TRANSPOWER

Service Measures Report 2025

September 2025

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Section 1.0
Introduction

Introduction

1.1. Purpose of service measures report

This Service Measures Report (report) summarises

- our services framework which defines the services we provide to our customers
- the performance of our regulated transmission business during Disclosure Year 2025 (DY 2025; 1 July 2024 to 30 June 2025) against the current regulatory control period (RCP3) performance and asset health measures[1]
- the performance and asset health measures, quality standards, targets, and incentives the Commerce Commission (the Commission) has determined for previous years of RCP3 which are Disclosure Years 2021 to 2024 (1 July 2020 to 30 June 2024)
- the service measures, quality standards, targets, and incentives for RCP4 (1 July 2025 to 30 June 2030).

This report satisfies the requirements of the Grid Outputs Report detailed in Transpower's capital expenditure input methodology (Capex IM).

1.2. Structure of this report

This report has three main sections:

1. The first is an overview of our services framework
2. The second is an overview of our RCP3 performance and asset health measures, quality standards, targets, and incentives, together with details of our performance in DY 2025
3. The third is an overview of our services measures, quality standards, targets, and incentives for RCP4

[1] Dates in this document represent the disclosure year ending 30 June. For example, the disclosure year 1 July 2024 to 30 June 2025 is simply referred to as Disclosure Year 2025, or DY 2025.

Section 2.0
Our Services Framework

Our Services Framework

The services we provide by operation of our network and the electricity system span eight broad categories (summarised in Table 1 below). They include provision of regulated electricity transmission services, provision of the system operator service and other activities not regulated under our individual price-quality path (IPP). The first three drive cost and quality of transmission services for end-consumers and are the focus for the performance and asset health measures covered in this report for RCP3.[2] For RCP4, we are introducing new customer service measures, which relate to the 'grid access' service we provide.

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 a high level of availability to minimise the impacts of system constraints for generators and consumers, so the lowest cost generation can be offered into the market.
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.

The performance and asset health measures help us fine-tune performance by ensuring we deliver services our customers value. They are measures that

- are meaningful and valuable to our customers
- focus on customer outcomes and service
- are challenging, but realistic and reasonably achievable
- drive a culture focusing on service

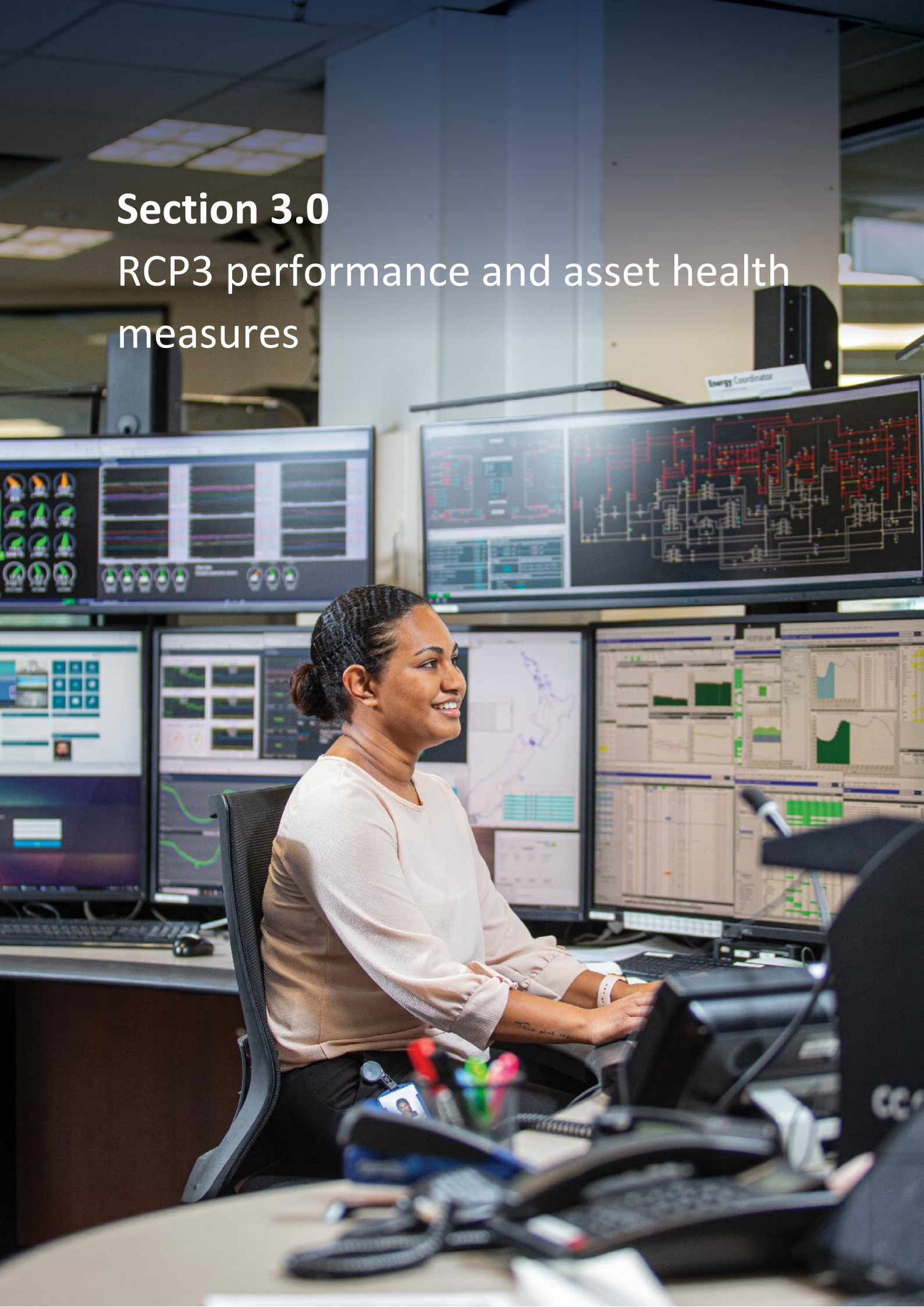
[2] We engaged with customers and stakeholders when developing our proposed RCP3 performance and asset health measures to ensure they represented the most important matters.

- provide direction to asset strategies
- improve our justification for expenditure on assets
- provide rigour to capital expenditure (capex) and grid operational expenditure (opex) substitution
- provide evidence and confidence that our spending is targeted at delivering the right performance.

We also use asset health as an indicator to understand and manage the current and future grid risk profile, as well as using it as a key input for decision-making processes. Asset health measures enable us to

- understand the condition of our grid assets and the probability of asset failure
- address potential problems caused by near end-of-life assets through asset refurbishment, replacement, or by other means[3]
- provide stakeholders and the Commission with a view of the state of our assets, highlighting potential work required to efficiently improve grid performance.

[3] There are cases where it is expedient to rely on our contingency plans to respond with a replacement from a nearby store when the asset fails or when we have determined it is about to fail.



Section 3.0

RCP3 performance and asset health measures

RCP3 performance and asset health measures

Interruptions to transmission service have been trending down since DY 2010. The unaudited results for DY 2025 saw the fifth best performance in 27 years, with 48 unplanned interruptions[4] for the RCP3 points of service (PoS).

For RCP3 our performance and asset health measures were reset. This involved consultation with our customers, interested consumer groups and the public.[5] The measures were published in November 2019 in the final IPP determination.[6]

The RCP3 performance and asset health measures are summarised in the sections below:

- Section 3.1 describes our performance measures
- Section 3.2 describes those performance measures that are revenue linked and have quality standards
- Section 3.3 describes our asset health measures and related quality standards
- Section 3.4 describes the linkages between our service measures and our planning and performance
- Section 3.5 describes our DY 2025 performance, with additional commentary.

[4] Our normalisation application has been approved i.e. Cyclone Gabrielle related interruptions are excluded.
[5] Transpower Service Measures Refresh for RCP3
[6] Transpower IPP Determination 2020

3.1. RCP3 performance measures

For RCP3, we have eight performance measures. These are

- three measures of grid performance (GP)
- five measures of asset performance (AP).

Four of the eight measures are revenue linked and four are non-revenue linked.[7]

Measures of Grid Performance

Our three measures of grid performance assess grid reliability and relate to our ability to provide uninterrupted transmission service. The first two, GP1 and GP2, are revenue linked with quality standards[8] and are discussed in in Section 3.2. The grid performance measures are summarised in Table 2.

Table 2 - Measures of grid performance for RCP3

Category	RCP3 Code	Quality Standard	Revenue Linked Target	RCP3 Performance Measure
Measures of Grid Performance (Grid Reliability)	GP1	Yes	Yes	Number of unplanned interruptions greater than one minute across all six supply and generation point of service sub-categories during a disclosure year.
	GP2	Yes	Yes	Average duration of unplanned interruptions greater than one minute, across six supply and generation point of service sub-categories during a disclosure year.
	GP-M	No	No	The number of momentary unplanned interruptions, with a duration of less than one minute, in a disclosure year.

[7] Linking performance measures to revenue has the effect of financially rewarding or penalising us for out- or under-performing the grid output targets set for these measures.

[8] Quality standards set a minimum standard of quality.

Measures of Grid Performance - Point of service categorisations

Measures of grid performance GP1 and GP2 are each reported across six point of service (PoS) sub-categories. Tables 3 and 4 describe the PoS sub-categories and categories for RCP3. A list of the categories is in Schedule F of the IPP.[9]

Table 3 - Point of service sub-categories for RCP3

Sub-category	Description	Examples
High Economic Consequence	A PoS that satisfies either of the following criteria: • significantly above-average consumption • an average consumption but an above-average fraction of commercial, industrial, and/or agricultural end-use consumers.	PEN033_S1, ISL066_S1, INV033_S1, HAM033_S1
Material Economic Consequence	A PoS that typically exports electricity from the grid but does not qualify as being 'High Economic Consequence'.	APS011_S1, BAL033_S1, HAM011_S1, KUM066_S1
Generator	A PoS that typically injects electricity into the grid.	BEN220_I1, ROX220_I1, MTI220_S1, HLY220_I1

Table 4 - Point of service categories for RCP3

Category	Sub-category	PoS
N-1 security[10]	High Economic Consequence	48
	Material Economic Consequence	95
	Generator	44
	N-1 security total	**187**
N-security	High Economic Consequence	12
	Material Economic Consequence	21
	Generator	9
	N-security total	**42**
	Total	**229**

[9] Transpower IPP Determination 2020

[10] N-security is where the system is such that a single fault event can lead to a service interruption. N-1 security is where the system is built such that a service interruption will only occur if there are concurrent outages.

Asset Performance measures

Our five asset performance measures (AP1 to AP5) assess asset availability and relate to our ability to maintain availability, minimise planned and unplanned outages, and communicate changes to customers. AP1 and AP2 are both revenue linked with quality standards; they are discussed in Section 3.2. The asset performance measures for RCP3 are summarised in Table 5.

Table 5 - Asset performance measures for RCP3

Category	RCP3 Code	Quality Standard	Revenue Linked Target	RCP3 Performance Measure
Asset Performance Measures (Grid Availability)	AP1	Yes	Yes	HVDC capacity availability (%) of the inter-island high-voltage direct current (HVDC) system.
	AP2	Yes	Yes	Average percentage of time selected high voltage alternating current (HVAC) assets are available during a disclosure year.
	AP3	No	No	Return to service time – extent to which Transpower meets planned return to service times for planned outages of selected HVAC assets that are returned to service two or more hours after Transpower's planned return to service time.
	AP4	No	No	Return to service time communications - measures the extent to which Transpower communicates delays to affected parties of planned outage return to service times of selected HVAC assets: • the percentage of outages that Transpower gives 1.5 hours or less notice to market (or industry) participants in the event assets are going to be returned to service later than the original planned return to service time; or • the extended return to service time.
	AP5	No	No	N-security reporting - reports the extent that Transpower has placed customers on a reduced level of supply security due to an outage, with that reduced level being N-security of supply.

The selected assets for assessing the AP2, AP3, and AP4 measures are listed in Schedule G of the IPP.[11]

[11] Transpower IPP Determination 2020

3.2. RCP3 revenue linked performance measures

For RCP3 we have four revenue linked performance measures with associated quality standards; these are GP1, GP2, AP1, and AP2. Linking measures to revenue has the effect of financially rewarding or penalising us for over- or under-performing against the targets set for these measures. For the RCP3 period total revenue at risk is $53.7 million. The targets, quality standards, caps, collars, and revenue incentives are further explained in the following sections.

Grid Performance Targets

GP1 and GP2: Number and duration of unplanned interruptions
Our targets for the GP1 and GP2 measures of grid performance are in Table 6.

Table 6 - Measure of grid performance targets for RCP3

Category	Sub-category	PoS	GP1 Number of Interruptions (all PoS)	GP2 Average Duration (mins) of Interruptions (all PoS)
N-1 security	High Economic Consequence	48	7	92
	Material Economic Consequence	95	24	61
	Generator	44	9	174
	N-1 security total	**187**		
N-security	High Economic Consequence	12	6	103
	Material Economic Consequence	21	23	140
	Generator	9	12	93
	N-security total	**42**		
	Total	**229**		

Asset Performance Targets

AP1: Percentage capacity availability of HVDC assets
Our target for AP1 (HVDC availability) is 98.75 per cent for all five years of RCP3, excluding Pole 2 life extension work. The Pole 2 work (Project K in the IPP) has been capped at 0.7 per cent unavailability over three of the five years of RCP3, meaning all unavailability resulting from the life extension work in excess of 0.7 per cent over those three years will count towards our AP1 performance target.

AP2: Percentage availability of selected HVAC assets
Our RCP3 target is 99.0 per cent availability over selected assets. The selected assets include: 110 kV and 220 kV circuits, interconnecting transformers, and bus sections that have the most impact on the market in RCP3 when out of service. These assets are approximately 20 per cent of the circuit-kilometres in our AC network and 22 per cent of our interconnecting transformers. They are listed in Schedule G of the IPP.[12]

[12] Transpower IPP Determination 2020

Normalisation

Using the concept of 'normalisation' the RCP3 determination allows us to treat certain outages and interruptions to be excluded from the calculations, subject to approval from the Commission.

Performance measures caps, collars, quality standards and incentives

Tables 7 and 8 summarise the caps, collars, targets, quality standards, and incentive rates for our revenue linked performance measures in RCP3.

Table 7 - RCP3 grid performance measures incentive summary

Measure	Cap	Target	Collar	PoS sub-category limit	Incentive rate	$ at risk per year
GP1: number of interruptions (per annum)					$ per interruption	
N-1 Security High Economic Consequence	0	7	14	14	335,714	2,350,000
N-1 Security Material Economic Consequence	7	24	41	41	40,294	685,000
N Security High Economic Consequence	4	6	8	8	250,000	500,000
N Security Material Economic Consequence	9	23	37	37	41,786	585,000
N-1 Security Generator	5	9	13	13	62,500	250,000
N Security Generator	6	12	18	18	41,667	250,000
GP2: average duration of interruptions (mins)					$ per	
N-1 Security High Economic Consequence	30	92	154	154	37,903	2,350,000
N-1 Security Material Economic Consequence	36	61	86	86	27,400	685,000
N Security High Economic Consequence	0	103	206	206	4,854	500,000
N Security Material Economic Consequence	0	140	280	280	4,179	585,000
N-1 Security Generator	50	174	298	298	2,016	250,000
N Security Generator	11	93	175	175	3,049	250,000

Table 8 - RCP3 asset performance measures incentive summary

Measure	Cap	Target	Collar	Quality standard	Incentive rate	$ at risk per year
AP1: HVDC availability (%)					$ per 1%	
HVDC availability	99.75%	98.75%	97.75%	96.75%	500,000	500,000
AP2: HVAC availability (%)					$ per 1%	
HVAC availability (selected assets)	99.2%	99.0%	98.8%	98.6%	5,000,000	1,000,000

To determine the potential adjustment to our revenue, our actual (normalised) results will be compared against the targets. The target for each measure represents a result where there would be no financial impact, i.e. we receive no financial penalty or reward. The caps and collars set the range of performance within which we receive either a financial penalty or reward.

The strength of each financial incentive is determined by the incentive rate and differs depending on the service measure. The incentives are symmetric, meaning the incentive rate and absolute reward or penalty is the same for over or under-performance.

As noted above, we adjust the calculation of our actual performance for normalisation and exceptional outlier events. Table 9 shows how compliance with the performance measures is determined.

Table 9 - Quality standard compliance requirements for RCP3

Performance Measure	RCP Disclosure year				
	DY 2021	DY 2022	DY 2023	DY 2024	DY 2025
GP1 and GP2	Calculate values, no compliance assessment	Comply in DY 2022, or if not, then to have complied in DY 2021	Comply in disclosure year, or if not, then to have complied in the two previous disclosure years		
AP1 and AP2	Comply in current disclosure year				

Compliance for the measures of grid performance (GP1 and GP2) in a disclosure year is defined as being when four or more of the six PoS sub-category limits for each measure are not exceeded. This is referred to as pooling. There is no quality standard for GP1 and GP2 in the first RCP3 disclosure year (DY 2021).

Compliance for the asset performance measures (AP1 and AP2) is defined as a result which is higher than, or equal to, the quality standard. Note: there is a deadband zone between the collar and the quality standard for the asset performance measures.[13]

3.3. RCP3 asset health measures and quality standards

Asset health measures

Our RCP3 asset health measures are aligned with the way we manage network assets, and how we measure and report on asset condition in our business. The measures indicate the expected health of these assets at the end of the regulatory control period, accounting for the investments we make in replacing, refurbishing, and maintaining the assets.

The measures provide a leading indicator showing how we see the state of our grid assets and enable us to foresee and communicate asset health issues. We use an Asset Health Index (AHI) for each asset, compiled from asset health modelling and condition data, to reflect the current state of our grid asset fleet.

[13] A deadband refers to a part of the range where no direct financial incentives apply.

Both asset health measures have associated quality standards but are not revenue linked. Further details are provided below.

Quality standards

For the Power Transformers and Outdoor Circuit Breakers asset classes we calculate the proportion of each asset class having an AHI score of 8 or above (meaning poor to very poor health) at the end of each disclosure year in the RCP3 period. The quality standard (for each asset class) is met if the proportion does not exceed the percentages listed in Table 10 for each disclosure year.

Table 10 - Quality standards for asset classes with an AHI score of 8 or higher for RCP3

Asset Class	DY 2021 %	DY 2022 %	DY 2023 %	DY 2024 %	DY 2025 %
Power Transformers	3.22	3.68	5.37	8.65	12.03
Outdoor Circuit Breakers	2.00	2.37	5.65	7.63	8.27

3.4. Linking service measures to planning

We are taking an incremental approach to linking service measure expectations with planning which is appropriate for Transpower's business and consistent with other transmission businesses.

During RCP3 network performance will be influenced by the existing network configuration and standard of grid assets. We have only limited scope during the five years of RCP3 to alter the built configuration. The reinvestment rate is low relative to the replacement cost of the grid given the long life of grid assets.

From a planning perspective, we can influence how we:

- prioritise asset maintenance and replacements
- plan work packages and timing to minimise peaks in planned outages
- prepare for event management with readiness planning.

We use Value of Lost Load (VoLL) as a common input across frameworks, enabling us to categorise PoS, set incentive strengths and gauge end users' expectations. Additionally, we use VoLL to support network enhancement and development decisions (including as an input to the investment test) and for asset renewal planning and prioritisation through our criticality framework, where applicable.

Given the complexity and uncertainty of modelling aggregate network performance, we have frameworks that guide performance and outputs towards an optimal state over time, consistent with other transmission businesses. We consider this is more appropriate than defining a static long-term view of optimal outputs and performance, particularly in a time of significant change to

the energy and electricity sectors and customers, as outlined in our analysis of electrification pathways *Whakamana i Te Mauri Hiko*.[14]

For our revenue linked grid reliability measures, GP1 (number of unplanned interruptions) and GP2 (duration of unplanned interruptions), a proportion of interruptions are practically beyond our control. There are interruptions (such as wilful damage and extreme weather) which are difficult to predict and expensive to fully mitigate across the grid. Also, due to the interconnected nature of the grid and the built-in redundancy, equipment failures do not always lead to interruptions. These factors make it difficult to determine service improvements which arise from grid investments.

For our revenue linked asset availability measures, AP1 (HVDC availability) and AP2 (HVAC availability), the targets were calculated with reference to the expected work we will undertake. This means there is a linkage between the availability of the grid and our workplan, which in turn is linked to our base capex allowance. This linkage is complex and challenging to predict with precision across the network at the time that targets are set. We continue to manage and update our forward workplan to ensure we deliver the right work and meet customer needs.

3.5. Disclosure Year 2025 performance

The following tables show our performance for DY 2025:

- Table 11 provides an overview of our performance against our revenue linked targets
- Table 12 provides an overview of our performance against the quality standards
- Table 13 provides an overview of our performance against performance measures which do not have quality standards.

Commentary on our performance, including where we have exceeded the collar, follows these tables. GP1 and GP2, results exclude the helicopter strike event (conductors being cut by the rotor and boom of a weed-spraying helicopter) as a normalisation application for this event has been approved[15].

[14] Whakamana i Te Mauri Hiko – Empowering our Energy Future

[15] Decision on the treatment of Transpower interruptions and outages caused by helicopter strike (Transpower normalisation application)

Table 11 - Performance measures linked to revenue and for asset health for disclosure year 2025

Measure	Category	Cap	Target	Collar	PoS sub- category limit	Incentive Rate	Actual	Result ($M)
GP1 - Number of unplanned interruptions across all points of service (No.)	GP1A: N-1 high EC	0	7	14	14	$335,714	2	$1.679
	GP1B: N-1 material EC	7	24	41	41	$40,294	13	$0.443
	GP1C: N high EC	4	6	8	8	$250,000	3	$0.5
	GP1D: N material EC	9	23	37	37	$41,786	15	$0.334
	GP1E: N-1 generator	5	9	13	13	$62,500	9	$0
	GP1F: N generator	6	12	18	18	$41,667	6	$0.25
GP2 - Average duration of unplanned interruptions greater than one minute (mins.)	GP2A: N-1 high EC	30	92	154	154	$37,903	93	-$0.038
	GP2B: N-1 material EC	36	61	86	86	$27,400	70.7	-$0.266
	GP2C: N high EC	0	103	206	206	$4,854	37.7	$0.317
	GP2D: N material EC	0	140	280	280	$4,179	59.2	$0.338
	GP2E: N-1 generator	50	174	298	298	$2,016	211.7	-$0.076
	GP2F: N generator	11	93	175	175	$3,049	11.2	$0.249
Measure	**Category**	**Cap**	**Target**	**Collar**	**Quality Standard**	**Incentive Rate**	**Actual**	**Result ($M)**
AP1 - HVDC availability (%)		99.75	98.75	97.75	96.75	$500,000	97.49[16]	-$0.5
AP2 - HVAC availability (%)	Selected assets	99.2	99.0	98.8	98.6	$5,000,000	97.31	-$1.00
AH: (% with Asset Health of 8 or higher)	Power transformers	N/A	N/A	12.03	12.03	N/A	4.89	N/A
	Outdoor circuit breakers	N/A	N/A	8.27	8.27	N/A	0.30	N/A

Note: these results are preliminary and may change following the final audit process.

[16] AP1 excludes 0.7% of the Pole 2 refurbishment project related hours as per IPP allowance. Without excluding the 0.7%, HVDC capacity availability for DY2025 is 96.8%

Table 12 - Our performance against the quality standards for disclosure years 2021–2025

Measure	Category	Met Quality Standard				
		DY 21	DY 22	DY 23	DY 24	DY 25
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	●	●	●	●	●

Note: these results are preliminary and may change following the final audit process.

Table 13 - Our performance against measures which do not have quality standards for disclosure years 2021–2025

Measure	Units	Actual				
		DY 21	DY 22	DY 23	DY 24	DY 25
GP-M – Momentary unplanned interruptions	Count < 1 min	22	29	28	35	28
AP3 - Return to service time[17]	% >2 hours of planned return to service	3.7	1.32	6.82	4.38	4.41
AP4 - Return to service time - Communications	% < 1.5 hours' notice of delay	7.41	8.55	13.07	21.88	13.24
AP5 – N security reporting	Count of PoS on N-security >20% of time	8	4	14	5	6

Note: these results are preliminary and may change following the final audit process.

Commentary on overall long-term service interruption performance

The long-term performance trend indicates a sustained improvement in the number of unplanned interruptions across all Points of Service (PoS) sub-categories. The past five years represent the strongest performance on record, along with the 2015/2016 disclosure year. The 2024/25 disclosure year ranks as the fifth-best year in the past 27 years for unplanned interruptions. Average interruption duration has also shown improvement across supply Points of Service (PoS) sub-categories in the last 7 years.

Key observations supporting this long-term improvement include:

- A 47% reduction in interruptions caused by equipment failures over the past five years (2021–2025) compared to the previous five years (2016–2020).
- A 6% reduction in interruptions resulting from human error incidents over the same period. DY 2025 matched DY 2023 in achieving the lowest number of Human Error Incidents (HEIs), with only two events resulting in five interruptions. It is important to note that a single event can affect multiple PoS interruptions.
- Environmentally caused interruptions continue to exhibit high variability.

The underlying drivers of this positive trend include:

- Enhanced asset management practices, including improvements in asset health monitoring, replacement and refurbishment planning, maintenance regimes and outage planning.
- Some system upgrades have also improved performances.

Quality Standard Breaches

For DY 2025, all quality standards were met except for AP2. The Commerce Commission has now completed their investigation of the breaches of AP2 for the first two disclosure years of RCP3.

Commentary on DY 2025 performance

- Strong performance across all PoS sub-category limits for both the number (GP1) and average duration (GP2) of unplanned interruptions.
- All six PoS sub-category limits and targets for GP1 were met.
- All six PoS sub-categories remained within their respective GP2 PoS sub-category limits, and three out of six sub-category targets were met. Reasons for not meeting the N-1 high and N-1 generator targets were due to long duration interruptions from environmental causes (birds, snow, animals, and suspected lightning). The N-1 material sub-category target wasn't met due to human error events and equipment failures.
- The AP2 quality standard was not met, solely due to the planned outages required for Pakuranga–Whakamaru Circuits (PAK–WKM) cable joint replacements. A bypass was implemented to mitigate market impact during these outages.
- The AP1 measure for DY 2025 met the quality standard but fell short of the target and collar, largely due to the extended timeline of the Pole 2 refurbishment project.
- Asset Health quality standards for Outdoor Circuit Breakers and Power Transformers were met in DY 2025.

Section 4.0

Overview of RCP4 service measures

Overview of RCP4 service measures

The RCP4 performance and asset health measures are summarised in the sections below:

- Section 4.1 describes our performance measures
- Section 4.2 describes those performance measures that are revenue linked and have quality standards
- Section 4.3 describes our asset health measures and related quality standards

4.1. RCP4 performance measures

For RCP4, we have eight performance measures. These are

- three measures of grid performance (GP)
- five measures of asset performance (AP).

Four of the eight measures are revenue linked and four are non-revenue linked.[18]

Measures of Grid Performance

Our three measures of grid performance assess grid reliability and relate to our ability to provide uninterrupted transmission service. The first two, GP1 and GP2, are revenue linked with quality standards[19] and are discussed in in Section 3.2. The grid performance measures are summarised in Table 2.

Table 14 - Measures of grid performance for RCP4

Category	RCP4 Code	Quality Standard	Revenue Linked Target	RCP4 Performance Measure
Measures of Grid Performance (Grid Reliability)	GP1	Yes	Yes	Number of unplanned interruptions greater than one minute across all six supply and generation point of service sub-categories during a disclosure year.
	GP2	Yes	Yes	Average duration of unplanned interruptions greater than one minute, across six supply and generation point of service sub-categories during a disclosure year.
	GP4	No	No	The amount of energy demand that is not supplied due to a transmission interruption to supply, as a percentage of total energy demand, during a disclosure year.

[18] Linking performance measures to revenue has the effect of financially rewarding or penalising us for out- or under-performing the grid output targets set for these measures.
[19] Quality standards set a minimum standard of quality.

Measures of Grid Performance - Point of service categorisations

Measures of grid performance GP1 and GP2 are each reported across six point of service (PoS) sub-categories. Tables 3 and 4 describe the PoS sub-categories and categories for RCP4. A list of the points of service and customer for each sub-category can be found in Schedule F of the IPP[20].

Table 15 - Point of service sub-categories for RCP4

Sub-category	Description	Examples
High Economic Consequence	A PoS that satisfies either of the following criteria: • significantly above-average consumption • an average consumption but an above-average fraction of commercial, industrial, and/or agricultural end-use consumers.	PEN033_S1, ISL066_S1, INV033_S1, HAM033_S1
Material Economic Consequence	A PoS that typically exports electricity from the grid but does not qualify as being 'High Economic Consequence'.	APS011_S1, BAL033_S1, HAM011_S1, KUM066_S1
Generator	A PoS that typically injects electricity into the grid.	BEN220_I1, ROX220_I1, MTI220_I1, HLY220_I1

Table 16 - Point of service categories for RCP4

Category	Sub-category	PoS
N-1 security[21]	High Economic Consequence	37
	Material Economic Consequence	105
	Generator	41
	N-1 security total	**183**
N-security	High Economic Consequence	9
	Material Economic Consequence	26
	Generator	10
	N-security total	**45**
	Total	**228**

[20] Transpower IPP Determination 2025

[21] N-security is where the system is such that a single fault event can lead to a service interruption. N-1 security is where the system is built such that a service interruption will only occur if there are concurrent outages.

Asset Performance measures

Our five asset performance measures (AP1, AP1.2, AP2, AP3 & AP4) assess asset availability and relate to our ability to maintain availability, minimise planned and unplanned outages, and communicate changes to customers. AP1 and AP2 are both revenue linked with quality standards; they are discussed in Section 4.2. The asset performance measures for RCP4 are summarised in Table 17.

Table 17 - Asset performance measures for RCP4

Category	RCP4 Code	Quality Standard	Revenue Linked Target	RCP4 Performance Measure
Asset Performance Measures (Grid Availability)	AP1	Yes	Yes	HVDC capacity availability of Pole 2 and Pole 3 of the inter-island high-voltage direct current (HVDC) system as a percentage of annual capacity during a disclosure year.
	AP1.2	No	No	HVDC operational capacity availability from any constraint.
	AP2	Yes	Yes	Percentage of time selected high voltage alternating current (HVAC) assets are available during a disclosure year.
	AP3	No	No	Return to service time – extent to which Transpower meets planned return to service times for planned outages of selected HVAC assets that are returned to service two or more hours after Transpower's planned return to service time.
	AP4	No	No	Return to service time communications - measures the extent to which Transpower communicates delays to affected parties of planned outage return to service times of selected HVAC assets: • the percentage of outages that Transpower gives 1.5 hours or less notice to market (or industry) participants in the event assets are going to be returned to service later than the original planned return to service time; or • the extended return to service time.

The selected assets for assessing the AP2, AP3, and AP4 measures are listed in Schedule G of the IPP.[22]

[22] Transpower IPP Determination 2025

4.2. RCP4 revenue linked performance measures

For RCP4 we have four revenue linked performance measures with associated quality standards; these are GP1, GP2, AP1, and AP2. Linking measures to revenue has the effect of financially rewarding or penalising us for over- or under-performing against the targets set for these measures. For the RCP4 period total revenue at risk is $90.5 million. The targets, quality standards, caps, collars, and revenue incentives are further explained in the following sections.

Grid Performance Targets

GP1 and GP2: Number and duration of unplanned interruptions

Our targets for the GP1 and GP2 measures of grid performance are in Table 18.

Table 18 - Measure of grid performance targets for RCP4

Category	Sub-category	PoS	GP1 Number of Interruptions (all PoS)	GP2 Average Duration (mins) of Interruptions (all PoS)
N-1 security	High Economic Consequence	37	4	73
	Material Economic Consequence	105	21	74
	Generator	41	9	225
	N-1 security total	**183**		
N-security	High Economic Consequence	9	2	66
	Material Economic Consequence	26	15	104
	Generator	10	7	123
	N-security total	**45**		
	Total	**228**		

Asset Performance Targets

AP1: Percentage capacity availability of HVDC assets

Our RCP4 target for AP1 (HVDC availability) is 98.00 per cent for all five years of RCP3, excluding three special projects: project k; project l; and project m. These projects and the related adjustments are described in clauses 18.3 and 18.4 of the IPP[23].

AP2: Percentage availability of selected HVAC assets

Our RCP4 target for AP2 is 98.25 per cent availability over selected assets. The selected assets include: 110 kV and 220 kV circuits, interconnecting transformers, and bus sections that have the most impact on the market in RCP4 when out of service. They are listed in Schedule G of the IPP.[24]

Normalisation

Using the concept of 'normalisation' the RCP3 determination allows us to treat certain outages and interruptions to be excluded from the calculations, subject to approval from the Commission.

[23] Transpower IPP Determination 2025
[24] Transpower IPP Determination 2025

Performance measures caps, collars, quality standards and incentives

Tables 19 and 20 summarise the caps, collars, targets, quality standards, and incentive rates for our revenue linked performance measures in RCP4.

Table 19 – RCP4 grid performance measures incentive summary

Measure	Cap	Target	Collar	PoS sub-category limit	Incentive rate	$ at risk per year
GP1: number of interruptions (per annum)					$ per interruption	
N-1 Security High Economic Consequence	0	4	8	8	789,666	$3,158,66
N-1 Security Material Economic Consequence	4	21	38	38	170,537	$2,899,12
N Security High Economic Consequence	0	2	4	4	185,592	$371,184
N Security Material Economic Consequence	4	15	26	26	57,795	$635,745
N-1 Security Generator	4	9	14	14	50,000	$250,000
N Security Generator	4	7	10	10	83,333	$249,999
GP2: average duration of interruptions (mins)					$ per minute	
N-1 Security High Economic Consequence	23	73	123	123	63,173	$3,158,65
N-1 Security Material Economic Consequence	27	74	121	121	61,683	$2,899,10
N Security High Economic Consequence	15	66	117	117	7,278	$371,178
N Security Material Economic Consequence	0	104	208	208	6,113	$635,752
N-1 Security Generator	30	225	420	420	1,282	$249.990
N Security Generator	0	123	246	246	2,033	$250,059

Table 20 – RCP4 asset performance measures incentive summary

Measure	Cap	Target	Collar	Quality standard	Incentive rate	$ at risk per year
AP1: HVDC availability (%)					$ per 1%	
HVDC availability	99.00%	98.00%	97.00%	96.00%	1,000,000	$1,000,000
AP2: HVAC availability (%)					$ per 1%	
HVAC availability (selected assets)	98.62%	98.25%	97.87%	97.45%	5,320,564	$2,021,814

To determine the potential adjustment to our revenue, our actual (normalised) results will be compared against the targets. The target for each measure represents a result where there would be no financial impact, i.e. we receive no financial penalty or reward. The caps and collars set the range of performance within which we receive either a financial penalty or reward.

The strength of each financial incentive is determined by the incentive rate and differs depending on the service measure. The incentives are symmetric, meaning the incentive rate and absolute reward or penalty is the same for over or under-performance.

As noted above, we adjust the calculation of our actual performance for normalisation and exceptional outlier events. Table 9 shows how compliance with the performance measures is determined.

Table 21 - Quality standard compliance requirements for RCP4

Performance Measure	RCP Disclosure year				
	DY 2026	DY 2027	DY 2028	DY 2029	DY 2030
GP1 and GP2	Comply (meet quality limits for4 or more of the 6 POS subcategories) in disclosure year, or if not, then to have complied in the two previous disclosure years, including the last two years of RCP3				
Asset health	Calculate values, no compliance assessment	Comply (meet quality limits for 4 or more of the 7 asset classes) with the AH assessment in disclosure year, or if not, then to have complied in DY 2026.	Comply (meet quality limits for 4 or more of the 7 asset classes) with the AH assessment in disclosure year, or if not, then to have complied in the two previous disclosure years		
AP1 and AP2	Comply (meet quality standard) in current disclosure year				

Compliance for the measures of grid performance (GP1 and GP2) in a disclosure year is defined as being when four or more of the six PoS sub-category limits for each measure are not exceeded. This is referred to as pooling. There is no quality standard for Asset Health in the first RCP4 disclosure year (DY 2026).

Compliance for the asset performance measures (AP1 and AP2) is defined as a result which is higher than, or equal to, the quality standard. Note: there is a deadband zone between the collar and the quality standard for the asset performance measures.[25]

[25] A deadband refers to a part of the range where no direct financial incentives apply.

4.3. RCP4 asset health measures and quality standards

Asset health measures

Our RCP4 asset health measures are aligned with the way we manage network assets, and how we measure and report on asset condition in our business. The measures indicate the expected health of these assets at the end of the regulatory control period, accounting for the investments we make in replacing, refurbishing, and maintaining the assets.

The measures provide a leading indicator showing how we see the state of our grid assets and enable us to foresee and communicate asset health issues. We use an Asset Health Index (AHI) for each asset, compiled from asset health modelling and condition data, to reflect the current state of our grid asset fleet.

Both asset health measures have associated quality standards but are not revenue linked. Further details are provided below.

Quality standards

For the asset classes listed in Table 22 we calculate the proportion of each asset class having an AHI score of 8 or above (meaning poor to very poor health) at the end of each disclosure year in the RCP4 period. The quality standard (for each asset class) is met if the proportion does not exceed the percentages listed in Table 10 for each disclosure year.

Table 22 - Quality standards for asset classes with an AHI score of 8 or higher for RCP3

Asset Class	DY 2021 %	DY 2022 %	DY 2023 %	DY 2024 %	DY 2025 %
Conductors*	1.76	1.97	2.18	2.37	2.61
Insulators*	2.79	3.14	3.85	4.76	5.98
Power transformers*	5.17	9.15	11.53	12.18	13.35
Outdoor circuit breakers*	1.24	1.45	2.46	3.19	4.27
Protection Relays	7.56	6.92	6.37	8.12	8.61
Tower grillage foundations	4.26	3.51	3.9	4.04	3.99
Tower protective coatings	13.98	15.89	17.79	20.02	22.09

*Criticality weighted

4.4. RCP4 Customer Service Measures

Customer measures are designed to measure overall customer satisfaction and to measure how Transpower is delivering new or enhanced grid connections. These measures are for reporting only, there are no associated quality standards of revenue linked targets.

Table 23 – Customer Service Measures for RCP4

RCP4 Measure	Description
Customer Service 1	Overall Customer Satisfaction
Customer Service 2	Number of connection enquiries
	Average, minimum and maximum times to start or decline an investigation
	Number of investigations started
	Average time to deliver concept assessment
	Investigations delivered in contracted time
	Connections delivered
	Value of connections delivered
	Median and mean time TWA-Commissioning Load
	Median and mean time TWA-Commissioning Generation
	Average cost overrun and number of overruns
	Average cost underrun and number of underruns

Appendix A: Definitions for GP1 and GP2

'Interruptions'[26] for the purpose of the GP1 and GP2 measures means:

- any supply interruption of greater than one minute in duration caused by a Transpower unplanned outage; or
- any generator interruption of greater than one minute in duration caused by a Transpower unplanned outage; or
- any unplanned interruption internal to a customer's system that resulted from an incident on the Transpower system.

This excludes:

- any momentary interruption (i.e. interruption to service for less than one minute) caused by Transpower, e.g. caused by a circuit tripping and auto-reclosing or the operation of a supply change-over system; and
- interruption to a Transpower customer, caused by another customer, e.g. a generator customer may cause under-frequency load shedding in a distribution customer's system, or a distribution customer may cause trippings that affect a second distribution customer supplied from the same site; and
- interruption to a Transpower customer, caused by the customer themselves, that resulted in Transpower equipment being removed from service.

  Note: This does not include the correct operation of a 'boundary' (i.e. feeder or generator) circuit breaker, which does not remove any other Transpower equipment from service; and
- restrictions to supply, such as interruptible load shedding or water-heating cuts; and
- events where there has been Automatic Under Frequency Load Shedding; and
- interruptions to generator auxiliary supply; and
- interruptions to embedded generation based on reconciliation manager's connection type.

An unplanned interruption ends on the date and time of 'Restoration' to a customer, which means the earliest of:

- for generators:
  - when the generator circuit breaker is closed; or
  - the generator is notified that Transpower equipment has been returned to service and is available for generation to be reconnected; or
  - operational control for connecting the Transpower assets is returned to the generator.
- for customers other than generators:
  - when the first feeder is closed, if feeder circuit breakers have been opened; or
  - when the supply bus is re-livened, if feeder circuit breakers have remained closed after the interruption; or
  - when 75 per cent of the load is returned to service by way of a backfeed within the customer's system or by generators; or
  - when Transpower has readied all its equipment and has made reasonable efforts to advise the customer that the equipment can be returned to service.

[26] For the purposes of interruptions in the event recording and reporting system, a planned interruption results from an outage for which 24 hours' notice has been given. If less notice or no notice is given, the interruption is considered unplanned.