

# 2024 Asset Plan reviews

## Presentation to EEA Asset Management Forum

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# Outline of presentation

- Our function
- Performance & Understanding
- Forecast review
- Resilience review



# Commerce Act 1986 – Part 4

## 52A Purpose of Part

- (1) The purpose of this Part is to promote the long-term benefit of consumers in markets referred to in [section 52](#) by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—
  - (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
  - (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
  - (c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
  - (d) are limited in their ability to extract excessive profits.
- (2) In this Part, the purpose set out in subsection (1) applies in place of the purpose set out in [section 1A](#).

Section 52A: inserted, on 14 October 2008, by [section 4](#) of the Commerce Amendment Act 2008 (2008 No 70).

# Our function



- We are an Independent Crown Entity designed to implement and enforce regulation set out in legislation. We engage and coordinate with government and other relevant agencies but are not directly controlled by a Minister.
- Commissioners are appointed by the Governor General on recommendation of the Minister for multi year terms that can be extended. These Commissioners are formed into Divisions and delegated decision-making powers from the Board.
- The Commission has an array of roles and responsibilities and is organized into 5 operational branches:
  - Fair Trading Branch (false and misleading practices)
  - Credit Branch (consumer credit and finance)
  - Competition Branch (mergers and restrictive trade practices)
  - Market Regulation Branch (telecommunications, dairy, fuel, groceries, retail payment systems)
  - Infrastructure Regulation Branch (electricity, gas, airports, fibre broadband, water)

# Performance & Understanding



# Introduction/overview to Information Disclosure



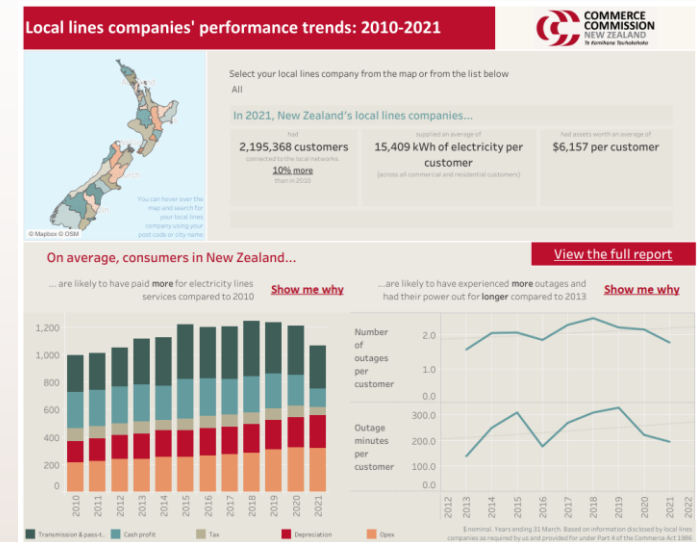
- The Commission amongst other things regulates the services provided by electricity distribution businesses (EDB), Transpower and Gas pipelines under Part 4 of the Commerce Act.<sup>1</sup> This is because there is little or no competition, and little or no likelihood of a substantial increase in competition in these sectors.
- A key tool in our “regulatory tool box” is the ability to impose Information Disclosure (ID) which provides transparency on the performance of regulated suppliers.
  - **Purpose of ID** – so that interested parties can have sufficient information on regulated suppliers to assess whether the purpose of Part 4 (long term benefits of consumers) is being promoted
  - **Form of ID** – varies across the sectors we regulate. For EDBs and Transpower, it consists of schedules which require the regulated party to provide regular information about financial and non-financial measures (eg quality - number and frequency of outages etc). We also require businesses in the energy sectors we regulate to release an Asset Management Plan which details their planning for the next 10 years
  - **Use of ID** – The Commission under Part 4 is required to publish a summary and analyses of ID information. In the last five years we have published numerous studies of EDBs ID data especially in relation to asset management practices
  - **History of ID.** ID for EDBs and Transpower came into effect in 2012. That means the Commission has a large amount of data that we can undertake summary and analyses of including a sufficient record of data to undertake time series trend analysis

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1. for EDBs – all EDBs are subject to information disclosure regulation and 16/29 EDBs and Transpower are subject to price/quality regulation as well.

# Trends in supplier performance dashboard

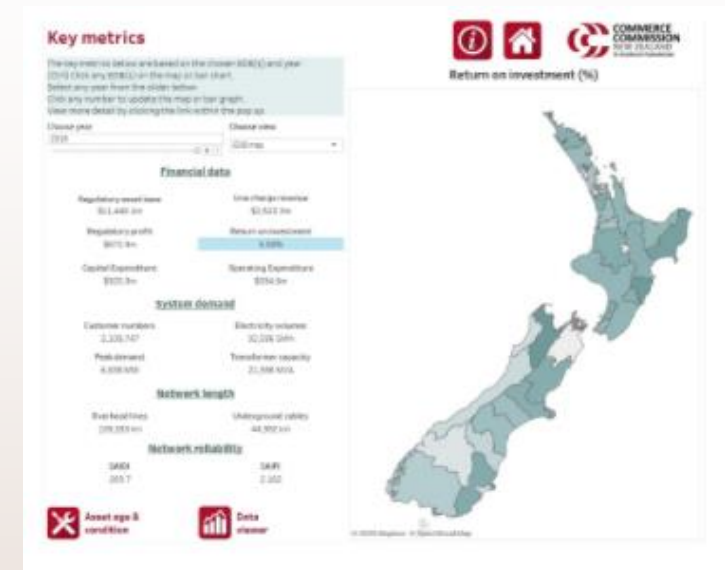
- Newest tool (published Jul 2022) covers trends in average price, profitability and reliability – to be updated annually
- Uses Tableau, a data visualisation software, to present information on selected range of information disclosure data from the last 10 years.
- Able to view statistics for individual suppliers
- Accompanied by industry-level report



<https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-distributor-performance-and-data/trends-in-local-lines-company-performance>

# Performance Accessibility Tool

- Uses Tableau, a data visualisation software, to present information on selected range of information disclosure data from the last 9 years.
- It covers profitability and revenue, capital and operating expenditure, and reliability
- Makes information about the performance of regulated businesses more accessible
- Updated annually

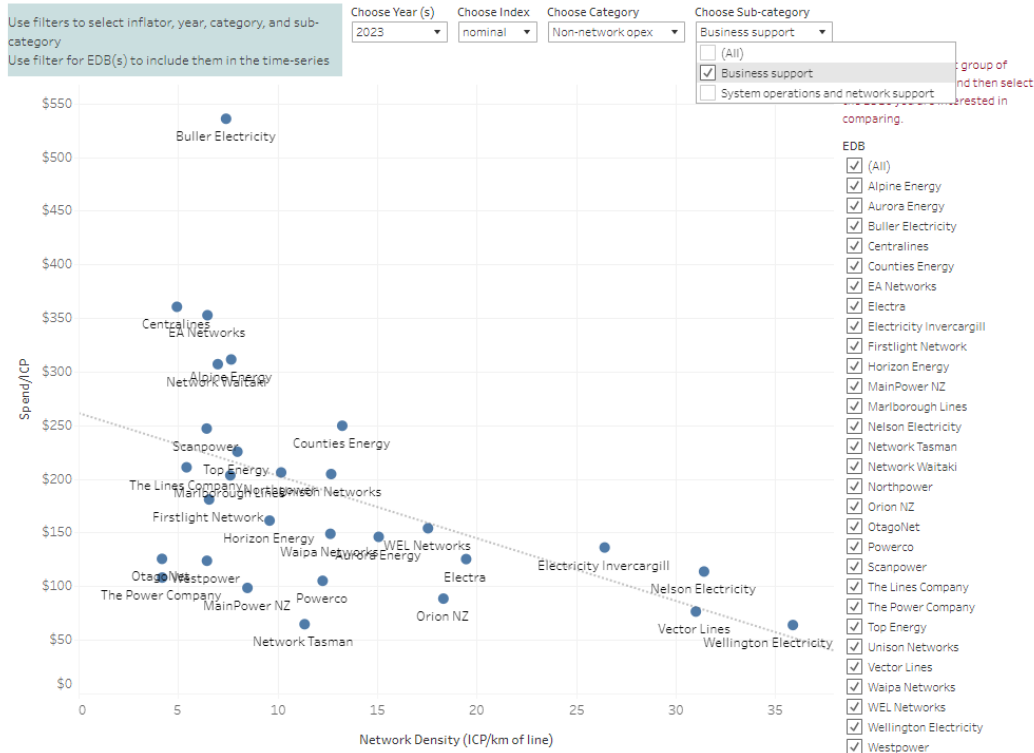


<https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-distributor-performance-and-data/performance-accessibility-tool-for-electricity-distributors>

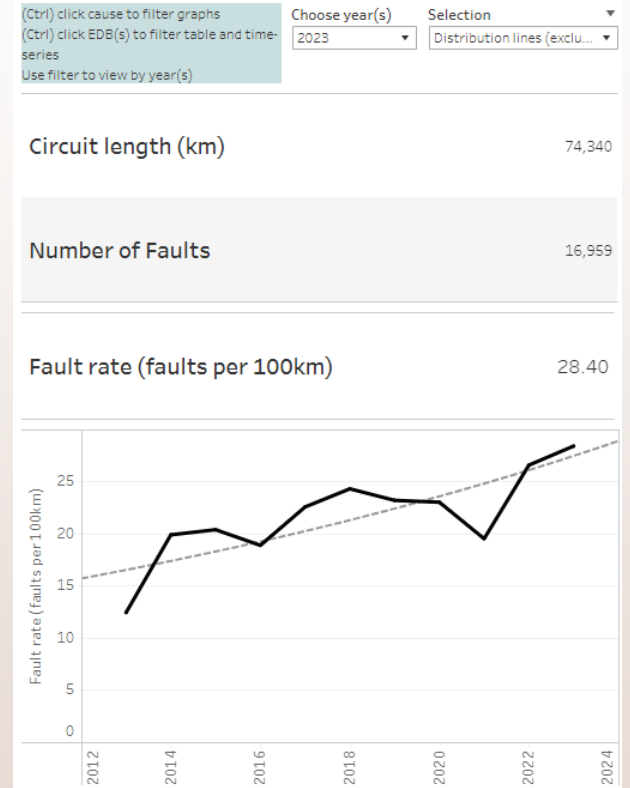


# Performance - New

## Operating Expenditure (Opex) Spend/Density



## Fault rates



# Performance – Quality

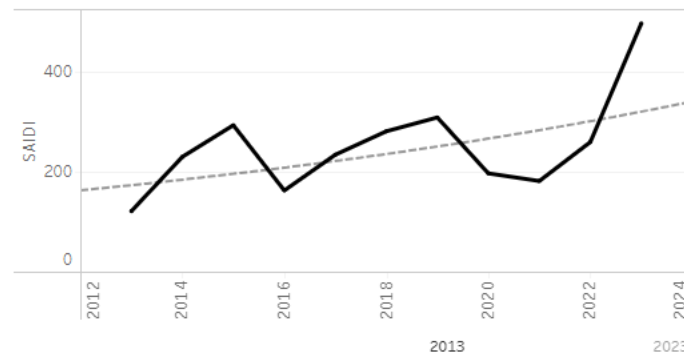
## Reliability by cause (SAIDI and SAIFI)

SAIDI = System Average Interruption Duration Index which measures average outage duration.  
SAIFI = System Average Interruption Frequency Index which measures average outage frequency.

(Ctrl) click cause to filter graphs  
(Ctrl) click EDB(s) to filter table and time-series  
Use filter to view by year(s)

Choose year(s)  Category  SAIDI  SAIFI

	SAIDI	
Planned interruption	84.5	17.1%
Adverse environment	14.9	3.0%
Adverse weather	137.2	27.7%
Defective equipment	63.0	12.7%
Human error	2.0	0.4%
Lightning	4.2	0.8%
Third party interference	19.9	4.0%
Vegetation	135.4	27.3%
Wildlife	5.2	1.1%
Cause unknown	28.9	5.8%
Class B & C interruptions	495.1	100.0%



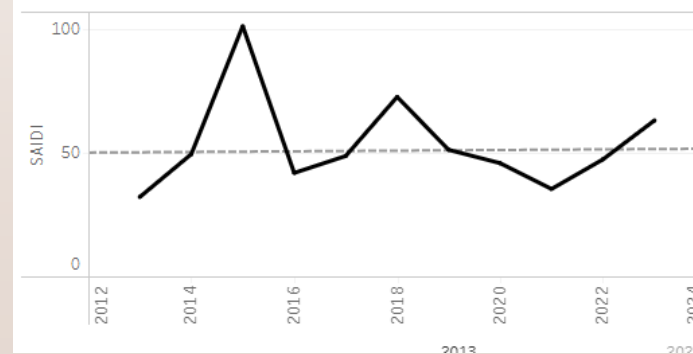
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# Forecasting Review



# Terms of reference

We were interested in analysis of the forecasts of each of the 29 EDBs to understand the elements that are certain and areas that have less certainty, and variations across the industry on common elements. The forecasting assessment review included:

- I. review of AMPs with a focus on 10-year forecasts,
- II. identify and analyse key drivers of change, uncertainties, and variables in financial and demand forecasts.
- III. providing an opinion on the reasonableness of the variations, both the certainty and uncertainty, for example:
- IV. identify key forecast assumptions, uncertainties, and risks.

# Approach

1. All 29 AMPs were reviewed at a high level to understand the quantum of forecast change of expenditure.
2. Financial thresholds were established for more in-depth analysis.
3. Identifying and describing good electricity industry practice in forecasting demand and expenditure.
4. Assessing the demand forecasting approach of each EDB.
5. Assessing the EDBs approach to convert demand into expenditure.

# Good practice

IAENGG defined as

*The degree of skill diligence, prudence, foresight and economic management which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances.*

Consumer connection & system growth capex forecast  High level summary of assessment area	Detailed list of what was considered to form a view on this element	What constitutes 'excellent'	What constitutes 'good'	What constitutes 'average'	What constitutes 'need improvement'
Realistic demand forecast  <ul style="list-style-type: none"> <li>Where there are material uncertainties and variabilities in inputs and assumptions, scenario and sensitivity studies are carried out to assess the risk – cost balance and to demonstrate the prudence of the forecast</li> </ul>	<ul style="list-style-type: none"> <li>Inputs and drivers used in demand forecasting, their certainties and variabilities</li> <li>Demand forecasting model/methodology</li> </ul>	<ul style="list-style-type: none"> <li>Clear articulation of investment drivers, their uncertainties &amp; variabilities</li> <li>Sound approach to manage the uncertainties and variabilities by the use of scenario and sensitivity studies where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Clear articulation of investment drivers, their uncertainties &amp; variabilities</li> <li>Scenario assessment has been used to manage the uncertainties and variabilities</li> </ul>	<ul style="list-style-type: none"> <li>New investment drivers have been adequately identified</li> <li>Has not applied approach to manage the uncertainties and variabilities of the new drivers</li> </ul>	<ul style="list-style-type: none"> <li>Investment drivers have not been adequately identified</li> </ul>
Demand forecast used to forecast expenditure  <ul style="list-style-type: none"> <li>Based on a realistic scenario</li> <li>Scenario is likely to be more realistic where the forecast is based on a variety of sources</li> </ul>	<ul style="list-style-type: none"> <li>Scenario analysis (if this has been used)</li> </ul>	<ul style="list-style-type: none"> <li>Scenario is clearly articulated</li> <li>Scenario is linked to industry recognised scenario</li> </ul>	<ul style="list-style-type: none"> <li>Scenario is clearly articulated</li> <li>Scenario is not linked to industry recognised scenario</li> </ul>	<ul style="list-style-type: none"> <li>Scenario is not clearly articulated</li> </ul>	Not defined

# Assessment

## Capex Forecasting

### Non-Exempt EDBs

EDB	Consumer connection			System growth			Asset replacement & renewal			Reliability, Safety & Environment			Overall
	Certainty of Drivers	Demand Forecast	Expenditure Forecast	Certainty of Drivers	Demand Forecast	Expenditure Forecast	Certainty of Drivers	Demand Forecast	Expenditure Forecast	Certainty of Drivers	Demand Forecast	Expenditure Forecast	
Alpine Energy	Not assessed*			HIGH	GOOD	GOOD	HIGH	GOOD	GOOD	Not assessed*			GOOD
Aurora Energy	Not assessed*			Not assessed*			Not assessed*			Not assessed*			Not assessed*
EA Networks	Not assessed*			Not assessed*			Not assessed*			Not assessed*			Not assessed*
Electricity Invercargill	Not assessed*			Organic growth HIGH	GOOD	AVERAGE	HIGH	AVERAGE	AVERAGE	HIGH	Insufficient Information for Analysis	Insufficient Information for Analysis	AVERAGE
				Electric heating MEDIUM									
				EV LOW									

# Findings

- Identified expenditures that are certain and those that are uncertain.
- The standardised expenditure categorisation assists in performing comparison between EDBs but may not be aligned to the categorisation used internally within the EDB businesses.
- EDBs use mapping table to map internal categorisation into regulatory categorisation but there appears to be a degree of subjectivity and inconsistency in the mapping approach.
- A minority of EDBs are apportioning capex project costs into the different regulatory capex categories based on their purpose e.g. a new zone substation cost may be split between system growth capex and asset replacement & renewal. The majority of EDBs allocate the whole project cost to the capex category that reflects the main purpose of the project.
- There are inconsistencies of how costs associated with LV visibility, future DSO functions and open access networks are categorised.
- The majority of AMPs do not provide information granular enough to allow identification of expenditure for business-as-usual versus new expenditure drivers
- The AMPs do not provide all the information necessary to convert demand forecasts into expenditure forecasts.
- Constraints limited assessment of the expenditure forecasts including;
  - Assess the reasonableness and accuracy of key inputs / drivers used in forecasting expenditure
  - Specifically identify projects or programmes of work where there is significant uncertainty about the need for, or timing of, forecast expenditure



# Resilience review



# Scope & Approach

We were seeking to understand the level of assessment that has been undertaken to determine the resilience initiatives, this assessment included all 29 EDBs and Transpower's approach. Review focus was to provide an opinion on:

- i. Initiatives raised to improve resilience,
- ii. Assessment of natural disaster risks to networks,
- iii. Resilience assessment and evaluation; and
- iv. Analysis of expenditure on resilience,
- v. Identification of good electricity industry practice.

## Approach focus

- Determining the level of assessment that has been undertaken by EDB for naturally occurring HILP events,
- Initiative raised to improve resilience,
- Proposed expenditure on resilience in 2026-2030 period,
- Justification for the proposed expenditure,
- Identification of good industry practice.

# Good practice

- Adoption of formal framework
- Standards are adopted
- Balance between proactive and reactive expenditure
- Supporting evidence for hardening initiatives
- Cost / benefit assessment

- Adoption of formal framework
  - NZ National Emergency Management Agency 4Rs Framework
  - EEA Resilience Guide
  - EN ISO 14091:2021 Adaptation into climate change — Guidelines on vulnerability, impacts and risk assessment
  - IEEE PES Technical Report (PES-TR83): Resilience Framework, Methods, and Metrics for the Electricity Sector
- Standards are adopted
  - What are the metrics for “high impact”?
  - What are the metrics for “low probability”?
- Balance between proactive and reactive expenditure
- Supporting evidence for hardening initiatives
- Cost / benefit assessment
  - Disaster cost-benefit framework, NSW treasury





# Findings

- EDBs generally have a framework that they use for resilience assessment. A common framework quoted is EEA's Resilience Guide:
- There are a number of common themes for proactive resilience investments:
  - EDBs investing to improve recovery from HILP events
  - EDBs investing to improve seismic strength of their assets
  - EDBs adopting resilient standards in new asset designs and specification
  - EDBs Relocating Assets & Facilities from Flood-prone areas
- While there are common themes, there are also significant variations in the initiatives to address resilience
- There are not enough details in the AMPs to allow us to determine the reasonableness of proactive resilience expenditure

# Findings Continued

- IAEngg has found that there are differences in how EDBs classify resilience expenditure
- Little details can be found in the AMPs to justify
  - areas targeted for resilience expenditure,
  - standards that have been applied (and if appropriate)
  - cost/benefit assessments for capital rationing
  - modelling to support an increase probability/ frequency of occurrence
- customers should be consulted on the level of resilience they are prepared to pay

# Example assessment

 <p><b>EDB</b> Name of EDB</p>	[REDACTED]
 <p><b>INITIATIVES</b> Describe initiatives raised to improve resilience</p>	<ul style="list-style-type: none"><li>» Projects underway to investigate and improve survivability through large seismic events.</li><li>» Completion of Seismic strengthening works</li><li>» Design of Networks to avoid high event probability areas</li><li>» Design Structures and buildings to cater for Seismic events</li></ul>
 <p><b>CAPEX / OPEX</b> Proposed resilience expenditure in FY26-30</p>	Resilience expenditure not identified in the AMP
 <p><b>RISK ASSESSMENT</b> What assessment has been done to ascertain natural disaster risk to networks?</p>	During planning stages, [REDACTED] takes into consideration potential areas of flooding as well as possible long term sea level rises into consideration

# Example assessment



## RISK ASSESSMENT

What assessment has been done to ascertain natural disaster risk to networks?

\_\_\_\_\_ has used different methods to identify HILP events, They categorise these Transmission, distribution & Environmental risk reviews.

**Transmission risk reviews** – \_\_\_\_\_ participates in the Connection Asset Risk Review projects undertaken with Transpower every 3-4 years to identify risks on the transmission circuits and substations, and develop mitigation measures

**Distribution risk reviews** – \_\_\_\_\_ as part of its network planning process, identifies the HILP events. Contingency response plans have been drawn up to mitigate impacts from such events; and

**Environmental risk reviews** – \_\_\_\_\_ engaged GNS and studies were undertaken to understand and identify the risk posed by earthquake and tsunami. \_\_\_\_\_ has also developed a storm inundation policy.



## STANDARDS





What standards are used for resilience initiatives

\_\_\_\_\_ follows the 4R (Reduction, Readiness, Response & Recovery) approach as described in the EEA resilience guide for hazard management.

\_\_\_\_\_ has used the resilience maturity measurement tool (RMMAT) to assess its resilience thereby identifying opportunities for improvement.



# Example assessment

 <p><b>RISK ASSESSMENT</b> What assessment has been done to ascertain natural disaster risk to networks?</p>	<p>IAEngg did not come across details on specific assessment done to ascertain natural disaster risk.</p>
 <p><b>STANDARDS</b> What standards are used for resilience initiatives</p>	<p>Risk Management framework consistent with ISO 31000: 2009 Risk Management – Principles and Guidelines standard</p> <p>New Zealand Society of Earthquake Engineering (NZSEE) seismic grades with a building importance level of 4 (IL4)</p>
 <p><b>TRIGGERS</b> What are the triggers for the resilience initiatives?</p>	<p>_____ main triggers for the resilience initiatives are the effects of weather events brought about by Climate change.</p> <p>Any changes to _____ plan or expenditure relating to network resilience triggered by the learnings from cyclone Gabrielle will be addressed in the next Asset Management Plan.</p>
 <p><b>ASSESSMENT</b> What assessment has been done to support the resilience expenditure?</p>	<p>IAEngg did not come across any detailed assessment relating to resilience expenditure</p>

