TRANSPOWER

2025 Integrated Transmission Plan Narrative

September 2025

Contents

1 Introduction

The Integrated Transmission Plan (ITP) is a suite of documents describing our plans for our regulated transmission business for the next 10 years. It consists of this ITP Narrative, which provides an overview and summary of our processes and plans, and three other documents: the Asset Management Plan (AMP), Transmission Planning Report (TPR), and Service Measures Report (SMR). Together these documents set out Transpower's plans for investing in, maintaining, and enhancing the national grid:[1]

- The *2025 ITP Narrative* provides an overview of our strategy and plans, services and performance, forecast revenue, and expenditure forecasts.
- The *2025 Asset Management Plan* sets out management approach, processes, and investment requirements by asset class covering our grid, ICT, and business support assets.
- The *2025 Transmission Planning Report* outlines our 30-year forecasts of grid capacity, and the investment needed to meet the longer-term requirements of New Zealand.
- The *2025 Service Measures Report* identifies our grid security and capacity issues that could arise over the coming 15 years due to changes in demand and generation. It includes details on committed and potential grid enhancements and our performance measures.

This year's ITP covers the first year of Regulatory Control Period (RCP) 4, the five-year planning and investment period spanning 1 April 2025 to 31 March 2030.[2] Therefore, as well as presenting out plans over the coming 10-years it also reflects what we have delivered throughout RCP3 (1 April 2020 to 31 March 2025).

The Narrative has been prepared to provide our stakeholders and customers with an overview of our transmission business, both now and over the coming 10 years. Unless otherwise stated, all expenditure values presented are 2024/25 constant dollars (i.e., the impact of CPI has been removed).[3]

[1] The 2025 ITP Compliance Checklist is a cross-reference document to ensure that we have met the requirements in Schedule E of Transpower's capex IM. The checklist is available under the relevant year for this ITP as the "ITP Compliance Checklist" at RCP4 updates and disclosures | Transpower

[2] Note, 1 April to 31 March represents our pricing year - the information presented in this report, and assessed by the Commission, is on our financial year basis of 1 July to 30 June.

[3] We have adjusted for CPI using the RBNZ's 2025 February Money Policy Statement. Monetary Policy Statement February 2025 - Reserve Bank of New Zealand - Te Pūtea Matua.

2 About us

2.1 Our role in the electricity industry

The power system is an integral part of New Zealanders' lives. Our purpose is to deliver and operate a safe, reliable, and cost-effective transmission grid that meets the needs of New Zealanders today and into the future.

There are two key roles to our business:

- **Grid owner**: we own and operate the national grid which is the high-voltage transmission network that carries electricity across New Zealand; and
- **System operator:** we are responsible for managing the real-time power system and operating the wholesale electricity market.

Both roles are essential for the power system to operate successfully. This ITP covers our role as grid owner. It excludes services delivered by, and costs funded through, our system operator service provider agreement with the Electricity Authority (Authority).

We are only one part of a wider electricity supply chain. We work closely with other industry participants to power New Zealand homes and businesses.

Where we fit in

We own and operate New Zealand's national electricity transmission network and run the electricity market system.

1 **Generation**
Generation companies generate power from wind, thermal, hydro and geothermal. They sell the power they generate on the electricity market. Emerging distributed generation includes electric vehicles, batteries and solar photovoltaic.

2 **New Grid Connects**
As New Zealand moves to electrify its economy, Transpower is receiving more requests to connect to the grid. This includes new generation such as solar and wind, as well as new industrial demand.

3 **Transmission**
Transpower transports high voltage electricity from where it is generated to distribution companies and some large directly connected customers.

4 **Industrial Customers**
A few major industrial companies receive their power directly from Transpower.

5 **Substations**
Substations reduce the voltage at the point where electricity is delivered to distribution companies – our customers.

6 **System Operator**
Operates the wholesale electricity market and manages system security.

7 **Distribution**
The lower voltage electricity is transported by distribution companies to homes and businesses throughout New Zealand.

8 **Commercial**
Some commercial customers that consume large quantities of energy purchase power directly from the wholesale electricity market.

9 **Retail**
Retailers buy power on the electricity market, package it together with other costs of delivering power (transmission and distribution), and on-sell it to customers.

10 **Domestic and Business Users**
Domestic and business users receive their electricity directly from retail companies, which deliver power to homes, businesses and commercial operations using distribution companies' lines.

There are many stakeholders we interact with in our roles as grid owner and system operator, including the Commerce Commission (Commission) and Authority. We discuss our stakeholders further in this section.

2.2 Our Grid

The grid extends from Kaikohe in the North Island to Tiwai Point in the South Island. As grid owner, we manage approximately $5 billion of transmission assets, including $700 million of high-voltage direct current (HVDC) assets and $200 million of telecommunications assets. Across the North and South Islands our transmission network covers:

- 194 substations;
- 10,948 km (route length) of overhead transmission lines;
- 89 km of underground high voltage alternating current (HVAC) cables; and
- 121 km of submarine HVDC cables.

Our information and communications technology assets include:

- 1,355 km of fibre optic cables;
- 6,550 km of leased fibre lines;
- 43 km of submarine fibre optic cables; and
- 52 firewalls, 2 data centres and 2,735 switches and routers.

Figure 1: Our grid infrastructure

2.3 Our customers and stakeholders

We coordinate electricity delivery from generators to distribution companies and retailers, partnering with technology providers to power New Zealand homes and businesses. Engaging with our stakeholders helps us to provide the reliable, cost-effective, and safe services our customers want. Our customers and main external stakeholders are:

- **Customers:** our direct customers are the 29 electricity distribution businesses (EDBs or distributors), 21 grid-connected generating companies, and 16 loads, mainly large industrials. However, our ultimate customers are end-use electricity consumers across New Zealand (end users). These include residential, commercial, and industrial end users and these customers are served through EDBs' networks.
- **Communities:** management of our assets can have a significant impact on communities throughout New Zealand. It is important we consult effectively with communities at an early stage when planning our activities, so we can better understand potential impacts and mitigate these as far as practicable.
- **Landowners:** we often require access to private land to undertake work on our assets. Constructive relationships with landowners are therefore essential. We are committed to working transparently with landowners and occupiers when undertaking our activities.
- **Service Providers:** we outsource field maintenance, capital project construction and several other technical roles to a group of service providers. They are key stakeholders in the maintenance and development of the grid.
- **Our Regulators:** our services are mainly regulated by two bodies:
    - The Commission regulates our transmission service revenues, sets our service measures, and governs revenue incentive arrangements.
    - The Authority sets reliability standards and governs our transmission pricing methodology and grid access framework.

  Additionally, we have other regulatory and legislative responsibilities which are enforced through bodies such as WorkSafe, the Ministry of Business, Innovation and Employment (MBIE), Local Authorities and the Financial Markets Authority.
- **Our Shareholder:** we are a State-Owned Enterprise owned by the Crown, which seeks confidence that financial returns will be proportionate to the investment risk and reflect preservation of the business's value. The Crown expects us to be an effectively managed business with appropriate governance processes.

We are committed to engaging with our customers in a way that is authentic, effective and provides benefit to everyone. Our customer engagement is discussed further in Section 4.3.

2.4 Our Grid Services

The reliability, safety, availability and cost effectiveness of our grid affect the quality of the service our customers receive.

The services we provide through the operation of our network and the electricity system span eight broad categories. These categories include the provision of regulated electricity transmission services, provision of the system operator service and other activities not regulated under our IPP. The first three drive cost and quality of transmission services for end-consumers and are the focus of our service performance measures.

The primary role of our service performance measures is in fine-tuning our performance by ensuring we deliver the services our customers value, in a safe and cost-effective manner.

Table 1: Our services framework

Service	Brief Description
Grid reliability	Keep interruptions to a very low level and restore supply quickly when there is an interruption.
Grid availability	Keep sufficient grid capacity and resilience available to allow New Zealand's lowest-cost sources of supply to be used to meet demand.
Event communications	Communicate with our customers when supply is interrupted so we can achieve the best outcomes for end-consumers.
Grid access	Work with customers to connect their assets to the grid, and plan and deliver changes to their connections.
Site access	Safely host customer equipment on our sites.
Information provision	Provide planning and other information to assist connected parties to make informed decisions.
Asset relocation	Assist in the identification, selection and execution of options to relocate transmission infrastructure.
System operation	Operate a competitive electricity market and deliver a secure power supply.

2.5 RCP3 performance

This section provides a summary of our service performance and expenditure over RCP3, which ended on 30 June 2025.

2.5.1 Service performance

For RCP3 we had four measures that had a quality standard and were revenue-linked – two grid performance (GP) measures relating to the number (GP1) and duration (GP2) of unplanned interruptions, and two asset performance (AP) measures that relate to the availability of the HVDC Link (AP1) and selected HVAC asset availability (AP2).

A quality standard is a required minimum standard we need to achieve. The Commission will investigate if we do not meet the standard. There were also two asset health measures which were not linked to revenue but included a quality standard.

The revenue linking has the effect of financially rewarding or penalising us for over- or under-performing the grid output targets set for these measures. For the RCP3 period the total revenue at risk was $53.7m.

During RCP3, Transpower consistently met the quality standards set by the Commission, which are embedded within the funding framework to ensure delivery of reliable service and value to consumers through well-maintained assets. Performance was strong across most measures, except for the HVAC availability at the AP2 site, which was impacted by planned upgrades to the Clutha Upper Waitaki transmission lines and cable joint failures on the Brownhill–Pākuranga circuit. Over the course of RCP1 to RCP3, there has been a clear trend of improvement, particularly in reducing equipment-related and human error outages. Most unplanned outages during RCP3 were driven by environmental factors, reflecting the resilience of operational practices and asset management. We were able to claim $15.5m in incentive revenue during RCP3 for meeting the service performance targets.

Further information on our service performance can be found in our *2025 Service Measures Report*[4] .Our performance for RCP3 is summarised in Table 2.

Table 2: Our RCP3 Performance with quality standards

Measure	Category	Met quality standard				
		DY21	DY22	DY23	DY24	DY25
GP1 - Number of unplanned interruptions across all points of service (No.)	All	●	●	●	●	●
GP2 - Average duration of unplanned interruptions greater than one minute (mins.)	All	●	●	●	●	●
AP1 - HVDC availability (%)		●	●	●	●	●
AP2 - HVAC availability (%)	Selected assets	●	●	●	●	●
AH: (% with Asset Health of 8 or higher)	Power transformers	●	●	●	●	●
	Outdoor circuit breakers	●	●	●	●	●

For Disclosure Year (DY) 2025, all quality standards were met except for AP2. The Commission has begun investigations on breaches of AP2 for the early years of RCP3.

In addition to the six measures with quality standards, we had another four measures for RCP3 which we just reported against. These are set out in the table below.

[4] Transpower RCP3 Updates and Disclosures

Table 3: RCP3 reporting only service measure

Measure	Description
AP3: Asset Performance 3 – Return to service	Extent that Transpower keeps to planned outage times in relation to selected HVAC assets.
AP4: Asset Performance 4 – Return to service time communications	Extent that Transpower communicates delays to planned outage return times in relation to selected HVAC assets
AP5: Asset performance 5 – N-security reporting	Extent that Transpower has placed customers on a reduced N-security level of supply due to an outage.
GPM: Grid Performance Momentary – Momentary unplanned interruptions	Momentary unplanned interruptions (less than one minute)

2.5.2 Expenditure

Our final capital expenditure (capex) for RCP3, at the time of this report, was $1.58bn (nominal). This is $87m (6%) above our allowance of $1.49bn (nominal). While our delivery was delayed due to COVID-19 lockdowns, we caught up on our work programme in the later years of RCP3.

The additional spend was due to:

- unforeseen joint repair work on Brownhill – Pakuranga cable;
- a change in warehouse strategy (with two new warehouses being constructed);
- significant weather events causing damage to the grid and assets;
- significant cost increases of materials and equipment across a broad range of categories; and
- partially being offset by the reclassification of expenditure on SaaS.

Our final operating expenditure (opex) for RCP3, at the time of this report, is $1.66bn which was $49m (3%) above our allowance of $1.61bn (nominal).

The additional spend was due to:

- increase in insurance costs of $33m (34% higher);
- redesignation of SaaS costs as opex of $27m; and
- the need to start building capability ahead of RCP4 which was partially offset by lower ICT operating and lower leasing costs.

3 Overview of our RCP4 plans

This section provides an overview of our plans and show how they have evolved since our RCP4 proposal, which was provided to the Commission in November 2023. While the underlying scenarios, assumptions, and analysis remain similar to our proposal, as noted above, equipment costs have increased faster than forecast due to demand out stripping supply.

During RCP4 we aim to deliver the following outcomes:

- **Deliver a reliable and safe grid.** We will deliver a transmission service that minimises interruptions at lowest whole of life costs, where assets are maintained and replaced in line with good electricity industry practice, and where risks to our staff, contractors, customers, and general public are minimised.
- **Deliver a resilient network.** We will increase the resiliency of our network to avoid extended power outages and quickly restore power when major events occur.
- **Deliver and enhance the network.** We aim to ensure capacity is in the right place at the right time and customers continue to receive a reliable and secure transmission service that meets their needs.
- **Deliver a sustainable network**. We will aim to reduce our combined scope 1 and 2 (excluding transmissions loss emissions) and overall scope 1, 2 and 3 carbon footprint over RCP4 to ensure we can achieve a 44% reduction.[5]

Transpower remains confident in our ability to deliver on our RCP4 plan. In addition to delivering an increase in our base capex volume of work compared to RCP3, we also anticipate a significant rise in major capital projects (projects exceeding $30 million in value) to enhance and develop the grid. Due to an increase in generation and demand connection requests, we expect to surpass the customer-initiated work (funded under new investment contracts) that we forecast in 2023, alongside RCP4 proposal.

However, alongside these opportunities materials and equipment prices have risen faster than expected. Although our allowances account for real price effects, unit prices still exceed forecasts. To manage costs, we are reprioritising work, seeking additional suppliers, and streamlining delivery processes, to ensure we meet our RCP4 objectives.

3.1 Regulatory cycle

In November 2024 the Commission approved our base capex and opex allowances, as well as the maximum allowable revenue we can recover each year under RCP4, the 5-year regulatory period effective from 2025 to 2030.

[5] Note, in our RCP4 proposal we set out a 60% reduction of our scope 1 and 2 emissions (excluding transmission loss emissions) by FY2030, relative to FY2006. This year we updated our baseline year (reference point) to FY2021 from FY2006. We are still targeting the same volume of scope 1 and scope 2 reductions by FY2030, but the percentage reduction has been updated to reflect the new baseline year. Please refer to our Climate Statement 2025 for more detail.

We are driven to become more efficient over time, being incentivised through our regulatory regime. Efficiency gains achieved in RCP4 will be shared with our customers and ultimately flow through to reduced transmission charges.

In our RCP4 proposal we submitted an ITP to the Commission summarising our expected expenditure over the 10 years to 2035. This 2025 ITP provides the first update since our proposal. We have delivered RCP3 and are now scoping our work programme for remainder of RCP4.

Along with this, we are developing our projections for RCP5 and RCP6, from 2030 onwards.

Table 4: RCP Timelines

RCP3	RCP4					RCP5	RCP6
2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030-2035	2035-2040
Delivered	In Delivery	Scoping				Projection	

The regulatory framework we operate under has different processes to approve our expenditure based on the driver of the work (e.g. demand growth, enabling new generation, asset replacement, and the value of work).

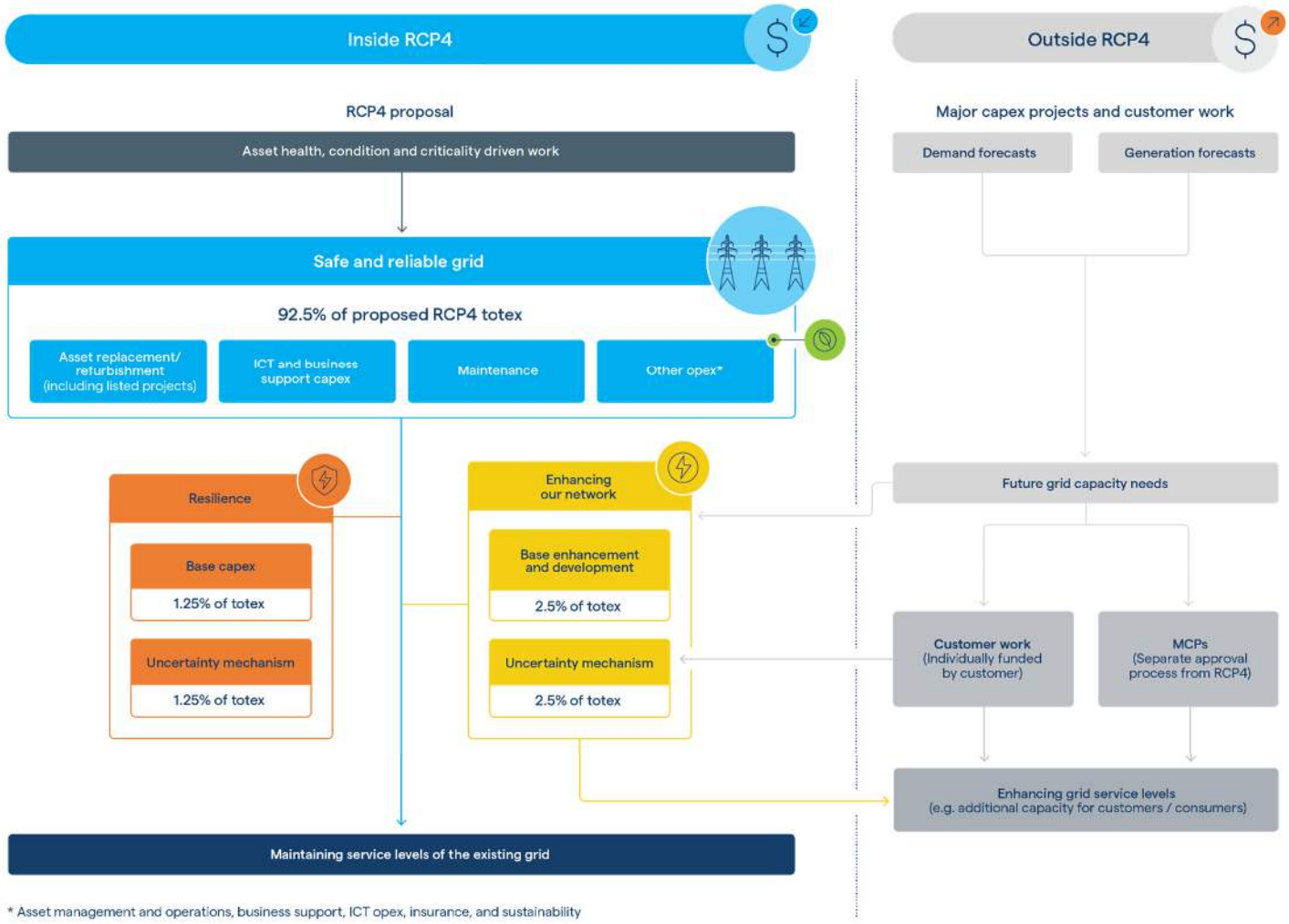
The RCP4 approval process covers our 'base' expenditure; it does not include:

- system operator service costs, which are covered under a separate contract with the Authority;
- customer- and third party-funded work, which includes adding new grid connections for customers or modifying existing connections to improve their individual service levels, as well as moving or modifying our existing lines and assets to enable other new infrastructure developments;
- major capex proposals (MCPs) that are related to enhancing and developing the network and are over $30 million. MCPs have their own consultation and approval process separate from our RCP proposal;
- listed projects are related to refurbishment and replacement capex identified at the time of the RCP proposal and valued at over $30 million. Listed projects have their own application process separate from our RCP proposal.

While demand and generation forecasts play a critical role in Transpower's future work, most of the associated expenditure to support demand growth falls outside of our RCP4 proposal.

As can be seen in Figure 2, the majority of the RCP4 spend is driven by the need to replace, refurbish, or maintain our existing assets.

Figure 2: Scope of RCP4 approval



3.2 RCP4 grid and asset performance measures

The grid and asset performance measures have remained largely unchanged since RCP3 and represent a refresh of these measures and quality standards. These are set to ensure that we provide services at a quality customers demand.

Our performance measures for RCP4 are summarised in Table 5. Further information on our service performance can be found in our *2025 Service Measures Report.*

Table 5: Our measures for RCP4

Measure Name	Revenue at risk per annum ($M)	Quality Standard	RCP4 measure description
GP1 – Grid Performance 1	7.6	Yes	Number of unplanned interruptions across all points of service (POS) in a sub-category during a disclosure year
GP2 – Grid Performance 2	7.6	Yes	Average duration of unplanned interruptions greater than one minute, across all POS in a subcategory during a disclosure year.
AP1: Asset Performance 1 – HVDC capacity availability	1	Yes	HVDC capacity availability (%) of the inter-island HVDC system.
AP2: Asset Performance 2 – HVAC selected asset availability	2	Yes	Average percentage of time selected HVAC assets are available during a disclosure year.
AH: Asset Health	-	Yes	Proportion of assets in poor health for seven asset classes.
AP1.2: HVDC operational availability	-	No	Measures HVDC link's operational capacity limit calculated as the available operating capacity limit against the maximum capacity of the HVDC link.
AP3: Asset Performance 3 – Return to service	-	No	Extent that Transpower keeps to planned outage times in relation to selected HVAC assets.
AP4: Asset Performance 4 – Return to services communications	-	No	Extent that Transpower communicates delays to planned outage return times in relation to selected HVAC assets
GP4: Energy not served (previously labelled NR and GP3)	-	No	Amount of energy demand that is not supplied due to a transmission interruption to supply.
CS1: Customer Service 1 – Overall customer satisfaction	-	No	Average level of overall customer satisfaction based on responses in an annual customer engagement survey.
CS2: Customer Service 2 – New and enhanced grid connections	-	No	Reports on delivery of new and enhanced grid connections

3.3 Update on our RCP4 plans

3.3.1 Expenditure

Transpower has allowances for RCP4 for both capex and opex.

We proposed a significant uplift in our work programme which resulted in an increase in the associated expenditure. Base expenditure is increasing by around 40% from RCP3 and the Commission determined this uplift to be prudent, efficient, and consistent with Good Electricity Industry Practice (GEIP). The uplift is required to replace and refurbish ageing assets which were built between the 1950s and 1970s and are now reaching the end of their useful lives. The replacements and refurbishments are necessary to maintain current service levels. The Commission's RCP4 final decision allowances in constant $2024/25 are:

- $2,340.5 million of capex; and
- $2,078.9 million of opex.

However, we had an adjustment for deliverability applied to our expenditure allowances which requires Transpower to recruit the staff necessary to deliver the full work programme. We can apply for the uplift in expenditure through the delivery risk adjustment mechanism when we meet our annual target FTEs.

The Commission's RCP4 final decision allowance in constant $2024/2025, after the $183.5 million deliverability adjustment is:

- $2,224.4 million of capex; and
- $2,015.5 million of opex.[6]

Table 6 shows the movement in our RCP4 plans since our 2023 proposal and the Commission's final RCP4 determination (allowance).

Table 6: 2025 ITP compared to our RCP4 Proposal and allowances (constant 2024/25 dollars)*

$m	Base capex	Opex	Other unapproved capex (listed projects and MCPs)
RCP4 Proposal	2,314.7	2,086.3	1,284.7
2025 ITP update	2,419.8	2,076.7	1,780.2
Movement relative to our proposal and the ITP update	**105.1**	**(9.6)**	**495.5**
RCP4 allowance (net of delivery risk adjustment)	2,192.3	2,015.5	N/A
2025 ITP forecast relative to allowance	**227.5**	**61.2**	**N/A**
RCP4 allowance (if deliverability risk adjustment criteria met)	2,380.4	2,079.0	N/A

[6] Note, $4.0m of the $183.5m of the delivery risk adjustment was disallowed for 2025/26 and is not subject to a reopener.

$m	Base capex	Opex	Other unapproved capex (listed projects and MCPs)
2025 ITP forecast relative to allowances if the delivery risk adjustment criteria is met	116.1	63.5	N/A

** Excludes capitalised leases. Note, the capex allowance is higher than RCP4 Proposal as it includes additional resilience allowances.*

The changes in forecast opex are primarily reflect a reduction in response to the Commission's allowance. Increases in our forecast base capex is largely due to higher input prices. The 2025 ITP forecast assumes that we meet our forecast FTEs for the deliverability risk adjustment (see section 3.3.3 below). Our current projections indicate a overspend relative to our allowances; however as outlined in section 3.3.2, there are initiatives underway aimed at reducing our expenditure in line with the allowances.

Increases to our forecast MCPs include:

- the Redclyffe substation rebuild;
- Tararua Regional Upgrade;
- Ōtāhuhu-Whakamaru A and B reconductoring;
- revisions to the HVDC project.

The table below provides further detail on our base capex portfolios. The changes are due to:

- reclassification of attachment point expenditure from opex to capex;
- expanded scope of the warehouse redevelopment;
- cable joint repairs;
- weather-related work;
- general cost increases across asset classes.

Table 7: RCP4 forecast capex (constant 2024/25 dollars)

Category	RCP4 Proposal	2025 ITP	Movement from RCP4 Proposal	
	$m	$m	$m	%
Substations	543.7	566.3	22.6	4.2%
Buildings & Grounds	95.1	95.0	(0.1)	0.1%
Transmission Lines	742.5	772.2	29.7	4.0%
HVDC & Reactive Assets	172.3	170.6	(1.7)	(1.0%)
Secondary Assets	301.0	309.7	8.7	2.9%
Enhancement and development (excluding resilience)	119.3	113.7	(5.6)	(4.7%)
Resilience	80.1	127.5	47.4	59.2%
ICT capex	223.7	223.7	0.0	0.0%
Business support capex	37.1	41.1	4.0	10.9%
Total	**2314.7**	**2,419.8**	**105.1**	**4.5%**

Table 8: RCP4 forecast opex (constant 2024/25 dollars)*

Category	RCP4 Proposal	2025 ITP	Movement from RCP4 Proposal	
	$m	$m	$m	%
Network	1236.3	1,217.2	(19.1)	(1.5%)
Non-network	850	859.5	9.5	1.1%
Total	**2,086.3**	**2,076.7**	**(9.6)**	**(0.5%)**

Network opex includes 'grid maintenance' and 'asset management and operations'.

Non-network opex included ICT opex and ICT anything-as-a-service (XaaS), and insurance.

The decrease in our base opex for the 2025 ITP is mainly due to aligning the business costs to the approved opex allowance.

3.3.2 Continuous improvement

Transpower is investing in several improvement programmes to support us in meeting the challenges and achieving our RCP4 outcomes. These key investments will improve the capabilities of our Grid and System Operations teams, enabling us to:

- identify correlations between events and outages;
- develop predictive models for early failure detection;
- conduct targeted scenario analyses; and
- integrate environmental data to forecast operational impacts.

These enhancements will support smarter, more proactive decision-making across our operations.

We are advancing our operational intelligence capabilities in alignment with the Control Room of the Future (CRoF) initiative. This strategic programme is designed to ensure our real-time operations remain resilient and adaptive within an increasingly complex energy environment. In collaboration with teams across the business, CRoF is guiding the evolution of our control rooms to meet future demands.

Most of the following initiatives were identified in our RCP4 proposal however, in light of the continued sharp increase in inputs costs, supply chain pressure and material growth in connections has meant we need to prioritise some of our work programmes. Our reprioritisation initiatives include:

- **Change management practices as a key part of continuous improvement**. These practices support adapting our approach to improve our delivery throughput. We will continue to develop our change management capability by adopting new technologies and the reviewing the way in which we operate to become more efficient.
- **End-to-end process across value streams**. Business process efficiencies can speed up the connection of new customers to the network and enhance stakeholder relationships. Improvements to services like delivering customer work and procurement will be enabled by ICT initiatives such as customer engagement tools, asset management, and business capability. We are making a strategic shift by implementing a modular enterprise business capability platform. This will empower us to respond effectively to internal and external changes, including managing the evolving business landscape.
- **Modern data practices & decision tools**. Our applications will improve integration and reduce manual data handling by streamlining and automating processes and dataflows. This will enhance efficiency and productivity by freeing up our workforce to focus on meeting our RCP4 outcomes and delivering greater value to our customers. We continue to invest and develop our field workforce and provide improved applications, such as our mobility application. This app allows us to accurately collect grid maintenance information and is key to providing information and informing our asset planning process.
- **Innovation for cost-effective service delivery**. Innovation in both new grid technology and the way that we approach and manage change is key to optimising resources in delivering value to our customers, and will result in better solutions, better practices, avoided costs, and improved reliability and resilience.

3.3.3 Deliverability risk adjustment

Transpower requires more staff to deliver our planned projects over the next 5 years. The Commission has provided a deliverability adjustment which is contingent on us recruiting the staff required to meet our resourcing needs. We continue to recruit to meet the target to deliver on our workplan. We are actively recruiting to support our forward work program. Our recruitment efforts to support the ambitious work plan are progressing well. There are still challenges in the international market to attract highly skilled staff.

Table 9: Our target full time equivalent (FTEs) targets set by the Commission

Disclosure year ending	RCP3	RCP4				
	30 June 2025	30 June 2026	30 June 2027	30 June 2028	30 June 2029	30 June 2030
FTE target	1003	1050	1055	1054	1056	1043

We have met our recruitment targets for 2024/25 with 1,050 FTEs as of 30 June 2025. This represents a significant increase compared to previous years and marks one of the largest employment growth periods in our recent history. We remain confident that we will meet our recruitment targets to deliver our work programme going forward.

3.4 Revenue update

The Commission sets our transmission revenue path. Our revenue path assumes the Commission will reopen our RCP4 revenue to add an increment for listed projects, MCPs yet to be approved, and the delivery risk adjustment mechanism (DRAM) since the Individual Price-quality Path (IPP) revenue during RCP4 was forecast.

The forecast revenue for RCP4 was set by the Commission in November 2024. The increase in revenue in RCP4 is significantly driven by a higher regulated rate of return (commonly referred to as WACC or Weighted Average Cost of Capital). The WACC increased from 4.57% in RCP3 to 7.10% in RCP4. This reflected increases in the underlying risk-free rate (linked to the Reserve Bank of New Zealand's official cash rate).

The increase in WACC and our work plan to maintain and renew those assets that have deteriorated, and to deliver projects in preparation for further electrification, has resulted in our projected revenue over the RCP4 period increasing by $1.8 billion relative to RCP3.

To minimise price shocks, the RCP4 revenue was smoothed over the five years. This provides the following growth rates (calculated on a nominal basis, i.e., including forecast inflation) set out in the Final Decision paper [7]as follows:

- for each of years one and two of RCP4, 15.11 %; and
- for each of years three to five of RCP4, 5.00%.

Transpower has met the FTE recruitment target of our DRAM and applied for a reopener to our 2026/27 pricing year. We expect to meet our FTE targets for the remainder of the RCP4 period and apply for a DRAM revenue reopener for all years of the period.

The Commission has recently approved Western Bay of Plenty MCP. While the Western Bay of Plenty MCP has been approved, Transpower has not yet applied to the Commission to reopen its price path. However, we have included the uplift for this in our revenue forecast.

Transpower's expected uplift in revenue is also dependant on unapproved large capex projects (major and listed, i.e. >$30 million), which have not been submitted to the Commission or are yet

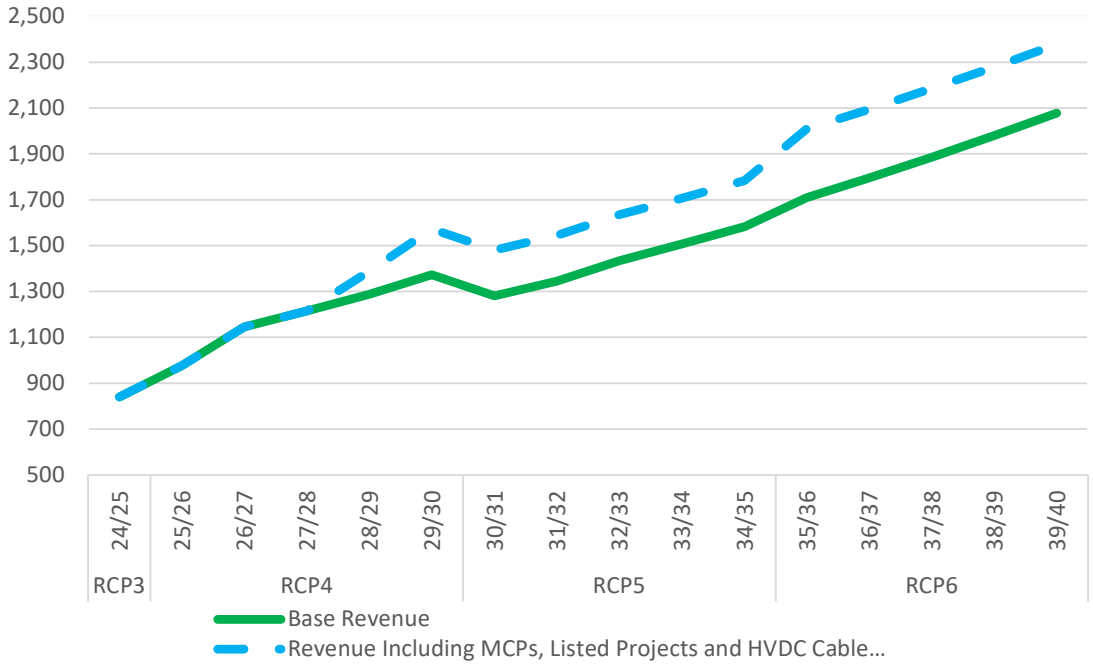
[7] Clause 3.7.6 RCP4-Final-Decision-paper-29-August-2024.pdf

to be approved. The anticipated unapproved listed projects and MCPs which may result in an additional uplift in revenue includes:

- Listed projects:
    - Huntly-Ōtāhuhu A reconductoring;
    - Haywards bus rationalisation;
    - Rangipō gas insulated switchgear replacement;
    - Ōtāhuhu-Whakamaru A and B reconductoring;
- MCPs:
    - Waikato and Upper North Island Voltage Management (WUNIVM);
    - Redclyffe Substation;
    - Upper South Island Capacity;
    - HVDC Link Upgrade Programme.

Figure 3 shows Transpower's expected impact on revenue of yet unapproved large capital expenditure projects (major and listed, i.e. >$30 million) and the DRAM adjustment, subject to Commission approval.

Figure 3: Revenue forecast 2025-2040, $million nominal



Any over- or under-recovery of revenue in RCP4 will be carried forward into RCP5 and returned to (or recovered from) customers through prices during RCP5. RCP5 revenue is only indicative and will be set by the Commission in 2029 and will depend on our RCP5 expenditure allowances which the Commission approves in 2029, and the regulated rate of return the Commission determines at that time. Currently, we have assumed a WACC of 4.77% for RCP5 which is a decrease from RCP4.

The trajectory of transmission revenue highlights the importance of our focus on managing costs. This is largely driven by the overall age and condition profile of our network and shows we are coming out of a low point in a multi-decade cycle of asset values and transmission revenue. An increasing portion of these ageing assets need replacing over the next 5-15 years.

4 Our strategy

Transpower plays a key role in decarbonising Aotearoa New Zealand's energy system. As a fully state-owned enterprise with infrastructure extending across the country, we are working for the whole of Aotearoa New Zealand.

Our strategy is discussed in the following documents, focussing on emerging and innovative technologies and supporting increased electrification. We intend to further embed these strategies while improving our performance over the next regulatory period.

4.1 Transmission Tomorrow – Our strategy

In 2023, we refreshed *Transmission Tomorrow*. This presents our long-term perspective on how the national grid should evolve to meet future demands. *Transmission tomorrow* identifies the external and internal factors influencing our operations.

The significant key challenges identified when developing our strategy were:

- **Global Events**: The COVID-19 pandemic disrupted supply chains and migration flows, while geopolitical tensions, such as the wars in Ukraine and the Middle East, led to shifts in global energy policies.
- **Climate Policy**: New Zealand's climate goals and emissions budgets are now embedded in legislation, requiring long-term commitment and potentially reducing political intervention.
- **Economic Pressures**: Supply chain disruptions and rising costs impact the affordability of energy infrastructure.
- **Workforce and Capital Competition:** New Zealand competes globally for skilled labour and investment capital, essential for accelerating decarbonisation efforts.

We have refined our strategic priorities to address these challenges as follows:

- **Deliver Services that Meet Customer Needs**: Focus on providing electricity services that align with consumer expectations and regulatory requirements.
- **Accelerate Electrification through Asset Investments**: Invest in infrastructure to support the electrification of transport and industrial sectors, facilitating a transition to a low-carbon economy.
- **Facilitate an Optimised Transition Path for New Zealand's Energy System**: Plan and implement strategies that ensure a smooth and efficient transition to a sustainable energy system.
- **Advance Organisational Effectiveness:** Enhance internal processes, capabilities, and workforce skills to improve overall performance and adaptability.
- **Enhance Social Licence to Operate**: Engage with communities and stakeholders to build trust and ensure that operations align with public expectations and values.

These strategic priorities will help Transpower manage costs efficiently, ensure competitive grid access and use, and meet New Zealand's future electricity needs.

Transmission Tomorrow relies heavily on *Whakamana i Te Mauri Hiko*– Empowering our Energy Future, published in 2020. It outlines our unique opportunity to accelerate electrification to decarbonise the economy.

Whakamana i Te Mauri Hiko emphasises the urgency of transitioning from fossil fuels to renewable electricity. This includes industrial and large-scale electrification resulting in a significant demand by 2050. The increased demand will require Transpower to invest in the grid. We will also advocate for regulatory changes to support decarbonisation and emerging technologies. *Whakamana i Te Mauri Hiko* also identifies the need to investigate demand side management strategies, like distributed energy resources (DER) such as batteries and smart charging. Investment plus DER will support a reliable, affordable energy system and contribute to achieving New Zealand's goal of 100% renewable electricity system by 2050.

Whakamana i Te Mauri Hiko and our follow up paper, the *Electrification Roadmap,* outline that electrification and renewable generation could provide over 60% of the non-forestry emissions reductions required to meet the 2050 net zero target.

We need to ensure that we are well placed to play an active role in helping enable a future which unlocks electrification of transport and process heat and supports new renewable generation. This work is closely linked to our *Future Grid* programme.

4.1.1 Te Kanapu - Future Grid

The Te Kanapu Future Grid initiative is working to develop and deliver a 'Grid Blueprint'. This blueprint will help us plan a grid that will drive economic growth and advance a low carbon future.

Te Kanapu is the next step on from Whakamana i te Mauri Hiko, which set out the opportunity for Aotearoa to make renewable electricity the cornerstone of our energy supply. The first paper setting out our plans was published in May 2025.[8] Stakeholder engagement and consultation on scenarios will be undertaken in 2025 to inform our view of the energy future to 2050 and beyond.

4.1.2 Key drivers and focus areas

The challenges and opportunities identified in *Transmission Tomorrow – Our Strategy* provide context and the strategy which underpins the key initiatives our business will focus on. Our strategic priorities are summarised in the table below.

Table 10: Strategic priorities

Strategic Priority	Description
Enhance our social licence to operate	Electrification of the economy will require investment in infrastructure that has not been seen in generations. To successfully deliver such a large transition, Transpower will need the support of its shareholders and wider government, including our regulators, along with the support of communities, Iwi and other stakeholders – with the electricity industry working collaboratively to enable the

[8] Transpower-Te-Kanapu-May-2025

Strategic Priority	Description
	transition, as and when needed. This support extends to both the ability to build new transmission assets and the cost implications for consumers.
Deliver services that meet our customers' needs	Transpower has unique expertise to design, build, maintain and operate the grid, and to operate the electricity market that underpins the reliable supply of electricity to New Zealand. We must continue to focus on efficiently meeting customer needs to connect to the grid, prioritising consistently across our connections, MCP and RCP work, as well as delivering a successful system operator service.
Facilitate delivery of an optimised transition path for Aotearoa New Zealand's energy system	Transpower plays a key role in enabling electrification. However, what is increasingly clear is that the current approach to transmission investment will not lead to the least-cost transition for New Zealand. A more optimised transition process could facilitate electrification at least cost while maintaining a reliable and stable system. Transpower will advocate for regulatory settings that support the development of the electricity system through the transition. Given the need for continued focus on affordability, Transpower will continue to seek innovative options, provide thought leadership, and advice on this optimised transition path.
Accelerate electrification through our asset investments	Grid-supplied electricity will be critical to enabling the greater electrification of New Zealand's economy. Execution of the second phase (and subsequent phases) of our NZGP work through the Future Grid programme will continue to progress, focussing on larger-scale projects (e.g. building new transmission lines) expected to be necessary beyond 2035. We will also continue with regional development planning with electricity distribution businesses (EDBs) for a more efficient approach to upgrading investments and developing resilience initiatives to ensure Transpower is meeting the expectations upon us as a critical infrastructure provider. We continue to ensure our investments remain prudent and efficient by using robust challenge and consultation processes, as well as looking for innovative solutions that will allow us to increase the life and utilisation of our assets.
Advance our organisational effectiveness	As a regulated entity, Transpower's costs are borne by all New Zealanders. We have a critical role to play in fostering and preparing capability and capacity to support New Zealand's energy future, and we continue to ensure our organisational effectiveness is front of mind as we ramp up our programme of work. For example, we are continuing to grow our asset management capability to optimise our maintenance and renewal plans, developing our information systems to innovate and support new capabilities such as the efficient integration of distributed devices and new market participants with our operational systems. We are also building leadership capability to support an inclusive and fit for purpose work environment. We continue to focus on cost-effective improvements and are working to continuously improve our processes, revising our business models and organisational structure where required.

4.2 Risk management

Transpower uses risk management methodologies which include bowtie risk analysis and a semi-quantitative risk assessment. Our risk management extends to strategic, operational, commercial and financial risks. Transpower's key risks have been identified as:

- serious workplace injury or death involving Transpower assets;

- property damage, serious injury or death of a member of the public at a Transpower site or involving our assets;
- serious harm to the environment;
- significant power supply interruptions;
- power system operations failure;
- cyber security breaches;
- not being able to find skilled resources to effectively deliver our services;
- reputational;
- supply chain.

Risks such as significant interruptions, cybersecurity, finding skilled resources, supply chain constraints and deliverability have been identified as being part of our strategic risks. Transpower is also committed to ensuring that its assets and operations do not pose a significant risk of serious harm to the public or damage to property which is embedded in our Public Safety Management System.

4.3 Customer engagement

We work proactively with our customers to understand their business and their needs, and to help them understand our business. We encourage customers to involve us in their thinking early on, which provides a greater opportunity for us to work together.

Transpower will facilitate economic growth during RCP4 and over the next decade. We aim to ensure timely connections of generators for a secure supply through our investments and customer-initiated work. We also aim to contribute towards improving consumer energy affordability as the electrification of the motu's economy progresses.

Our principles of engagement are as follows:

1 Approach to engagement is developed collaboratively

- We will involve our customers in the process of developing engagement plans.

2 Engagement is transparent and responsive to feedback

- We will keep our customers fully informed of our process and timelines for all relevant business activity.
- We will regularly seek customer feedback on plans and activities.
- We will 'close the loop' - respond to feedback and provide explanation for the decisions we have taken.

3 Engagement is continuous with key milestones clearly identified

- We will engage with customers on an ongoing basis in alignment with annual planning cycles and individual engagement plans.
- We will ensure the timeframe for key inputs and decisions is identified well in advance and gives adequate time for customers to consider information and form their views.

4 Engagement occurs via **multiple channels**

- We will discuss with customers which channels best meet their needs for engagement.
- We will use multiple channels to support the accessibility of information.
- All public (non-commercially sensitive) information will be published on our website.

5 Engagement is supported by information that informs and educates

- We will discuss with customers what information is needed to support their understanding and action.
- We will provide additional information where required to support customer understanding of what we are trying to achieve and factors influencing our decision making.
- We will provide information in a form that is appropriate for the audience and can be easily understood.

6 Engagement is targeted at those impacted

- We will find out from customers who needs to be involved and when.
- We will facilitate the involvement of those customers who have an interest in, or are affected by, business decisions being discussed.

Our principles of engagement plan is supported by webinars which are held during the year to inform customers and stakeholders of Transpower developments, and when required for major projects and RCP proposals as required under the regulations.

4.3.1 Customer feedback

Since the beginning of RCP3 in 2020, we have tracked customer sentiment through a headline satisfaction result[9], which has shown consistent progress and valuable insights into how our engagement practices are perceived.

The initial survey established a baseline headline result of 57%, after which the Customer Engagement Plan set a target to increase the result by 15% over the baseline, i.e. 72%. This was accepted by the Commission and was exceeded over the 4 years. In our 2024 customer survey, 73% of customers reported being satisfied (or very satisfied) with the way Transpower engages, consults and meets their expectations. While this result is lower than in 2021 (80%) the difference is not significant and is within the error range of 11%

Satisfaction with contracting with Transpower, point 6 of Table 11, has declined over the past 4 years. We are confident that our contract turn-around times have not changed - to achieve the throughput we are increasingly adopting standard approaches to contracts and offering less flexibility and asserting more clauses as non-negotiable which is the likely reason for the decline.

[9] The headline result was defined in 2020 as the unweighted arithmetic sum of the responses to seven selected "index" questions in the survey expressed as a percentage.

Table 11: the overall satisfaction results for each section in the survey and the overall summary

Overall satisfaction with…	2021	2022	2023	2024
In summary, how satisfied are you with the way Transpower engages and consults with you, and meets your expectations?	80%	76%	73%	73%
Do you consider the engagement principles to be meaningful / appropriate?	99%	99%	92%	96%
Understanding your business, its drivers and objectives	71%	72%	71%	74%
Engagement around service levels and unplanned events	79%	74%	81%	76%
Works delivery and outage planning	84%	75%	76%	84%
Transmission network planning	70%	60%	81%	77%
Contracting with Transpower	82%	78%	66%	59%

4.3.2 New connections pipeline

As highlighted in the RCP4 proposal and our regular customer updates, the volume of customer-related work (work agreed through transmission works agreements that fall outside of base funding) has exponentially increased. There were 437 new connection enquiries in the pipeline in September 2025.[10]

At this stage we envisage that this work will be able to be undertaken with the workforce and resources which we have, inclusive of the delivery risk recruitment, to deliver these projects.

We have moved more applications to investigation over the past year, and the pipeline of work has been moved along quicker than in prior years. We continue to work to ensure that we are processing applications faster. Figure 4 is the latest status of Connection information for Transpower with 32 projects in the investigation stage and 14 in delivery.

[10] Transpower New Connection Enquiries

Figure 4: the connection pipeline

Transpower continues to explore ways to streamline the pipeline of work. We are looking at ways to improve the application process, looking at all the steps, from obtaining the required consents, through to progressing to construction.

We intend to improve our ability to understand our customers price-quality preferences, and to take these into account in our decision making and to communicate our decisions clearly to our customers including how we have, or have not, taken their views into account. This year our focus is on establishing individual engagement plans for each of our customers to enable improved price-quality trade-offs.

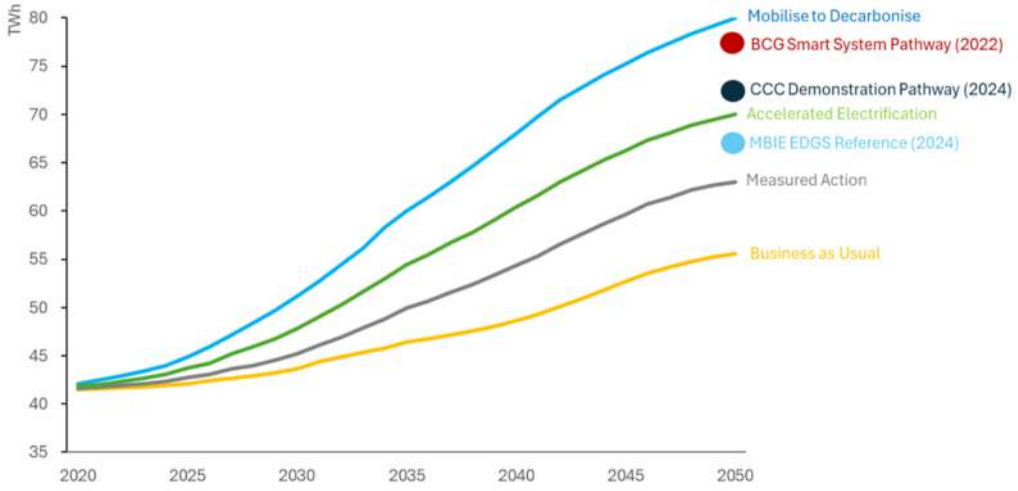
4.4 Base scenarios

In "*Whakamana i Te Mauri Hiko"* we developed scenarios out to 2050 to model the forecast increase in demand for electricity with accelerated electrification. Figure 5 reflects a growing consensus on the key role of electricity in the future energy system with a significant increase in demand.[11].

The 3 dots in Figure 5 show the forecast demand (TWh) from the Boston Consulting Group (BCG), Climate Change Commission (CCC), and Ministry of Business, Innovation & Employment (MBIE) out to 2050. This indicates that our modelling is broadly aligned with those forecasts by these external entities.

[11] We updated our original forecast which included the Tiwai exit in Figure 13 of "*Whakamana i Te Mauri Hiko", since Tiwai* (NZAS New Zealand Aluminium Smelters) signed a 20-year electricity arrangement in May 2024 making it no longer relevant to our modelling.

Figure 5: Forecast TWh from Transpower modelling and estimated by BCG, CCC and MBIE



The *Transmission Planning Report* provides more detail on the assumptions and scenarios we use in our developing our enhancement and development expenditure work (including MCPs).

5 Expenditure forecasts

Transpower forecasts expenditure based on evolving supply chain conditions, reprioritisation of projects, global demand for goods, and fluctuations in international equipment and material prices.

Transpower sources much of its high voltage electricity equipment from international manufacturers and suppliers to support grid maintenance and development. The global competition for resources has increased in recent years and is expected to persist during RCP4, contributing to further price increases.

Transpower's RCP4 allowances take account of real price effects and input price increase above CPI. However, post our RCP4 proposal, equipment price increases have far surpassed these forecasts. In response, Transpower is seeking efficiencies and prioritising work programmes to meet service targets despite rising equipment costs. The end-to-end improvement programme initiated since the RCP4 proposal has continued, with anticipated positive impacts on programmes of work and ICT projects identified in that proposal.

As noted in section 3.3.2, we are implementing several initiatives, including those outlined in our RCP4 proposal and newly identified ones, to enhance throughput and delivery. These initiatives are expected to yield improvements across our base and customer-initiated work. In addition to higher costs, the increase demand for equipment and supply chain constraints have led to longer lead times for equipment orders. To address this, Transpower is considering measures such as earlier purchasing and identifying providers in advance to manage the risk of extended lead times affecting the delivery programme.

5.1 Forecasting approach

Our forecasts are based on a suite of forecasting approaches that we have been continuously developing since RCP1. Our grid and non-grid capex forecasts are generally developed using bottom-up approaches (combined with top-down planning frameworks).

Table 12 provides an overview of the approaches we applied to each expenditure category.

Table 12: Forecasting approaches

Expenditure category	Forecast approach
Refurbishment and replacement capex	Asset health in combination with criticality; condition assessment where asset health models are unavailable
ICT capex and opex	Bottom-up based on programme, investment type and category, and base-step-trend approach
Business support capex	Bottom-up (in combination with top-down planning frameworks)
Enhancement and development capex	Scenario-based forecasting based on bottom-up and top-down assumption
Resilience capex	Bottom-up based on assessed need
Maintenance opex	Bottom-up and base-step-trend

Expenditure category	Forecast approach
Asset management and operations opex	Base-step-trend
Business support opex	Base-step-trend
Insurance opex	Based on expert actuary and broker information

5.1.1 Bottom-up cost estimation

The bottom-up estimates used in our grid capex renewal forecast are based on historical costs, suitably tailored to forecast scope. We distinguish between:

- volumetric works which are relatively low value, routine and have a uniform consistent scope with a consistent delivery method. These are based on average rates and assumed scope of works;
- non-volumetric works are higher value and require a project specific and tailored investigation.

5.1.2 Base-step-trend

For most of the opex we adopt a base-step-trend framework. This is generally appropriate for expenditure that is recurring, and historical costs provide a good starting point for a forecasting position. The components of the base-step-trend approach is:

- base year identification for an efficient base year, assessing the efficiency of the expense and then adjusting for atypical cost items;
- step changes to allow for external requirements not already captured in the scope of the base amount;
- trends reflecting any changes in cost due to output growth and can include adjustments for ongoing productivity and cost efficiency.

Further details of our forecasting approaches can be found in our *RCP4 Main Proposal*.

5.2 Cost estimation

Transpower Enterprise Estimation System (TEES) is a cost database used for estimating capital and maintenance grid project costs. Integrated with our core planning and financial systems, TEES centralises estimation processes, manages foreign exchange and commodity escalation, and ensures automatic project forecast updates as delivery dates change.

Using TEES, the two methods for estimating projects are as follows:

- TEES building blocks. Typically used for volumetric renewal or maintenance projects allocated to service providers. Each building block has an agreed scope from which costs are derived. The cost components include materials, equipment, design, and overheads (internal and service provider). The methodology for updating or creating building blocks

includes historical analysis of past projects, benchmarking against specific projects, and custom estimate build-up for new activities.

- Custom estimates. Typically used for complex, large-scale projects where there is a high degree of site-specific variation or custom design and optioneering. The cost estimates for project deliverables are informed by a basis of design and built in TEES using cost data.

Cost data is updated annually to reflect the changes in market rates or how work is delivered. The key outcomes are to improve feedback loops for cost data and analysis to improve the delivery of work programmes and estimation accuracy.

5.3 Replacement and refurbishment capex

Replacement and refurbishment capex is our largest single expenditure category. It covers all replacement and refurbishment expenditure on grid assets (excluding ICT). We split replacement and refurbishment expenditure into the following asset categories.

- **AC substations** include power transformers, indoor switchgear, outdoor switchgear, structures and buswork, power cables, outdoor 33kV switchyards and other AC substation equipment.
- **Buildings and grounds** assets provide accommodation, services, and physical security for critical grid equipment and systems. Our objective is to ensure substation primary and secondary network assets are properly secured against physical and environmental risks, at the least whole of-life cost. Assets include buildings, site infrastructure, building services, and access ways to our substation sites. The asset class covers the physical buildings containing AC substations, warehouses, leased depots, and our national operating centres. Our buildings and grounds comprise approximately 670 buildings across 200 sites.
- **Transmission lines** assets transport electricity from generation sources around the country to where it is consumed within our homes and places of business. They consist of transmission towers, poles, foundations, conductors, earth wires, insulators, and other hardware. Transmission lines is our largest aggregate asset class portfolio of spend.
- **HVDC and reactive assets** are a critical part of the network. The HVDC link enables the North Island to access South Island hydro-electricity generation and the South Island to access North Island thermal electricity generation. The link is critical to the operation of an efficient national electricity market. The HVDC link comprises:
    - converter stations;
    - submarine cables and cable substations;
    - electrode stations.

  Reactive power is needed in the AC transmission system to support the transfer of real power over the network and incorporate:
    - synchronous condensers;
    - static VAR compensators (SVCs) and static synchronous compensators (STATCOMs);

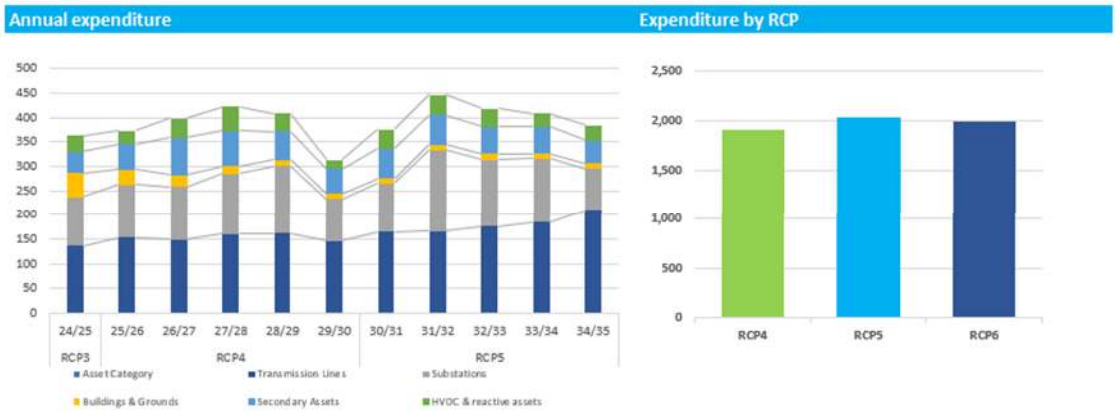
- capacitor banks and reactors.

There are currently only a small number of qualified suppliers of suitable equipment. Due to the high demands for this type of equipment, prices have increased and are forecast to continue to increase. In addition, the time taken to source equipment may be more volatile, due to increased lead times.

- **Secondary assets** support the overall operation of the grid and provide essential services for the monitoring and control of equipment. Secondary assets include:
  - **protection schemes**: used throughout the grid to detect and initiate isolation of electrical faults, protect primary equipment, and ensure people's safety;
  - **revenue meters**: supply electricity volume information and are used for wholesale market reconciliation and billing;
  - **station DC systems:** provide power (even when the local AC service supply has failed) to protection schemes, circuit breaker trip and close coils, control, and metering;
  - **Substation Management Systems SMS:** a telemetry system based on computers and local area networks that have been designed to operate in electricity utility environments.

The primary driver of the protection, battery systems, and revenue meters renewal forecast is asset health. The wide range of asset life expectations means that required work volumes fluctuate.

Figure 6: Historical and forecast replacement and refurbishment expenditure



5.3.1 Listed Projects

Listed projects are large R&R projects or programmes with significant uncertainty of timing and costs (the estimated project cost is likely to exceed the base capex threshold of $30 million). The timing and cost of these projects will depend on detailed engineering and economic analysis. Listed projects are base capex projects which are known when the RCP proposal is compiled. However, the Commission does not approve base capex allowances for listed projects during the IPP reset. Within a defined timeframe and when the uncertainty is reduced, we can apply to have our base capex allowance and revenue amended to include these projects and they will be considered for regulatory approval during RCP4.

Table 13: Listed projects (constant 2024/25 $m)

	Estimated project capex	Estimated project start
Huntly - Ōtāhuhu A (OTA – DRY) reconductoring	38.6	2028
Ōtāhuhu - Whakamaru A and B (Rest of Auckland) reconductoring	52.6	2026
Haywards bus rationalisation	44.6	2027
Rangipō site redevelopment	60.6	2026

5.4 Enhancement and development (E&D) capex

We report on three different categories of E&D expenditure:

- base E&D capex on projects less than $30m to enhance the capacity of the grid or to meet reliability requirements;
- network resilience capex;
- MCPs (costing over $30m) to enhance the capacity of the grid or to meet reliability requirements.

5.4.1 E&D base capex

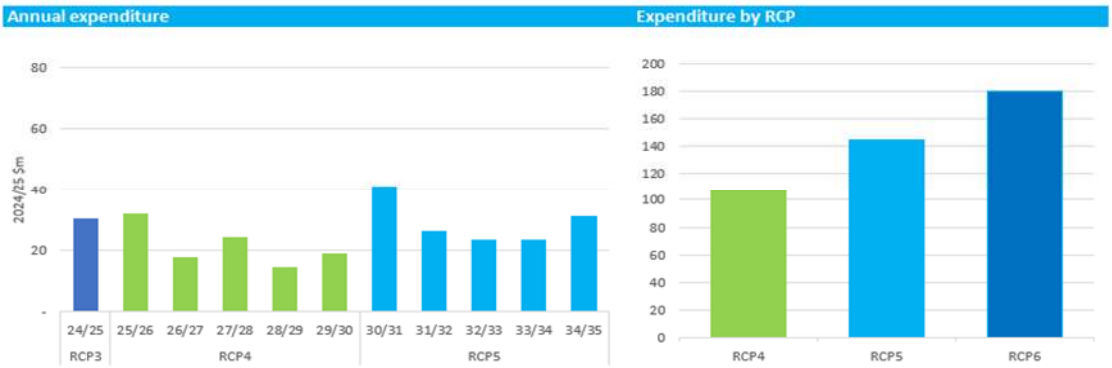
E&D projects are aimed at maintaining and improving reliability and efficiency of the grid. Transpower is assessed by the Commission on the application based on the necessity of the projects and the potential benefits to consumers.

The Commission approved $111.7 million as E&D base capex for RCP 4, which includes $5 million in corridor management. The E&D expenditure can be accessed for asset replacement and refurbishment, resilience, business support and ICT assets. These projects include funding for:

- **Voltage Management**: Projects to manage voltage levels in the Upper South and North Islands;
- **Interconnecting Capacity**: Enhancements at the Kawerau substation to improve interconnecting capacity;
- **Variable Line Ratings**: Installation of variable line ratings at the Ōtāhuhu-Whakamaru line to optimize transmission capacity.

Transpower intends on applying for this expenditure in the second year of the RCP4 regulatory period.

Figure 7: Historical and forecast base enhancement and development expenditure (constant 2024/25 $m)



5.4.2 Resilience expenditure

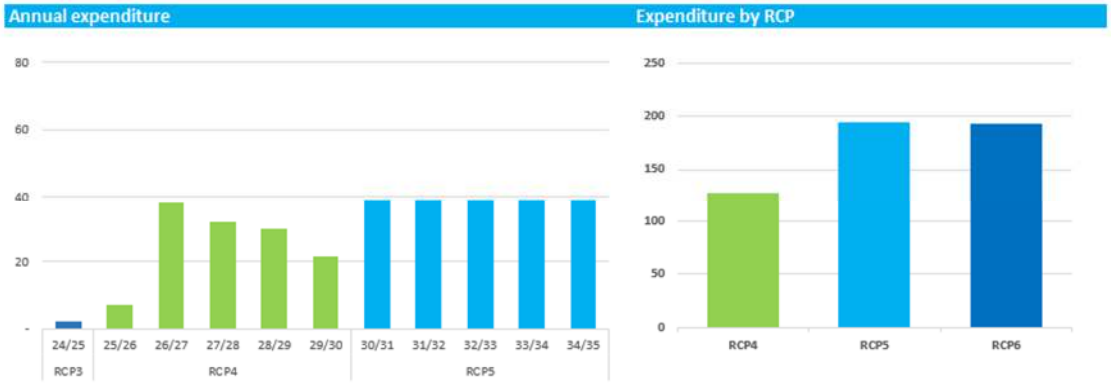
Consumers have become more concerned about the electricity industry's resilience to extreme weather events, like the Auckland floods and Cyclone Gabrielle in 2023. Transpower is investing in mitigations to improve network resilience.

Our resilience programme includes improving readiness and risk reduction for substation flooding, seismic risks, building fire, volcanic ash impacts, land stability, common mode failure, and wind and flood strengthening for towers. Some of the climate related investments will form part of the *Transpower Climate Change Adaptation Plan*. Mitigation of solar storm impacts on transformers was also part of this programme of work but was not approved under the allowance for RCP4.

In the RCP4 proposal some of the cybersecurity and transmission systems expenditure that was classified within the resilience category. This expenditure proposal was rejected by the Commission. We continue to refine and reevaluate the proposed initiatives and

In the RCP4 proposal some of the cybersecurity and transmission systems expenditure that was classified within the resilience category. This expenditure proposal was disallowed by the Commission. We continue to refine and reevaluate the proposed initiatives and funding will be sought for priority projects by substitution mechanisms through our internal productisation governance process.

Figure 8: Historical and forecast base resilience expenditure (constant 2024/25 $m)



5.4.3 Major Capex Projects

Enhancement and development projects above $30 million are considered MCPs. We are initiating major capex work through RCP4.

This includes investments in:

- the proposed Upper South Island capacity upgrade is to address demand increases and ensure voltage stability;
- a Commission-approved project in the Western Bay of Plenty aims to meet growing demand until 2050;
- In September 2025, we applied to the Commission for three additional approvals including the upgrade of the HVDC Link by installing four new cables, a control system, termination stations, and a cable store. This project will reduce outage risks and enhance capacity to 1400 MW, catering to future generation and demand growth; and
- additionally, we have applied for funding to rebuild the 220kV yard at Redclyffe, following Cyclone Gabrielle.

At the same time, we are undertaking more MCP investigations and projects over the next two decades.

These additional workstreams place additional pressures on our workforce resources. We are prioritising across the workstreams to ensure we deliver on our base service targets, meet reasonable customer expectations, and enhance the grid for the future.

Table 14: RCP4 MCPs

Projects	Outputs	Status	Estimated cost 2024/25 ($ million)	Commissioning date (estimate)
Approved MCPs				
Waikato and Upper North Island Voltage Management (WUNIVM)	Maintain voltage stability in the Waikato and upper North Island through a series of investments.	In delivery	132	Dec 2028
Net Zero Grid Pathways – Stage 1	Wairakei, Central North Island and HVDC upgrades to increase capacity	In delivery	393	Jun 2028
Western Bay of Plenty	Transmission capacity and constraints related to forecast demand growth and development	In delivery	86	Dec 2037
Unapproved - Submitted (at time of writing)				
Redclyffe Substation	Increase flood resilience at Redclyffe substation	Submitted to CC (June 2025)	43	TBC
HVDC Link Upgrade Programme	Undersea cable replacement – end of life	Submitted to CC (September 2025)	1,400	June 2032
Unapproved – Not submitted				
Upper South Island Upgrade	Capacity growth north of Twizel	Close to submission	178	TBC
Waikato Interconnection	TBC	Under investigation	30	TBC
Waikato and Upper North Island 2	Maintain voltage stability and increase capacity in the Waikato and upper North Island through a series of investments.	Under investigation	TBC	TBC
Wairakei to Whakamaru Capacity	TBC	Under investigation	TBC	TBC
Tararua Regional Development	TBC	Under Investigation	TBC	TBC

The maximum allowed revenue set for Transpower for RCP4:

- includes approved MCPs;
- excludes unapproved MCPs.

Transpower needs to apply to the Commission for the revenue to be adjusted for any approved MCPs.

5.5 ICT expenditure

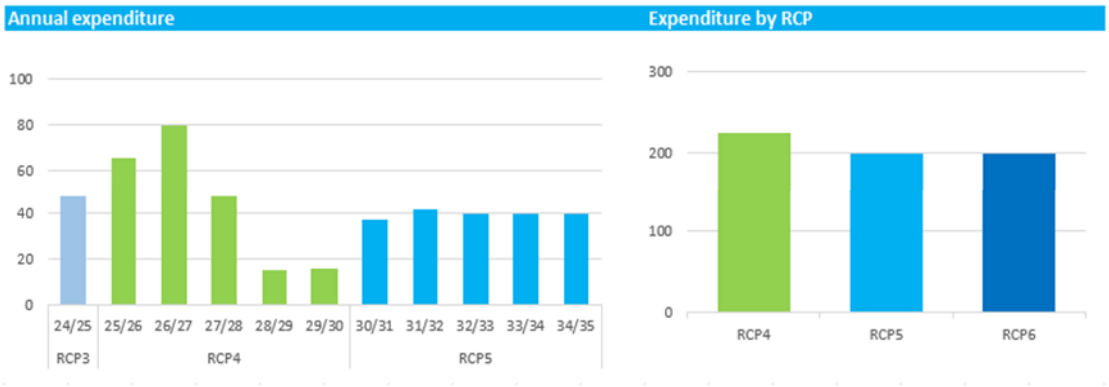
5.5.1 ICT base capex and XaaS

Our delivery model is shifting to incorporate increasingly more Anything-as-a-Service (XaaS) solutions, including but not limited to any Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). Historically, these costs have been accounted for as capex.

The strategic direction for our base capex and XaaS opex forecast is listed below by portfolio:

- Asset Management Systems;
- Transmission Systems;
- Corporate Systems;
- ICT Shared Services;
- Telecommunications, Network and Security Services (including TransGo and Enterprise Business Capability Programmes);
- Transmission Pricing Methodology (TPM) ICT enablement and enhancement in RCP4.

Figure 9: Historical and forecast base ICT capex and XaaS opex

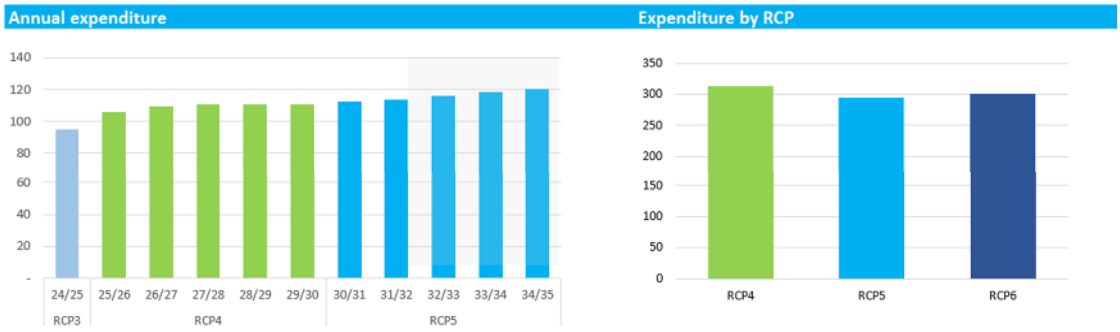


5.5.2 ICT opex

Our ICT opex covers the external costs to run our ICT function and comprises non-capitalised leases, third-party support and maintenance, outsourced services, licences, communications and control and investigations.

We continually review the balance between in-house and outsourced solutions to ensure operational support is cost-effective.

Figure 10: Historical and forecast base ICT opex



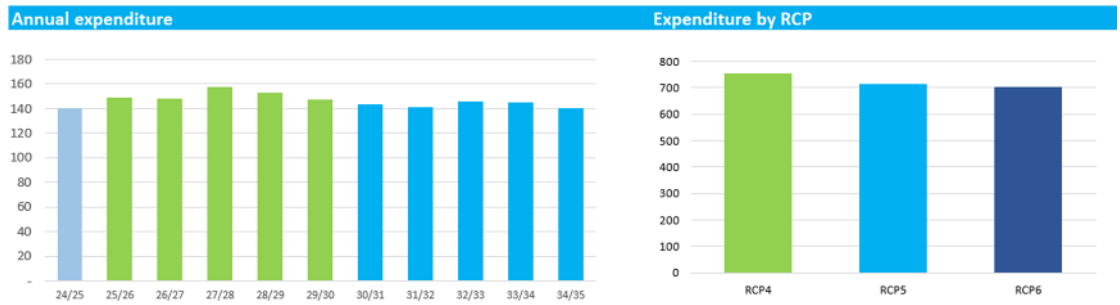
5.6 Grid maintenance

Grid maintenance is categorised as follows:

- preventive maintenance (routine servicing or inspections);
- predictive maintenance (maintenance performed based on condition prior to asset failure);
- corrective maintenance; and
- proactive maintenance.

RCP4 grid maintenance expenditure shown in the figure below reflects an increase in work to enable deferral of capex, specifically an increase in our coverage of condition assessment information on conductors, increase maintenance on some towers to enable the tower to pole programme, and our improvements in sulphur hexafluoride (SF6) management. These increases are partially offset by improvements made through our preventive maintenance optimisation programme, which has allowed us to reduce preventative maintenance activities while maintaining the reliable and safe performance of the grid. Additionally, there is a reduction in capex spend, e.g. reconductoring, as maintenance activities allow deferral of replacement of assets. We are forecasting a reduction in RCPs 5 & 6 due to expected realisation of maintenance efficiency opportunities, and the completion or near completion of some of our maintenance programmes.

Figure 11: Historical and forecast maintenance opex



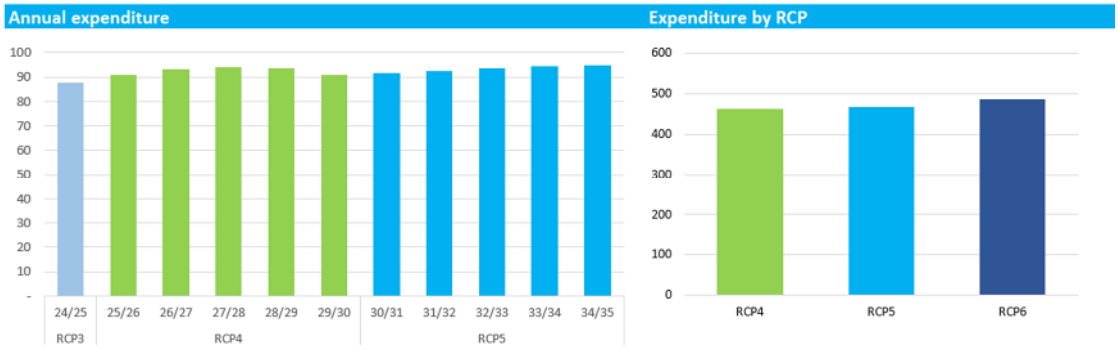
5.7 Asset management and operations

Asset management and operations cover the costs related to internal staff and consultancy associated with the grid divisions such as:

- investigations relating to the enhancement and improvement of our transmission system;
- investigations related to condition-driven replacement projects;
- innovation and exploring new technology for the grid; and
- funding of our internal workforce, which is essential to enabling all work on our network, i.e., asset management, planning, and network operations.

Expenditure is primarily driven by the increased internal resources necessary to plan and deliver the increased investment programme over RCP4 and RCP5.

Figure 12: Historical and forecast asset management and operations (including sustainability) opex



5.8 Business support

5.8.1 Business support base capex

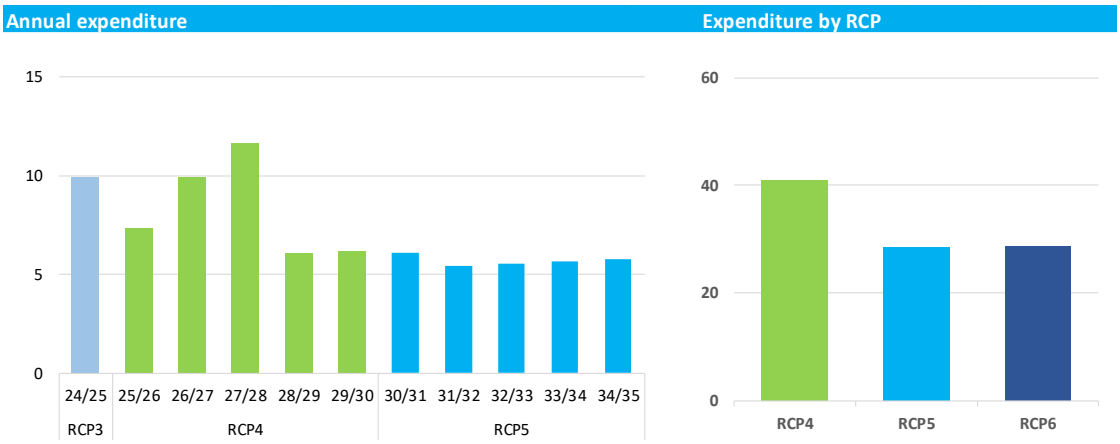
Business support assets cover our office buildings, vehicles and office equipment including office desks, chairs, meeting room furniture, laptops, and mobile phones.

Our business support assets are categorised as:

- Office buildings;
- Vehicles;
- Minor fixed assets - office equipment;
- Minor fixed assets – IT;
- Residential houses.

Our management objective for business support assets is to provide the appropriate level of capability at the least cost but also reflect the diversity of the asset types.

Figure 13: Historical and forecast business support capex

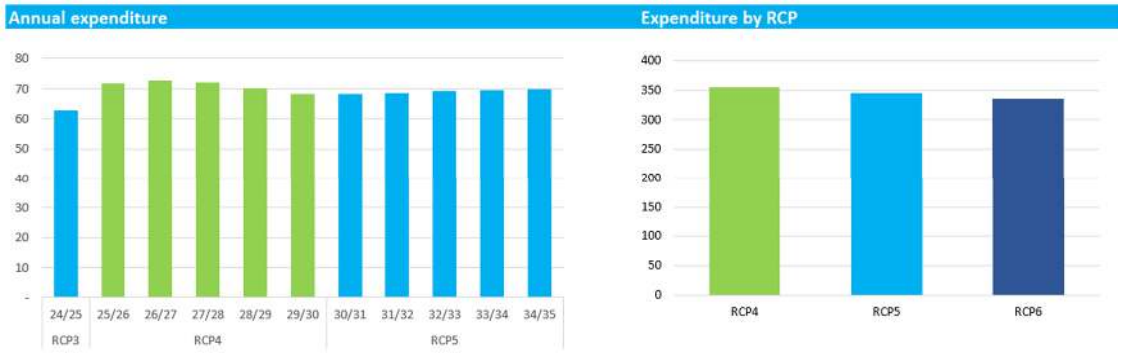


5.8.2 Business support opex

Business support functions encompass the staff and consultancy costs associated with activities that support the delivery of our investment programme and support our asset management and operations activities. It covers the internal costs of permanent employees and contractors of six divisions.

- IST;
- External affairs;
- Corporate services;
- Corporate governance;
- People;
- Customer and strategy.

Figure 14: Historical and forecast business support opex



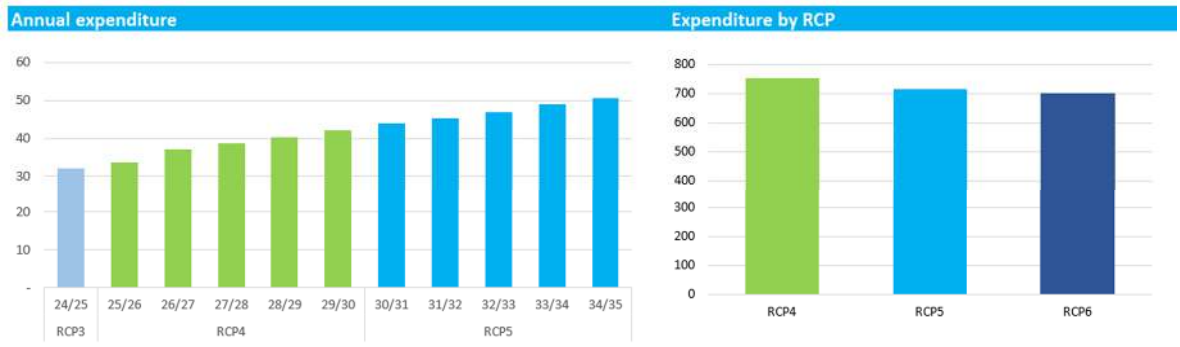
5.9 Insurance

Insurance expenditure for RCP4 includes both external and captive (self-insurance) premiums. Primary determinants of insurance costs are the insurance type and volume of insurance cover we purchase, including market premium pricing.

To insure prudently, we compare ourselves to other similar sized organisations' insurance approach and advice from insurance brokers. Insurance premiums are driven by market factors such as perception of risk, loss experience and availability of capital and not simply inflationary pressure.

Insurance market capacity is declining as insurers reduce exposures to catastrophic event risk, or exit the insurance class entirely, which has impacted premiums significantly. Utilities with catastrophic natural disasters exposure, like Cyclone Gabrielle are experiencing considerable challenges securing insurance cover risks. For example, the Cook Strait submarine cables, full insurance cover is unavailable resulting in Transpower retaining more self-insurance. The growth in costs in later RCPs is a function of a growing insured regulated asset base, as we build the transmission network to meet customer needs over time, and expected premium increases due to market risks to which insurers are exposed.

Figure 15: Historical and forecast insurance costs



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