stakeholder Information 1.9 Level of Service – Performance Measures and Targets 1.10 Programmes and Projects to Improve Network Performance	3.1
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	2.5 Planning Period of the RAMP	3.4
	2.6 Date of Director Approval	3.5
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	3.2 Why Risk Management is Important to us	
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	7.6 Asset Lifecycle Management by Asset Category 7.6.1 General Section Overview and Format 7.7 Sub-Transmission: Asset Group Overview 7.8 Sub-Transmission: 33kV Overhead Lines	4.4 including 4.4.1 - 4.4.4 12.4 including 12.2.1 and 12.2.2 12.3 including 12.3.1 and 12.3.2
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Certification for Year-beginning Disclosures

Clause 2.9.1

We, Fenton Wilson and Anthony Gray, being directors of Centralines Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

a. the following attached information of Centralines Limited 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 (amendments related to IM Review 2023) Amendment Determination 2024 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, 11c, 12a, 12b, 12c and 12d are based on objective and reasonable assumptions which both align with Centralines Limited's corporate vision and strategy and are documented in retained records.

Anthony Trevor Gray
Director

Fenton David Wilson
Director

27 March 2026

Date

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