

## **Transpower's individual price-quality path for the regulatory control period from 1 April 2025**

**Final Decision Attachment D – Quality standards and grid output measures**

**Date of publication:** 29 August 2024

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# 1. Introduction

## Purpose

- 1.1. This document is part of the package of final decision documents on Transpower's individual price path (**IPP**) for the fourth regulatory period starting on 1 April 2025 (**RCP4**). We published our draft decision on 29 May 2024, submissions closed on 26 June 2024, and cross submissions closed on 15 July 2024. The final decision package is published on 29 August 2024.
- 1.2. This is one of five attachments to our main final decision paper. The main final decision paper sets out all of the decision as well as the context within which we are setting quality standards and grid output measures.
- 1.3. The purpose of this attachment is to set out our review of Transpower's proposal and detail our final decision relating to quality standards and grid output measures for the RCP4 IPP reset, and to explain our reasons for that final decision.

## Background to our review

- 1.4. The Transpower Capital Expenditure Input Methodologies Determination (**Capex IM**)<sup>1</sup> allows Transpower to propose, and for us to set, certain types of grid output measures, such as asset performance measures, grid performance measures, asset capability grid performance measures, and asset health grid output measures.
- 1.5. These measures are important for ensuring that Transpower has incentives to provide transmission services at a quality that reflects consumers' demands.
- 1.6. Transpower has developed its proposed updated measures for this period in consultation with its stakeholders. Consequently, the package of measures proposed to us represent the measures most valued by customers while remaining aligned with Transpower's business priorities.

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<sup>1</sup> Commerce Commission "[Transpower Capital Expenditure Input Methodology](#)" (13 December 2023) (**Capex IM Amendment Determination 2023**).

## Structure of this paper

**Table 1.1 Structure of this paper**

Section	Title	Description
<b>Chapter 1</b>	Introduction	Prefaces the paper.
<b>Chapter 2</b>	Our final decision	Summarises our decision for grid output measures and quality standards providing some background.
<b>Chapter 3</b>	Context and regulatory framework	Explains the various settings, how we formulated our reasoning and the legal requirements for us and Transpower.
<b>Chapter 4</b>	Quality standards and revenue linked grid output measures	Discusses in detail the decision and reasons behind revenue linked grid output measures, quality standards, and revenue at risk.
<b>Chapter 5</b>	Reporting only grid output measures	Discusses in detail the decision and reasons behind reporting only grid output measures.

## 2. Summary of our final decision

### Context

- 2.1. From RCP2 onwards we have been using grid output measures in conjunction with quality standards to monitor and incentivise the quality of service provided by Transpower. The measures chosen are based on the best information available at the time and the areas of focus for Transpower's performance and quality of service.
- 2.2. Over the course of several regulatory periods our aim is to have a progressively improved understanding of Transpower's performance and ongoing refinement of the suite of measures to ensure the service provided by Transpower meets the desired outcomes as per Part 4 of the Commerce Act 1986 (**the Act**).
- 2.3. Each measure is set by applying a number of different settings. We then evaluate the measure as a whole, including comparison with other measures, and its role in the suite of measures considering the purpose of Part 4 of the Act. We set the targets and quality standards to help us identify systematic issues in performance and quality of service, consistently with the purpose of Part 4.
- 2.4. Given the complexity of the quality monitoring framework, we will first briefly provide an overview of the status quo and of our final decision. Then in the relevant sections we will discuss in detail the various settings, background information, and reasons for our decision.

### Transpower's performance to date

- 2.5. In the third regulatory period (**RCP3**) we made some changes to Transpower's grid output measures from the previous period (**RCP2**).
- 2.6. We introduced three new reporting only measures for monitoring purposes. We also amended the four revenue linked measures with quality standards to ensure they can provide better incentive mechanisms. We also set quality standards related to selected asset health measures as a proxy for functional asset risk modelling, and a forward-looking measure of potential quality outcomes. Finally, we introduced a requirement for Transpower to provide us with updated information over RCP3 about asset and network risk modelling progress for selected asset classes.
- 2.7. We discuss Transpower's performance for these measures in detail in the relevant sections below. Table 2.1 presents a summary of performance for the grid output measures that are revenue linked and/or have a quality standard in both RCP2 and RCP3. Dark green indicates the quality limit for the reporting year was met. Red means the quality limit was not met. See Chapter 3 for details of quality limits and quality standards.

- 2.8. In RCP2 the asset health targets were volumetric and there was no associated quality standard. We used dark green to indicate where volumetric targets were met and red where the targets were not met. Empty cells are used when no reporting requirements and quality standards applied.
- 2.9. For measures which consistently scored “dark green” we are proposing minor refinements as RCP3 settings are deemed to be working. Conversely, where measures repeatedly scored “red” we are proposing deeper changes for RCP4.

**Table 2.1 Transpower’s performance in RCP2 and RCP3: grid output measures against quality limits and targets<sup>2</sup>**

Grid output measures		RCP2					RCP3		
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Grid performance</b>									
<b>GP1 - number of unplanned interruptions</b>	N-1 High economic - GP1A								
	N-1 material - GP1B								
	N - high - GP1C								
	N - material GP1D								
	N-1 Generator - GP1E								
	N generator - GP1F								
<b>GP2 - average duration of unplanned interruptions</b>	N-1 High economic - GP2A								
	N-1 material - GP2B								
	N - high - GP2C								
	N - material GP2D								
	N-1 Generator - GP2E								
	N generator - GP2F								
<b>Asset performance</b>									
<b>AP1 – High Voltage Direct Current (HVDC) Availability</b>									
<b>AP2 – High Voltage Alternate Current (HVAC) Availability</b>									
<b>Asset health<sup>3</sup></b>									
<b>AH - Asset health</b>	Power transformers								
	Outdoor circuit breakers								
	Tower Grillage Foundations								
	Tower protective Coatings <sup>4</sup>								
	Insulators								
	OD to ID conversion								

Legend:

**Red:** below quality limit or target

**Dark green:** above quality limit or target

No fill: Not applicable

<sup>2</sup> Table 2 has been constructed using Transpower website, “[Transpower RCP3 updates and disclosures](#)” (RCP3 Update and disclosures).

<sup>3</sup> For asset health, for RCP2 the targets were volumetric and there was no quality standard. We used the green to indicate volumetric targets were met and red to indicate when the targets were not met.

<sup>4</sup> Includes insulators.

### Summary of grid output measures in RCP4

- 2.10. For RCP4, Transpower's proposed package of measures is a refresh of the RCP3 grid output measures and quality standards. Overall, our final decision is to keep the grid output measures largely unchanged but to accept some of Transpower's proposed changes to the revenue linked measures and quality standards.
- 2.11. Following submissions on our draft decision we have made minor amendments to some of the measures and the IPP Determination to implement our decisions.
- 2.12. Our final decision is to:
- 2.12.1. introduce Customer Service measure 2 (**CS2**) and Asset Performance measure 1.2 (**AP1.2**) with changes from our draft decision;
  - 2.12.2. set Grid Performance measures 1 and 2 (**GP1** and **GP2**) Asset Health measure (**AH**) with implementation changes from our draft decision;
  - 2.12.3. set Asset Performance measures 1, 2, 3 and 4 (**AP1**, **AP2**, **AP3**, and **AP4**) as per our draft decision;
  - 2.12.4. discontinue Asset Performance measure 5 (**AP5**) and Grid Performance measure M (**GPM**) as per our draft decision;
  - 2.12.5. introduce Customer Service measures 1 (**CS1**) and Grid Performance measure 4 (**GP4**) as per our draft decision; and
  - 2.12.6. set the total revenue at risk for the revenue-linked grid output measures as per our draft decision.
- 2.13. Our decision seeks to strike the right balance between ensuring the targets and quality limits provide an incentive to perform efficiently, while recognising that some events are outside Transpower's control.
- 2.14. Table 2.2 summarises our proposed package of grid output measures, with further detail on the changes in chapters 4 and 5.



**Table 2.2 Summary of final decision for all grid output measures and quality standards for RCP4**

Measure name	Revenue at risk (\$m) <sup>5</sup>	Quality standard	Measure description	Summary of final decision
<b>Revenue linked measures with quality standard – Grid Performance</b>				
<b>GP1 – Grid Performance 1</b>	<b>7.6</b>	Yes	Number of unplanned interruptions across all points of service ( <b>POS</b> ) in a sub-category during a disclosure year.	Retain the measure with the following features: <ul style="list-style-type: none"> <li>- update the POS sub-categories in line with Transpower’s proposal.</li> <li>- set targets by using 8 years’ average of historic performance.</li> <li>- retain the cap and collar range of 1 standard deviations around target.</li> <li>- retain the quality limits at the collar.</li> <li>- retain pooling approach, assessing compliance with the quality standards across POS categories and across years.</li> </ul>
<b>GP2 – Grid Performance 2</b>	<b>7.6</b>	Yes	Average duration of unplanned interruptions greater than one minute, across all POSs in a sub-category during a disclosure year.	Retain the measure with the following features: <ul style="list-style-type: none"> <li>- update the POS sub-categories in line with Transpower’s proposal.</li> <li>- set targets by using 25 years’ average of historic performance as proposed by Transpower.</li> <li>- retain the cap and collar range of 1 standard deviation round target.</li> <li>- retain the quality limits at the collar.</li> <li>- retain pooling approach, assessing compliance with the quality standard across POS categories and across years.</li> <li>- retain threshold for extreme events.</li> </ul>

<sup>5</sup> Revenue amounts are in nominal dollars and not referenced to any particular year.

Measure name	Revenue at risk (\$ million)	Quality standard	Measure description	Summary of final decision
<b>Revenue linked measures with quality standard – Asset Performance</b>				
<b>AP1: Asset Performance 1 – HVDC capacity availability</b>	<b>1.0</b>	Yes	HVDC energy availability (%) of the inter-island HVDC system.	Retain the measure with the following features: <ul style="list-style-type: none"> <li>- set target as proposed by Transpower (98%).</li> <li>- set specified project allowances (with a limit) in the target.</li> <li>- set exclusion of planned outages due to resilience workstream, listed projects, enhancement, and development (<b>E&amp;D</b>) projects and major capex projects (<b>MCPs</b>).</li> <li>- retain the cap and collar range of 2% around target.</li> <li>- retain quality limit settings, retaining a dead band of 1% from collar.</li> </ul>
<b>AP2: Asset Performance 2 – HVAC selected asset availability</b>	<b>2.0</b>	Yes	Average percentage of time HVAC assets are available during a disclosure year.	Retain the measure with the following features: <ul style="list-style-type: none"> <li>- set target as proposed by Transpower, based on a forecast model of unavailability.<sup>6</sup></li> <li>- set exclusion of planned outages due to resilience workstream, listed projects, E&amp;D projects, and MCPs.</li> <li>- set the cap and collar based on a 1 standard deviation interval around mean of forecast model plus 300-hour deduction.</li> <li>- retain quality limit settings, retaining a dead band of 1 standard deviation from collar.</li> </ul>

<sup>6</sup> Transpower, “[Service Measures Report 2023](#)” (November 2023) ([Service Measures Report](#)), p 47-50, section 5.4.2.

Measure name	Revenue at risk (\$ million)	Quality standard	Measure description	Summary of final decision
<b>Measures with quality standard – Asset Health</b>				
<b>AH: Asset Health</b>	-	Yes	Proportion of assets in poor health for selected asset classes.	Retain the measure with the following features: <ul style="list-style-type: none"> <li>- introduce five new asset classes as proposed by Transpower.<sup>7</sup></li> <li>- set the quality limits based on an 80% benefit from the ‘with intervention’ improvement.</li> <li>- introduce pooling approach, assessing compliance with quality standard across asset classes, and across years.</li> </ul>
<b>Reporting only measures – Existing measures</b>				
<b>AP3: Asset Performance 3 – Return to service</b>	-	No	Extent that Transpower keeps to planned outage times in relation to selected HVAC assets.	Retain the measure as is, as proposed by Transpower.
<b>AP4: Asset Performance 4 – Return to services communications</b>	-	No	Extent that Transpower communicates delays to planned outage return times in relation to selected HVAC assets.	Retain the measure as is, as proposed by Transpower.
<b>AP5: Asset Performance 5 – N-security reporting</b>	-	No	Extent that Transpower has placed customers on N-security of supply.	Remove the measure, as proposed by Transpower.
<b>GPM – Grid Performance Momentary interruptions</b>	-	No	Number of momentary unplanned interruptions, <1min.	Remove the measure, as proposed by Transpower.

Measure name	Revenue at risk (\$ million)	Quality standard	Measure description	Summary of final decision and reasoning
<b>Reporting only measures – new measures</b>				
<b>GP4: Energy not served (previously labelled NR and GP3)</b>	-	No	Amount of energy demand that is not supplied due to a transmission interruption to supply.	Introduce the measure as proposed by Transpower, changing its name to GP4.
<b>CS1: Customer Service 1 – Overall customer satisfaction</b>	-	No	Average level of overall customer satisfaction based on responses in an annual customer engagement survey.	Introduce the measure, as proposed by Transpower.
<b>CS2: Customer Service 2 – New and enhanced grid connections</b>	-	No	Reports on delivery of new and enhanced grid connections.	Introduce the measure proposed by Transpower with amendments: <ul style="list-style-type: none"> <li>- set reporting areas looking at various metrics for enquiries, investigations, and delivery of new and enhanced connections.</li> </ul>
<b>AP1.2: HVDC operational availability</b>	-	No	Measures HVDC link's operational capacity limit calculated as the available operating capacity limit against the maximum capacity of the HVDC link.	Introduce the new measure: <ul style="list-style-type: none"> <li>- set this new measure to run in parallel to the existing AP1 and avoid confusion when discussing HVDC availability.</li> <li>- the capacity limit relies on the Wholesale Information Trading System and therefore includes the impact of the Wellington load.</li> <li>- measure introduced as reporting only with no quality standard or revenue linking.</li> </ul>

<sup>7</sup> Transpower, [Service Measures Report](#), p 53, section 5.7.1.

## Submissions on our draft decision

- 2.15. In response to our draft decision, we received three submissions and no cross-submissions:
- 2.15.1. Major Electricity Users' Group (**MEUG**) supports our approach and draft decision. It supports the existing measures and new measures introduced. MEUG also indicates it believes more work is required to develop a market impact measure and states it is happy to work with us on this in the future.<sup>8</sup> We discuss the implications for this measure in section 'Asset Performance 2.2 measure (AP2.2) – Market impact'.
  - 2.15.2. Consumer Advocacy Council (**CAC**) suggests we consider introducing new measures and quality standards focussed on Transpower's planning processes and approach to planning.<sup>9</sup> We discuss our analysis of this submission in the section 'Proposed new measure and quality standard on planning process and planning approaches'.
  - 2.15.3. Transpower's submission makes a number of recommendations for changes to some measures and a range of recommendations for amendments to the IPP determination.<sup>10 11</sup> We discuss the substantial points below in the relevant sections.

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<sup>8</sup> [Major Electricity Users' Group \(MEUG\) "MEUG's Submission on RCP4 draft decision" \(26 June 2024\) \(MEUG's submission on draft decision\)](#), para 13-14.

<sup>9</sup> [Consumer Advocacy Council \(CAC\) "Submission on RCP4 draft decision" \(26 June 2024\) \(CAC's submission on draft decision\)](#), para 18.

<sup>10</sup> [Transpower "Submission on RCP4 draft decision" \(26 June 2024\) \(Transpower's submission on draft decision\)](#), para 55-72.

<sup>11</sup> [Transpower "Submission on Draft Transpower IPP Determination 2025" \(26 June 2024\) \(Transpower's submission on Draft IPP determination\)](#).

### 3. Context and regulatory framework

- 3.1. We are required to set Transpower's IPP in accordance with s 53ZC of the Act. The Act allows us to set the IPP using any process and in any way the Commission sees fit, but we must apply the relevant input methodologies (**IMs**). In practice, for grid output measures, this means the Capex IM.
- 3.2. We are required to apply s 53M(1)(b) of the Act by specifying the quality standards that must be met by Transpower. The Act allows us to set quality standards in any way we consider appropriate, such as using targets, bands, or formulae.
- 3.3. Under s 53M(2) we may include incentives to maintain or improve Transpower's quality of supply, which may include penalties, rewards, compensation schemes, and reporting requirements for failure to meet quality standards.
- 3.4. Under the Act and the Capex IM we can set the following type of quality measures:<sup>12</sup>
- 3.4.1. revenue linked grid output measures in conjunction with a quality standard. In RCP3, GP1, GP2, AP1, and AP2 fall within this category;
  - 3.4.2. non-revenue linked grid output measures in conjunction with a quality standard. In RCP3 only AH measure falls within this category;
  - 3.4.3. reporting-only grid output measures. In RCP3, AP3, AP4, AP5, and GPM fall within this category; and
  - 3.4.4. revenue-linked grid output measure without a quality standard (none in this category in RCP3).

#### Setting grid output measures and quality standards

- 3.5. In setting the grid output measures, we are primarily seeking to provide Transpower with incentives to deliver its services at a quality that reflects consumer demands, in line with the Part 4 purpose.<sup>13</sup>

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<sup>12</sup> We are required by the Capex IM to set:

- Revenue-linked grid output measures, each of which includes a cap, collar, grid output incentive rate, and grid output target including at least one or more asset performance measures and at least one or more measures of grid performance (clause 2.2.2(1)(b) and (d)).
- Asset health grid output measures which may be revenue-linked or not revenue-linked (clause 2.2.2(1)c).

<sup>13</sup> We must also apply the criteria in the Capex IM Schedule A clauses A4-A6 which include the extent to which each measure is a recognised measure of risk in the supply and performance of electricity transmission services, and the relationship between the grid output measure and expenditure by Transpower.

- 3.6. For this purpose, we can set revenue linked grid output measures where Transpower will be financially rewarded for outperforming grid output targets (**targets**) and penalised for underperforming targets.<sup>14</sup>
- 3.7. The extent of potential financial rewards/penalties depends on the distance between the target and the cap/collar that we set, and the total revenue at risk.<sup>15</sup>
- 3.8. We also determine applicable quality standards for the purpose of compliance with the Act.<sup>16</sup> Quality standards set by us may differ from those proposed by Transpower, and Transpower is not required to propose quality standards to be associated with its grid output measures in its proposal. Breaching the quality standard is a serious matter, and we may investigate and take enforcement action, including seeking pecuniary penalties, under the Act.
- 3.9. We set quality standards to impose the minimum level of acceptable performance or quality demanded by consumers to promote Part 4 purpose. To ensure that the level is calibrated correctly, we usually set quality standards once we have sufficiently developed models and historic data. The quality standard may be set at any level where we consider an appropriate incentive would be provided under the Act.
- 3.10. In some cases, we measure compliance against the quality standard by ‘pooling’ across sub-categories for a grid output measure. Where we take a pooling approach, we set a ‘quality limit’ for each sub-category and compliance is achieved by meeting the quality limit for a minimum number of sub-categories.
- 3.11. We may also pool across years, with compliance achieved by meeting the quality limits across a minimum number of years.
- 3.12. Figure 3.1 provides an example of how the incentives operate for the revenue-linked grid output measures with quality standards.

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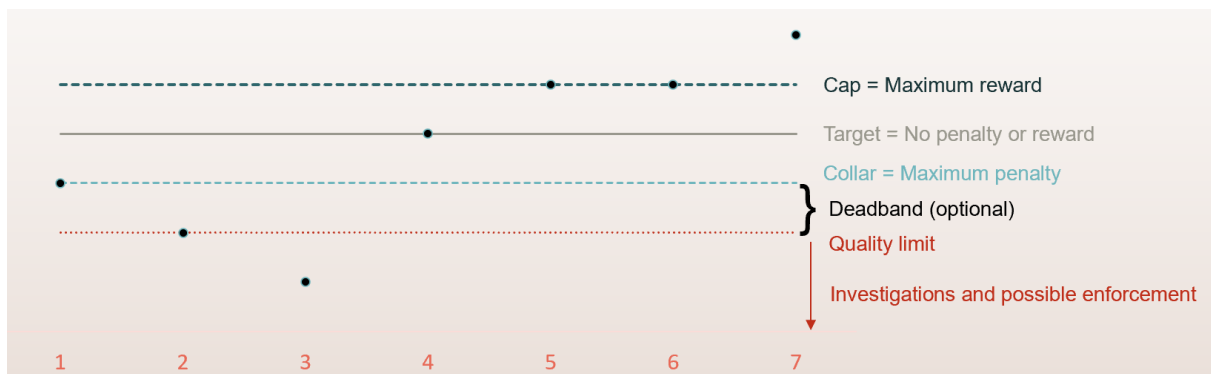
<sup>14</sup> The Act, section 53M(2); The incentive reward or penalty applies up until the cap (maximum reward) or collar (maximum penalty) is reached and where no further reward or penalty will apply. See Figure 3.1 for more information.

<sup>15</sup> We may also link the quality standard to a non-financial incentive mechanism, such as special purpose reporting requirements: see the Act s 53M(2)(d).

<sup>16</sup> The Act, section 53M(3).

- 3.13. In Figure 3.1, we use example data to show the different possible outcomes for Transpower as it achieves different levels of performance. From left to right, in year 1 Transpower hits the collar, resulting in a penalty equivalent to the entire revenue at risk for the measure or sub-category. In the subsequent two years (years 2-3) performance is still below the collar therefore the maximum penalty continues to apply. Performance is also at or below the quality limit. In year 4 performance improves and the target is reached. No penalty or reward applies. In the subsequent years 5-7 Transpower continues to improve its performance, outperforms the target and the maximum reward is achieved.
- 3.14. The quality standard setting will determine when a breach of the IPP occurs, and statutory penalties could apply. If, for example, there is no pooling across years for this measure, the quality standard is equivalent to the quality limit, and in year 3 the quality limit is not reached. This means the quality standard is breached and penalties, or other enforcement action, could apply. In contrast, if the quality standard is pooled across years (quality limit to be met in one year over a three- year period), Transpower would have complied with the quality standard and no statutory penalties could apply.

**Figure 3.1 Example of interaction between cap, target, collar, quality limit**



- 3.15. Lastly, we may also have measures with a quality standard and no revenue linking (at present, AH). This is an asymmetric incentive in that Transpower may be penalised if the quality standard is not met but receives no financial reward for any level of performance.
- 3.16. The reasoning behind having only a quality standard and no revenue linking, is that we want to set a quality standard to establish the minimum level of expected performance, but we do not want to set a performance level to be targeted, as that may be inappropriate and incentivise over-investment into the grid.



**Non-revenue linked measures without a quality standard**

- 3.17. We use non-revenue-linked measures without a quality standard to better understand Transpower's performance and provide the information to customers. In other words, these are reporting-only requirements. Our proposed RCP4 reporting requirements include measures AP1.2, AP3, AP4, CS1, CS2, and GP4.
- 3.18. We use reporting-only measures to gather information to set optimal quality measures in future periods.

## 4. Quality standards and revenue linked grid output measures

- 4.1. In this chapter we discuss our approach to setting revenue linked grid output measures and quality standards. We discuss:
- 4.1.1. how we have set measures of grid performance GP1 and GP2;
  - 4.1.2. how we have set asset performance measures AP1 and AP2;
  - 4.1.3. how we have set the asset health measure AH; and
  - 4.1.4. our approach to allocating revenue at risk across the revenue linked grid output measures.

### Grid Performance 1 measure (GP1)

- 4.2. Our final decision is to retain the GP1 measure as set out in Transpower's proposal (with some updates as set out in the draft). Our final decision is to amend the POS list in the IPP Determination from our draft decision following a submission from Transpower.
- 4.3. GP1 measures the number of unplanned interruptions of supply across six POS sub-categories. We define an unplanned interruption as:

means any **interruption** for a period of one minute or longer in respect of which less than 24 hours' notice, or no notice, was given, either to the public or to **customers** affected by the **interruption** and excludes:<sup>17</sup>

- a) any unplanned interruptions originating on another party's system and where the Transpower grid operated correctly;
- b) any unplanned interruptions to the auxiliary load used by electricity generator assets;
- c) for all point of service sub-categories other than GP1E, GP1F, GP2E, and GP2F:
  - a. load restrictions achieved completely by the use of controllable load, interruptible load or demand-response; and
  - b. automatic under-frequency load-shedding (**AUFLS**); and
  - c. unplanned interruptions for which all load is supplied by a backfeed or by embedded generation.

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<sup>17</sup> Commerce Commission, "[Transpower Individual Price Quality Path Determination 2020](#)" (14 November 2019) (**RCP3 IPP**), p 19.

4.4. Table 4.1 summarises Transpower’s proposal and our final decision for the GP1 measure. Table 4.2 shows the final decision settings in detail.

**Table 4.1 Summary of Transpower proposal and our final decision for GP1**

Element	Transpower proposal	Final decision
Revenue at risk (\$ 000)	\$8,314	\$7,565
<b>Points of Service settings</b>	<ul style="list-style-type: none"> <li>Update the allocation POS to each sub-category using 2023 load forecast.</li> <li>Use the historic sub-category averages to adjust targets when setting targets for new POS.</li> </ul>	<ul style="list-style-type: none"> <li>Update the allocation POS to each sub-category using 2023 load forecast.</li> <li>Use the historic sub-category averages to adjust targets when setting targets for new POS introduced for RCP4.</li> </ul>
<b>Grid output target</b>	<ul style="list-style-type: none"> <li>Set the targets by using: <ul style="list-style-type: none"> <li><b>5-year average</b> for equipment-related unplanned interruptions; and</li> <li>the <b>25-year average</b> for non-equipment related causes.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Set the targets by using: <ul style="list-style-type: none"> <li><b>8-year average</b> for all causes.</li> </ul> </li> </ul>
<b>Cap and collar</b>	<ul style="list-style-type: none"> <li>Cap and collar set at <b>+/- 1 standard deviation</b> from the target.<sup>18</sup></li> </ul>	<ul style="list-style-type: none"> <li>Cap and collar set at <b>+/- 1 standard deviation</b> from the target.<sup>19</sup></li> </ul>
<b>Quality standard</b>	<ul style="list-style-type: none"> <li>Quality limit set at collar.</li> <li><b>Pooling across sub-categories</b> for quality standard</li> <li><b>Pooling across years</b> for quality standard: <ul style="list-style-type: none"> <li>No compliance assessment for disclosure year (<b>DY</b>) 2026;</li> <li>Comply with quality limit for DY 2027 or have complied in DY 2026;</li> <li>For remainder of RCP4 comply in DY or comply in previous two DYs.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Quality limit set at collar.</li> <li><b>Pooling across sub-categories</b> for quality standard.</li> <li><b>Pooling across years</b> for quality limits: <ul style="list-style-type: none"> <li>comply with the measure of grid performance in DY; or</li> <li>have complied in the previous two DYs.</li> </ul> </li> </ul>

<sup>18-19</sup> Except for the ‘Material Economic Consequences’ sub-categories where a 1.5 standard deviation was applied, as greater variation was observed in the data.

**Table 4.2 GP1 final decision settings**

Measure and sub-category GP1: number of interruptions (per annum)	Cap (number)	Target (number)	Collar (number)	Quality Limit (number)	Incentive rate (\$ per event)	\$ at risk per annum
<b>N-1 security high economic consequence – GP1A</b>	0	4	8	8	789,666	3,158,663
<b>N-1 security material economic consequence – GP1B</b>	4	21	38	38	170,537	2,899,122
<b>N security high economic consequence – GP1C</b>	0	2	4	4	185,592	371,184
<b>N security material economic consequence – GP1D</b>	4	15	26	26	57,795	635,741
<b>N-1 security generator – GP1E</b>	4	9	14	14	50,000	250,000
<b>N security generator – GP1F</b>	4	7	10	10	83,333	250,000

4.5. Below we set out the Verifier and stakeholder’s views, and our analysis. We received one submission on our draft decision related to this measure. We discuss the submission and additional analysis below.

### What Transpower proposed

4.6. Table 4.3 shows Transpower’s proposed setting for RCP4.

**Table 4.3 Transpower’s proposed settings for GP1 – number of interruptions**

Category	Cap	Target	Collar	Quality Limit
<b>N-1 High economic - GP1A</b>	0	5	10	10
<b>N-1 material - GP1B</b>	5	24	43	43
<b>N - high economic - GP1C</b>	0	2	4	4
<b>N - material GP1D</b>	6	22	38	38
<b>N-1 Generator - GP1E</b>	5	10	15	15
<b>N generator - GP1F</b>	7	12	17	17

- 4.7. For targets, caps, collars, incentives, and quality standards Transpower is proposing:
- 4.7.1. to use the 5-year average for equipment-related unplanned interruptions, as equipment failures have reduced in recent years, and to use the 25-year average for non-equipment related causes;
  - 4.7.2. for new POS, where no historical data exists, to use the average of the other POS in the sub-category for determining the GP1 targets;
  - 4.7.3. to exclude from historical data, events due to automatic under-frequency load shedding (**AUFLS**), as well as events that did not originate in Transpower's network;
  - 4.7.4. to set the caps, collars and quality limits for each sub-category at +/- one standard deviation from the target based on the data for the relevant POS, except for the 'Material Economic Consequences' sub-categories where a 1.5 standard deviation was applied, as greater variation was observed in the data;
  - 4.7.5. to base the proposed incentive rates on the economic value and the spread (how far the cap/collar is from the target) for each sub-category;
  - 4.7.6. to retain the current approach for setting the quality standards. This includes pooling across disclosure years and sub-categories, which are assessed against annual quality limits standard. The annual quality limits standard proposed for GP1 for RCP4 aligns with the collar values; and
  - 4.7.7. to set the requirement for meeting the quality standards as four or more of the six POS sub-category quality limits for each measure are not exceeded for the DY and:
    - (a) for DY 2026, there is no compliance assessment;
    - (b) for DY 2027, either comply with the measure of grid performance in the disclosure year or have complied in DY 2026; and
    - (c) for DY 2028 to DY 2030, either comply with the measure of grid performance in disclosure year, or if not, then to have complied in the previous two disclosure years.

### Verifier comments and stakeholder submissions

- 4.8. The Verifier agreed with Transpower’s approach to GP1. However, the Verifier noted that by using historical averages of network performance to set targets there is a risk, if network performance deteriorates over time, that this performance will be ‘baked in’ when averaging historical performance to set targets.<sup>20</sup>
- 4.9. Meridian noted that Transpower’s approach risked incorporating any deterioration in network performance into the target.<sup>21</sup>

### Our review of Transpower’s proposed settings

- 4.10. Unplanned interruptions negatively impact customers. By measuring the number of unplanned interruptions, we are measuring the quality of the service provided to customers. We use the quality standard and revenue linking as an incentive for Transpower to provide services at a quality demanded by consumers.<sup>22</sup>
- 4.11. Consistent with our draft decision, our final decision is to retain GP1 with certain modifications. In coming to our draft decision, we reviewed Transpower’s proposed updates and modifications to the GP1 settings. Our review assessment of this measure focused on:
- 4.11.1. setting the quality target, and caps and collars;
  - 4.11.2. assessing compliance with the quality standard; and
  - 4.11.3. POS settings.
- 4.12. Grid performance measures quantify interruptions of supply across six supply and generation POS sub-categories.<sup>23</sup> The POS sub-categories proposed by Transpower are the same as RCP3. The POS categorisations are based on:
- 4.12.1. security standards;<sup>24</sup>
  - 4.12.2. whether it is a generation or supply POS; and
  - 4.12.3. whether the supply connection is of material or high economic consequence.

<sup>20</sup> GHD Advisory and Castalia, [IV Report](#), p 469.

<sup>21</sup> Meridian, [“Meridian’s submission on RCP4 Issues paper” \(21 February 2024\) \(Meridian’s submission on Issues paper\)](#), p 2, para 7.

<sup>22</sup> Commerce Act s52A(1)(b).

<sup>23</sup> POS comprise grid exit points (**GXP**) and grid injection points (**GIP**).

<sup>24</sup> Security standards are determined by the Electricity Authority under s 8 of the Electricity Industry Act 2010. For more information on security standards, see Electricity Authority, [“Security Standards Assumptions Document \(14 November 2012\)”](#).

- 4.13. Table 4.4 shows the number of POS per sub-category in RCP3 and proposed for RCP4 by Transpower.

**Table 4.4 Number of POS per sub-category in RCP3 and proposed for RCP4**

Level of service	Sub-category	RCP3 Actuals	Transpower RCP4 proposal	% change
<b>N-1 security</b>	High Economic Consequence	48	37	-23%
	Material Economic Consequence	95	105	11%
	Generator	44	41	-7%
	N-1 security total	187	183	-2%
<b>N-security</b>	High Economic Consequence	12	9	-25%
	Material Economic Consequence	21	26	24%
	Generator	9	10	11%
	N-security total	42	45	7%
<b>Total</b>		<b>229</b>	<b>228</b>	<b>0%</b>

- 4.14. For assigning interruptions to new POS, Transpower used the average performance of other POS in the respective sub-category. Although Transpower's proposed treatment of new POS is not optimal, we consider it a reasonable option in terms of feasibility and simplicity.
- 4.15. Ideally, new points of supply should perform better than existing ones (of the same sub-category) because of the lower asset age. Using the average performance of other similar POS means that, over time, the target becomes less stringent when more and more POS are introduced. However, we can use the more recent average performance to set appropriate targets, as discussed below.
- 4.16. Transpower's approach to using load forecast to allocate POSs to sub-categories resulted in a change in the number of POSs in the sub-categories. The updated POS list and categorisation reflect the changes in service provided since the commencement of RCP3.
- 4.17. A significant change is that the number of high economic consequence POS proposed for RCP4 is a fifth lower than the number of POS within the same sub-categories in RCP3. These are the highest criticality POS.
- 4.18. We are satisfied that Transpower's approach is appropriate because future demand may not follow historical trends.

- 4.19. Our final decision is therefore to approve Transpower’s proposed RCP4 sub-categories and POS allocation methodologies for both new and existing POS (this is consistent with our draft decision). We consider our final decision is appropriate because it provides a time series of data on performance of the grid while also being forward looking, and simple to implement.

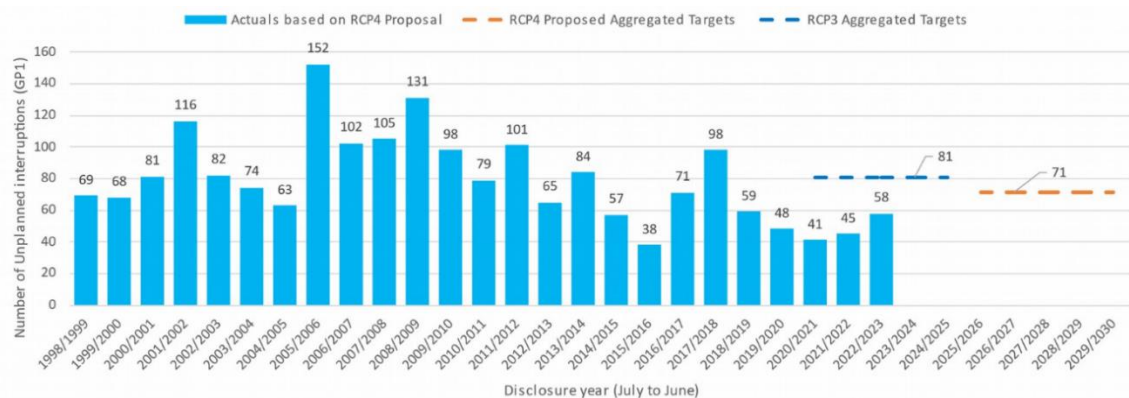
#### Additional analysis following draft decision feedback

- 4.20. In its submission on our draft decision, Transpower suggests some minor changes to correct typographical errors in the IPP Determination POS list.<sup>25</sup> This list will be used to calculate performance for GP1, GP2, and GP4 in RCP4.
- 4.21. Having considered the submission, our final decision is to update the IPP determination list of POS as per submission.

#### *Grid output target*

- 4.22. Our final decision is to set Transpower’s targets based on an eight-year average of historic performance, as per Table 4.2. This is the same as our draft decision. Our view is that Transpower’s proposed approach of using 5-year average for equipment-related unplanned interruptions and the 25-year average for non-equipment related causes does not appropriately reflect its improvement in performance. Figure 4.1 shows the historical data Transpower used to quantify its proposed settings for GP1.<sup>26</sup>

**Figure 4.1 Historical GP1 performance and Transpower’s proposed targets<sup>27</sup>**



<sup>25</sup> [Transpower’s submission on draft decision](#), p 11, para 62 and [Transpower’s submission on Draft IPP determination](#), p 82, Schedule F.

<sup>26</sup> Transpower, [Service Measures Report](#), section 5.1.2, figure 2.

<sup>27</sup> Transpower, [Service Measures Report](#), p 37 figure 2.



- 4.23. Figure 4.1 shows there is an observable trend with the number of interruptions gradually reducing over time. Transpower has identified the following reasons for this improvement in unplanned interruptions:
- 4.23.1. fewer interruptions caused by equipment failures with a decrease of 43% over the current decade since 2014, compared with the previous decade between 2004-2013;
  - 4.23.2. fewer interruptions due to human error interruptions, with a decrease of 36% over the same periods as above;
  - 4.23.3. several other factors such as:
    - 4.23.3.1. asset management improvements in asset health, replacement and refurbishment planning, and maintenance processes;
    - 4.23.3.2. grid security improvements with system changes;
    - 4.23.3.3. improving risk mitigation planning for outages; and
    - 4.23.3.4. programmes to reduce human error events during maintenance and project activities.<sup>28</sup>
- 4.24. Performance has improved largely due to the increased base capex and opex since RCP1, and improvements in Transpower's processes. As set out in our draft, in our view, a shorter historic average (eight years rather than 25 years as proposed by Transpower) better shares the benefits of those recent improvements between Transpower and consumers.
- 4.25. Our final decision is to use eight years of historical performance data from the beginning of RCP2 to develop our proposed settings, as this reflects the recent observable improvement in quality.
- 4.26. Because the number of POSs within the sub-categories has changed since RCP2, for our final decision we have used the total number of interruptions to calculate our quality targets, instead of using interruptions per sub-category. The average number of total annual interruptions since RCP2 is 57, while Transpower's RCP4 target has an annual total of 75 interruptions. As with our draft decision, we have based our final settings by scaling Transpower's targets, to a total of 57 interruptions.

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<sup>28</sup> Transpower, [Service Measures Report](#), section 3.6.

4.27. We tested the reasonableness of our final decision RCP4 quality targets on actual performance since RCP2. Table 4.5 below shows our comparison of Transpower’s and our final decision targets against actual performance since RCP2.<sup>29</sup>

**Table 4.5 GP1 - Transpower’s performance since RCP2; Transpower’s proposed RCP4 collars; our final decision RCP4 collars**

GP1 Sub-category	Final RCP4 decision collar	Transpower RCP4 proposal collar	2015/2016 actual	2016/2017 actual	2017/2018 actual	2018/2019 actual	2019/2020 actual	2020/2021 actual	2021/2022 actual	2022/2023 actual
N-1 high economic	8	10	1	10	8	3	2	0	1	4
N-1 material	38	43	13	21	47	19	25	12	18	11
N high economic	4	4	2	0	3	4	2	1	1	3
N material	28	38	12	13	28	10	10	19	12	15
N-1 generator	12	15	7	20	7	11	2	6	6	12
N generator	10	17	3	7	5	12	7	3	7	13

Legend: **Red:** below Transpower’s proposed collar  
**Dark green:** below final decision and Transpower proposed’ collar  
 No colour: above collar

4.28. Table 4.5 shows that:

4.28.1. under Transpower’s proposed settings there would only be two actual measures below the collar (shown in red). One was in 2017/2018 for the N-1 material sub-category, and the other was in 2016/2017 for the N-1 Generator sub-category. Most of the results (shown in black or with no filling) were above the target; and

<sup>29</sup> Transpower, “[RCP4 RT02 Output Incentives Model \(November 2023\)](#)”.

- 4.28.2. under our final decision settings, six actual measures (or 12.5%) of performance (shown in red and dark green) would be below the collar.<sup>30</sup> None would result in Transpower contravening the quality standard because of the pooling approach.<sup>31</sup> This suggests Transpower's proposed settings are generous which could result in positively biased incentive outcomes. The 12.5% of poor performance better aligns with the spread in performance we expect when setting the collar to one standard deviation.<sup>32</sup>
- 4.29. As set out in our draft decision, our analysis suggests that Transpower's proposed targets for GP1 do not adequately reflect the impact of investments since RCP1, as Transpower has been able to reach performance levels above the target and capture increased benefits which should be shared with customers.
- 4.30. Quality standards should incentivise Transpower to make investments in the grid that are for the long-term benefit of consumers. One benefit is better quality transmission services through decreased interruptions of service.<sup>33</sup>
- 4.31. Historic data indicates the number of interruptions is declining, indicating an improvement in the quality of service. As Transpower states this is largely due to investments and improvement in its asset management processes.
- 4.32. We consider the settings of the performance measures should reflect this gain and that it is more appropriate to base the settings on more recent performance, considering the strength of the relationship between base capex and interruptions. This is consistent with the requirements of cl. A7(b) of the Capex IM.

#### *Cap and collar*

- 4.33. Since RCP2, we have set the cap and collar at a level we consider achievable and appropriate to incentivise good performance. If the target is set at the expected level of performance, or mean value (as per above), the cap and collar would provide a range or confidence interval around the target.

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<sup>30</sup> 6 (in red and green) out of 48 reported values are at or below both collars (proposed by Transpower or our final decision).

<sup>31</sup> As discussed below, pooling is used to consider overall trends rather than single observations in the presence of small samples.

<sup>32</sup> As discussed below, we set cap and collar at 1 standard deviation from the target. Assuming the target is the correct expected value, from a statistical perspective, this means that in 68% of the cases, values should fall within cap and collar. This would leave about 16% of observations that would fall below the collar.

<sup>33</sup> The Act, s 52A(1).

- 4.34. Our final decision is to maintain this approach for RCP4. We consider it is the most consistent with cl. A7(d) of the Capex IM, which specifies the caps and collars are to be set in relation to the plausible range of the relevant grid outputs likely to be delivered, considering capex and effects of unrelated factors which may impact outputs.
- 4.35. Consequently, our final decision is to set the caps and collars for each sub-category at +/- one standard deviation from the target based on the data for the relevant POS, except for the 'Material Economic Consequences' sub-categories, where a 1.5 standard deviation was applied "as greater variation was observed in the data" consistent with Transpower's proposal.<sup>34</sup> In its proposal Transpower demonstrated that the cap and collar ranges it had proposed were supported by analysis and we consider those ranges to be appropriate for RCP4.

#### *Quality standard*

- 4.36. Our final decision is to set the quality standard so that it is met if four or more of the six POS sub-category quality limits for each measure are met for the disclosure year, or in the previous two disclosure years. This is consistent with what Transpower has proposed and a continuation of our approach in RCP3.
- 4.37. We want the quality standard to be met not only when the performance is at the lower tail of expected performance, or in other words, when performance is below a minimum level.
- 4.38. Our focus is on the overall performance trend not individual observations. Therefore, we have continued to set pooling across years and sub-categories to ensure we are measuring long-term performance to promote service delivered at the level demanded by customers.
- 4.39. We are maintaining our approach to measuring quality over multiple periods because, in our view, the existing approach is effective at providing the right incentives.
- 4.40. In our RCP3 decision, we introduced pooling across disclosure years and sub-categories because it increased the effective sample size of the individual grid performance measures. Pooling reduces the risk of quality breaches from volatility due to low numbers of observations in a point of service category, and to filter single-year performance issues in individual categories. We consider these reasons are still relevant.

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<sup>34</sup> Transpower, [Service Measures Report](#), p 37, figure 2.

- 4.41. Our final decision is to update the annual quality limits, retaining the compliance standard which applies across regulatory periods. We do not agree with Transpower's proposal to have no compliance assessment for DY 2026 or a special requirement for DY 2027.
- 4.42. Having no compliance requirement for DY 2026 would effectively mean removing the quality standard for 2026. This approach would prevent the ongoing monitoring of performance, which is contrary to the requirements of cl. A5 of the Capex IM.

### **Grid Performance 2 measure (GP2)**

- 4.43. Our final decision is to retain the GP2 measure as set out in Transpower's proposal (with some updates as set out in the draft). Different from our draft decision is the POS list in the IPP Determination, our final decision is to amend the list following a submission from Transpower.
- 4.44. GP2 measures the average duration of unplanned interruptions greater than one minute, across six supply and generation POS sub-categories.
- 4.45. Table 4.6 summarises Transpower proposal and our final decision for the GP2 measure. Table 4.7 shows the final decision settings in detail.

**Table 4.6 Summary of Transpower’s proposal and our final decision for GP2**

Element	Transpower proposal	Final decision
Revenue at risk (\$ 000)	<b>\$8,314</b>	<b>\$7,565</b>
<b>Grid output target</b>	<ul style="list-style-type: none"> <li>Set the targets by using the <b>25-year average</b> for all causes.</li> </ul>	<ul style="list-style-type: none"> <li>Set the targets by using the <b>25-year average</b> for all causes.</li> </ul>
<b>Points of Service settings</b>	<ul style="list-style-type: none"> <li>Update the allocation POS to each sub-category using 2023 load forecast.</li> <li>Use the historic sub-category averages to adjust targets when setting targets for new POS.</li> </ul>	<ul style="list-style-type: none"> <li>Update the allocation POS to each sub-category using 2023 load forecast.</li> <li>Use the historic sub-category averages to adjust targets when setting targets for new POS introduced for RCP4.</li> </ul>
<b>Cap and collar</b>	<ul style="list-style-type: none"> <li>Cap and collar set at <b>+/- 1 standard deviation</b> from the target.<sup>35</sup></li> </ul>	<ul style="list-style-type: none"> <li>Cap and collar set at <b>+/- 1 standard deviation</b> from the target.<sup>34</sup></li> </ul>
<b>Quality standard</b>	<ul style="list-style-type: none"> <li>Quality limit set at collar</li> <li><b>Pooling across subcategories</b> for quality standard.</li> <li><b>Pooling across years</b> for quality standard: <ul style="list-style-type: none"> <li>No compliance assessment for DY 2026;</li> <li>Comply with quality standard for DY 2027 or have complied in DY 2026;</li> <li>For remainder of RCP4 comply in DY or comply in previous two Dys.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Quality limit set at collar</li> <li><b>Pooling across subcategories</b> for quality standard.</li> <li><b>Pooling across years</b> for quality standard: <ul style="list-style-type: none"> <li>comply with the quality standard in DY; or</li> <li>have complied in the previous two DYs.</li> </ul> </li> </ul>

<sup>34-35</sup> Except for the ‘Material Economic Consequences’ sub-categories where a 1.5 standard deviation was applied, as greater variation was observed in the data.

**Table 4.7 Summary of final decision for GP2**

GP2: average duration of interruptions (per annum)	Cap (minutes)	Target (minutes)	Collar (minutes)	Quality Limit (minutes)	Incentive rate (\$ per min)	\$ at risk per annum
<b>N-1 security high economic consequence – GP2A</b>	23	73	123	123	63,173	3,158,663
<b>N-1 security material economic consequence – GP2B</b>	27	74	121	121	61,683	2,899,122
<b>N security high economic consequence – GP2C</b>	15	66	117	117	7,278	371,184
<b>N security material economic consequence – GP2D</b>	-	104	208	208	6,113	635,741
<b>N-1 security generator – GP2E</b>	30	225	420	420	1,282	250,000
<b>N security generator – GP2F</b>	-	123	246	246	2,033	250,000

4.46. Below we set out the Verifier’s view and Transpower’s response. We also set out our analysis and draft decision. We received one submission (but no cross submissions) on our draft decision related to this measure. We discuss the submission and our final decision.

#### **What the Verifier said and Transpower’s response**

4.47. The Verifier supported retaining the GP2 measure, but suggested that in future, Transpower should consider setting targets that are not linked to historical averages, as there is a risk this method can result in deteriorating targets over time.<sup>36</sup>

4.48. In its proposal, Transpower acknowledged the Verifier’s view that poor historical performance may result in deteriorating targets over time, and minimum standards may be more appropriate, by stating that it had consulted on its proposed settings and stakeholders were satisfied with the current levels of reliability on the grid.<sup>37</sup>

#### **Our final decision and reasons**

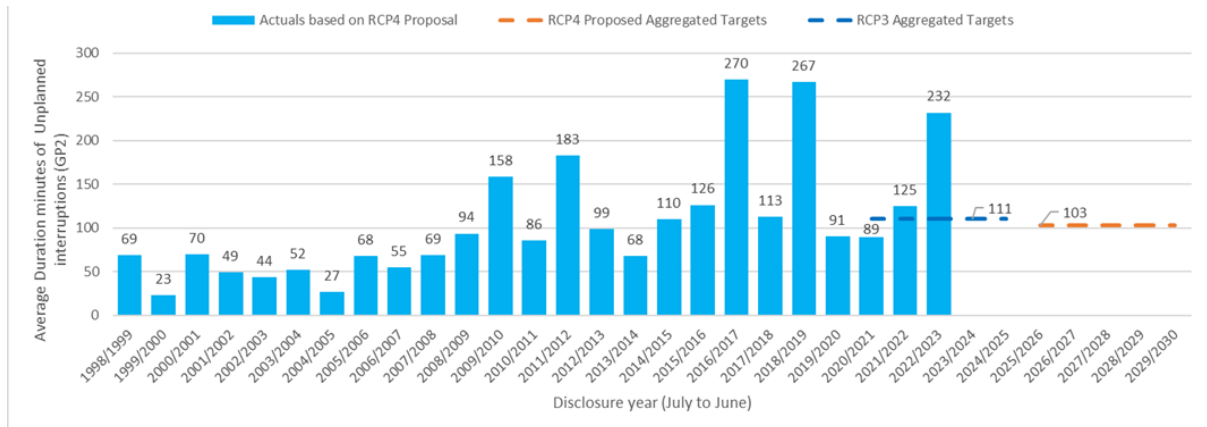
##### *Grid output target*

4.49. Figure 4.2 shows historical GP2 performance since 1998/1999.

<sup>36</sup> GHD Advisory and Castalia, [IV Report](#), p 469.

<sup>37</sup> Transpower, [Service Measures Report](#), p 39.

**Figure 4.2 Historical performance for GP2, RCP3 target and Transpower’s proposed target<sup>38</sup>**



4.50. Figure 4.2 illustrates that, in contrast to the improving trend on the number of interruptions (GP1), the average duration of interruptions has been increasing.

4.51. Table 4.8 summarises the key outage incidents that occurred for years with the highest average duration of unplanned interruptions in 2016/2017, 2018/2019, and 2022/2023.<sup>39</sup>

**Table 4.8 Key outage incidents in disclosure years with highest average duration of unplanned interruptions since RCP2**

Disclosure year	Key outage incidents
<b>2016/2017 – highest average duration of unplanned interruptions since 1998/1999.</b>	<ul style="list-style-type: none"> <li>Longest average duration was due to abnormally long outage of 14,275 minutes at Black Point caused by an internal fault on a transformer at Waitaki.</li> </ul>
<b>2018/2019 – second highest average duration of unplanned interruptions since 1998/1999.</b>	<ul style="list-style-type: none"> <li>Long duration outages were due to failure of protection relays at Maraetai, explosive failure of current transformers (CT) at McKee (both were type failures), and disconnecter insulator failure at Castle Hill.</li> <li>Wairakei supply transformers tripped out causing a major outage in Taupo.</li> </ul>
<b>2022/2023 – third highest average duration of unplanned interruptions since 1998/1999.</b>	<ul style="list-style-type: none"> <li>An interruption at Manapouri (24,276 minutes capped at 10,080 minutes) due to failure of a bus coupler after planned maintenance.</li> </ul>

<sup>38</sup> Transpower, [Service Measures Report](#), p 37, figure 2.

<sup>39</sup> Transpower IPP information disclosure information.



- 4.52. While the major outage events set out in Table 4.8 provide some explanation for the average outage durations exceeding 200 minutes in the 2016/2017, 2018/2019 and 2022/2023 disclosure years, we note that the average outage duration trend appears to be increasing over time.
- 4.53. As set out in our draft decision, we agree with the Verifier that using historic average outage duration data may not be appropriate for calculating future GP2 settings. This is because increasing outage durations over time will increase the average outage duration used to set aggregate targets, and reward poor past performance.
- 4.54. We acknowledge that not all outages will lead to loss of supply or loss of generation events, and the GP2 measure covers both N-1 and N security sites. There has been an increase in the aggregate average outage duration since 1998/1999.
- 4.55. We reviewed the submission on Transpower's RCP4 consultation on this topic, Meridian submitted that it agreed with Transpower's proposed GP2 targets.<sup>40</sup> While it appears that stakeholders are comfortable with the grid performance they are experiencing, in our draft decision we asked submitters if they had any concerns about or are experiencing increasing outage durations and what impact this has. In response to our draft decision, we received no additional submissions on this point. Therefore, we have no evidence that stakeholders are uncomfortable with the GP2 targets we have set.
- 4.56. In its RCP4 proposal, Transpower proposed using a 25-year historical dataset to calculate the GP2 settings and targets. This has resulted in a proposed GP2 aggregated target of 103 minutes, which is lower than the RCP3 setting of 111 minutes.
- 4.57. In our draft decision, we have accepted Transpower's approach of using 25-year historical dataset to calculate settings and have agreed with Transpower's proposed targets, which are in aggregate more stringent than the RCP3 settings. This includes a seven-day cap on the duration of interruptions, as is the case in the RCP3 GP2 settings. This cap will moderate the effect of long-duration interruptions that have distorted the GP2 results in the 2016/2017, 2018/2019 and 2022/2023 disclosure years:

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<sup>40</sup> Meridian, "[Meridian submission on RCP4 Consultation Document](#)" (3 November 2022) p 6.

- 4.57.1. We considered setting minimum GP2 targets in line with the Verifier’s suggestions to Transpower, especially given that the outage duration trend appears to be increasing over time. Transpower’s recent performance has been driven by some significant outage events that we consider does not reflect its long term historical performance.
- 4.57.2. We also considered calculating GP2 settings using 8 years of historical data, similar to the approach taken for GP1. However, our view is that this approach is not appropriate as it would lower quality targets given the last 8 years of GP2 performance as seen from Figure 4.2.

#### Additional analysis following draft decision submissions

- 4.58. Transpower submission to our draft decision discussed our approach to setting the targets (and consequentially caps, collars, and quality limits) for GP1 and GP2 discussed above.<sup>41</sup>

- 4.59. Transpower submits:<sup>42</sup>

GP1 and GP2 are inherently linked and need to be considered together to effectively measure the impact of unplanned interruptions. Setting the targets using different periods breaks this link and leads to a situation where our expected revenue incentive over RCP4 is negative, rather than the regulatory design for zero. [footnote: Assuming the eight years of historical data are a good indicator for performance over RCP4, we would start RCP4 with an expectation of a net zero revenue incentive return for GP1 and a negative revenue return of over \$7m for GP2 over RCP4.]

- 4.60. Transpower further set out that it considers an increase in the average duration of interruptions is not necessarily an indication of poor performance:<sup>43</sup>

Higher average durations can be due to:

A reduction in the number of short duration interruptions, which means there are fewer short duration outages in the distribution, resulting in an increasing average duration even if all other performance remains the same

Having a smaller number of interruptions which can make the average duration more volatile or sensitive longer duration interruptions

Changing weather patterns can cause interruptions that may be beyond our direct control, or be challenging to respond quickly, e.g. if we cannot immediately mobilise field crews to sites to restore service.

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<sup>41</sup> [Transpower’s submission on Draft decision](#), para 57-62.

<sup>42</sup> [Transpower’s submission on Draft decision](#), para 58.

<sup>43</sup> [Transpower’s submission on Draft decision](#), para 59.

- 4.61. Further, Transpower notes it has recently been targeting interruptions which are shorter in duration and that this has resulted in the average overall duration of interruptions increasing over time.
- 4.62. Transpower concludes its submission saying that the GP1 and GP2 targets should be set using an eight-year historic average. We considered this and we disagree.<sup>44</sup>
- 4.63. We consider that our analysis and conclusions above remain valid.<sup>45</sup> As explained, the Independent Verifier stated that using historical averages may result in 'baking in' poor performance.<sup>46</sup>
- 4.64. We set GP2 using 25 years of data because our analysis showed that performance in three out in the last eight years was particularly poor.<sup>47</sup>
- 4.65. The poor performance was due to major equipment failures and environmental impacts that resulted in long interruptions.<sup>48</sup>
- 4.66. We do not expect these equipment failures should continue into RCP4. If they do, then we consider this may reflect systemic issues with asset management. Additionally, interruptions due to environmental impacts can be normalised in RCP4 where they meet certain criteria.
- 4.67. If we were to set the GP2 target using the eight-year average it would mean setting higher targets than the RCP3 targets. Doing so could reward Transpower for worse performance than the long-term average.
- 4.68. As such, we do not agree with Transpower's submission that the targets for GP1 and GP2 should be calculated using the same number of years. Transpower's proposal for GP1 was to use a 5-year average for equipment-related unplanned interruptions, and a 25-year average for non-equipment related causes; whereas for GP2 Transpower proposed a the 25-year average for all causes of unplanned interruptions.<sup>49</sup>

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<sup>47</sup> [Transpower's submission on draft decision.](#)

<sup>45</sup> See para 4.49-4.57.

<sup>46</sup> See para 4.47.

<sup>47</sup> See Figure 4.2.

<sup>48</sup> See Table 4.8.

<sup>49</sup> Transpower, "[Service Measures Report 2023](#)" (November 2023) ([Service Measures Report](#)), section 5.1.2.

- 4.69. In its submission Transpower noted that our intent is to set the quality incentive targets so that the expected return is \$0. This is how we set the final targets for GP1 and GP2. Our best estimate of Transpower's expected performance for GP2 is a longer-term average as, in our view, the 8 years average is skewed by three years of poor performance. We want Transpower to be rewarded for performing above expectations and penalised for performing below expectations. This is to incentivise efficiency gains consistent with Part 4 of the Act.
- 4.70. Having considered Transpower's submission, our final decision is to use a 25-year average to set the GP2 quality target this is the same as our draft decision. As for GP1, our final decision is to amend the list of POS.

*Cap, collar and quality standard*

- 4.71. Our considerations of the GP2 cap, collar, incentives, and quality standard are the same as those we made for GP1.
- 4.72. Our final decision is to set the grid output target using the 25-year average for all causes and set the cap and collar at +/- 1% standard deviation from the target except for the 'Material Economic Consequences' sub-categories, where a 1.5 standard deviation is applied.
- 4.73. The quality standard is set at the collar and will be met if four or more of the six POS sub-category quality limits for each measure are met for the disclosure year or in the previous two disclosure years.

**Asset Performance measure 1 (AP1)**

- 4.74. Our final decision is to retain the AP1 measure for RCP4 with some updates and modifications to the specific AP1 settings (consistent with our draft decision).
- 4.75. AP1 measures the available annual available capacity as a percentage of the total annual capacity of the HVDC system using monopole and bipole outages.
- 4.76. Outages of HVDC link assets (such as the transmission line) reduce the HVDC link's operational capacity, which affects its annual available capacity. AP1 does not measure the impact of HVDC ancillary asset outages (such as reactive power devices and harmonic filters), and outages of adjacent HVAC transmission lines, both of which affect HVDC availability.<sup>50</sup>
- 4.77. Table 4.9 summarises Transpower's proposal and our final decision for the AP1 measure.

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<sup>50</sup> We have proposed a new reporting measure, AP1.2 to measure the reduction in HVDC capacity due to outages of any associated assets. See chapter 5 below.

Table 4.9 Summary of Transpower proposal and final decision for AP1<sup>51</sup>

Element	Transpower proposal	Final decision
Revenue at risk (\$ 000)	\$500	\$1,000
Grid output target	<ul style="list-style-type: none"> <li>• <b>98%</b> target <ul style="list-style-type: none"> <li>○ <b>1.25%</b> unavailability for maintenance planned outage;</li> <li>○ <b>0.25%</b> for unplanned unavailability; and</li> <li>○ <b>0.5%</b> for tower painting and attachment point replacement project.</li> </ul> </li> <li>• Project specific allowances: <ul style="list-style-type: none"> <li>○ <b>1.26%</b> for Pole 2 refurbishment;</li> <li>○ <b>3.84%</b> for TCU and HMI software upgrade; and</li> <li>○ <b>0.80%</b> yearly for maintenance.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>98%</b> target <ul style="list-style-type: none"> <li>○ <b>1.25%</b> unavailability for maintenance planned outage;</li> <li>○ <b>0.25%</b> for unplanned unavailability; and</li> <li>○ <b>0.5%</b> for tower painting and attachment point replacement project.</li> </ul> </li> <li>• Project specific allowances: <ul style="list-style-type: none"> <li>○ <b>1.26%</b> for Pole 2 refurbishment;</li> <li>○ <b>3.84%</b> for TCU and HMI software upgrade; and</li> <li>○ <b>0.80%</b> yearly for maintenance.</li> </ul> </li> </ul>
Cap and collar	<ul style="list-style-type: none"> <li>• <b>99%</b> cap.</li> <li>• <b>97%</b> collar.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>99%</b> cap.</li> <li>• <b>97%</b> collar.</li> </ul>
Quality standard	<ul style="list-style-type: none"> <li>• <b>96%</b> quality limit (<b>dead band</b>).</li> <li>• Introduce <b>pooling across years</b> for quality limits.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>96%</b> quality limit (<b>dead band</b>).</li> <li>• <b>No pooling across years.</b> Require compliance with quality limit in all disclosure years of RCP4.</li> </ul>
Threshold for major outages	<ul style="list-style-type: none"> <li>• <b>Threshold</b> limit set at <b>0.5%</b> of the total annual availability for major unplanned outages.<sup>52</sup></li> </ul>	<ul style="list-style-type: none"> <li>• <b>No threshold</b> limit.</li> </ul>
Exclusions of the impact of planned outages	<ul style="list-style-type: none"> <li>• MCPs;</li> <li>• listed projects involving the HVDC Pole 2 and Pole 3; and</li> <li>• new resilience workstreams to harden HVDC towers against wind and flood damage.</li> </ul>	<ul style="list-style-type: none"> <li>• MCPs;</li> <li>• listed projects involving the HVDC Pole 2 and Pole 3; and</li> <li>• new resilience workstreams to harden HVDC towers against wind and flood damage.</li> </ul>

<sup>51</sup> Transpower advised that it considered a range of scenarios for target development (best, prudent, and worst cases). The proposed target is based on the prudent outage estimates and assumptions, and project-specific allowances are based on the worst-case outage estimates. The worst-case outage estimates are also used as a high-level check for the suitability of the proposed quality limit and quality standard. See Transpower, [Service Measures Report](#), p 43.

<sup>52</sup> The threshold means that if a single event causes an outage(s) that exceeded the threshold, its impact on AP1 would be capped at 0.5%. Transpower advised that in the previous 25 years, there have been three events above this threshold limit. Refer note 34 in the Transpower, [Service Measures Report](#).

- 4.78. Below we set out the Verifier's view and our analysis. We received one submission from Transpower on our draft decision related to the AP1 quality standard. We discuss the submission and additional analysis below.

### What the Verifier said

- 4.79. The Verifier supports all of Transpower's proposed changes except for limiting the impact of a single event:<sup>53</sup>

We do not support limiting the impact of a single event, instead recommend maintaining the full incentive for a single event. This is because major long duration HVDC events that have historically not been frequent but when they occur have a significant impact on the network. The HVDC network is also made up of a far smaller population of assets compared to the HVAC network, which in our view differentiates the need to maintain an incentive after a single major event.

### Our final decision and reasons

#### *Grid output target*

- 4.80. Transpower provided data on planned and unplanned availability of the HVDC and we are satisfied with Transpower's proposal of 1.5% unavailability for planned maintenance and unplanned outages, as it is the average of the historic unavailability since 2013.<sup>54</sup>
- 4.81. The allowance enables Transpower to undertake work necessary for the provision of the service while ensuring customers are not overly negatively impacted by excessive outages.<sup>55</sup>
- 4.82. Transpower also included an estimated 0.5% of planned outage for tower painting and attachment point replacement project. The outage duration can vary depending on the scope of work, which is not identified until the delivery phase.
- 4.83. In our draft decision paper, we stated that the 0.5% value had been calculated based on 'worst-case outage estimate'. In its submission to our draft decision, Transpower pointed out how this is not the case.<sup>56</sup> We have amended the statement accordingly.
- 4.84. The duration of outages for each tower depends on its condition and the consequential preparation work and difficulty of access to the tower, and other factors.

<sup>53</sup> GHD Advisory and Castalia, [IV Report](#), p 475.

<sup>54</sup> Data before 2013 is inconsistent with data after 2013 and cannot be used to analyse trends. Pole 3 was commissioned in May 2013 and prior to 2013 Pole 1 was in service and was of a different type.

<sup>55</sup> This is in line with the purpose of Part 4 as per s 52A(1)(a) and s 52A(1)(b) of the Act.

<sup>56</sup> [Transpower's submission on Draft decision](#), para 65-67.

- 4.85. For these reasons outages duration can vary widely for different towers. Given the high degree of uncertainty on the duration of outage for tower painting for each tower and the small number of HVDC towers that would be painted in RCP4, our final decision is to accept 0.5%.

*Project specific allowances*

- 4.86. Transpower proposed excluding from the target and quality standard some specified projects for defined outage durations (%). This is so it can carry out investments in the grid without being penalised for doing so.
- 4.87. Table 4.10 shows Transpower’s estimated unavailability due to three project-specific allowances.<sup>57</sup>

**Table 4.10 Unavailability allowance for identified projects**

Identified project	Maximum unavailability allowance
<b>Pole 2 refurbishment</b>	1.26% for RCP4
<b>HVDC control system and HMI software upgrade</b>	3.84% for RCP4
<b>HVDC cable maintenance</b>	0.8% annually

- 4.88. Our final decision, consistent with our draft decision, is to treat these three projects in a manner similar to our approach for the Pole 2 replacement programme in RCP3. We excluded the impact of this project on AP1 from the target but required Transpower to include in the AP1 assessed value any reduction in capacity greater than the maximum unavailability allowance for that project.
- 4.89. As in RCP3, we consider that reducing the target (and associated caps and collars) for total unavailability for the years affected by the projects mentioned above, could lead to potential incentive issues. We decided not to take this approach because it could lead to a perverse outcome, where Transpower could make windfall gains if the actual outage duration for the project is lower than the estimated value of the project outage.

<sup>57</sup> Transpower, [Service Measures Report](#), p 42.

- 4.90. As set out in our draft decision, our assessment shows that including the impact of these projects in the target will significantly distort the incentive scheme. This is because the unavailability due to projects is high compared to the target, and the timing of the projects is uncertain. To include the above projects in the settings, we will need to add the corresponding unavailability allowance to the AP1 target. This would significantly distort the intent of the incentive rate due to the relatively small number of base capex projects and their significant outage requirements.<sup>58</sup>
- 4.91. We consider that a decision not to provide target allowances for these projects would not be optimal either. These are important projects for the long-term benefit of customers. If we decided not to provide any allowances, we are disincentivising Transpower from undertaking the projects, providing an incentive to defer needed work to comply with the quality standard.
- 4.92. We received no submission on this part of our draft decision.
- 4.93. Our final decision, consistent with our draft, is to allow Transpower a maximum adjustment for unavailability due to the identified projects, as set out in Table 4.9 above. These adjustments will allow Transpower to net out the actual outages due to these projects, up to the specified project allowances, from the assessed values.<sup>59</sup> Transpower has based the project allowances on the worst-case outage estimates, meaning that actual project outages are not likely to be more than Transpower's estimates.<sup>60</sup>
- 4.94. By providing a fixed allowance for these projects we consider we are striking the right balance between enabling Transpower to deliver the projects efficiently, without impacting too negatively the quality of the service provided to customers.
- 4.95. Transpower has an incentive to operate efficiently without negatively impacting quality of service, while not being penalised for undertaking projects. Our approach provides a consistent incentive rate setting throughout RCP4.

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<sup>58</sup> Clause A7 of the Capex IM requires us to consider strength of the relationship between base capex and the grid output both within the regulatory period and the long term.

<sup>59</sup> In RCP3, we used this approach for the Pole 2 refurbishment project. Commerce Commission, ["Transpower's individual price-quality path from 1 April 2020 Decisions and reasons paper" \(29 August 2019\) \(RCP3 Decisions paper\)](#), p 178, para F180.

<sup>60</sup> Transpower, [Service Measures Report](#), p 43.



- 4.96. We consider the target adequately reflects the quality of service that Transpower should deliver under a normal operating environment. This provides a more meaningful incentive scheme because the unavailability target is based on expected planned outages. We consider the final decision, consistent with our draft decision, provides a better alignment between planned base capex projects and the AP1 measure as per A7(b) of the Capex IM.

*Cap and collar settings*

- 4.97. Our final decision is to set a +/-1% offset for cap and collar as Transpower proposed, which is the same approach used in RCP3. This is the same as our draft decision.
- 4.98. Our final decision is to set the caps and collars at 1% offset from the target, as proposed by Transpower. A 1% offset is more than one standard deviation, which is the approximate value at which we tend to set collars and caps for the other measures. The range of 2% around the target for revenue at risk provides a plausible range of relevant grid outputs likely to be delivered, and therefore meets condition A7(e) of the Capex IM.

*The quality standard settings*

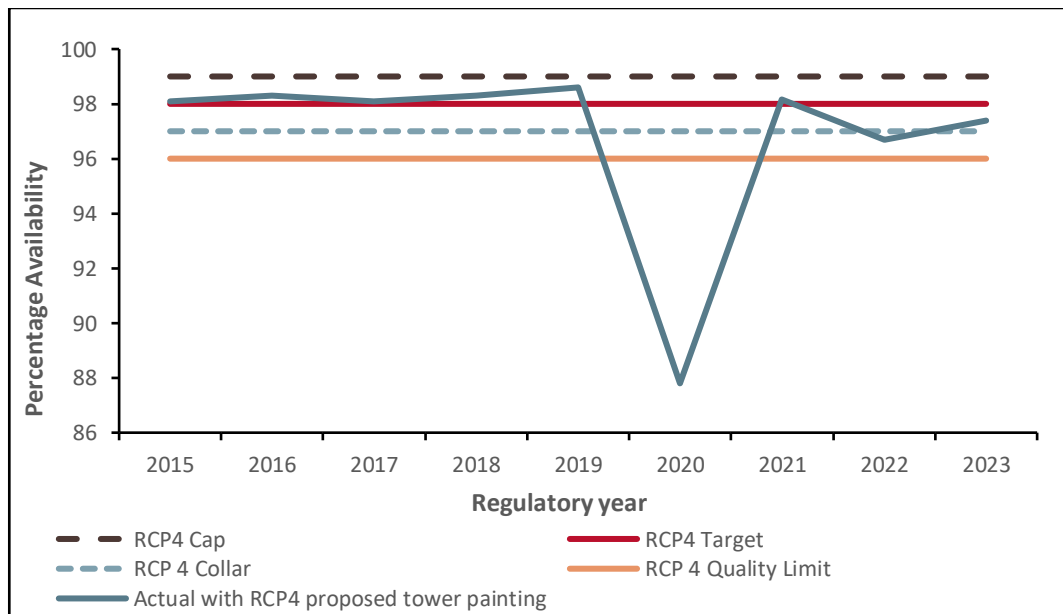
- 4.99. Transpower proposed a dead band and pooling across years, for assessing compliance with the AP1 quality standard. The idea is to mitigate the impact of one abnormal year by considering the performance of multiple years.
- 4.100. As set out in our draft decision, we are not satisfied that Transpower's proposal to apply both pooling across disclosure years and a dead band for the quality standard better promotes our ability to measure Transpower's performance in accordance with clause A5(a)(ii) of the Capex IM. Both tools independently provide similar results, and only one is needed to meet our objectives of reducing false positive instances of the quality standard not being met.
- 4.101. In RCP3, we introduced pooling or dead bands to mitigate the effect of a natural spread in performance, causing quality standards not being met across different measures. We decided to use dead bands (consisting of a gap between collar and quality limit) for the asset performance measures, and pooling for the grid performance measures.<sup>61</sup>

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<sup>61</sup> Commerce Commission, [RCP3 Decisions paper](#), para F198-F199, F227.

- 4.102. Our final decision, consistent with our draft decision, is to set the quality limit at 2% below the target, which is about two standard deviations of historical performance since 2015. Mathematically this results in a less than 3% likelihood of Transpower’s actual performance to be below the quality limit. We consider occasional performance below the quality limit does not necessarily signal worsening performance.
- 4.103. For compliance with the quality standard, the performance should be above the quality limit in the disclosure year.
- 4.104. Figure 4.3 below shows Transpower’s most recent performance against our final decision settings, which include the 0.5% unavailability due to tower painting.<sup>62</sup> Under these proposed settings, Transpower would have only failed to meet the quality limit once, in 2020, due to the HVDC Pole 2 replacement project. In RCP4, projects of this nature are excluded from the assessment of AP1 by design of the measure (part of exclusions).

**Figure 4.3 RCP4 AP1 final decision settings versus historical HVDC performance**



#### Additional analysis following draft decision feedback

- 4.105. In its submission on our draft decision Transpower states that by deciding not to introduce pooling across years there is a relatively high probability of randomly breaching a quality standard regardless of whether it has failed to follow good electricity industry practice.<sup>63</sup>

<sup>62</sup> RCP4 draft decision settings include the additional 0.5% unavailability, which was not included in RCP3 and RCP2 settings.

<sup>63</sup> [Transpower’s submission on Draft decision](#), para 63.

4.106. Transpower states that: <sup>64</sup>

For example, following the Commission's logic of setting AP1, multiplying the 3% chance of failure each year, across five measures, results in only a 47% chance of meeting the quality standards. [footnote: This is calculated as  $(0.97^5)^5$ ; 97% probability of success in meeting the quality standard across five years, across five measures.] On this basis the Commission could consider widening the deadband to mitigate the risk of false positive breaches occurring. [footnote: We still consider that pooling alongside the deadband for AP2 (and AP1) better meets the intent that a quality standard should be used to identify a clear trend of poor performance across years.]

4.107. We do not agree with Transpower's submission. Transpower's analysis does not consider that:

4.107.1. for GP1, GP2, and AH we have pooling across categories and years and the quality standards are not set at two standard deviations;

4.107.2. the AH quality standard is not based on random events outside Transpower's control, but it depends on asset expenditure which is largely in the control of Transpower; and

4.107.3. for AP1 and AP2, we have introduced several amendments to the quality standard by excluding future major project works, listed projects work, customers work and resilience work from the performance calculations, which further reduces the chances of exceeding the quality standard.

4.108. This means that in practice the actual probability of meeting the quality standard across all years of RCP4 for all five measures will be significantly higher than 47%.

4.109. As discussed above, in the last 10 years Transpower exceeded the quality limit for AP1 only once, in 2020, due to the HVDC Pole 2 replacement project.<sup>65</sup> Our final decisions for RCP4 quality settings means this type of project would be excluded from the quality standard compliance calculations. In excluding these types of projects from compliance calculations, our intention is to ensure that Transpower is not disincentivised from undertaking major projects that improve the network.

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<sup>64</sup> [Transpower's submission on draft decision](#), para 64.

<sup>65</sup> [Transpower's submission on draft decision](#), para 4.120.

- 4.110. The historic standard deviation of the 10 years of performance data is 3.4%, when including the impact of the 2020 HVDC Pole 2 replacement project. However, applying our RCP4 settings (ie, the impact of the HVDC Pole 2 replacement project would be excluded) results in a historic standard deviation of 0.56%. Under this scenario, with the quality standard set at 2% or 3.5 standard deviations below the target, the probability of Transpower's AP1 performance being below the quality standard is 0.15%.
- 4.111. We disagree with the view that there is a high probability of breaching the quality standard in RCP4 if pooling across years is not introduced for AP1 and AP2.
- 4.112. Having considered Transpower's submission, our final decision is to set the AP1 quality standard 2% below the target and not to introduce pooling across years.
- 4.113. Our decision is consistent with the purpose of quality standards. We set quality standards to ensure that a minimum level of quality is maintained. Pooling and deadbands provide similar benefits by mitigating the impact of atypical years and having both would mean making the quality standard lose purpose.

*Threshold for major outages*

- 4.114. Transpower has proposed a threshold limit of 0.5% of the total annual availability for the duration of all major unplanned outages. This means that if a single event caused an outage(s) that exceeded this threshold, its impact on AP1 would be capped at 0.5%.
- 4.115. Transpower argues that thresholds are used in other jurisdictions and are also used by us in the GP2 measures as well as performance measures for distribution businesses.
- 4.116. Transpower states the threshold: <sup>66</sup>

mitigates the impact of major unplanned outages by ensuring that no single unplanned event can have a disproportionate impact on the overall performance against the measure in a year. This concept has been introduced in other jurisdictions and a similar threshold exists for duration in GP2.

The threshold limit is proposed to be set at a relatively large value, 0.5 per cent of the total annual capacity availability. If a single event caused an outage(s) that exceeded this threshold, its impact on AP1 would be capped at 0.5 per cent. We would continue to have a significant incentive to avoid unplanned outages, and the revenue incentive to meet the measure would not be extinguished by a single event.

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<sup>66</sup> Transpower, [Service Measures Report](#), p 41.

- 4.117. As set out in our draft decision, we do not agree with the introduction of a threshold for the asset performance measures. We consider a threshold could mask the impact of long outages that are within Transpower's reasonable control. Therefore, it does not provide a suitable measure of Transpower's performance in terms of the Part 4 purpose.
- 4.118. We consider there is a difference between AP1 and GP2 measures, where we apply a threshold on the duration of interruptions. For AP1, major outages within the HVDC system are rare, and it will be useful for us to have visibility of their full impact, and to have the subsequent ability to investigate.<sup>67</sup>
- 4.119. We consider introducing a threshold would not provide a material benefit in terms of measuring Transpower's performance because normalisation of outages is already in place. Normalisation allows Transpower to apply to remove from the assessed value of AP1, the impact of major outages that are due to events outside Transpower's reasonable control.
- 4.120. As set out in our draft decision, the Verifier and stakeholders agreed with our view not to add a threshold and did not agree with limiting the impact of a single event.<sup>68, 69</sup> We received no submissions on our draft decision on this topic.
- 4.121. Our final decision is not to introduce thresholds for this measure, this is the same as our draft decision. We consider this decision does not materially reduce Transpower's incentives to reduce unplanned outages. This is because unplanned outages are caused by external factors or sustained under-investment and need to be managed through long term investment planning. Accordingly, short term actions cannot have a significant impact on unplanned outages, and a threshold cannot provide a significant incentive to alter the chances of unplanned outages.
- 4.122. We also consider that Transpower will have the incentives to continue to manage further unplanned and planned outages effectively, according to its established processes. In our assessment of the three normalisation applications in RCP3, we concluded that Transpower effectively managed the outages/interruptions and displayed good electricity industry practice (**GEIP**).

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<sup>67</sup> Transpower states that there have been three events in the previous 25 years above its proposed threshold limit - insulator attachment point failure at Weka Pass in 2022; 2013 storm damage to T10 converter transformer housing, and 2011 P2 capacity reduction. Transpower, [Service Measures Report](#), p 41, note 34.

<sup>68</sup> GHD Advisory and Castalia, [IV Report](#), p 473 and 477.

<sup>69</sup> [Meridian's submission on Issues paper](#), p 2.

### *Exclusion of impact of planned outages*

- 4.123. Transpower has excluded the impact of resilience projects, major capex projects, and listed projects from the proposed target. The main reason for excluding the impact of these projects is the uncertainty in their outage requirements or scope and timing.
- 4.124. In response to Transpower’s consultation, stakeholders did support Transpower removing project outages from the AP1 settings.<sup>70</sup> Having considered those submissions and Transpower’s reasons, our draft decision was that, on balance, it is appropriate to exclude the impact of these outages from the target. This is because the timing of these projects and the duration of the resulting outages is uncertain.<sup>71</sup> We received no submissions on our draft decision on this topic.
- 4.125. In its proposal, Transpower states that its planned resilience projects have significant outage requirements, and there is uncertainty in scope and timing. Similarly, the scope and timing of any major capex projects and listed projects are uncertain at this stage. It is also not possible to know if the projects will go ahead, and which disclosure years they will take place.
- 4.126. Given the uncertainties in scope and timing, it is challenging for Transpower and us to provide estimates for the impact of these projects and we agree with Transpower that it is not reasonable to include the impacts of these in the AP1 measures.
- 4.127. Our final decision is to exclude these projects from the AP1 measures. For completeness, we note that we have the ability to amend the measure in case we approve a listed project or MCP.<sup>72</sup>

### **Asset Performance measure 2 (AP2)**

- 4.128. Our final decision is to retain the AP2 measure for RCP4 with some updates and modifications to the specific AP2 settings, as set out in our draft decision.
- 4.129. AP2 measures the average percentage of time selected HVAC assets are available for service.
- 4.130. Table 4.11 summarises our final decision settings for the AP2 measure.

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<sup>70</sup> “Both Contact Energy and Meridian Energy support the exclusion of impacts from major capex projects, however Meridian Energy would not support the removal of listed projects from the measure without some process put in place to ensure that those projects are treated in a similar way to major capex projects.” Our final decision is to treat listed projects and MCPs in the same manner. See Transpower, ["Submission Summary - Grid Service Engagement Paper 1" \(August 2022\) \(Submission Summary\)](#), p 3, para 13.

<sup>71</sup> When we exclude or include any event in the calculation of the target it results in the “measured performance” being changed for the year. In simple terms, cap, target, collar, and quality limit stay the same, the performance level is “moved” up or down within the scale.

<sup>72</sup> Commerce Commission, [Capex IM Amendment Determination 2023](#), clause 3.7.12.

**Table 4.11 Summary of Transpower proposal and final decision for AP2**

Element	Transpower proposal	Final decision
Revenue at risk (\$ 000) per percent	\$1,000	\$2,000
HVAC assets	<ul style="list-style-type: none"> <li>Updating the list of selected HVAC assets to 62 circuits based on outages forecasts.</li> </ul>	<ul style="list-style-type: none"> <li>Updating the list of selected HVAC assets to 62 circuits based on outages forecasts.</li> </ul>
Grid output target	<ul style="list-style-type: none"> <li><b>98.25%</b> target based on a forecasted model of unavailability based on capex expenditure plus an allowance for unplanned unavailability based on historic average.</li> </ul>	<ul style="list-style-type: none"> <li><b>98.25%</b> target based on a forecasted model of unavailability based on capex expenditure plus an allowance for unplanned unavailability based on historic average.</li> </ul>
Cap and collar	<ul style="list-style-type: none"> <li><b>98.62%</b> cap.</li> <li><b>97.87%</b> collar.</li> </ul>	<ul style="list-style-type: none"> <li><b>98.62%</b> cap.</li> <li><b>97.87%</b> collar.</li> </ul>
Quality standard	<ul style="list-style-type: none"> <li><b>Remove</b> the quality standard (preferred option).<sup>73</sup></li> <li><b>97.45%</b> quality limit (<b>dead band</b>).</li> <li>Introduce <b>pooling across years</b> for quality limits.</li> </ul>	<ul style="list-style-type: none"> <li>Retain the quality standard.</li> <li><b>97.45%</b> quality limit (<b>dead band</b>).</li> <li><b>No pooling across years.</b> Require compliance with quality limit in all disclosure years of RCP4.</li> </ul>
Threshold for major outages	<ul style="list-style-type: none"> <li><b>Threshold</b> limit set at <b>150</b> hours of duration for major unplanned outages.<sup>74</sup></li> </ul>	<ul style="list-style-type: none"> <li><b>No threshold</b> limit.</li> </ul>
Exclusions of the impact of planned outages	<ul style="list-style-type: none"> <li>MCPs.</li> <li>customer-funded work.</li> <li>listed projects.</li> <li>E&amp;D.</li> </ul>	<ul style="list-style-type: none"> <li>MCPs.</li> <li>customer-funded work.</li> <li>listed projects.</li> <li>E&amp;D.</li> </ul>

4.131. Below we set out the Verifier and stakeholder's views and our analysis. We received one submission on our draft decision related to this measure. We discuss the submission and additional analysis below.

<sup>73</sup> In their submission on our Issues paper ([Transpower's submission on Issues paper](#)), p 6, para 27, Transpower pointed out that we incorrectly stated that Transpower proposed to "or using forecast model to set targets using forecast expenditure", while they proposed to remove quality standards and if those are to stay, then Transpower is proposing to use the forecast model to set quality limits.

<sup>74</sup> The threshold means if a single event causes an outage(s) that exceeded the threshold, its impact on AP2 would be capped to 150 hours. Transpower advised that in the previous 25 years, there have been three events above this threshold limit. Refer note 34 in Transpower, [Service Measures Report](#).

### What the Verifier said

- 4.132. The Verifier supported all of Transpower's proposed changes except for removing the quality standard, stating:<sup>75</sup>

For AP2, we consider the method proposed to set the target, caps and collars, and incentive rates are appropriate and support the adoption of the proposed quality standard. We support the adoption of a linear regression-based approach for setting the target for unavailability due to planned outages as this allows alignment with the planned outages needed to deliver the RCP4 programme and should reduce the risk of quality standard breaches.

### Our reasons and final decision

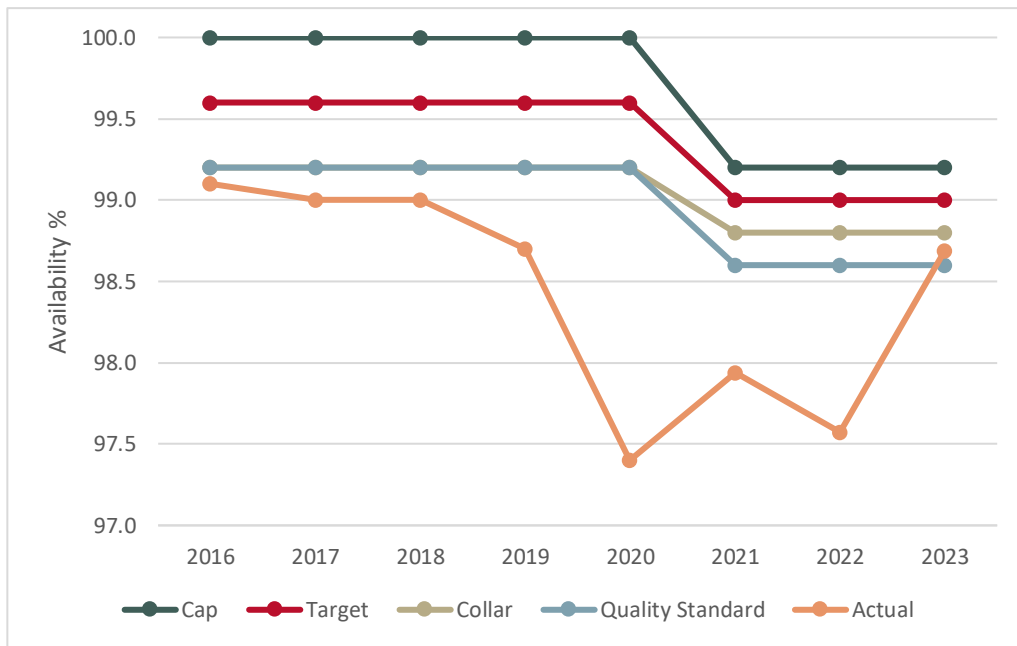
#### *Analysis of Transpower's historical performance since RCP2*

- 4.133. As set out in our draft decision, we consider the AP2 measure is not working as intended. Transpower's assessed values have failed to meet the target and quality standard in every year since 2016 except over 2022/2023. This has been driven by:
- 4.133.1. under-estimating availability due to planned work;
  - 4.133.2. the impact of the Clutha Upper Waitaki Lines (**CUWLP**) line upgrade MCP that Transpower did not expect to undertake in RCP3; and
  - 4.133.3. the impact of a significant unplanned outage of the Pakuranga-Brownhill (**PAK-WKM**) cable.
- 4.134. We have considered these issues in our approach to setting the AP2 measure for RCP4.
- 4.135. Figure 4.4 shows Transpower's AP2 performance against the target, cap, collar, and quality standards. Note that in RCP2, the quality standard coincided with the collar.

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<sup>75</sup> GHD Advisory and Castalia, [IV Report](#), p viii.



**Figure 4.4 AP2 performance against target and quality standard**

4.136. In our RCP3 decision we concluded that the RCP2 exceedances were caused by inaccurate forecasting of the duration of planned outages. We lowered the cap, collar, and target, and introduced a dead band between the collar and quality standard to address these issues (see Figure 4.4).

#### **Our final decision and reasons**

4.137. To better design AP2 for RCP4, in light of the experience in RCP3, Transpower also proposed a few additional instruments to address potential non-compliance in RCP4. These include removing unapproved work from quality measures, thresholds for major unplanned outages along with normalisation and dead band, and pooling across years for quality standard.

4.138. As set out in our draft, we do not consider all the proposed instruments are necessary. Consistent with the draft decision, our final decision is based on what is required to provide a balanced measure that avoids the quality standard not being met for reasons outside Transpower's control, as well as providing services at a quality demanded by consumers in promotion of the Part 4 purpose. We discuss our reasons below.

#### *HVAC assets*

4.139. Our final decision (consistent with our draft decision) is to accept Transpower's revised number of circuits included in the AP2 measure. Transpower advises it identified the circuits using its latest System Security Forecast.

4.140. The System Security Forecast forecasts Transpower's ability to achieve the Principal Performance Obligations that Transpower and the Electricity Authority agree to.<sup>76</sup>

4.141. We are satisfied Transpower's approach identified the relevant circuits for AP2.

*Grid output target*

4.142. For RCP4, Transpower has proposed setting the target by using a forecast model of planned unavailability based on capex expenditure and adding an allowance for unplanned unavailability based on historic averages.

4.143. In reaching our draft decision, we assessed Transpower's calculations and are generally satisfied with its approach to setting the target for RCP4. We are also satisfied with Transpower adopting a linear regression-based approach for setting the target for unavailability due to planned outages, based on the estimated outages required to deliver the RCP4 capex programme.

4.144. We have assessed Transpower's calculations and are generally satisfied with its approach to setting the target for planned outages. We are satisfied Transpower's approach provides a reasonable estimate of the planned outages required to deliver the proposed RCP4 expenditure.

4.145. Having a direct link between the target and capex provides strength to the measure and is a key criteria for considering matters relating to revenue-linked grid output measures as per cl. A7(b) of the Capex IM.

4.146. We conducted a sensitivity analysis to test the proposed cap, collar, and target of AP2. Transpower provided us with the linear regression model it used to calculate the settings based on the proposed capex expenditure.

4.147. For our sensitivity analysis, we used a 98% proportion of approved base capex and the settings obtained were less than 1% different from the ones proposed by Transpower as per Table 4.12.<sup>77</sup> Our final decision (consistent with our draft decision) is to keep Transpower's proposed setting as the difference in availability between the proposed base capex and approved base capex is immaterial.

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<sup>76</sup> Details on the System Security Forecast are available at Transpower website

<https://www.transpower.co.nz/system-operator/planning-future/system-security-forecast>.

<sup>77</sup> Commerce Commission, *Transpower's individual price-quality path for the regulatory control period commencing 1 April 2025* (29 May 2024), para 3.16.

**Table 4.12 Settings calculated using Transpower’s model using different Capex amounts**

Scenario – settings	Cap	Target	Collar	Quality Limit
<b>AP2 final decision settings using Transpower’s proposed base capex</b>	98.62%	98.25%	97.87%	97.45%
<b>AP2 settings using draft decision base capex total (98% of proposed base capex)</b>	98.67%	98.32%	97.97%	97.58%

#### *Cap and collar settings*

- 4.148. Transpower proposed to set the caps and collars based on one standard deviation from predicted mean of planned unavailability and add a 300-hours deduction for unplanned unavailability, which is largely in line with the RCP3 approach.
- 4.149. Our final decision is to accept Transpower’s proposed caps and collars. This is the same as our draft decision. We consider the caps and collars are reasonable and consistent with how we set them in RCP3, where we used a revenue at risk range of 2 standard deviations around the target as they provide a plausible range of relevant grid outputs likely to be delivered as per A7(e) of the Capex IM.

#### *Quality standard*

- 4.150. Transpower has proposed to either remove the quality standard for AP2 or set the quality standard with a dead band and use pooling across regulatory years.
- 4.151. Given our previous experience with this measure, in coming to our draft decision we considered the effectiveness of the proposed RCP4 settings in mitigating any ‘false positives’ of the standard not being met.
- 4.152. When considering the design of this measure for RCP4, we have taken measures to improve the design of AP2 by removing unapproved projects, and the effect of improved planned outage estimation from the measure.
- 4.153. Transpower has proposed a dead band and pooling across years, for assessing compliance with the quality standard. The idea is to mitigate the impact of one abnormal year by considering the performance of multiple years. In RCP3, we decided to use dead bands for the asset performance measures, and pooling for the grid performance measures.

Additional analysis following draft decision feedback

- 4.154. As discussed in the AP1 section, in its submission on our draft decision Transpower states that by deciding not to introduce pooling there is a relatively high probability of randomly breaching a quality standard regardless of whether it has failed to follow good electricity industry practice.<sup>78</sup>
- 4.155. In addition to the points made above, over RCP2 and RCP3, Transpower has been exceeding the quality limit repeatedly for asset performance measure AP2. For RCP4 our final decision is to set the target, and hence quality standard, higher than in RCP3, and have based target and quality standard on forecasted planned work.<sup>79</sup> For AP2, as for AP1, we have included targeted exclusions to prevent Transpower from being penalised for conducting project work.<sup>80</sup>
- 4.156. As we discussed above, breaches of AP2 were largely the result of planned projects which are now excluded. Further, our final decision for AP2 (consistent with our draft decision) is to set the quality standard at 2 standard deviations from the mean forecast of outages based on planned work.
- 4.157. Statistically, on the basis of our final decision, the likelihood of Transpower being below the quality standard is less than 2.1% per year (or 2 standard deviations). The variance has been calculated using historic outage data which includes outages caused by work which is excluded from the RCP4 quality standard and does not reflect the new model used to calculate target and quality standard.
- 4.158. In practice the likelihood of exceeding the quality standard is lower than 2.1%, meaning that the chances of exceeding a quality standard across five years and five measures are also lower than as stated by Transpower.
- 4.159. Having considered Transpower's submission, our final decision (consistent with our draft decision) is to not introduce pooling across disclosure years while maintaining a dead band for the quality standard as they provide similar benefits and including both would result in a double up, as explained under AP1 quality standard settings section.
- 4.160. Both pooling and deadbands independently provide similar results, and only one is needed to meet our objectives of reducing 'false positives' of the quality standard not being met. We consider applying both will mask deteriorating performance and would not be consistent with the requirements of cl. A5(a)(ii) of the Capex IM.

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<sup>78</sup> [Transpower's submission on draft decision](#), para 63.

<sup>79</sup> See para 4.143-4.148

<sup>80</sup> See para 4.176-4.180

*Removal of the quality standard*

- 4.161. In its IPP Proposal, Transpower suggested removing the quality standard for AP2 for RCP4 because of the increase in planned outages, weak relationship between market outcomes and AP2, (potentially providing unwanted incentives), and the regulatory burden due to breaches.<sup>81</sup>
- 4.162. The Verifier did not support removing the quality standard for AP2.<sup>82</sup> Stakeholders did not support removing the quality standards for AP2 in response to both Transpower’s proposal and our Issues paper.<sup>83 84 85</sup>
- 4.163. We considered Transpower’s proposal to remove the quality standard for AP2. The reasons for introducing a quality standard in RCP3 for this measure remain valid. There has been no significant change to justify removing it:
- 4.163.1. Transpower has pointed out the significant time and effort involved in investigating breaches of quality standards. It argues that we have the power to investigate poor performance without a quality standard being triggered.<sup>86</sup> If there is no quality standard, we cannot investigate or seek a pecuniary penalty for any contravention of the quality standard. Therefore, this reduces the incentive and fails to meet the purpose of price-quality regulation, providing incentives for Transpower to provide services at a quality that reflects consumer demands; and
- 4.163.2. we are maintaining our approach to measuring quality because, while Transpower has made a valid argument about being investigated for events outside of its control, this risk can be mitigated by properly setting the quality standard and we consider maintaining the quality standard ensures the purpose of Part 4 is met by having a minimum level of acceptable quality for customers.
- 4.164. Our final decision (consistent with our draft decision) is to maintain the quality standard settings as set out in the table above, without pooling and without a threshold for major outages.

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<sup>81</sup> Transpower, [Service Measures Report](#), p 49.

<sup>82</sup> GHD Advisory and Castalia, [IV Report](#), p 479.

<sup>83</sup> MEUG, [MEUG’s submission on Issues paper](#), p 4.

<sup>84</sup> Meridian, [Meridian’s submission on Issues paper](#), p 2.

<sup>85</sup> CAC, [CAC’s submission on Issues paper](#) p 2, para 9.

<sup>86</sup> Transpower [“Cross-submission on RCP4 Issues paper comparison of indexation approaches” \(13 March 2024\) \(Transpower’s cross-submission on Issues paper – comparing indexation approaches\)](#), para 11.

*Threshold for major outages*

4.165. For the same reasons discussed under the AP1- section, our final decision is to not introduce a threshold for major outages to mitigate the impact of major unplanned outages. Transpower states: <sup>87</sup>

This would help to ensure the revenue incentive remains throughout the year to efficiently manage other planned works and avoid the situation where the target for AP2 is continually beyond reach.

4.166. Under Transpower's proposal to exclude major projects and introduce a 150-hour threshold, Transpower would have achieved the cap in 2021 and 2022 DYs despite performance that we assess to be below the minimum level set by the quality limit.<sup>88</sup>

4.167. This means Transpower would have gained the maximum reward for performance that falls below the necessary standard. We do not consider this is consistent with s 52A(b) of the Act.

4.168. In our view, a threshold may mask the impact of long outages that are within Transpower's reasonable control. We consider that outages having a significant impact on consumers should trigger an investigation into potential non-compliance.

4.169. Investigations enable us to determine whether there are systemic issues. Among those, through investigation we can determine if Transpower followed GEIP. A threshold may mask the impact of long outages that are within Transpower's reasonable control.

4.170. There are many other factors that incentivise Transpower to effectively manage outages, such as scheduling planned work, managing resourcing and costs, and market constraints on availability of planned outages.

4.171. As discussed below, our final decision excludes many factors that contributed to Transpower not meeting its AP2 quality standard in the past. These factors are excluding all E&D, resilience and unapproved work from the measure and allowing normalisation of major events outside Transpower's reasonable control.

4.172. This results in Transpower having the ability to potentially gain a higher reward than in the past when those factors hindered its performance.

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<sup>87</sup> Transpower, [Service Measures Report](#), p 45, section 5.4.1

<sup>88</sup> By having a reasonably low limit on events, one major outage across years would have been practically excluded (except for 150 hours each year), meaning we would have been unable to investigate it and Transpower would have been rewarded the maximum revenue by achieving the cap in both years.

- 4.173. To the extent that the events are outside of Transpower’s control, the normalisation provision exists, and enables us to ascertain if best practice was followed.
- 4.174. Our final decision (consistent with our draft decision) is not to introduce a threshold to the AP2 measure that would exclude the effect of unplanned measures within Transpower’s control. Our final decision is made on the basis that normalisation can apply to exclude the effect of events outside Transpower’s control from the measure. We consider this approach provides a better measure of Transpower’s performance.

*Exclusion of the impact of planned outages*

- 4.175. For the reasons discussed under the AP1 section ‘Exclusion of the impact of planned outages’, our final decision is to exclude the impact of base capex E&D, customer-funded projects, major capex projects, and listed projects from the target, cap, and collar and quality standard of AP2.
- 4.176. As set out in our draft decision, the scope and timing of such projects are uncertain and cannot be meaningfully included in the settings. We have the ability to amend the measure if and when we approve an MCP or listed project application, as discussed in the AP1 section.
- 4.177. If we did not exclude the effect of these projects, Transpower may forego grid investment to avoid not meeting the quality standard. Transpower states:<sup>89</sup>

In its current form, AP2 can create unintended situations. For example, projects previously not planned for RCP3 can make it impossible for Transpower to meet the quality standard for AP2, even though those projects are creating long-term benefits for consumers and are, in some cases, approved by the Commission. Where customer or grid enhancement projects impact the measure, we are incentivised to consider whether maintenance, replacement, and refurbishment work should be deferred to manage unavailability – such deferrals can reduce the reliability of the grid and impact other measures and our supply to customers over time.

- 4.178. We consider there is a risk that Transpower will not have the incentive to manage the outage duration of such projects. CAC submitted against removing the effect of MCPs from the AP2 measure.<sup>90</sup> However, we do not consider this is a material risk relative to Transpower’s revenue, because we have the ability to amend the measure when we approve an MCP.<sup>91</sup>

<sup>89</sup> Transpower, [Service Measures Report](#), p 46.

<sup>90</sup> CAC, [CAC’s submission on Issues paper](#), para 9.

<sup>91</sup> We refer you to our proposed amendment to clause 3.7.12(3)(ab) in the Commerce Commission, *Transpower Input Methodology Determination 2010 (Principal determination)*, (23 April 2024), which we have published alongside this paper.

4.179. Our final decision is to allow Transpower to exclude projects which have not been approved yet, and it is not currently known if they will take place, and what outages they will result in.

### Asset Health measure (AH)

4.180. Our final decision is to retain the AH measure for RCP4 with some updates and modifications to the specific AH settings (as set out in our draft decision).

4.181. The asset health setting measures the percentage of assets with an asset health indicator (AHI) of eight or above, for all assets in an asset class.<sup>92</sup> Transpower considers that when AHI is at or above eight, the asset is in poor or very poor health and that an intervention may be necessary depending on asset criticality.<sup>93</sup>

4.182. Table 4.13 summarises the quality limits set out in our final decision for the AH measures, and Table 4.14 compares our final decision settings to those proposed by Transpower for the AH measure quality standards.

**Table 4.13 RCP4 Asset Health final decision – quality limits by regulatory year**

Asset Class quality limits (% of assets with AHI >=8)	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
Conductors*	1.76	1.97	2.18	2.37	2.61
Insulators*	2.79	3.14	3.85	4.76	5.98
Outdoor Circuit Breakers*	1.24	1.45	2.46	3.19	4.27
Power Transformers*	5.17	9.15	11.53	12.18	13.35
Protection Relays	7.56	6.92	6.37	8.12	8.61
Tower Grillage Foundations	4.26	3.51	3.90	4.04	3.99
Tower Protective Coatings	13.98	15.89	17.79	20.02	22.09

\*values weighted by criticality

<sup>92</sup> An AHI represents an asset's proximity to the end of its useful life. When combined with other information and decision frameworks, an AHI can inform the optimal time for various asset interventions or replacement when combined with engineering judgement.

<sup>93</sup> Transpower, [Service Measures Report](#), sections 3.3 and 5.7.1.



**Table 4.14 RCP4 Asset Health final decision - settings**

Element	Transpower proposal	Final decision
Asset classes	<ul style="list-style-type: none"> <li>7 asset classes.<sup>94</sup></li> </ul>	<ul style="list-style-type: none"> <li>7 asset classes</li> </ul>
Target, cap, and collar	<ul style="list-style-type: none"> <li>None, <b>not revenue linked</b>.</li> </ul>	<ul style="list-style-type: none"> <li>None, <b>not revenue linked</b>.</li> </ul>
Quality standard	<ul style="list-style-type: none"> <li><b>Removing the quality standard</b> (preferred option), or <ul style="list-style-type: none"> <li>Introduce <b>pooling across years and asset classes</b> for quality standard</li> <li>Quality limit set at a <b>25% benefit</b> from the ‘with intervention’ improvement for each asset class.<sup>95</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>Retain the quality standard</b> <ul style="list-style-type: none"> <li>Introduce <b>pooling across years and asset classes</b> for quality standard</li> <li>Quality limit set at an <b>80% benefit</b> from the ‘with intervention’ improvement for each asset class.</li> </ul> </li> </ul>

4.183. The Verifier’s conclusions about what Transpower proposed, stakeholder’s views on our Issues paper, and our analysis is set out below. We received one submission on our draft decision (and no cross submissions) related to this measure. We discuss the submission and the reasons for our final decision below.

#### What the Verifier said

4.184. The Verifier supported all proposed changes proposed by Transpower except removing the quality standard, stating:<sup>96</sup>

We do not support removing the quality standard for this measure as AH can be an effective leading indicator of the future performance of the network.

4.185. The Verifier also noted it is worth considering revenue linking AH measures in the future, stating that:<sup>97</sup>

Critical consideration should also be given to this measure becoming an incentivised measure in the future. Incentivising this measure would not ‘double count’ the current incentivisation of GP1 or GP2. The measurement of AH covers a broad spectrum of business tool and systems not concurrent to GP1 or GP2.

<sup>94</sup> Retaining the two existing asset classes and introduce five new asset classes following a redevelopment of Transpower’s asset health models. The seven asset classes are set out in Transpower, [Service Measures Report](#), table 24 p 53.

<sup>95</sup> The measure is computed by using the forecasted asset health index score for each asset, in all seven asset classes, with and without intervention based on the proposed investment plan for RCP4. Quality limits are relating to the proportion of assets in poor health (ie, those which have an asset health index score of eight or above) are calculated assuming a 25% benefit from the ‘with intervention’ improvement. See Transpower, [Service Measures Report](#), p. 56.

<sup>96</sup> GHD Advisory and Castalia, [IV Report](#), p 487.

<sup>97</sup> GHD Advisory and Castalia, [IV Report](#), p 487.

## Submissions

- 4.186. We received two submissions on the AH quality standard to our Issues Paper. Transpower re-iterated that setting quality standards reduces their flexibility to reprioritise work.<sup>98</sup> CAC disagreed with removing the quality standard and supported our preliminary view of retaining it.<sup>99</sup>
- 4.187. In its draft decision submission Transpower noted that we did not explicitly mention that AHI values we set in the conductors, insulators, and outdoor circuit breakers, and power transformers asset classes are all criticality weighted.<sup>100</sup> We have noted this in our final decision as per Table 4.13.

## Our final decision and reasons

- 4.188. Our final decision is to introduce five new asset classes as proposed by Transpower, maintain the quality standard and make it more stringent while introducing pooling across years and classes. This is the same as our draft decision.
- 4.189. In RCP3 we introduced an asset health measure in two asset classes (power transformers and outdoor circuit breakers) to monitor the proportion of assets with poor asset health to very poor asset health (eg, an asset health score of eight or greater). We focused on these two asset classes as Transpower had relatively mature asset health models for these.
- 4.190. We set a quality standard for each asset class to act as a safety net to ensure that asset health would not degrade significantly over RCP3 and to act as a proxy for network risk.<sup>101</sup>
- 4.191. For RCP4 Transpower proposed to expand the asset health measure by including an additional five asset classes but that the quality standard be removed or, if we decided to retain it, use pooling across years and asset classes.

## *Historical performance and RCP3*

- 4.192. The quality standard for RCP3 in practice meant that Transpower would meet the standard if it delivered on 25% of the expected benefit of its forecast interventions in the asset class. Transpower has so far achieved this quality standard in the first three years of RCP3 by a large margin.

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<sup>98</sup> Transpower, ([Transpower's submission on Issues paper](#)), para 26.

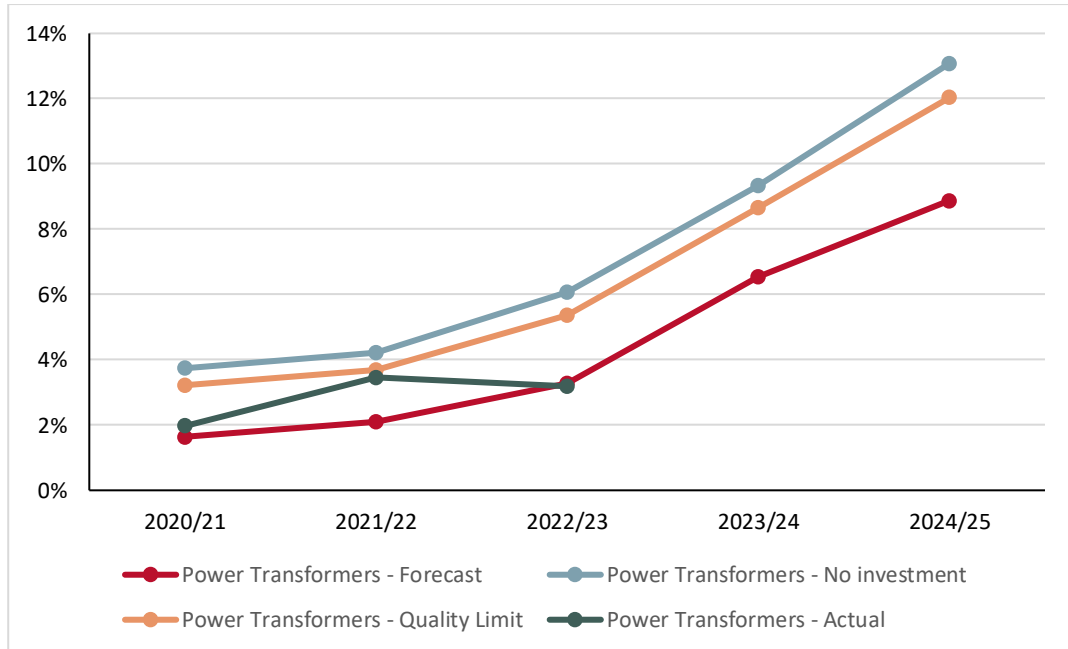
<sup>99</sup> CAC, [CAC's submission on Issues paper](#), para 10.

<sup>100</sup> [Transpower's submission on draft decision](#), para 72.

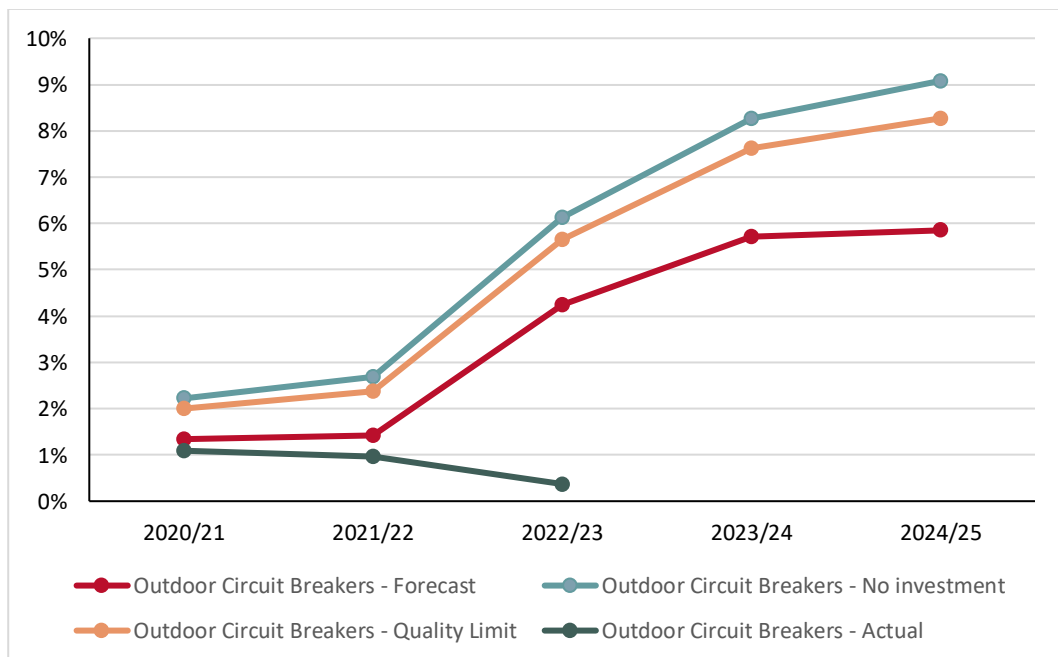
<sup>101</sup> The standards were set, for each year of RCP3, and in each asset class, between the "no investment" percentage of assets with an asset health index >8 and the "forecast investment" percentage of assets with an asset health index >8. The quality standard levels were set at 25% of the range between the two investment outcomes.

4.193. Figure 4.5 and Figure 4.6 show actual performance, together with the quality limit, and expected asset health without any intervention, in the power transformers and outdoor circuit breaker asset classes respectively.

**Figure 4.5 AH RCP3 performance for power transformers (% of assets with AHI>8)**



**Figure 4.6 AH RCP3 performance for outdoor circuit breakers (% of assets with AHI>8)**



4.194. Figures 4.5 and 4.6 illustrate that Transpower’s actual asset health scores are below the quality limits in these asset classes for the first three years of RCP3. The results suggest, with the exception of the 2021/2022 regulatory year for power transformers, that the RCP3 asset health quality standards are set too low. At the time we assessed this approach was appropriate given Transpower was in the early stages of its asset health and risk model development.

*Quality standard*

4.195. Since the RCP3 decision was made, Transpower has made considerable progress in developing its asset health and risk models.

4.196. As set out in our draft, our view is that implementing asset health quality standards is reasonable, and provides an incentive for Transpower to supply electricity transmission services at a quality demanded by consumers consistent with s 52(A)(1)(b) of the Act and cl. A5(a) of the Capex IM.

4.197. Transpower has indicated it is confident in its ability to deliver its proposed RCP4 work programme, which should ensure that asset health is maintained to the levels Transpower has planned for.<sup>102</sup> While we do have RCP4 programme deliverability concerns, Transpower fully delivering its proposal would result in 100% of the outcome from the ‘with intervention’ asset health improvements it has modelled.

4.198. Transpower did not favour asset health quality standards, suggesting that “asset health is a leading indicator for reliability, which is captured under the GP1 and GP2 quality standards”.<sup>103</sup> While we agree asset health is a leading indicator of reliability, we disagree that this is the case with the GP1 and GP2 measures. Grid performance measures GP1 and GP2 are a lagging outcome of asset maintenance and investments in prior years. As explained in the section Grid Performance 2 measure (GP2) Grid output target, we have seen an increase in the duration of interruptions. By setting minimum asset health quality standards, we are incentivising Transpower to make timely asset investments and carry out prudent maintenance before quality of service is impacted.

4.199. Asset health quality standards will help ensure timely investment decisions are made, and approved expenditure is delivered.

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<sup>102</sup> Commerce Commission, [RCP4 draft decision: Attachment B – Capex \(29 May 2024\)](#).

<sup>103</sup> Transpower, [Service Measures Report](#), p 54, section 5.7.2.

- 4.200. We consider quality standards need to set the minimum performance level we expect from Transpower. However, we want to make sure that the quality standard is stringent enough that Transpower has an incentive to ensure asset health does not significantly degrade. At the same time, we want to ensure the quality standard is not triggered by a single atypical year.
- 4.201. Transpower suggested that if we were to retain asset health quality measures, we introduce “a pooling method for the quality standard that factors in the number of AH quality limits that were exceeded in a year, this result would then be pooled across disclosure years”. Transpower argues that pooling allows for some “variance to our delivery plan due to unforeseen changes, reprioritisation, or optimisation of our workplan for delivery within RCP4”.
- 4.202. We consider Transpower’s suggested approach is sensible and agree with its view. Our final decision is to introduce the pooling mechanism proposed by Transpower that pools “four out of the seven asset classes to have met their respective quality limits in the previous two disclosure years”. This pooling approach was also supported by the Verifier.<sup>104</sup>
- 4.203. Pooling across asset classes and years allows Transpower to re-prioritise and re-phase its base capex and opex, and will enable it to optimise the timing and type of intervention. It also helps ensure year on year variations in investment do not unnecessarily affect compliance with the quality standards we have set. We consider this pooling approach is consistent with the Part 4 purpose and meets the requirements of the Capex IM.
- 4.204. Given the RCP3 asset health quality standard performance so far, our final decision is to raise the quality standard limit to 80% of the outcome from the ‘with intervention’ improvement. This is more consistent with the investment programme Transpower has been delivering over RCP3 and proposed for RCP4.
- 4.205. Our view is that the raised quality standard threshold will incentivise Transpower to continue to deliver its base capex programme and maintenance activities, and to maintain and improve its asset health modelling. Our final decision is the same as our draft.

### **Alternatives considered**

#### *Removing the quality standard*

- 4.206. We considered Transpower’s proposal to remove the quality standards for asset health. However, we have formed the view that the reasons for introducing asset health quality standards in RCP3 remain valid for RCP4.

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<sup>104</sup> GHD Advisory and Castalia, [IV Report](#), p viii.

- 4.207. As set out in our draft decision, this is because:
- 4.207.1. asset health is a proxy for asset and network risk and a leading indicator of reliability that is not captured by other measures we have introduced;
  - 4.207.2. asset health provides investment signals for Transpower and so incentivises timely investment decision making; and
  - 4.207.3. we are maintaining our approach to measuring quality because Transpower did not provide us with sufficient evidence to justify removing them. While Transpower argued that it should not be penalised for events outside of its control, we consider pooling mitigates this effect.
- 4.208. We introduced the asset health quality measures in RCP3 reasoning that:<sup>105</sup>
- 4.208.1. these will act as a safety net in order that asset health will not degrade significantly over RCP3 for the asset classes in the measures; and
  - 4.208.2. in the absence of a fully functional risk model that can be used to set forward-looking quality standards, setting these based on asset health provides timely investment signals. This is because asset investment decisions made now may not manifest as quality outcomes for years. Asset health as a feedback mechanism is almost a feed-forward signal in the overall investment/quality framework.
- 4.209. Our view is that these reasons are still valid, given Transpower is not yet able to set asset and grid performance quality targets based on forward looking risk-based investment decisions, and asset health model outputs are forward looking measures Transpower has developed to a mature level.
- 4.210. For the reasons set out above, our final decision is not to remove the quality standards for asset health.

### **Revenue at risk**

- 4.211. Our final decision is to retain the revenue at risk settings for RCP4 with minor modifications (as set out in our draft decision).
- 4.212. Revenue at risk is the total amount of additional revenue Transpower can obtain as reward, or pay as penalty, over the course of RCP4 across measures GP1, GP2, AP1, and AP2.

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<sup>105</sup> Commerce Commission, [RCP3 Decisions paper](#), p 205, para F309.

- 4.213. As set out in our draft decision, the updates and modifications we have made in our final decision on setting revenue at risk are:
- 4.213.1. retain the revenue at risk at 1.4% of the forecast Maximum Allowable Revenue (**MAR**); and
  - 4.213.2. modify the allocation of revenue at risk across the revenue linked measures to put more weight on AP1 and AP2.<sup>106</sup>
- 4.214. Table 4.15 summarises the revenue at risk settings.

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<sup>106</sup> Please note the MAR value considered in this section is Transpower's proposed MAR amount. The final decision MAR is yet to be finalised. However, small changes are unlikely to change the percentage figure significantly. Hence the rationale behind our decision to set the revenue at risk at 1.4% is unaffected.

**Table 4.15 Summary of incentive rates and \$ at risk for service performance measures – our final decision**

Measure and category	Cap	Target	Collar	Incentive rate	\$ at risk
<b>GP1: number of interruptions (per annum)</b>			<b>\$ per event</b>		
N-1 security high economic consequence	0	4	8	789,666	3,158,663
N-1 security material economic consequence	4	21	38	170,537	2,899,122
N security high economic consequence	0	2	4	185,592	371,184
N security material economic consequence	4	15	26	57,795	635,741
N-1 security generator	4	9	14	50,000	250,000
N security generator	4	7	10	83,333	250,000
<b>GP2: average duration of interruption (min)</b>			<b>\$ per min</b>		
N-1 security high economic consequence	23	73	123	63,173	3,158,663
N-1 security material economic consequence	27	74	121	61,683	2,899,122
N security high economic consequence	15	66	117	7,278	371,184
N security material economic consequence	0	104	208	6,113	635,741
N-1 security generator	30	225	420	1,282	250,000
N security generator	0	123	246	2,033	250,000
<b>AP1: HVDC availability (%)</b>			<b>\$ per 1%</b>		
HVDC availability	99.00%	98.00%	97.00%	1,000,000	1,000,000
<b>AP2: HVAC availability (%)</b>			<b>\$ per 1%</b>		
HVAC availability (62 selected assets)	98.62%	98.25%	97.87%	5,320,564	2,000,000

Note: Revenue amounts are in nominal \$s and not referenced to any particular year



### What Transpower proposed

- 4.215. Transpower proposed a total revenue at risk for all measures across the five years of 1.4% of the MAR. This is the same percentage we set in our RCP3 decision.
- 4.216. A revenue at risk of 1.4% with a higher forecast average MAR results in a revenue at risk of \$18 million for each year of RCP4, up from \$11 million in RCP3.<sup>107</sup>
- 4.217. Transpower also proposed to increase the allocation of the revenue at risk to the GP measures and to reduce the allocation of revenue at risk to the AP measures.
- 4.218. Overall, this means that for GP1 and GP2 the possible maximum reward and penalty nearly doubles in nominal dollar terms while for AP1 and AP2 it stays constant.<sup>108</sup>

### What the Verifier and stakeholders said

- 4.219. We considered the following views from stakeholders and the Verifier:
- 4.219.1. Stakeholders were engaged by Transpower regarding the revenue at risk during the final proposal consultation but did not provide any major comment.<sup>109</sup>
- 4.219.2. The Verifier considered the proposed revenue at risk (%) provided a sufficiently strong financial incentive, calculating that a 1.4% revenue at risk would have a 50-basis point impact on Transpower's return to equity.<sup>110 111</sup>

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<sup>107</sup> In RCP3, a tax adjustment was made to 'gross up' the economic value at risk of \$10,740,000 to the 'revenue at risk' of \$14,916,667. The grossed-up figure was used to calculate the revenue at risk (%) of 1.75%, which was then capped at 1.4%. In RCP4, this tax adjustment is not required.

<sup>108</sup> See Table 4.18 for a side-to-side comparison of allocation of dollars at risk per measure.

<sup>109</sup> Transpower, "[RCP4 Consultation](#)" (September 2022), p 52.

<sup>110</sup> GHD Advisory and Castalia, [IV Report](#), p 471.

<sup>111</sup> Return to equity is a financial performance measure. It is calculated as the ratio of a company's net income to shareholders equity.

### Our final decision and reasons

- 4.220. Our final decision (consistent with our draft) is to retain the asset revenue at risk at 1.4% of MAR for two reasons:
- 4.220.1. If the revenue at risk (%) was to be lower in RCP4 compared to RCP3, the incentive to improve or maintain quality would be diluted compared to RCP3. This consideration aligns with objective s 52A(1)(a) of the Act. The potential maximum positive or negative revenue adjustment from the quality incentive scheme (**QIS**) would lose its significance in relation to a higher MAR. This consideration also aligns with s 52A(1)(b) of the Act. A dilution of incentives could result in a level of quality that would be too low compared to what consumers are willing to pay for; and
- 4.220.2. If we set the revenue at risk (%) higher in RCP4, this would provide an incentive for Transpower to increase the quality to consumers compared to RCP3. However, we have no evidence at this stage that consumers are willing to pay for a higher quality of supply in RCP4 compared to RCP3. It is possible that consumers' willingness to pay for a higher quality of supply could be even lower in RCP4 given the expected increase in charges. These considerations align with s 52A(1)(b) of the Act.
- 4.221. We consider retaining the revenue at risk at 1.4% promotes the long-term benefit of consumers under s 52A of the Act. It effectively balances between preventing consumers from having to pay for a quality of supply they are not willing to pay for, and providing an incentive to Transpower to improve the quality of supply that consumers are willing to pay for.
- 4.222. Our final decision is the same as our draft decision. We received no submissions on our revenue at risk draft decision.
- 4.223. Table 4.16 shows the overall difference in dollar terms and share of revenue at risk between the RCP3 settings, the RCP4 settings proposed by Transpower, and our final decision.

**Table 4.16 Total revenue at risk summary (\$ million)**

Revenue incentives	RCP3	RCP4 – Proposed by Transpower	RCP4 – Our Final Decision
<b>Annual revenue at risk</b>	\$10.7	\$18.1	\$18.1
<b>five-year revenue at risk</b>	\$53.7	\$90.6	\$90.6
<b>Percentage of revenue</b>	1.4%	1.4%	1.4%

### Determining the revenue at risk

- 4.224. Revenue-linked quality incentive measures provide Transpower with incentives to:
- 4.224.1. seek to supply a level of quality that consumers are willing to pay for as per s 52A(1); and
  - 4.224.2. deliver quality improvements at a lower cost than would otherwise would have been the case as per s 52A(1)(a) and (b).
- 4.225. The total revenue at risk from the revenue-linked measures indicates the maximum/minimum revenue adjustment that Transpower can experience over RCP4, from performance against the quality targets.
- 4.226. To gain the maximum revenue, Transpower would need to perform in the top 16% percentile of historic performance under our final decision settings. Therefore, the total revenue at risk will not necessarily reflect Transpower's actual revenue over RCP4.
- 4.227. The revenue at risk is already partly determined by our decision on caps, targets, and collars for the revenue-linked measures. This means the following decisions played a key role in determining the final revenue at risk for RCP4, namely:
- 4.227.1. how much revenue to allocate to the AP measures; and
  - 4.227.2. the level at which to set the GP measures incentive rate, which is informed by value of lost load (**VoLL**), to play a key role in 'calibrating' the final revenue at risk for RCP4.
- 4.228. As set out in our draft decision, in considering the level to set the revenue at risk from the revenue-linked quality measures, we considered the following trade-offs, explained below, looking at two extreme cases:
- 4.228.1. A very high revenue at risk results in a high-powered incentive scheme. This may benefit consumers because it provides more opportunities for quality and revenue to adjust for what consumers are willing to pay, and for Transpower to seek cost efficiencies. However, this can penalise Transpower when its behaviour is efficient, as revenue can be clawed back from events outside its control. A high revenue at risk also limits the protection against regulatory errors that could lead to oversupply of quality to consumers (eg, if the incentive rate is set too high).

4.228.2. A very low revenue at risk results in a low-powered incentive scheme. This provides greater price certainty to consumers and protection against the risk of oversupply for quality. However, there is less opportunity for quality and revenue to adjust to meet consumer's willingness to pay. Transpower also has lower incentives to seek for cost efficiencies because of the lower pay-off to cost improvements to supply quality, and because revenue might not be clawed-back when Transpower's behaviour has been inefficient.

*Allocation of revenue at risk between GP and AP measures*

4.229. Transpower has proposed to change the allocation per measure as per Table 4.17 relative to RCP3. Transpower provided the following explanation:<sup>112</sup>

We have allocated more of the incentive pool to the reliability measures (GP1 and GP2) than the availability measures, reflecting the higher economic impact of interruptions and the importance of grid reliability for connected customers and end-consumers.

4.230. Transpower's proposal allocates more of the revenue at risk to the GP measures and, consequently, allocates less to the AP measures. Whilst we recognise interruptions have a higher impact on consumers, we are conscious of the increasing importance of the HVDC and HVAC assets.

4.231. Transpower and stakeholders mentioned that the role of the HVDC would become critical for grid security as the thermal generating stations are decommissioned.<sup>113</sup> We consider that, as more renewable generation is built and demand increases are driven by electrification, the role of HVAC circuits will become more important.

4.232. Therefore, we consider Transpower's proposed allocation which dilutes the incentive strength of asset performance measures would not be in the long-term best interest of consumers. Our final decision (consistent with our draft decision) is to use allocations which more closely align with RCP3 to preserve relative incentive strengths, as per Tables 4.17 and 4.18.

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<sup>112</sup> Transpower, [Service Measures Report](#), p 30.

<sup>113</sup> Transpower, ["Examining the purpose and future role of our HVDC link" \(7 March 2024\)](#), p 6-7.

**Table 4.17 Allocation of revenue at risk between measures (%)**

Grid service measure	Percentage of revenue at risk		
	RCP3	RCP4 (Transpower proposal)	RCP4 final decision
<b>GP1</b>	~43	~46	~42
<b>GP2</b>	~43	~46	~42
<b>AP1</b>	~5	~3	~6
<b>AP2</b>	~9	~6	~11
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 4.18 Allocation of revenue at risk between measures (\$)**

Grid service measure	Revenue at risk allocation (\$ million)		
	RCP3	RCP4 (Transpower proposal)	RCP4 final decision
<b>GP1</b>	4.6	8.3	7.6
<b>GP2</b>	4.6	8.3	7.6
<b>AP1</b>	0.5	0.5	1.0
<b>AP2</b>	1.0	1.0	2.0
<b>Total</b>	<b>10.7</b>	<b>18.1</b>	<b>18.1</b>

*Revenue at risk for asset performance measures*

- 4.233. Our final decision is to allocate revenue at risk to the AP measures to ensure incentives to invest in these assets are not diluted. This is consistent with our draft decision.
- 4.234. Transpower proposed to keep the dollar amounts allocated to AP1 and AP2 constant from RCP3, \$0.5 million and \$1 million respectively. Given that the same RCP3 total revenue at risk % is used, and not the same RCP3 total revenue at risk dollar amount, this has the effect of diluting the incentive strength on the AP measures. For example, revenue at risk from the AP measures is 3% for AP1 and 6% for AP2 in Transpower's RCP4 proposal, compared to 5% and 9% respectively in RCP3.

- 4.235. Considering the increased importance of the HVDC and HVAC assets, as well as the consistent below target performance of the AP2 measure in RCP2 and RCP3,<sup>114</sup> we consider the allocation of revenue at risk to the AP measures needs to be equivalent to RCP3 in percentage terms. Our final decision (consistent with our draft decision) is to allocate \$1 million to AP1 and \$2 million to AP2, maintaining their importance within the incentive scheme as per Table 4.19.

**Table 4.19 Allocation of revenue at risk for AP1 and AP2**

AP measure	RCP4 – Transpower’s proposed revenue at risk (\$ million)	RCP4 – Final decision revenue at risk (\$ million)
<b>AP1 - HVDC availability</b>	0.5	1.0
<b>AP2 – HVAC availability</b>	1.0	2.0

*Revenue at risk for grid performance measures*

- 4.236. Our final decision is to set the incentive rate to \$5,910/MWh. This is consistent with our draft decision.
- 4.237. The revenue at risk for grid performance measures is, in principle, determined by the incentive rate and MWh for each POS category.
- 4.238. The incentive rate reflects the VoLL to ensure quality improvements are informed by the best available information we have on consumer preferences.<sup>115</sup>

<sup>114</sup> AP2 actual performance has been below target every year since 2016.

<sup>115</sup> This aligns with s 52A(1)(b) of the Act.

- 4.239. The VoLL figure is informed by Transpower's 2018 VoLL study and is informed by both the consumers' willingness to pay to reduce the level of outages (more reliability), and the willingness to accept, in terms of compensation, increased level of outages (less reliability):<sup>116</sup>
- 4.239.1. We have calculated a VoLL of \$35,374/MWh.<sup>117</sup> The VoLL figure used in RCP3 was \$25,000/MWh. Transpower has used the RCP3 VoLL figure in its RCP4 proposal calculations. However, this figure was calculated in 2018. We have updated this figure to account for inflation to better reflect consumers' willingness to pay.<sup>118</sup>
- 4.239.2. The VoLL of \$35,374/MWh is then scaled back by the Incremental Rolling Incentive Scheme (**IRIS**) retention factor of 34%. This produces an incentive rate for the grid performance measures of \$12,027/MWh. The reason for this is to account for the interactions with the IRIS mechanism. If VoLL is not scaled back, consumers may end up paying more for an improvement in reliability than what it is worth to them. Any quality improvement through opex or capex is only partially borne by Transpower. However, consumers pay the rest of the expenditure to improve quality, as well as the incentive payment to reward Transpower for the quality improvement.
- 4.239.3. In RCP3, the incentive rate was further reduced to approximately 50% to manage the risk of over-investment in the grid.<sup>119</sup> In RCP4, for similar reasons, Transpower's proposed to use an adjustment of 45%. As set out in our draft decision, we consider an adjustment is required for RCP4 to allow for a balanced overall quality incentive mechanism. Hence, we have adjusted the \$12,027/MWh by using a scaling factor of ~49% to manage the risk of over-investment in the grid.
- 4.240. Table 4.20 summarises the adjustments made to produce the incentive rate of \$5,910/MWh from the starting VoLL figure of \$35,374/MWh.

<sup>116</sup> Transpower, "[Value of lost load study](#)" (November 2018).

<sup>117</sup>  $\text{VoLL}(\$35,374/\text{MWh}) = \text{VoLL}(\$2004/\text{MWh}) * \text{CPI}(2027\text{Q4}) / \text{CPI}(2004\text{Q4})$ , where:  
 -  $\text{VoLL}(\$2004/\text{MWh}) = \$20,000$ , this is the VoLL stated in the Electricity Industry Participation code 2010  
 -  $\text{CPI}(2027\text{Q4}) = 1369$ , this is the CPI figure as at Q4 2027 - the midpoint of RCP4  
 -  $\text{CPI}(2004\text{Q4}) = 774$ , this is the CPI figure as at Q4 2004 – the time of calculation of \$20,000/MWh.

<sup>118</sup> This approach is also consistent with the approach we have adopted for the concurrent default price path for electricity distribution business (DPP4).

<sup>119</sup> Commerce Commission, [RCP3 Decisions paper](#), p 216, para F367.

**Table 4.20 RCP4 incentive rate calculations**

Variable	Calculated value (\$)
VoLL	35,374
VoLL * incentive rate (34%)	12,027
VoLL * incentive rate (34%) * adjustment (~49%)	5,910

4.241. Table 4.21 shows how the incentive rate of \$5,910/MWh is then applied across POS sub-categories. This provides the total revenue at risk for each POS sub-category as per below:

**Table 4.21 Incentive rate by sub-category**

GP sub-category	Hours (collar vs target)	Average load (MW)	MWh	Revenue at risk (\$)	\$/MWh	\$/MWh as % of VoLL*IRIS
<b>N-1 Security High Economic Consequence</b>	11.5	92.7	1,069	6,317,327	5,910	0.49
<b>N-1 Security Material Economic Consequence</b>	50.7	19.3	981	5,798,243	5,910	0.49
<b>N Security High Economic Consequence</b>	5.6	22.4	126	742,367	5,910	0.49
<b>N Security Material Economic Consequence</b>	64.1	3.4	215	1,271,483	5,910	0.49
<b>N-1 Security Generator</b>	64.3	194.5	12,499	500,000	-	-
<b>N Security Generator</b>	26.7	59.6	1,588	500,000	-	-



- 4.242. Table 4.22 illustrates the 50/50 split of the revenue at risk calculated for each POS category in Table 25 between the GP1 and GP2 measures.

**Table 4.22 Allocation of revenue at risk for GP1 and GP2**

GP1 and GP2 sub-category	RCP4 – Our final decision revenue at risk (\$)
<b>N-1 Security High Economic Consequence</b>	3,158,663
<b>N-1 Security Material Economic Consequence</b>	2,899,122
<b>N Security High Economic Consequence</b>	371,184
<b>N Security Material Economic Consequence</b>	635,741
<b>N-1 Security Generator</b>	250,000
<b>N Security Generator</b>	250,000
<b>Total</b>	<b>7,564,710</b>

*Alternatives considered*

- 4.243. We considered the possibility of taking a more principle-based approach by setting the incentive rate at 100% of VoLL (after adjustment for the IRIS retention rate). This would result in a total revenue at risk of 2.9%.
- 4.244. We consider increasing the revenue at risk to 2.9% would require improved evidence that consumers are willing to pay for increased levels of quality. In addition, we would also need to carefully consider any unintended consequences of using a higher VoLL incentive rate.
- 4.245. We note the VoLL used in Transpower’s quality incentive scheme is an average valuation across different consumer groups, periods of time, and valuation methods. This means the incentive rate, even if set at a higher level, might not reflect consumers’ marginal valuations at each point in the network. Therefore, using a higher VoLL incentive rate, will not necessarily bring the supply of quality closer to a ‘social’ optimum.
- 4.246. We recognise that a potential benefit of setting a higher VoLL incentive rate is to allow Transpower to retain a greater share of benefits of a quality improvement.

4.247. However, our current approach to setting the VoLL incentive rate and quality targets already intends to achieve a balance between:

4.247.1. providing incentives to Transpower to improve the supply quality to consumers; and

4.247.2. passing on the benefits of improved quality to consumers by setting credible but challenging quality targets.

4.248. For example, at each RCP we revise the levels of targets and quality limits to ensure the wider investments and works are considered. Specifically, for GP1 and GP2, Transpower has been investing significantly into the grid.

4.249. Over RCP3 Transpower has performed consistently above target and has received the benefit of investment. To reflect this, we are making the levels more stringent for RCP4 to prevent the target and quality limit from losing meaning and becoming too easy to achieve. This will prevent Transpower from earning an 'excessive benefit' which will be passed-on to customers in the form of lower charges and improved levels of quality.

## 5. Reporting only grid output measures

- 5.1. Our final decision for reporting only grid output measures are:
- 5.1.1. introduce new grid performance measure GP4;
  - 5.1.2. introduce new customer service measures CS1 and CS2;
  - 5.1.3. retain existing asset performance measures AP3 and AP4 as proposed by Transpower;
  - 5.1.4. remove existing asset performance measure AP5 and grid performance measure GPM as proposed by Transpower; and
  - 5.1.5. introduce new asset performance measure AP 1.2.
- 5.2. The Verifier’s conclusions about what Transpower proposed, stakeholders’ views on our Issues paper, and our analysis is set out below. We received two submissions on our draft decision (and no cross submissions) related to this measure. We discuss the submission and the reasons for our final decision below.

### **Grid Performance 4 measure (GP4) (previously NR and GP3) - Energy not served**

- 5.3. Transpower has proposed a new measure GP4 that will measure energy not served, which is the amount of energy demand not supplied due to a transmission interruption to supply.
- 5.4. Transpower is proposing to report against the same four supply POS sub-categories applied to GP1 and GP2 (excluding generators), ie, N-1 high economic consequence; N-1 material economic consequence; N high economic consequence and N material economic consequence.<sup>120</sup> For more information on POS and sub-categories, please see GP1 section ‘Points of Service settings’ above.
- 5.5. The Verifier and stakeholders supported the introduction of this measure.<sup>121, 122</sup>

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<sup>120</sup> Transpower, [Service Measures Report](#), p 39, section 5.2.1.

<sup>121</sup> GHD Advisory and Castalia, [IV Report](#), p 488, section 20.12.

<sup>122</sup> Transpower, [Submission Summary - Grid Service Engagement Paper 1](#)”, (August 2022), para 30-31.

- 5.6. Our final decision (which is the same as our draft) is to introduce this new measure because:
- 5.6.1. it provides a valuable new metric to determine quality of service provided, and provides a view on the economic impact of interruptions which follows the purpose of Part 4 to promote long-term benefits of consumers;
  - 5.6.2. the impact of interruptions can vary widely even within the same POS subclass depending on when they take place. GP4 enables us to monitor the actual impact customers experience in case of an interruption;
  - 5.6.3. it provides insight about whether to introduce quality standards and/or revenue linking in future RCPs once we have sufficient historic data;
  - 5.6.4. Transpower previously reported on planned interruptions with a measure called GP3. To avoid confusion, we propose this measure be called GP4; and
  - 5.6.5. requiring Transpower to report both percentage and absolute values will provide more context to customers.
- 5.7. We received no submission to our draft decision on this measure.

#### **Customer Service 1 & 2 measures (CS1 and CS2)**

- 5.8. Our final decision is to introduce the CS1 measure as per our draft decision. The information is shown in Tables 5.1.

**Table 5.1: Customer Service measure 1 (CS1) – final decision**

Area	Detail
<b>Customer feedback</b>	Overall customer satisfaction in percentage terms based on Transpower's annual customer survey.

- 5.9. Our final decision is to introduce the CS2 measure with some amendments to our draft decision. We have removed reporting requirements for areas where no data is available and amended the reporting on costing. Table 5.2 summarise our final decision.

**Table 5.2: Customer Service measure 2 CS2 – final decision**

Area	Detail
<b>Enquiries</b>	<ol style="list-style-type: none"> <li>1. Number of connection enquiries.</li> <li>2. Time to start of investigation or formal decline to investigate, in particular:               <ol style="list-style-type: none"> <li>a. average,</li> <li>b. minimum and</li> <li>c. maximum times in days.</li> </ol> </li> </ol>
<b>Investigations</b>	<ol style="list-style-type: none"> <li>3. Number of investigations started.</li> <li>4. Average time to deliver concept assessment in days.</li> <li>5. Percentage and number of investigations projects delivered within contracted time.</li> </ol>
<b>Delivery</b>	<ol style="list-style-type: none"> <li>6. Number of connections delivered.</li> <li>7. Value of connections delivered in dollars.</li> <li>8. Median and mean time from TWA to commission – Load.</li> <li>9. Median and mean time from TWA to commission – Generation.</li> <li>10. For all connections where the final commissioned project cost exceeds the agreed cost, disclose the average percentage cost overrun, and the number of these.</li> <li>11. For all the connections where the final commissioned project cost is less than the agreed cost, disclose the average percentage cost underrun, and the number of these.</li> </ol>

*Transpower's proposal*

- 5.10. Transpower has proposed the introduction of two pilot reporting-only customer service measures, CS1 and CS2:
- 5.10.1. CS1 to measure overall customer satisfaction, based on a question in Transpower's annual customer survey (average percentage); and
  - 5.10.2. CS2 to measure how Transpower is delivering new or enhanced grid connections across five sub-categories, representing different elements of the connection process as per Table 5.3.

**Table 5.3: Customer Service measure 2 (CS2) - Transpower proposal**

Sub-category	Detail
<b>Average time to deliver concept assessment [days]</b>	Measures and reports average turnaround time for the initial feasibility assessment of new connection concepts in calendar days. Supporting efficient early triage of connection concepts helps our customers prioritise resource to their most viable projects.
<b>Percentage of investigation projects delivered within contracted time</b>	Measures and reports the percentage of connection investigations completed within the timeframe agreed in the associated Transpower Services Agreement (TSA).
<b>Median time from Transpower Works Agreement (TWA) to commission – Load [days]</b>	Measures and reports on the median time from the start date of the associated TWA to commissioning for all load connection projects commissioned within the reporting period.
<b>Median time from TWA to commission – Generation [days]</b>	Measures and reports on the median time from the start date of the associated TWA to commissioning for all generation connection projects commissioned within the reporting period.
<b>Percentage of connection projects delivered within contracted time</b>	Measures and reports the percentage of connection projects commissioned within the timeframe agreed in the associated TWA.

- 5.11. The Verifier and stakeholders supported the introduction of these measures.<sup>123 124</sup>
- 5.12. We received one submission from Transpower on our draft decision with some suggested amendments for parts of CS2 as discussed below.

*Our final decision and reasons*

- 5.13. Our final decision (which is the same as our draft) is to introduce measures which provide information on customer service, which is an area not currently monitored through the grid output measures.
- 5.14. CS1 can provide an overall sense in direction of the performance of Transpower. While an aggregated indicator may not provide a tangible and concrete metric to measure performance, having visibility over the long-term trend in customer satisfaction provides an indication of long-term patterns in performance. This is consistent with the requirements of cl. A5 of the Capex IM.

<sup>123</sup> GHD Advisory and Castalia, [IV Report](#), p 489-491.

<sup>124</sup> Transpower, [Submission Summary](#), para 32.

- 5.15. Given the limited burden on Transpower to compile and report the data, and the potential use for trend analysis, we consider adding the measure can provide a beneficial indicator to customers.
- 5.16. CS2 provides detail on new and enhanced grid connections. By monitoring the operational delivery of connections, it is possible to more closely analyse whether Transpower is improving performance and efficiency, and enables Transpower and its customers to plan and deliver connections more efficiently.
- 5.17. While we agree with the introduction of the CS2 measure, we are proposing an expanded set of metrics for our final decision including:
- 5.17.1. reporting on the mean and observed totals to provide a more useful view on actual performance as the median in isolation may not provide meaningful information; and
  - 5.17.2. breaking down the measure to consider enquiries, investigations, and delivery separately to make it easier to isolate poor performance if it were to take place.
- 5.18. We consider that our final decision to expand the set of metrics provides a more detailed measure which results in Transpower providing more information on the service delivered to enable customers to have a better picture of service delivery. This is similar to our draft decision approach although some of the metrics have changed due to data availability and to clarify reporting.
- 5.19. In our draft decision we proposed that Transpower discloses customer connection project cost overruns in the CS2 measure. In its submission on our draft decision Transpower stated that cost underruns should also be factored into the measure and recommended amending the IPP determination wording to the following: “average ratio of final commissioned cost compared to initial budget”.<sup>125</sup> Whilst we agree that cost underruns should be factored in, we do not agree with the recommended change to the IPP determination (ie, the proposed solution).
- 5.20. Our view is that the use of the term ‘initial budget’ needs to be more clearly defined. We consider that the term ‘agreed price’ (which is the contracted price between Transpower and the connected party, at the start of a project) is a more accurate project cost reference.

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<sup>125</sup> Transpower, [Transpower’s submission on Draft IPP determination](#), p. 42.

- 5.21. We agree Transpower should report on both project cost overruns and underruns. Having a count of projects in each category, together with the total number of connections delivered, will provide a clearer indication on the volume and scale of under and over budget projects.
- 5.22. We also consider that the amendment proposed by Transpower does not provide a complete picture of final commissioned project cost versus agreed price. For instance, a ratio of 1 can mean an equal number of project cost underruns and overruns or all projects completed exactly to budget. Therefore, our decision is that Transpower reports:
- 5.22.1. for all connections where the final commissioned project cost exceeds the agreed cost, disclose the average percentage cost overrun, and the number of these; and
- 5.22.2. for all connections where the final commissioned project cost is less than the agreed cost, disclose the average percentage cost underrun, and the number of these.
- 5.23. Transpower in its submission on our draft decision also proposes removing the CS2 sub-clause “Percentage of on time project commencement” because:<sup>126</sup>
- ‘Agreed date’ is subject to change for several reasons include a request by the connecting party. We do not consider that this metric provides value. We consider (v) [number and percentage of connections delivered within the contracted time;] provides a more appropriate metric of delivery performance.
- 5.24. Our final decision is to remove this clause from the determination. This is because we consider that the report in cl. 27.1.6(c)(v) - number and percentage of connections delivered within the contracted time - provides sufficient information on the timing of the delivery phase of projects.
- 5.25. Transpower also proposed amending CS2 sub-clause “customer overall satisfaction with connection process rating based on exit surveys” to “a measure of customers’ satisfaction with the connection process as indicated via an annual survey” explaining:<sup>127</sup>

We do not do exit surveys, our annual survey is the established mechanism for feedback. The survey has a section about level of satisfaction with delivery and works, for both contract (TWA) and TPM processes.

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<sup>126</sup> Transpower, [Transpower’s submission on Draft IPP determination](#), p. 42.

<sup>127</sup> Transpower, [Transpower’s submission on Draft IPP determination](#), p. 42.



- 5.26. Our final decision is to remove this clause from the determination. If there is no data available for each new connection, we do not believe using a generic yearly figure provides additional benefit and would not align with the other clause requirements.
- 5.27. Transpower also proposed adding a clause to the IPP Determination stating that it will not be required to release any commercially sensitive information. The argument is that the number of new connections in a certain year may be very low.
- 5.28. We agree that Transpower should not be required to release information that is commercially sensitive. However, we consider that the proposed wording of the clause is too broad. As such, our final decision is that Transpower not be required to publish information where it reasonably considers that the information is commercially sensitive.
- 5.29. We may consider introducing quality standards and/or revenue linking this measure in subsequent RCPs once we have sufficient historical data.
- 5.30. Following our consideration of submissions and further analysis our final decision settings for the CS1 and CS2 measures are detailed in Tables 5.1 and 5.2.

#### **Asset Performance 3 & 4 measures (AP3 & AP4)**

- 5.31. In RCP3 we introduced AP3 and AP4. These measures report on HVAC asset availability and are a reporting only requirement.
- 5.32. AP3 measures the number of planned outages of selected HVAC assets returned to service 2 or more hours after the original planned return-to-service time. AP3 assists customers by disclosing return to service durations of certain transmission assets, and whether this is increasing over time.
- 5.33. AP4 measures the number of outages where a delay to the planned, or extended, return-to-service time was communicated with 90 minutes or less notice, against the total number of planned outages. AP4 helps customers by requiring Transpower to provide timely communication about delays to those assets being returned to service.

- 5.34. In the RCP3 Reasons paper we explained the motivation behind the introduction of these measures. At that time, we identified that the measures had value to customers and stakeholders. Throughout RCP4 engagement the same feedback has been provided by customers. In our view, the same rationale remains relevant for RCP4.<sup>128</sup>
- 5.35. Transpower has proposed to keep the measures as they are. The Verifier and stakeholders have agreed with the proposal.<sup>129, 130</sup>
- 5.36. Our final decision (which is the same as our draft) is to retain these measures unmodified as we consider they provide valuable information to customers.

#### **Asset Performance 5 measure (AP5)**

- 5.37. In RCP2 we introduced asset performance measure AP5 to measure the extent to which Transpower places customers on N-security.
- 5.38. We considered time on reduced levels of security can have a significant impact on customers if they are not given adequate warning to prepare for this. In RCP3 we decided to retain the measure.<sup>131</sup>
- 5.39. Transpower has proposed to remove the AP5 measure as it considers it does not provide valuable information to customers and is very labour intensive to collect the reporting data.<sup>132 133</sup>
- 5.40. Transpower's view it that the AP5 measure does not assist customers in mitigating risks associated with outages.
- 5.41. The Verifier and stakeholders have agreed with the proposal to remove the AP5 measure.<sup>134 135</sup>
- 5.42. We are satisfied this measure no longer provides sufficient benefit to consumers to be worth retaining. Customers have indicated they do not find the information useful, and measuring the length of time customers are placed on N-security does not provide an indication on performance.

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<sup>128</sup> Commerce Commission, [RCP3 Decisions paper](#).

<sup>129</sup> Transpower, [Submission Summary - Grid Service Engagement Paper 1](#), para 20-21.

<sup>130</sup> GHD Advisory and Castalia, [IV Report](#), p 482-483.

<sup>131</sup> Commerce Commission, [RCP3 Decisions paper](#), para F258-F260.

<sup>132</sup> Transpower, ["Regulatory control period 4 proposal April 2025 – March 2030", \(21 November 2023\) \(RCP4 Proposal\)](#), section 7.6.1, p 86.

<sup>133</sup> Transpower, [Service Measures Report](#), p 61.

<sup>134</sup> GHD Advisory and Castalia, [IV Report](#), p 484.

<sup>135</sup> Transpower, [Submission Summary](#), para 22-25.

- 5.43. Planned outages are required to enable investment in the grid, which is in the long-term benefit of consumers. These planned outages are likely to increase over RCP4. Putting customers on N-security may be necessary to maintain supply in certain circumstances, and Transpower is best placed to make that judgement about when this is appropriate.
- 5.44. We have considered Transpower’s proposal, stakeholder views, and the Verifier’s conclusions. We agree that the asset performance measure AP5 is not providing value to consumers and that it is no longer necessary.
- 5.45. Our final decision (which is the same as our draft) is to remove the AP5 measure (consistent with Transpower’s proposal). Given the reporting burden on Transpower and lack of demand for the information, the costs outweigh the benefits of retaining it.

#### **Grid Performance M measure (GPM)**

- 5.46. In RCP3, we introduced grid performance measure GPM to report on momentary interruptions with a duration of less than one minute. We determined the metric could provide some valuable insight in terms of performance of the grid. In the RCP3 IPP Reasons and decisions paper, we stated: <sup>136</sup>

We agree with Transpower’s submission that the number of momentary interruptions does not necessarily indicate deteriorating quality and can help prevent longer duration interruptions. Therefore, our decision is to remove the quality standard for the GP-M measure.

However, we still consider that transparency over the number and cause of momentary interruptions should be available for interested parties to evaluate. In its submission on our draft decision, Transpower considered that reporting should be on trends, insights and notable events which will be more useful than granular reporting.

- 5.47. Transpower has proposed removing the GPM measure as it considers it is not useful to customers, noting “they do not use the GP-M reports but could see the benefit of specific data being available in their annual individual engagement plan”.<sup>137</sup>
- 5.48. The Verifier agreed with Transpower that the GPM measure is not relevant to customers. Stakeholders submitting on Transpower’s RCP4 service measures supported removing the measure conditional on Transpower incorporating the specific data in annual engagement plans.<sup>138</sup>

<sup>136</sup> Commerce Commission, [RCP3 Decisions paper](#), para F250-F252.

<sup>137</sup> Transpower, [RCP4 Proposal](#), section 7.6.2, p 87.

<sup>138</sup> GHD Advisory and Castalia, [IV Report](#), p 472, section 20.5.2.

- 5.49. Our final decision (which is the same as our draft) is to remove the GPM measure and to incorporate its features into customer annual engagement plans (this is consistent with Transpower's proposal).

**Asset Performance 1.2 measure (AP1.2) - HVDC operational availability**

- 5.50. Our final decision is to introduce the reporting only AP1.2 measure to report on the actual transfer capacity in MW, and the availability (or transfer capacity) in percentage of total capacity of the HVDC link due to the outages of all assets that affect the transfer capacity of the HVDC link. The difference from our draft decision is the inclusion of the Wellington load, following one submission on our draft decision as discussed below.
- 5.51. The asset performance measure AP1 measures the operational capacity in terms of availability of the HVDC, due to outages on both the bipole and monopoles of the HVDC link. In other words, it measures HVDC availability without considering the impact of other related assets that are necessary for the HVDC link to operate at full capacity. Outages of these related assets affect the operational capacity of the HVDC.

*Our final decision and reasons*

- 5.52. As set out in our draft decision, when providing information to customers on HVDC availability Transpower uses either the AP1 parameters or the equivalent of our proposed AP1.2 parameters. The results of the two can be significantly different. For example, the AP1 performance measure provides an availability of around 98%. If we consider the impact of the outages of ancillary and connected assets, HVDC availability reduces to 89%.<sup>139</sup> AP1.2 would measure the impact of outages on the availability of the HVDC.
- 5.53. This means customers are likely to be confused by the availability figures, and when they see a figure around HVDC availability they may not be able to put this into perspective. For HVDC operational capability, customers have no clear reporting and would need to manually collate data and figures using reports. This is less than ideal and may result in masking poor performance. Reporting on AP1.2 will allow us to assess whether Transpower meets its outputs for the NZGP major capex project, and the base capex investments, on the synchronous condensers during RCP4.

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<sup>139</sup> Transpower, [NZGP1 MCP 1](#), p 6. Transpower states that the 1070 MW transfer capability referred to in the addendum is the historical average availability of the HVDC link and associated AC assets.

- 5.54. Our draft decision noted that we want to differentiate between the two types of capacity and ensure customers are well informed and clear on what the figures measure. This means that when Transpower reports on HVDC capacity in its investment decisions, customers will be able to understand historical HVDC capability and put the figure into context.
- 5.55. We consider that by having reporting on both AP1 and AP1.2, customers will be better informed on the actual performance of the HVDC link.

Additional analysis following draft decision feedback

- 5.56. In its submission to the Draft decision paper, Transpower suggested amending our approach for AP1.2.
- 5.57. Transpower agrees with the measure but suggests including the Wellington load (excluded from our draft decision) and aligning this with the HVDC capacity limit information data Transpower currently provides to the Wholesale Information Trading System (**WITS**) which is publicly available.<sup>140</sup>
- 5.58. We agree with Transpower's suggestion. Aligning the measure with the data already released through WITS will provide more clarity for customers, and agree that the Wellington load is an important part of HVDC link operational availability.
- 5.59. Therefore, our final decision is that the AP1.2 measure:
- 5.59.1. incorporates the reduction in capacity of the HVDC link due to the outages of the reactive support devices, harmonic filters, and the adjacent HVAC transmission lines; and
  - 5.59.2. includes the impact of Wellington load on the transfer capacity of the HVDC, and the impact of the outages in the bipole or monopoles.
- 5.60. In future, we may consider making the two measures closely aligned by introducing quality standards and revenue linking AP1.2 as well.

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<sup>140</sup> Transpower, [Transpower's submission on Draft decision](#), para 69.

### **Asset Performance 2 measure (AP2.2) - Market impact**

- 5.61. Our Issues paper set out our intention to introduce a market impact measure, AP2.2. This would complement the availability measure AP2.<sup>141</sup> AP2 provides information on alternating current (AC) circuit availability but not on the impact unavailability has on the electricity market or supply. Linking AC circuit availability to electricity prices would better show the impact of unavailability on customers, more closely aligning it with the Part 4 purpose.
- 5.62. In response to our Issues paper, MEUG submitted that, despite the merit in looking at market impact measures, they would welcome further discussion on this option.<sup>142</sup> Transpower pointed out how the new measure would need good analysis and evidence before being introduced.<sup>143</sup>
- 5.63. Our draft decision was not to introduce this measure. A submission to our draft decision from MEUG agrees stating that there is more work required before introducing this measure and they would be happy to work with us on this.<sup>144</sup>
- 5.64. Our final decision is not to introduce the measure. We agree with the submissions that more work is required before creating reporting requirements. We intend to work with Transpower and MEUG during RCP4 to determine what this measure could look like, and potentially introduce it in RCP5 if its design would meet the requirements of schedule A of the Capex IM.

### **Proposed new measure and quality standard on planning process and planning approaches**

- 5.65. CAC in its submission on the Draft decision states that:<sup>145</sup>
- We recommend the commission also considers additional measures, such as new quality standards, that could be used to provide greater transparency about Transpower's planning processes and the extent to which it recognises and uses consumer-centric integrated planning approaches.
- 5.66. In its cross-submission on the Draft decision, Transpower discussed its approach to integrated planning:<sup>146</sup>

[...] We agree with Consumer Advocacy Council, and we consider that good practice integrated planning should also include taking account of generation.

We engage with our connected (and prospective) customers to understand their perspectives and needs and take these into account when deriving expenditure

<sup>141</sup> Commerce Commission, [RCP4 Issues paper](#), para 7.115-7.118.

<sup>142</sup> MEUG, [MEUG's submission on Issues paper](#), para 20.

<sup>143</sup> Transpower, [Transpower's cross-submission on Issues paper – comparing indexation approaches](#), para 14-15.

<sup>144</sup> MEUG, [MEUG's submission on Draft decision](#), para 13-14.

<sup>145</sup> CAC, [CAC's submission on Draft decision](#), para 18.

<sup>146</sup> Transpower, [Transpower "Cross submission on RCP4 Draft decision" \(15 July 2024\)](#), para 6-8.

forecasts for enhancement and development works. Our annual Transmission Planning Report details how we forecast demand and generation. Demand forecasting applies a two-stage modelling process:

- stage 1 considers how underlying, business-as-usual growth will evolve with input from distribution companies and major electricity users about their expectations
- stage 2 considers how the uptake of electric vehicles, solar photovoltaic panels, battery storage and industrial electrification will impact demand.

It is important to note, our RCP4 forecast expenditure is predominantly made up of expenditure to replace, refurbish, or maintain our existing assets. The majority of expenditure driven by changing demand or generation requirements sit outside RCP4.

- 5.67. Transpower’s cross-submission highlights how Transpower engages with its customers in developing its Transmission Planning Report (**TPR**).
- 5.68. In addition to Transpower’s TPR, we require Transpower to provide an Integrated Transmission Plan which includes the publication of an annual Asset Management Plan.
- 5.69. The Transpower TPR sets out how it engages with local electricity distribution businesses (**EDBs**) to ensure technical supply capacity solutions are integrated. For example, in the 2023 TPR, Transpower discusses its ongoing engagement with Aurora and PowerNet to investigate solutions to address long-term capacity issues at the Cromwell and Frankton grid exit points (**GXP**). Both EDBs will be affected by the long-term transmission solution Transpower proposes.<sup>147</sup>
- 5.70. Connected party needs are also considered when Transpower seeks to replace existing assets at GXP substations, such as transformers. In these situations, Transpower may investigate whether a like-for-like capacity is required, or if an upgrade is more appropriate, which may include a request to do so by the connected EDB.
- 5.71. Our view is that a quality standard linked to integrated planning is not necessary because Transpower already considers connected party needs and plans.

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<sup>147</sup> Transpower, [2023 Transmission Planning Report](#), Section 19.4.1, p 369.

- 5.72. In our RCP3 decision, and following the RCP3 verifier review recommendations, we introduced new information reporting requirements on Transpower regarding customer consultation.<sup>148</sup> We set these to encourage Transpower to become more open and transparent in its IPP proposal customer engagement, so that Transpower’s customers will:<sup>149</sup>
- 5.72.1. have more opportunity to engage with Transpower to influence its investment decisions throughout the regulatory period; and
  - 5.72.2. become more confident that Transpower is efficiently investing and operating in a way that reflects customer preferences.
- 5.73. We set these obligations with a view to improving Transpower’s engagement with customers, stating that we wanted the obligations to “have a positive impact on Transpower’s RCP4 proposal and our review of that proposal.”
- 5.74. Over RCP3 we have been monitoring Transpower’s progress in its customer consultation, and consider it is improving in this area. In preparation for its RCP4 proposal submission, our view is that Transpower meaningfully engaged with stakeholders.<sup>150</sup>
- 5.75. Transpower carried out consultation on its draft plan in October 2022, performed webinar sessions on its asset management approach, key portfolio plans, and its proposed service measures. We are satisfied that this process helped inform Transpower’s RCP4 proposal and do not consider a quality standard to “provide greater transparency about Transpower’s planning processes”, is necessary, as suggested by the CAC.

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<sup>148</sup> Transpower, [RCP3 53ZD notice – Customer consultation \(14 November 2019\)](#).

<sup>149</sup> Transpower, [RCP3 Decisions paper](#), para 2.136-2.144.

<sup>150</sup> Transpower, RCP4 proposal development and consultation available at <https://www.transpower.co.nz/our-work/industry/regulation/rcp4/developing-our-rcp4-proposal>