

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

Draft Decision Attachment C - Opex

Date of publication: 29 May 2024

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Chapter 1 Introduction

Purpose

- 1.1 This document is part of the package of draft decision documents on Transpower's individual price path (**IPP**) for the fourth regulatory period starting on 1 April 2025 (**RCP4**).¹ The draft decision package was published on 29 May 2024. We seek submissions on our draft decisions, which will inform our final decisions for the IPP reset.
- 1.2 This is one of five attachments to our main draft decision paper. The main draft decisions paper sets out all the decisions as well as the context within which we are setting operating expenditure (**opex**).
- 1.3 The purpose of this attachment is to set out our review of Transpower's proposal and detail our draft decisions relating to opex for the RCP4 IPP reset, and to explain our reasons for those draft decisions.

Structure of this paper

- 1.4 This paper discusses the following:
 - 1.4.1 Chapter 2 – opex overview;
 - 1.4.2 Chapter 3 – opex review of Transpower's proposal; and
 - 1.4.3 Chapter 4 - our assessment of Transpower's RCP4 forecast opex by work programme.

¹ Details on consultation dates and formats for submission can be found in Commerce Commission, Transpower's individual price-quality path for the regulatory control period commencing 1 April 2025 – Draft Decision (29 May 2024), p 22.

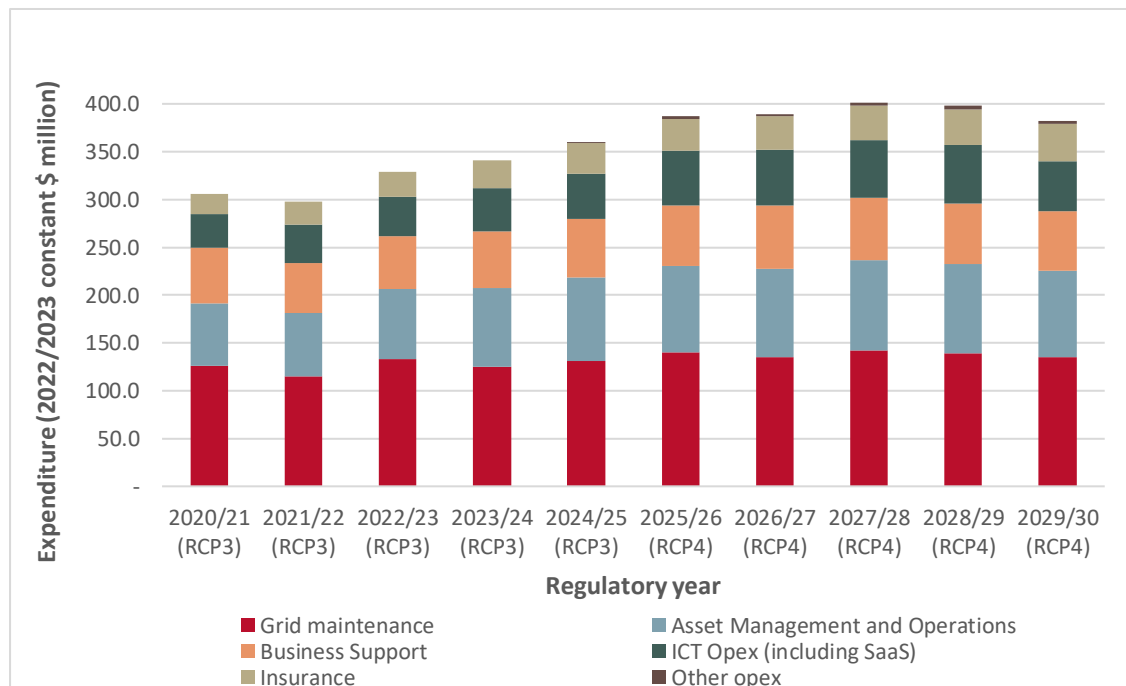
Chapter 2 Operating expenditure overview

2.1 This chapter provides background on Transpower's opex trends, the opex forecasting methods and how our Incremental Rolling Incentive Scheme (IRIS) interacts with opex.

Opex trends since RCP3

2.2 Figure 1.1 shows annual opex for periods RCP3 and RCP4 (reflecting reported and forecast data) broken down by major operating expenditure category.

Figure 1.1 Annual opex for RCP3 and RCP4 (\$ million constant 2022/2023)²



² All values are from Transpower's RCP4 submission expenditure forecast modelling – Document RTRM001-C-RT01.

Table 2.1 Summary of operating expenditure (\$ million constant 2022/2023)

| | RCP3 expenditure (\$m) | RCP4 proposal expenditure (\$m) | RCP4 approved expenditure (\$m) | % approved |
|--|------------------------|---------------------------------|---------------------------------|------------|
| Preventive maintenance | 225.3 | 232.6 | 226.0 | 97.2% |
| Predictive maintenance | 376.7 | 428.2 | 428.2 | 100.0% |
| Corrective maintenance | 24.0 | 23.9 | 23.9 | 100.0% |
| Proactive maintenance | 4.3 | 5.4 | 5.4 | 100.0% |
| Resilience | - | 12.2 | 7.6 ³ | 62.3% |
| Asset management and operations | 375.6 | 461.8 | 461.8 | 100.0% |
| Sustainability | 0.5 | 2.4 | 2.4 | 100.0% |
| Business support | 286.0 | 320.1 | 317.3 | 99.1% |
| ICT opex | 181.1 | 232.6 | 234.9 | 100.9% |
| ICT Software as a Service | 26.4 | 57.4 | 57.4 | 100.0% |
| Insurance | 132.7 | 181.1 | 181.1 | 100.0% |

³ This resilience opex amount of \$7.6 million includes resilience base opex of \$3.8 million and resilience uncertainty mechanism (UM) opex proposed by Transpower on a UIOLI basis of \$3.8 million. The review of the resilience UM opex is discussed in Attachment B – Capex, where we have carried out a detailed assessment of Transpower’s resilience programme.

Transpower's RCP4 opex forecasting approach

2.3 Transpower has developed base-step-trend opex forecasts for each of the expenditure categories (excluding insurance and preventive maintenance). It described this in its proposal as follows:⁴

For most of our opex forecasts we have adopted a base-step-trend framework. Base-step-trend forecasting is generally appropriate for expenditure that is recurring and assumes that historical 'revealed' expenditure provides a suitable starting point for a forecast requirement. This revealed expenditure approach works alongside the incremental rolling incentive scheme that the Commission imposes. It is designed to ensure we are incentivised to innovate and implement efficiencies as they are identified. This provides confidence to the Commission and stakeholders that our base year is efficient.

The base-step trend approach involves the following main components.

- Base year – identifying an efficient base year, typically the most recent year for which actual opex data is available. This includes assessing the extent to which the base year is relatively efficient. The base year is adjusted for any atypical cost items.
- Step changes – required to meet the needs of the network or to allow for external requirements, and which are not already captured within the scope of the base amount.
- Trends – these reflect expected changes in cost due to output growth. It can also include adjustments for ongoing productivity and/or cost efficiency.

2.4 Transpower undertook historical trend analysis to determine if the base year is efficient. In its consideration, Transpower looked at the historical average opex and considered how the proposed base year compares to the historical average levels of opex for each category, and why there might be significant increase (if any).

2.5 Transpower's insurance opex forecast has been developed based on actuarial and broker forecasts of premiums over RCP4.

2.6 For preventive maintenance, Transpower has generated standard jobs for the routine maintenance activities and used work volumes generated by Maximo to calculate an aggregated [quantity] x [standard job cost] forecast.⁵ This informs the expenditure it has categorised as step changes in its proposal.

⁴ [Transpower New Zealand Limited "Regulatory control period 4 proposal April 2025 – March 2030" \(21 November 2023\) \(Transpower RCP4 proposal\)](#), p 56 and 57.

⁵ Maximo is Transpower's internal core asset management information system for all grid assets. It is used as the asset register, to manage the maintenance programme and work orders and to manage incidents.

Significance of the base year, base amounts, step, and trend

- 2.7 The significance of the base year is that it largely determines the level of expenditure that is projected forward into the next RCP. We expect Transpower to become more efficient over time (due to incentives), so the most recent available year is generally preferred as a base year. Using an earlier year would potentially exclude any additional efficiency gains from the forecast and (all else being equal), resulting in an expenditure allowance that is higher than required.
- 2.8 A potential complication to this approach is that the base year may not accurately reflect the baseline level of activity, due to atypical expenditure and year to year variability. To compensate for this, adjustments are made to the base year, by removing or adding in 'expenditure', to arrive at the base amount. This helps ensure that the base amount accurately reflects both the current level efficiency (due to the base year), and the recurring level of activity (due to the adjustments). It is the base amount that will be trended forward.
- 2.9 Trend factors, as noted above, represent expected changes in efficiency or productivity. Applying a trend factor results in increasing or decreasing expenditure allowances in consecutive years (ignoring any step changes).
- 2.10 Step changes enable amounts of expenditure that are not within the baseline to be included, for example, to fund new requirements.

Significance of the Incremental Rolling Incentive Scheme

- 2.11 In analysing the results of the base-step-trend approach, we also consider the interaction between opex and the IRIS mechanism.
- 2.12 The IRIS provides an incentive for Transpower to realise efficiency gains. The IRIS mechanism results in Transpower retaining approximately 32% of the benefit of any underspend of its opex allowance or bearing approximately 32% of any overspend.⁶
- 2.13 The IRIS mechanism returns (or passes on) the remainder to Transpower's customers by decreasing (or increasing) the revenue Transpower can earn in subsequent periods, and hence the prices that customers will pay.

⁶ The percentage of benefit or additional cost that is shared with Transpower's customers is not a set percentage but depends on the formula in clauses 3.6.2 and 3.6.4 of the Transpower IM, which takes the WACC rate as one of the inputs. We expect the retention factor will change based on the final WACC applying to the IPP.

- 2.14 For permanent gains (eg, an amount of expenditure that will not be spent because Transpower found a more cost-effective way to deliver the work) this will result in Transpower retaining approximately 32% of the net present value (**NPV**) of the total amount that will not be spent (the NPV calculation takes into account that this will be saved every year in perpetuity).
- 2.15 For temporary gains (eg, an amount of expenditure that can be deferred until later) the net benefit is the timing advantage (ie, the NPV of the amount deferred, less the NPV of the later spend) and Transpower will retain approximately 32% of this difference.
- 2.16 This has the following implications for the base year, base-year amount, trend, and steps:
- 2.16.1 Making adjustments to the base year to exclude one-off items ensures that these are not built into the forecast. If these were included in the forecast, it would result in Transpower being rewarded (through IRIS) as it would appear to save this expenditure in the subsequent period (as the forecast is too high).
 - 2.16.2 Applying a trend factor can compensate for growth (or decline) in the cost of inputs and apply a downwards productivity factor and ensure this is correctly treated under IRIS.
 - 2.16.3 Step changes for additional work requirements ensure that these additional expenses are correctly treated.

Chapter 3 Opex review framework

Opex review and the Capex Input Methodologies

- 3.1 There is no IM that sets out how we should determine or evaluate forecast opex in an IPP. However, we consider the criteria to be applied should not be materially different to the criteria that apply to base capex, particularly given the need to direct capex expenditure towards achieving cost-effective and efficient solutions, and the potential cost trade-offs between capex and opex that this implies.
- 3.2 Therefore, consistent with our approach to assessing base capex, in assessing opex we will be guided by:
- 3.2.1 the extent to which the opex that Transpower proposes will promote the purpose of Part 4 of the Act; and
 - 3.2.2 where they can be usefully applied to opex, the base capex evaluation criteria.⁷
- 3.3 In considering the extent to which Transpower’s opex proposal will promote the Part 4 purpose, we will be guided by whether Transpower’s proposal is consistent with an expenditure outcome which represents the efficient costs of a prudent supplier (ie, where a ‘prudent supplier’ is a hypothetical transmission business facing the same circumstances as Transpower whose planning and performance standards reflect GEIP).⁸

⁷ Schedule A of the Capex IM.

⁸ ‘Good electricity industry practice’ is defined in Part 1 of the Code as: **good electricity industry practice** in relation to transmission, means the exercise of that degree of skill, diligence, prudence, foresight and economic management, as determined by reference to good international practice, which would reasonably be expected from a skilled and experienced **asset** owner engaged in the management of a transmission network under conditions comparable to those applicable to the **grid** consistent with applicable law, safety and environmental protection. The determination is to take into account factors such as the relative size, duty, age and technological status of the relevant transmission network and the applicable law [bold terms in original].

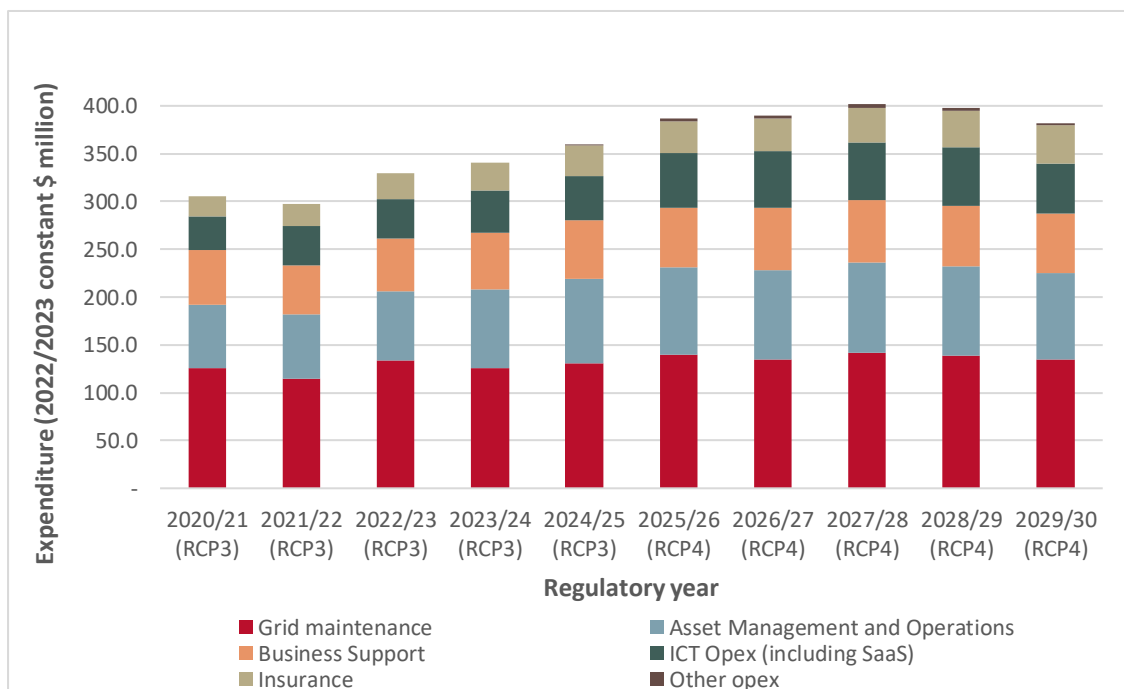
We used a Verifier to review Transpower's proposal

- 3.4 In our Process and approach paper we considered it would be beneficial to use an Independent Verifier to verify Transpower's proposal in advance of our draft decision. We considered that a verification process would:
- 3.4.1 help improve our decision making by testing, in advance of us receiving the proposal, the policies, planning standards and assumptions that underpin Transpower's forecast information on proposed capex, opex, and demand;
 - 3.4.2 enable us to better focus our review of Transpower's proposal on areas where forecast expenditures and/or associated grid output measures are less likely to meet the expenditure outcome, consistent with the proportionate scrutiny principle;
 - 3.4.3 provide useful insights to Transpower in terms of potential operational improvements it could make;
 - 3.4.4 help to mitigate the risk of any potential incentives on Transpower to provide overly generous estimates of forecast expenditure; and
 - 3.4.5 result in better scrutiny of Transpower's investment plans prior to these being submitted to us, which may result in a more appropriate level of forecast expenditure in the proposal.
- 3.5 We consider that the independent verification process has been useful and effective for us, for Transpower, and for consumers. Verification has:
- 3.5.1 provided many of the benefits we identified in our Process and Approach paper;
 - 3.5.2 identified key areas for us to focus on in our review of Transpower's opex proposal; and
 - 3.5.3 identified issues we may want Transpower to focus on as it continues to improve its asset management and planning processes.

Chapter 4 Our assessment of Transpower’s RCP4 Opex by work programme

4.1 Transpower is proposing \$1,961.4 million (inclusive of resilience opex of \$3.8 million that Transpower has proposed on a Use-It-Or-Lose-It (UIOLI) basis (\$ constant 2022/2023) of opex over RCP4 (see Figure 4.1). This is a 20.1% increase compared with actual expenditure it has already incurred and what it forecasts it will spend by the end of RCP3 (in \$ constant 2022/2023).

Figure 4.1 Annual opex for RCP3 and RCP4 (\$ million constant 2022/2023)⁹



4.2 Table 2 sets out the RCP3 and proposed RCP4 expenditures for each proposed opex programme.

⁹ All values are from Transpower’s RCP4 submission expenditure forecast modelling – [Document RTRM001-C-RT01](#).

**Table 4.1 RCP4 proposal expenditure and comparison with RCP3
(\$ million constant 2022/2023)¹⁰**

| Expenditure programme | RCP3 expenditure (\$ m) | RCP4 Proposed Expenditure (\$ m) | Variance (%) |
|---------------------------------------|-------------------------|----------------------------------|--------------|
| Preventive Maintenance | 225.3 | 232.6 | 3.2% |
| Predictive Maintenance | 376.7 | 428.2 | 13.7% |
| Corrective Maintenance | 24.0 | 23.9 | -0.2% |
| Proactive Maintenance | 4.3 | 5.4 | 25.6% |
| Resilience | - | 12.2 ¹¹ | - |
| Asset Management and Operation | 375.6 | 461.8 | 22.9% |
| Sustainability | 0.5 | 2.4 | 400.0% |
| Business Support | 286.0 | 320.1 | 11.9% |
| ICT Opex | 181.1 | 232.6 | 28.4% |
| ICT SaaS | 26.4 | 57.4 | 117.2% |
| Insurance | 132.7 | 181.1 | 36.4% |
| Total | 1632.6 | 1961.4 | 20.1% |

4.3 The Verifier's report has provided a good basis for our review, focusing our review on areas that we considered necessitated further investigation. These include:

- 4.3.1 Transpower's proposed base year efficiency;
- 4.3.2 Transpower's proposed insurance expenditure and its potential trade-off with resilience expenditure;
- 4.3.3 Transpower's grid maintenance and its potential trade-off with proposed replacement and refurbishment expenditure; and
- 4.3.4 additional expenditure Transpower has proposed which was not reviewed by the Verifier.

¹⁰ All values are from Transpower's RCP4 submission expenditure forecast modelling – Document RTRM001-C-RT01.

¹¹ Note the \$12.2 million is exclusive of the additional \$3.8 million of resilience uncertainty mechanism opex.

- 4.4 This chapter provides our view of the robustness of the Verifier’s review, and our view of those areas which we have undertaken further investigation. Our review and analysis are broken down by opex categories.

Base year efficiency

- 4.5 Transpower has proposed using 2022/2023 as its base year for its base-step-trend forecasting methodology rather than 2021/2022, which was the base year assessed by the Verifier. Transpower updated its proposal to use the most up to date figures to reflect the most recent actual operating expenditure.

Draft decision

- 4.6 Our draft decision is to approve Transpower’s proposed use of the 2022/2023 actual expenditure as the base year for its base-step-trend forecasting methodology.
- 4.7 We consider that, given the difficulty in ascertaining the true efficient level of opex, using the most recent actual opex costs (being 2022/2023 opex base year) with appropriate adjustments is a reasonable approach. Our IRIS mechanism limits the incentives for Transpower to inflate 2022/2023 opex costs and provides a mechanism that reveals efficient costs over time.
- 4.8 We consider that the additional analysis we have undertaken provides sufficient evidence that the 2022/2023 opex base year is likely to be efficient. We set out this analysis below.

Verifier’s review

- 4.9 The Verifier reviewed the use of 2021/2022 as a base year. The Verifier was not able to verify definitively that 2021/2022 is an efficient base year. However, it considered Transpower’s rationale in assessing what is an appropriate base year to be reasonable. On balance, the Verifier considered that 2021/2022 was the most suitable year to select as a base year.¹²
- 4.10 In reaching its conclusion, the Verifier noted that Transpower’s use of the most up to date, actual costs is reasonable, given it will capture movements in price and efficiencies realised by previous initiatives. Further, it considers it is reasonable for Transpower to compare historical opex to the proposed base year.¹³

¹² GHD Advisory and Castalia “[Independent verification report – RCP4 base expenditure and service measures 2025-2030 proposal. Transpower New Zealand Limited](#)” (12 September 2023) (**IV Report**), p 306-307.

¹³ GHD Advisory and Castalia, [IV Report](#), p 306-307.

Stakeholder submissions and our response to submissions

- 4.11 Transpower’s RCP4 opex forecast is based on base-step-trend modelling. New Zealand Aluminium Smelters Limited (**NZAS**) questioned the “appropriateness of the inherent assumption in Transpower’s RCP submission that historical investments have been efficient (as that forms the basis for base, step and trend analysis” and supported us examining this further.¹⁴
- 4.12 NZAS also noted:¹⁵
- The base, step and trend used inherently assumes historical expenditure is a reasonable or “efficient” basis for projecting future costs. NZAS believes that the industry would take more comfort in Transpower’s cost projections, in the absence of other transmission investors in the NZ market, through comprehensive cost benchmarking with transmission owners in other jurisdictions such as Australia.
- 4.13 Vector noted “caution should be exercised comparing expenditure between jurisdictions given differences in operating environment” and noted that the Commerce Act prohibits the Commission from “using comparative benchmarking on efficiency in order to set starting prices, rates of change, quality standards, or incentives to improve quality of supply.”¹⁶
- 4.14 In its cross-submission Transpower disagreed with NZAS, stating that the Verifier concluded Transpower had carried out “economic benchmarking to measure how efficient it is as a supplier over time compared with its peers” and then steps through that benchmarking process.”¹⁷
- 4.15 In our review of the proposal capex forecast, we note where the Verifier has compared Transpower’s proposed asset unit costs against historical data, supplier quotations and international peer information, particularly Australian Transmission Network Service Providers (**TNSPs**) and Distribution Network Service Providers (**DNSPs**) asset cost data.
- 4.16 We also reviewed the Verifier opex benchmarking assessment and while this was more focussed on productivity, it provided us with useful insight into Transpower’s opex performance when compared to its Australian counterparts.

¹⁴ New Zealand Aluminium Smelters Limited (NZAS) [“Submission on RCP4 Issues paper”](#) (21 February 2024) (**NZAS submission on Issues paper**), p 3.

¹⁵ NZAS submission on Issues Paper, p 3.

¹⁶ Vector [“Submission on RCP4 Issues paper”](#) (21 February 2024) (**Vector submission on Issues paper**), p 3 para 12.

¹⁷ Transpower New Zealand Limited [“Submission on RCP4 Issues paper”](#) (21 February 2024) (**Transpower submission on Issues paper**), para 15.

- 4.17 We note Vector’s view regarding benchmarking and our assessment of Transpower’s proposal. Vector suggests that the Commerce Act s 53P provisions preclude us, or a Verifier, from carrying out benchmarking when we process a base capex proposal from Transpower.
- 4.18 The s 53P provisions relate to electricity distribution business (**EDB**) default price-path (**DPP**) setting processes, and the use of benchmarking in that process, and not a Transpower IPP which does not restrict us from using benchmarking.
- 4.19 As we noted in our Capex IM 2012 Final Decision reasons paper:¹⁸
- In undertaking its evaluation, the Commission may undertake high level governance and process reviews, benchmarking, process or functional modelling, trending or time-series analysis, project and programme sampling, or any other technique or approach that the Commission considers appropriate in the circumstances to make an evaluation against the specified criteria.
- 4.20 In its submission, Transpower noted that “under the Incremental Rolling Incentive Scheme we have a financial incentive to achieve efficiencies. Any overspending against what is efficient reduces the returns to our shareholder.”¹⁹

Our review

- 4.21 We have reviewed the Verifier’s review but considered we need to undertake our own assessment as Transpower’s proposed year is different to the base year reviewed by the Verifier. We consider some of the Verifier’s assessment reasons to still be applicable in our review.
- 4.22 We consider Transpower’s approach to select the most up-to-date actual costs (being a 2022/2023 base year) is reasonable, given that the most recent costs are likely to be reflective of efficiencies and normal expenditure as Transpower has provided supporting information that it is seeking efficiency initiatives.²⁰
- 4.23 While we consider selecting the most recent base costs to be reasonable, we have undertaken further analysis to satisfy ourselves that Transpower’s proposed base year is reasonably efficient. We have considered how the IRIS mechanism affects incentives to achieve efficiencies under and compared Transpower’s historical opex against its proposed base year.

¹⁸ Commerce Commission, [Transpower Capital Expenditure Input Methodology Reasons Paper](#), (31 January 2012), para 5.7.2.

¹⁹ [Transpower submission on Issues paper](#), para 11.

²⁰ See for example, maintenance reduction strategies at IV Report, section 14.6. The Independent Verification Terms of Reference also includes specific provisions to assess opex reduction initiatives, see sch A2(c).

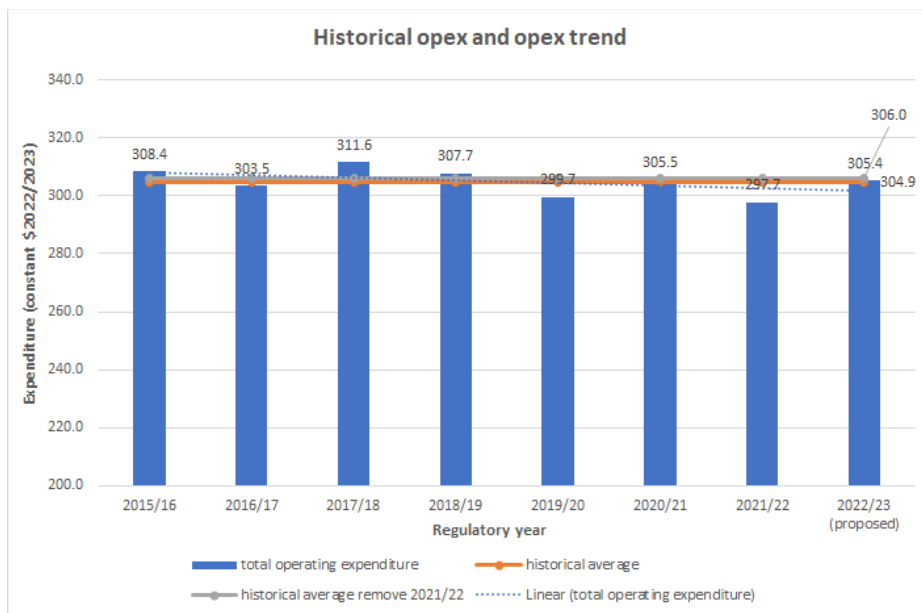
IRIS Mechanism

- 4.24 Transpower has noted that its opex allowance is subject to the IRIS mechanism, which it notes provides a “financial incentive to achieve efficiencies.”²¹ It notes that “Any overspending against what is efficient reduces the returns to our shareholder.”²²
- 4.25 We consider the IRIS mechanism provides a time-constant incentive to Transpower to act/operate efficiently. Our view is that Transpower has limited incentive to inflate 2022/2023 opex to game the base-step-trend methodology.²³

We have tested Transpower’s proposed base level opex vs historical opex

- 4.26 We have undertaken further analysis to determine whether the 2022/2023 base year is likely to be reflective of an efficient year, and we have tested Transpower’s 2022/2023 expenditure against its historical opex expenditure (see Figure 4.2).
- 4.27 We calculated Transpower’s historical average opex from the proposal and opex data starting from the 2015/2016 regulatory period. We calculated an average per annum opex of \$304.9 million,²⁴ which was marginally lower than Transpower’s proposed base year opex of \$305.4 million. We also calculated that the proposed base year is consistent with the median of the historical opex between 2015/2016 to 2022/2023.

Figure 4.2 Transpower historical opex and opex trends (\$ million constant 2022/2023)



²¹ Transpower submission on Issues paper, p 4.
²² Transpower submission on Issues paper, p 4.
²³ Transpower submission on Issues paper, para 12 noted that Transpower has incentives to achieve efficiencies and any overspending against what is efficient reduces shareholder returns.
²⁴ The historical data is sourced from Transpower’s RCP4 RT01 Expenditure spreadsheet.

- 4.28 Based on our analysis, we consider 2022/2023 base year does not appear to be an inefficient year.
- 4.29 We considered whether the 2021/2022 opex might be an outlier as the Verifier described, given COVID interruptions. In its proposal, Transpower explained why the 2021/2022 had lower expenditure for some categories of expenditure. For example, Transpower noted that predictive maintenance in particular, was lower than expected in 2021/2022 due to the introduction of new service provider grid services contracts.²⁵ We accept these explanations.
- 4.30 Based on the analysis we have carried out, we consider that on balance, 2022/2023 is more likely than not to be representative of an efficient base year and is appropriate to be used as the basis for Transpower's base-step-trend modelling.

Further supporting factors

- 4.31 To further ensure that the expenditure reflects an efficient amount and to ensure that IRIS mechanism operates as intended, we considered whether Transpower had made appropriate adjustments to the base opex so that non-recurring expenditure items are removed.
- 4.32 As an example, Transpower made adjustments to remove maintenance expenditure associated with weather events including Cyclone Gabrielle.²⁶
- 4.33 We discuss these considerations in more depth when we review in the maintenance, business support, and insurance opex where Transpower has made non-recurring expenditure adjustments to its base opex.

Insurance opex

- 4.34 Transpower has proposed \$181.1 million of insurance opex for a mix of external insurance and self-insurance. This represents an increase of 36.5% from RCP3 insurance opex of \$132.7 million. The key driver for the increase is that market insurance premium costs have increased and are likely to increase further.
- 4.35 Transpower's forecast is based on advice it received from its insurance broker and actuary. It considers what level of cover it needs and prices this accordingly.
- 4.36 Transpower's proposed insurance opex is lower than the verified amount because its actual premiums were lower than forecast for 2022/2023.

²⁵ Transpower RCP4 proposal, section 8.4.2.1, p 138.

²⁶ Transpower OPX003 Maintenance 2023 PMP, p 28.

- 4.37 Transpower carries insurance to cover the replacement cost of assets. It takes out self-insurance for this purpose when it is no longer cost effective to take out external insurance for certain assets.

Draft decision

- 4.38 Our draft decision is to approve Transpower's proposed insurance opex of \$181.1 million (\$ constant 2022/2023).

Verifier's review

- 4.39 The Verifier accepted 100% of Transpower's \$195.9 million (in \$ constant 2022/2023) insurance opex it submitted for verification.
- 4.40 The Verifier concluded that Transpower's base year insurance opex cost was a reasonable estimate of a prudent year, and that the insurance opex steps and trends were reasonable.

Stakeholder submissions

- 4.41 MEUG agreed with our view that there is a link between resilience and insurance, and noted insurance has increased in the energy sector with "Transpower forecasting a 36% increase." MEUG noted that scrutiny is required "to ensure that this is efficient and discussion around whether there are other options available to Transpower" such as alternative government-backed options or self-insurance.²⁷
- 4.42 Transpower submitted that it uses insurance to protect Transpower and consumers from "large losses following significant events." Transpower note that clarity over the trigger and lower threshold for the "catastrophic reopener is important when considering the aggregate value of insurance cover."²⁸
- 4.43 Transpower further explain that the \$5 million catastrophic events reopener provides certainty when "considering cover for long-tail/unexpected events and reduces the potential of over-insuring, which removes additional premiums", stating:²⁹

We maintain insurance cover for credible risks without relying solely on the \$5 million reopener to mitigate financial risk. Relying solely on the \$5 million threshold without prudent insurance cover has the potential to cause a material price shock for consumers in the event of a catastrophic event.

²⁷ Major Electricity Users' Group, "[Submission on Issues paper](#)" (MEUG submission on Issues paper), (21 February 2024), p 5 para 21.

²⁸ Transpower "[Cross-submission on RCP4 Issues paper](#)" (13 March 2024) ([Transpower cross-submission on Issues paper](#)), p 4 para 15.

²⁹ Transpower cross-submission on Issues paper, p 5 para 16.

- 4.44 Transpower note the link between insurance and resilience stating that its proposed resilience expenditure is expected to marginally impact insurance expenditure needs over RCP4, with its insurers already considering that it will be investing to manage risk.

Our view

- 4.45 We consider Transpower's forecast expenditure is likely to be reflective of a prudent and efficient level of expenditure. In reaching this conclusion, we have reviewed the Verifier's review, Transpower's insurance opex overview, an actuarial report, broker reports, as well as Transpower responses to requests for information (RFIs).
- 4.46 Transpower's actuarial and insurance broker advice takes a risk-based approach to estimating insurance premiums. Factors that influence premium costs include the likelihood of claims and quantum of losses.

Transpower's insurance process

- 4.47 In its proposal Transpower consider that the following activities help it achieve reasonable and cost-effective insurance costs:³⁰
- 4.47.1 annual review of insurance arrangements overseen by Transpower's Board, management by the treasury team with a governance structure composed of the Board, Audit & Risk Committee, and the Chief Executive and Chief Financial Officer providing oversight;
 - 4.47.2 an internal challenge process to determine necessary level of cover; and
 - 4.47.3 regular advice and guidance from an insurance broker.
- 4.48 We consider that Transpower has taken reasonable process steps to seek the lowest available premiums and the level of cover it thinks is necessary.
- 4.49 Transpower only insures for the maximum credible loss i.e., it insures the probable maximum loss caused by a single event, which is lower than the total value of its assets. Transpower retains some of the risk of above-limit losses.
- 4.50 Transpower detailed its approaches to mitigating insurance premium increases. These include:³¹
- 4.50.1 placing insurance cover in multiple markets diversifying repricing risk;

³⁰ Transpower, "OPX005 Insurance Opex Overview", p 19.

³¹ Transpower New Zealand Limited "OPX005 Insurance Opex Overview", p 9.

- 4.50.2 using a global broker to manage placement and drive premium tension;
 - 4.50.3 utilising self-insurance through its self-insurance company Risk Reinsurance Limited (**RRL**) where the risk/cost trade-off is more cost effective than the external market; and
 - 4.50.4 amending insured cover dependent upon changing risk profile of assets.
- 4.51 We are satisfied that Transpower is actively seeking cost effective outcomes and pursuing efficiencies.

Insurance step changes

- 4.52 Transpower state that there are no insurance step changes forecast over RCP4 but that there were insurance cover changes in the 2021/2022 year due to:³²
- 4.52.1 increased bushfire risk in New Zealand; and
 - 4.52.2 changes to its HVDC submarine cables cover as the submarine cables near the end of their operational life.
- 4.53 There are also insurance premium cost increases each year over RCP4 which Transpower has modelled as a trend rather than a step change in costs each year.
- 4.54 In its review, the Verifier concluded that it was satisfied that increasing insurance due to bushfire risk was supported, but it did not assess the HVDC cable cover.
- 4.55 The HVDC cables are a crucial component of the electricity network as they allow cheaper hydro power in the South Island to access North Island demand. Transpower is currently investigating HVDC cable replacement over the RCP5 period and planning to replace the cables by 2032 which results in increase failure risk as the cables age. We consider that it is reasonable for Transpower to manage this risk with its insurance cover in the interim.
- 4.56 We consider Transpower using a broker and actuary to inform its cover (and resulting expenditure) to be prudent and should result in efficient cost estimates. This approach is consistent with a risk-based approach and is reflective of Transpower seeking cost reductions in its insurance expenditure.
- 4.57 We have assessed the insurance cost increases and consider these to be in line with the expert opinion by the insurance broker and actuary.

³² Transpower New Zealand Limited "OPX005 Insurance Opex Overview", p 13.

We have considered the impact of Transpower's resilience expenditure on its insurance opex

4.58 We have investigated what impact Transpower's resilience capex will have on Transpower's proposed insurance expenditure and sought further information from Transpower on the relationship between resilience expenditure and insurance opex.

4.59 Transpower explained that its proposed resilience expenditure is intended to minimise the outage impact following high impact low probability (**HILP**) events, while the purpose of insurance opex is to insure the value of assets that may be damaged.

4.60 Based on the explanation Transpower provided, we consider that resilience expenditure and insurance opex serve different purposes but are not mutually exclusive.

4.61 Transpower explained that:³³

proposed resilience spend ... does not impact our insurance premiums. This is because:

- we do not purchase business interruption cover (other than for HVDC substations)
- while the resilience spend may help mitigate claim values, this would mitigate increases above the premium trend increase and, if this did impact, we would not see it until RCP5 at the earliest.

4.62 Transpower provided an explanation along with examples of how its resilience expenditure has resulted in Transpower's insurance premiums being lower than what it would have been had it not undertaken specific resilience investments.

4.63 We issued an RFI to Transpower and it explained how its resilience programme has resulted in insurance premium savings:³⁴

Two examples of design and operation resilience translating into premium savings are:

- **Pole 3 HVDC Converter Building** – significant seismic mitigations including base isolation, seismic bracing, fire walls, deluge systems and redundancy. Resilience expenditure has the benefit of reducing the estimated maximum probable loss following earthquake, which reduces insurance cover required and saves premiums. The premium rate also benefits from the reduced asset risk due to increased resilience.
- **Cook Straight Submarine HVDC Cables** – the availability of spares, regular monitoring of the cable condition and maintenance/management of risks/threats reduces potential for damage, loss and costs of recovery of the cables. Consequently, the insurance cover limit and premiums are saved.

³³ Transpower RCP4 proposal, p 159.

³⁴ RFI010 Insurance opex and resilience relationship.

The quality of resilience design and management results in very low loss/claims experience which translates into low premium rates as Transpower is considered a very good insurable risk.

Transpower's insurers view Transpower as having extremely well managed risks, which translates into lower premium rates.

[...]

Following Cyclone Gabrielle and significant insurance claims in New Zealand, insurers have increased premiums and excluded some locations as "too risky to insure". Transpower's flood resilience work mitigates the risk of some flood prone sites being rendered uninsurable and/or significant premium increases to compensate insurers for risk.

Our proposed RCP4 specific resilience workstreams are only likely to have a marginal impact on our insurance during RCP4. As noted above, our insurers expect Transpower to manage our exposure to risk. Our resilience investments are likely to keep insurance premiums from increasing further than they might otherwise rather than bringing them down.

- 4.64 We are satisfied Transpower has considered and understood how its resilience expenditure impacts its insurance premiums.
- 4.65 We are also satisfied this meets clauses A1(b) and (d) of the Capex IM as Transpower has demonstrated a risk-based approach to determining the level of insurance needed and has demonstrated its internal policies and planning processes are directed towards achieving cost-effective and efficient outcomes.

Relationship between the catastrophic event reopener threshold change and insurance

- 4.66 We also considered whether the thresholds between Transpower's external and self-insurance would change following our decision to lower the catastrophic event reopener threshold.³⁵
- 4.67 Transpower noted in its submission on the issues paper that:³⁶

Insurance protects Transpower and consumers from large losses following significant events. Clarity over the trigger and lower threshold for the catastrophic reopener is important when considering the aggregate value of insurance cover. The \$5 million reopener allows Transpower certainty in considering cover for long tail/unexpected events and reduces the potential of over-insuring, which removes additional premiums.

Transpower's insurance strategy continues to prioritise prudent asset resilience design, operation, and management. We maintain insurance cover for credible risks without relying solely on the \$5 million reopener to mitigate financial risk. Relying solely on the \$5 million threshold without prudent insurance cover has the potential to cause a material price shock for consumers in the event of a catastrophic event. Prudent insurance cover,

³⁵ We changed the catastrophic event reopener threshold from a % revenue threshold to \$5 million in our 2023 Input Methodology Review, para 7.8 of the [CPPs and in-period adjustments topic paper](#).

³⁶ Transpower submission on Issues paper, p 4-5.

along with the \$5 million reopener threshold, mitigates the need for excessive insurance and prevents incurring premiums beyond appropriate and efficient costs.

- 4.68 Given the multi-year nature of insurance premiums and coverage, our view is that the effect of the new \$5 million catastrophic event reopener threshold needs to be considered well in advance of Transpower's RCP5 proposal. The 2023 IM Review decision was made following the Verifier review and proposal submission and has not been factored into Transpower's RCP4 forecast.

Business support opex

- 4.69 Transpower is proposing a total expenditure of \$320.1 million across RCP4 for business support. This represents an increase of around \$34.1 million or 11.9% when compared to RCP3 expenditure.
- 4.70 Business support covers internal costs of permanent employees and contractors for Information Services and Technology (**IST** or **ICT**),³⁷ external affairs, corporate services,³⁸ corporate governance, people,³⁹ and customer and strategy.⁴⁰
- 4.71 We consider most of the expenditure is prudent and efficient with the exception of \$2.8 million proposed for RCP5 preparation.
- 4.72 Transpower notes that "capex and maintenance are forecast to grow by 145 percent from RCP2 to RCP5, while workforce Capacity is forecast to grow by 45 percent."⁴¹ This suggests the proposed FTE increase is likely to be proportionate to the proposed work programme and is consistent with the main driver of the increase.
- 4.73 Transpower considers business support opex to be directly linked to its planned investment. Key drivers for the business support opex increase include:⁴²

³⁷ Note we use 'IST' and 'ICT' interchangeably.

³⁸ Includes Finance, Procurement and Supply (including Warehousing), Risk and Assurance and Treasury teams.

³⁹ Comprises four functional groups – Health and Safety, Facilities Management, Human Resources, and Technical Training. The Technical Training function is responsible for development and delivery of trades and compliance training to Service Providers who work on the national grid, and training of staff in the Operations Division.

⁴⁰ Responsible for the development and implementation of organisation strategy and innovation. The division incorporates strategy advisor roles, EMS Delivery, EMS Development, and Tradepoint teams, as well as the customer and commercial functions. Facing the opportunities and challenges of a changing electricity system, the Strategy function is focused on monitoring context, developing the strategy, and continuing to build our innovation methods and deliver innovation developments.

⁴¹ Transpower New Zealand Limited "Transpower Workforce Plan", p 1.

⁴² Transpower RCP4 proposal, p 153.

- 4.73.1 an increase in staff numbers and size of the work programme (this affects all elements of business support costs, including staff numbers and costs, legal and contractor fees, and office rental costs);
- 4.73.2 the ICT capital plan;
- 4.73.3 an increasing focus on stakeholder engagement; and
- 4.73.4 the implementation of the transmission pricing methodology.

Draft decision

- 4.74 Our draft decision is to approve \$317.3 million of Transpower's proposed business support opex.

Verifier's view

- 4.75 The Verifier reviewed and accepted \$331.4 million of business support opex (\$ constant 2022/2023). Transpower proposed \$320.1 million of business support opex (\$ constant 2022/2023), which is lower than the verified amount.
- 4.76 The Verifier's overall conclusion was that the approach taken to generate the forecast was reasonable and that Transpower's proposal is consistent with the efficient costs of a prudent electricity transmission services supplier, and it meets all the evaluation criteria including GEIP.
- 4.77 The Verifier assessed this expenditure for each Transpower business division and evaluated Transpower's approach to forecasting its opex requirements, including assessing the reasonableness of the step changes.
- 4.78 The Verifier also undertook a broad evaluation of FTE costs, and it found that FTE costs appeared to be stable throughout the end of RCP3 and over RCP4. This suggests that the proposed business support opex is representative of the proposed FTE increase, and likely to represent properly costed expenditure.
- 4.79 The Verifier considered the FTE increases were informed by the Transpower Workforce Planning model and FTE requirements confirmed by the model; other FTE step changes in FTEs were informed by investment cases.

4.80 The Verifier cost analysis noted that:⁴³

The average cost per FTE ranges from nearly \$180k per FTE in 2017/18 to around \$145k per FTE at the end of RCP3/start of RCP4. By the end of RCP4, the cost per FTE has increased by around 2.5% to a little over \$149k per FTE. Overall, from 2023/24 onwards, the business support opex cost per FTE is stable between \$145k and \$149k, although it does appear to be increasing slowly over time.

4.81 The Verifier considered the cost per FTE profile suggests business support opex costs are growing broadly in proportion to the change in FTEs, and that the link between proposed cost increases and proposed FTE changes are stable. The Verifier concluded the cost per FTE was relatively stable indicating the expenditure was likely to be prudent and efficient.

⁴³ GHD Advisory and Castalia, [IV Report](#), p 401.

Our view

- 4.82 Following our review of the Verifier report, we are satisfied the Verifier assessed Transpower’s business support opex proposal in line with the relevant independent verification Terms of Reference based on the following factors:
- 4.82.1 we are satisfied that the Verifier has considered the reasonableness of the key assumptions used to build Transpower’s proposed steps for its opex proposal, consistent with clauses A1(c),(j),(m) and (n) in Schedule A of the Capex IM.
 - 4.82.2 the Verifier has evidenced its consideration of each category of uplift – this includes citing investment cases and assessing the need for uplift for various categories and making further enquiries as needed; and
 - 4.82.3 the Verifier reviewed a wide range of materials and made additional enquiries as to the information Transpower provided and factored this into its assessment. It also considered the level of business support in line with its capex work programme.

Transpower has not justified additional expenditure for RCP5 preparation

- 4.83 Transpower proposed a step change for \$2.8 million for RCP5 preparation. We propose to not approve this expenditure.
- 4.84 Our draft decision is not to approve this expenditure. We do not consider Transpower’s step change for RCP5 preparation of \$2.8 million has been sufficiently justified as prudent and efficient expenditure in accordance with the expenditure objective.⁴⁴
- 4.85 Transpower notes that the driver for the step change is “increased volume and complexity of key regulatory instruments such as the Input Methodologies, Regulatory Control Periods and Transmission Pricing Methodology regimes”.
- 4.86 We have insufficient information at this stage to demonstrate there is an increased regulatory burden on Transpower for IPP reset preparation.
- 4.87 We do not consider RCP5 preparation should be more complex compared to preparation for other proposals and expenditure related to this would already be incorporated into the 2022/2023 base year opex. Transpower included RCP4 preparation costs as a step change in its RCP3 proposal, which we approved and forms part of the RCP3 expenditure.⁴⁵

⁴⁴ Transpower RCP4 proposal, Table 42.

⁴⁵ Commerce Commission “Transpower’s individual price-quality path from 1 April 2020” (29 August 2019), paras I173 and I193.

Overall conclusion

- 4.88 We have considered Transpower's explanation in its proposal, the Verifier's review and our own assessment, we consider \$317.3 million of Transpower's proposed business support opex to be reflective of prudent and efficient expenditure, consistent with the Part 4 purpose.

Asset Management and Operations

- 4.89 Asset management and operations (**AM&O**) provides the opex funding to plan, build, operate and maintain the transmission network. This section details the key issues we have identified in our review of this expenditure category.
- 4.90 Transpower is proposing base expenditure of \$461.8 million dollars aggregated over RCP4. This represents an uplift of 22.9% or \$86.2 million from RCP3 AM&O expenditure of \$375.6 million.
- 4.91 The proposed expenditure is comprised of a base year amount of \$366.2 million, step changes totalling \$103.9 million and total trend of -\$8.3 million.
- 4.92 Main driver for the expenditure increase in this portfolio is the increase in FTEs to support the planned increase in the work programme.

Draft decision

- 4.93 Our draft decision is to approve Transpower's proposed expenditure of \$461.8 million.

Verifier's review

- 4.94 The Verifier reviewed and verified all the proposed expenditure including the base expenditure, step changes and trends.
- 4.95 The Verifier noted that the increase in opex is directly correlated to the magnitude of investment required to deliver the future work programme (opex, base capex, listed projects, MCPs and customer works).
- 4.96 The Verifier noted that there is a 29% increase in base capex work programme and an expected 200+% increase in the major capex project (**MCP**) work programme with a 28% increase in AM&O opex.⁴⁶ The 28% increase is also referred to in Transpower's workforce plan (**WFP**) – internal resource needs report.

⁴⁶ GHD Advisory and Castalia, [IV Report](#), p 344.

- 4.97 The Verifier undertook an assessment of the volumetric programme outputs per FTE for Grid Development, Grid Delivery, and operations (including base capex, maintenance, MCPs and customer works).⁴⁷
- 4.98 It concluded that the programmes per FTE output was generally constant and in some areas, experiencing increases.⁴⁸ This suggests that the proposed FTE increases are reasonable given the expected increase in work programme.

Our view

- 4.99 We have reviewed the Verifier's assessment of AM&O and consider its assessment has met the independent verification Terms of Reference (which is based on the Transpower Capex IM).
- 4.100 In particular we are satisfied with the Verifier's analysis, which shows Transpower's forecasting is likely to be prudent and efficient based on the forecasting methodology and its detailed scrutiny of the Workforce Planning model, which informs FTE numbers.
- 4.101 We are also satisfied with the Verifier's assessment of outputs per FTE, which considers whether the increase in FTEs is proportionate to the increase in work programme.
- 4.102 We consider the Verifier's assessment to be reliable and robust. The Verifier considered a breadth of information, made further enquiries as needed and considered relationship of AM&O opex with capex.
- 4.103 Transpower note that the specific changes to its proposal since verification includes 11 additional FTEs to support its larger resilience programme, higher base year costs and an additional \$0.6 million for the instantaneous reserve event charges.
- 4.104 We tested Transpower's proposed BST values. The step change in \$ constant 2022/2023 values are lower than the verified step change of \$105 million (in \$ constant 2021/2022). We are satisfied that the increase in total expenditure from the reviewed amount is due to the increase in base year expenditure.
- 4.105 We identified specific areas within the AM&O expenditure to further investigate as part of our assessment. We discuss these below.

⁴⁷ GHD Advisory and Castalia, [IV Report](#), figure 15-6 and p 348.

⁴⁸ GHD Advisory and Castalia, [IV Report](#), figure 15-6 and p 348.

Modelling of staffing requirements

- 4.106 In our Issues paper, we noted we would be further investigating Transpower's workforce planning model, and whether the model over-estimates FTEs.⁴⁹
- 4.107 We issued an RFI to Transpower and reviewed Transpower's proposal. Transpower noted that:⁵⁰

Despite the model going through several iterations to refine the outputs, during the WFP Group's review and challenge process it was recognised that the model was overestimating the need in some areas. This was likely due to a combination of the base year having several disruptive events and adjusting for higher forecast volumes of MCP and customer work which we had not experienced in recent years.

As result of this, a bottom-up review of the future resourcing requirements was undertaken by each division. In most instances the bottom-up need has been used as the resource forecast. This resulted in an overall lower forecast FTE need than the output of the WFP Model would indicate.

Senior Leadership Teams reviewed the final forecast numbers and these were tested by each division followed by a GM challenge and review. Further review and oversight of the forecast FTEs was provided by a collective GMT review.

Transpower will recalibrate the WFP Model based on actual results to build an enduring workforce planning model. This will also allow us to adjust for the impact of COVID-19 more fully, the Service Provider reset, and incorporate any changes to our procurement FTE needs as a result of supply chain disruption.

- 4.108 Based on Transpower's explanation, we are satisfied that there has been an appropriate top-down challenge on the FTE numbers produced by the workforce planning model and appropriate adjustments to FTE counts for each work division.
- 4.109 This explanation is consistent with the Verifier's review which concluded there was a mature approach to reviewing and challenging forecasts and model outputs.⁵¹ The Verifier also reviewed the \$ of capex output per FTE and found this remained consistent over the period and historically.⁵² These factors indicate the proposed FTEs are linked to the delivered base capex.
- 4.110 Transpower has proposed a \$72.0 million step change across RCP4 for its increased FTE count. We are satisfied this expenditure has been sufficiently justified and reflects a prudent and efficient level of expenditure.

⁴⁹ Commerce Commission "[Transpower's individual price-quality path for the next regulatory control period - Issues Paper](#)" (RCP4 Issues paper), (25 January 2024), p 68.

⁵⁰ Transpower New Zealand Limited "Transpower Workforce Plan", p 5.

⁵¹ GHD Advisory and Castalia, [IV Report](#), p 404.

⁵² GHD Advisory and Castalia, [IV Report](#), figures 15-3, 15-5, 15-8.

- 4.111 This conclusion is based on the processes and internal scrutiny of the workforce planning model and reviewing the output per FTE portion of the Verifier's report. Overall, we are satisfied this is likely to be a prudent and efficient amount, and is consistent with the Part 4 purpose.

Instantaneous reserve event charges

- 4.112 We noted in our Issues Paper that we would be further investigating instantaneous reserve event charges.⁵³ Transpower proposed a \$0.6 million step change across RCP4 in AM&O opex for this purpose, which was not assessed by the Verifier.

- 4.113 We received submissions from MEUG and Transpower on this issue.

- 4.114 MEUG submitted that:⁵⁴

Treatment of instantaneous reserve event charges: Transpower has proposed to include instantaneous reserve event charges in the AM&O opex portfolio. We question whether these charges should be passed through to consumers, as they arise from Transpower's actions and are in their control.

- 4.115 Transpower submitted that:⁵⁵

The Commission is considering whether it should change its policy of allowing Transpower to recover an efficient and prudent forecast amount instantaneous reserve event charges from consumers.

We maintain that the current treatment of instantaneous reserve event charges is fair for both Transpower and our customers. Extensive discussions and consultations occurred before RCP1, with decisions documented in the input methodologies reasons paper. We stand by our position that certain uncontrollable risks faced by Transpower, as the HVDC owner, cannot be predicted in advance. Agreeing with the Commission, including event charges in the capped opex allowance ensures appropriate incentives to minimize the occurrence of such events.

⁵³ Commerce Commission, RCP4 Issues paper, para 6.55.

⁵⁴ MEUG submission on Issues paper, p 5.

⁵⁵ Transpower submission on Issues paper, para 18-19.

4.116 In our RCP1 IPP decision paper and relevant IM reasons paper, we noted that the definition of opex included net instantaneous reserve event charges.⁵⁶ At the time, we considered including these charges to be appropriate to be considered opex for the following reasons:⁵⁷

Including event charges as a component of the capped operating expenditure allowance ensures that appropriate incentives exist to minimise the number of events caused by Transpower. This differentiates the event charges from the instantaneous reserve availability charges which are now treated as recoverable costs and are not included in the operating expenditure allowance. The reasoning for this is set out in the Input Methodologies (Transpower) Reasons Paper.

4.117 We consider that there is no reason to move away from this policy position we set out in the RCP1 IPP decision paper, as the intent to ensure incentives exist for Transpower to minimise the number of instantaneous reserve events is still appropriate.

4.118 Transpower noted that the forecast RCP4 instantaneous event charges are based on average historical charges and event occurrences. It noted:⁵⁸

We have experienced a few of these charges under the Electricity Authority's strict causer regime; however, we do not have a charge in the base year. We have estimated the amount based on the average charge on causers over RCP2 and RCP3 to date, and forecast an estimate of three events for RCP4.

4.119 We note that in its RCP3 proposal, Transpower also requested a step change of \$0.6 million for instantaneous event charges which we approved.⁵⁹ We consider that the current proposed level of expenditure is consistent with the historical amount proposed in RCP3, and as such, is likely to reflect an efficient amount.

4.120 We also consider forecasting based on historical Instantaneous Reserve event charges to be a reasonable methodology. This is likely to satisfy our assessment under clause A1(c) of the Capex IM.

4.121 We consider the expenditure is likely to be prudent as these charges are incurred as a result of the EA's regulatory regimes. We are also satisfied with Transpower's reason for the step change given that the cost was not factored into the base year and consider it appropriate to include.

⁵⁶ Commerce Commission, "[Individual Price Quality Path Transpower Reasons Paper](#)" (22 December 2010), para 4.2.1.

⁵⁷ Commerce Commission, "[Individual Price Quality Path Transpower Reasons Paper](#)" (22 December 2010), para 4.2.1.

⁵⁸ Transpower RCP4 proposal, p 148-149.

⁵⁹ Transpower New Zealand Limited, "[Transpower RCP3 proposal](#)" (23 November 2018) (**RCP3 Proposal**), p 112.

Overall conclusion

- 4.122 Having regard to Transpower’s explanation of this expenditure in its proposal, the Verifier’s review and our own inquiries as discussed above, these appear consistent and we consider the \$461.8 million proposed by Transpower is justified. Accordingly, as noted above, our view is that the proposed expenditure reflects a prudent and efficient level of expenditure, consistent with the Part 4 purpose.

ICT opex

- 4.123 ICT opex covers the operating expenditure related to all non-business support related costs required to run ICT functions, including costs for functions such as ICT leases, third party services, outsourcing services to specialist providers, and software and hardware licenses.
- 4.124 Transpower is proposing \$290.0 million of ICT opex including Software as a Service (**SaaS**) opex. This represents an increase of 39.8% from RCP3, including SaaS opex. The “underlying” ICT opex (ICT opex not including SaaS) shows an increase of 28.4% from RCP3 while SaaS opex has increased by 117.4% from RCP3.⁶⁰
- 4.125 The proposed expenditure is comprised of a base year amount of \$177.1 million, step changes totalling \$50.2 million, total trend of \$5.3 million and SaaS of \$57.4 million.
- 4.126 The key drivers of ICT opex are:
- 4.126.1 an ongoing increase in the use of cloud services – shift to more applications being delivered via cloud-based SaaS instead of on-premises data centres;
 - 4.126.2 additional license costs required for new capabilities and higher number of FTEs; and
 - 4.126.3 increased costs associated with the transition from current “own and control” data centre approach towards adopting an “as a service” approach (driven by the Data Centre Services Modernisation (DCSM) sub-strategy).

Draft decision

- 4.127 Our draft decision is to approve \$292.3 million of ICT opex (inclusive of SaaS opex) including additional opex for the TransGO Refresh project.

⁶⁰ Underlying ICT opex is Transpower’s ICT opex excluding SaaS opex. This is due to the International Financial Reporting Standards’ decision to recategorize SaaS from capex to opex in 2021, which means a portion of RCP3 SaaS expenditure is classified as capex.

- 4.128 We consider that Transpower's ICT expenditure including additional opex costs for its TransGO project have been sufficiently justified as prudent and efficient and are consistent with the Part 4 purpose.

Verifier's review

- 4.129 The Verifier reviewed all of Transpower's ICT opex including SaaS and concluded that all of Transpower's proposed \$219.9 million (\$ constant 2021/2022) was prudent and efficient.⁶¹
- 4.130 The Verifier reviewed information including investment cases as part of its assessment and considered the capex and opex trade-off as part of its assessment.
- 4.131 The Verifier noted that Transpower's ICT investment framework involves an explicit option analysis step prior to including the preferred solutions and expenditures into the investment cases.⁶²
- 4.132 The Verifier also considered the expenditure step changes and reviewed the investment cases that informed these. The Verifier considered that these step changes it reviewed were supported by the investment cases and were prudent and efficient.
- 4.133 Transpower proposed SaaS opex of \$57.4 million and the Verifier verified \$55.8 million (\$ constant 2021/2022) of that opex.

Our view

- 4.134 We are satisfied with the Verifier's review and have considered the Verifier's review is consistent with the Terms of Reference (which is based on the Capex IM assessment criteria).
- 4.135 We consider the Verifier's review to be robust and has undertaken thorough analysis and considered a range of materials.
- 4.136 While we have taken into account the Verifier's review, we considered it would be prudent to undertake further analysis to inform our assessment as to whether the expenditure is prudent and efficient given the large number of step changes and quantum of uplift.
- 4.137 We undertook spot checks on the more material step changes to confirm they are sufficiently justified. These step changes include outsourced services and IST licenses.

⁶¹ GHD Advisory and Castalia, [IV Report](#), p iv.

⁶² GHD Advisory and Castalia, [IV Report](#), p vi.

Outsourced services step change

- 4.138 We tested the ICT outsourced services step change expenditure of \$28.8 million. We analysed the investment cases to assess whether the uplift was justified.
- 4.139 We assessed the data centre services modernisation (**DCSM**) investment case, as the DCSM related changes form the largest portion of the outsourced services step change.
- 4.140 We have been able to reconcile the proposed opex step change with the investment cases and were able to confirm these costs are incremental to base expenditure. Transpower has identified the needs and benefits of the investment in these investment cases. The need for the investment is also consistent with ICT overview and other strategy documents.
- 4.141 This shows a well-considered approach with a justified need and quantified benefit. This is likely to reflect prudent and efficient expenditure, which we consider is in accordance with the Part 4 purpose.

Expenditure related to TransGO Refresh project

- 4.142 We investigated the TransGO refresh project as Transpower indicated that cost uncertainties related to the project were “significant”.⁶³ We noted that the project was in the tender stage and tested whether Transpower was in a position to provide more accurate forecasts for capex and opex.
- 4.143 We issued an RFI to Transpower to determine whether the TransGO Refresh project costs had firmed since the RCP4 proposal was lodged with us. We sought this information to ascertain whether we should agree with Transpower that the base capex low incentive rate should apply due to cost uncertainties.
- 4.144 Transpower provided additional information that indicated the project had progressed sufficiently that capital costs are now much more certain (at a P50 level). We discuss this in the Capex Topic Paper under ICT Capex.
- 4.145 Transpower also indicated that it has revised its TransGO project opex costs. Transpower provided us with a cost breakdown outlining the differences between the RCP4 proposal costs and the updated market response.
- 4.146 While some updated opex costs have decreased since the proposal, such as Radio-as-a-Service (**RaaS**) costs, overall opex needs have increased by the introduction of costs related to the “professional services to perform the design, validation, deployment, operation, and handover of the new network.”

⁶³ Transpower RCP4 proposal, p 128.

- 4.147 We have concluded that the opex cost increases since proposal are reasonable and prudent because Transpower does not necessarily maintain the in-house fibre design and delivery expertise, so this must be externally sourced and added to the project cost. This cost appears to have been omitted at the proposal stage ⁶⁴
- 4.148 In total, over the RCP4 period, Transpower has indicated that it needs an additional \$2.3 million related to TransGO Refresh project. We consider that this expenditure is likely to be prudent and efficient based on the competitive tender process undertaken.
- 4.149 The solutions identified from this process are more likely than not needed for the implementation of the project as these are identified by experts during the tender process.

Overall conclusion

- 4.150 Having taken into account the Verifier's review, Transpower's proposal and our subsequent assessment and inquiries, we consider the \$292.3 million of ICT opex (inclusive of SaaS opex) to be sufficiently justified and prudent and efficient, and is consistent with the Part 4 purpose.

Grid Maintenance

- 4.151 Grid maintenance is incurred for works on HVDC and HVAC transmission line and substation assets, and communication-site and services assets. Grid maintenance addresses in-service deterioration of assets, responds to transmission faults, proactively improve assets and implements projects to replace asset components.⁶⁵
- 4.152 Transpower is proposing a total grid maintenance expenditure of \$690.1 million, which represents a 9.5% (or \$59.9 million) increase from RCP3 (\$630.2 million) total grid maintenance.

⁶⁴ Based on our review of Transpower's ICT opex overview, we have not been able to identify expenditure that is related to a solution integration. As such, we consider it is appropriate to include a new step-change into the broader ICT opex portfolio rather than incorporate it into an existing step change category.

⁶⁵ IV Report, p 308.

4.153 This expenditure is split into four categories:⁶⁶

4.153.1 **Preventive maintenance** - routine, interval-based maintenance (interval is determined by asset management information systems). This comprises inspections, condition assessments, condition monitoring and routine servicing of Transpower's network plant and equipment;

4.153.2 **Predictive maintenance** – needs-based maintenance (also informed by asset management plans). Predictive works are usually remedial work, identified through the preventive maintenance and asset information feedback processes. The objective is to ensure that deferred maintenance is addressed, and asset health is managed. This includes work such as condition-based repairs, vegetation control, additional targeted condition monitoring;

4.153.3 **Proactive maintenance** - maintenance done to manage root causes of asset failure before asset failure occurs. This is usually driven by tactical or strategic reliability analysis. Works include reliability driven corrective work. One-off condition monitoring, inspections to determine fault causes;

4.153.4 **Corrective maintenance** - response based maintenance to respond to faults. This is usually to correct faults, restore an asset to service, and/or make asset safe to use.

4.154 We assess each of these categories below. Our assessment focusses whether each of these categories has been sufficiently justified and whether it is likely to reflect prudent and efficient expenditure.

Draft decision – Grid maintenance opex

4.155 Following our review of the Verifier's report and Transpower proposal, our draft decision is to approve \$683.5 million of Transpower's proposed grid maintenance opex.

Our view on the proposed maintenance opex increase

4.156 Given Transpower is proposing a significant increase in asset replacement and refurbishment capex, we wanted to understand if such an increase in grid maintenance opex was justified.

⁶⁶ Transpower RCP4 proposal, Table 30.

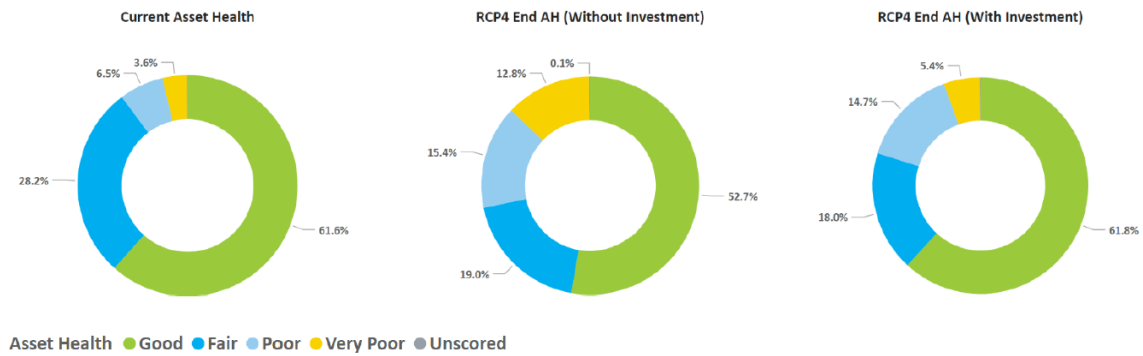
- 4.157 We noted in our Issues paper that we would expect Transpower’s grid maintenance opex to decrease given that asset replacement and refurbishment capex should improve Transpower’s asset age profile, which in turn should reduce the need for maintenance.⁶⁷
- 4.158 In its submission, Transpower noted that:⁶⁸
- one of the reasons our grid maintenance workload is not decreasing is due to managing a larger proportion of aging assets, notwithstanding our increased renewals spend in RCP4. This aligns with our risk-based asset management approach. We also note that there are additional activities we will be undertaking during RCP4 compared to RCP3.
- 4.159 To test Transpower’s explanation, we checked Transpower’s 2023 Asset Management Plan which sets out its asset health profile estimates for most asset classes.
- 4.160 We confirmed that:
- 4.160.1 in the conductor, earthwire, towers, and foundations asset classes, overall fleet asset health was decreasing despite the proposed capex investment;⁶⁹ and
- 4.160.2 the proposed capex investment appeared to be maintaining or slightly improving overall fleet asset health in other asset classes.
- 4.161 For example, Transpower asset health modelling for tower protective coatings demonstrates that even with the proposed RCP4 investment, asset health is predicted to reduce under the current investment strategy.⁷⁰

⁶⁷ RCP4 Issues paper, para 6.41.

⁶⁸ Transpower New Zealand Limited “RCP4 Issues Paper submission” (21 February 2023), para 13.

⁶⁹ Transpower New Zealand “[Asset Management Plan 2023](#)” (November 2023), figures 78 (conductors), 79 (earthwires), 92 (towers), 100 (foundations).

⁷⁰ Transpower New Zealand “[Asset Management Plan 2023](#)” (November 2023), p 117.

Figure 1 Tower protective coating asset health

4.162 This is consistent with Transpower’s explanation. We also consider Transpower’s explanations to be reasonable and reliable given the asset health profile information in the 2023 AMP are informed by asset health models Transpower has been developing and improving over RCP3.

Preventive maintenance overview

4.163 Preventive maintenance comprises activities related to asset “inspections, condition assessments, condition monitoring, and servicing.”⁷¹

4.164 Transpower has proposed a preventive maintenance expenditure of \$232.6 million consisting of \$210.0 million in base expenditure, \$20.5 million in step changes, and net trend of \$2.1 million.

Verifier’s review – Preventive maintenance

4.165 The Verifier reviewed \$206.9 million (\$ constant 2021/2022) and verified that expenditure. Inflated to \$ constant 2022/2023 this verified amount is \$221.0 million.⁷²

4.166 In its review, the Verifier assessed and verified the maintenance field work step change of \$2.5 million (\$ constant 2021/2022).

4.167 Verifier noted that the step change for maintenance field work is informed by policies and strategies including asset strategies. The work is planned based on its Grid Asset Management Framework.

⁷¹ Transpower RCP4 proposal, p 135.

⁷² Note that this includes using the 2021/2022 base year expenditure. The 2022/2023 base year is higher by about \$3.9 million (\$ constant 2022/2023) aggregated over RCP4.

- 4.168 It reviewed the preventive maintenance requirements for several asset classes as well as the assumption, lifecycle plans and other inputs for creating the preventive maintenance requirements.⁷³ This determines the inspections and routine servicing frequencies. It also reviewed asset class plans which require asset health models and notes that preventive maintenance inspections inform the asset health values.
- 4.169 Transpower's maintenance schedule is produced using Maximo and the expenditure forecasting carried out on a bottom-up basis.⁷⁴ Activities are costed using established unit rates multiplied by the scheduled programmes of work.
- 4.170 The Verifier concluded that Transpower's approach to forecasting its preventive maintenance opex need is likely to be prudent.

Our review – Preventive maintenance

- 4.171 We have considered the Verifier's review and are satisfied that it has carried out its assessment in accordance with the Terms of Reference (which is based on the Capex IM). The Verifier considered a breadth of information, made further enquires as needed. In particular we are satisfied that the Verifier reviewed Transpower's forecasting methodology.
- 4.172 In addition to our review of the Verifier's report, we were interested in the reasons for the \$21.4 million step change in opex in this category. The Verifier reviewed the field work portion of the proposed step change but not the proposed service provider cost increase, which forms the majority of the step change.
- 4.173 The Verifier was satisfied that the step change related to increased maintenance field work was prudent and efficient. The Verifier tested the link between costs and the quantity of interventions and was satisfied that interventions were driven by Transpower's asset health modelling, which in some asset classes has highlighted the need for more interventions as well as asset replacements.
- 4.174 **Maintenance field work step change:**⁷⁵ Based on our review of Verifier's report and the proposal, we are satisfied with the "maintenance field work" step change, which is likely to be prudent and efficient, consistent with the Part 4 purpose.

⁷³ GHD Advisory and Castalia, [IV Report](#), p 322.

⁷⁴ Maximo is Transpower's internal core asset management information system for all grid assets. It is used as the asset register, to manage the maintenance programme and work orders and to manage incidents.

⁷⁵ This includes power cables, asbestos inspections and outdoor junction boxes strategy.

- 4.175 **Maintenance price increase step change:** Transpower has proposed an additional opex step change for price increases in this category which was not reviewed by the Verifier. Transpower's Maintenance Portfolio Management Plan (**PMP**) highlights that the new service provider contract price increases represent a \$18.4 million opex step change in aggregate over RCP4.
- 4.176 In its proposal Transpower explained the increase was mainly driven by service provider costs. In our initial review of the proposal, we considered Transpower had not provided sufficient background material or explanation to support the proposed increase.
- 4.177 We sought additional information from Transpower using an RFI, requesting costing information from service provider contracts and how these costs were used to quantify the step change.
- 4.178 Transpower explained how it calculates preventative maintenance costs. It takes a bottom-up approach based on average intervention costs per unit and predicted volumes. Volumes are informed by asset defect data.
- 4.179 In responding to our RFI Transpower discovered it had over-estimated its average intervention costs per unit. This resulted in a reduction of the proposed preventative maintenance opex step change of \$6.6 million in aggregate over the period.⁷⁶
- 4.180 We have accepted that service provider costs have increased based on the information provided by Transpower. In its supporting documentation Transpower note that provider costs have increased by 5% to 10% due to "high consumer price index and labour price index rises."

Overall conclusion

- 4.181 We after reviewing the Verifier's review and undertaken our own assessment and inquiry, we consider that the preventive maintenance expenditure of \$226.1 million has been sufficiently justified as prudent and efficient and is consistent with the Part 4 purpose.

Predictive maintenance overview

- 4.182 Predictive maintenance "focuses on defects identified through preventive maintenance and asset information feedback processes" and to "ensure that deferred maintenance is addressed, and asset health is managed"⁷⁷

⁷⁶ Request for information RFI023 Preventive maintenance opex.

⁷⁷ Transpower RCP4 proposal, p 144.

- 4.183 Transpower is proposing expenditure of \$428.2 million for predictive maintenance, representing an increase of 13.7% (or \$51.5 million) when compared to what Transpower estimates it will spend by the end of RCP3 (\$377.0 million).
- 4.184 This expenditure is formed using a proposed base year amount of \$328.7 million, \$103.8 million in step changes and a downward net trend of \$4.3 million.

Verifier's review – Predictive maintenance

- 4.185 The Verifier reviewed \$383.9 million (\$ constant 2021/2022) and verified that expenditure. Inflated to \$ constant 2022/2023 this verified amount is \$410.0 million.
- 4.186 In assessing this expenditure, the Verifier noted that the maintenance step changes are project specific and forecast on a volumetric basis. The Verifier considered that the expenditure need is justified based on the asset condition assessments outlined in Transpower asset class portfolio management plans.⁷⁸
- 4.187 The Verifier noted that the level of work undertaken by Transpower is driven by the asset condition and asset health models in order to maintain current levels of performance and risk.⁷⁹
- 4.188 The Verifier assessed programme cost efficiency and determined that the use of contestable Grid Services Contracts and price book contractor comparisons would result in cost-effective solutions.⁸⁰

Our review – Predictive maintenance

- 4.189 We reviewed the verifier's report and Transpower's proposal. We consider that the Verifier has carried out a robust and extensive review of this expenditure and assessed carried out its review in accordance with the Terms of Reference (which is based on the Capex IM assessment criteria). However, we have focussed our review on the proposed expenditure which is 4% (or \$18.2 million) higher than the verified amount adjusted for inflation.
- 4.190 Since verification Transpower states that it increased its proposed predictive maintenance opex due to "minor timing, scope, and volume changes" and "higher prices".⁸¹

⁷⁸ GHD Advisory and Castalia, [IV Report](#), p 331.

⁷⁹ GHD Advisory and Castalia, [IV Report](#), p 330.

⁸⁰ GHD Advisory and Castalia, [IV Report](#), p 332.

⁸¹ Transpower RCP4 Proposal, p 144.

- 4.191 The step change increase is largely due to higher service provider costs. This increase is consistent with Transpower's explanation in its supporting documentation that provider costs have increased by 5% to 10% percent due to "high consumer price index and labour price index rises."
- 4.192 We have accepted that service provider costs have increased but sought additional information from Transpower. We wanted to test whether the over-estimate in the average intervention cost per unit identified in the preventive maintenance (discussed above) similarly affected the predictive maintenance forecast.⁸²
- 4.193 Transpower explained that the pricing anomaly causing an overestimate did not apply to the predictive maintenance portfolio. It was caused by an input error in the Maximo system and that predictive expenditure is forecasted using a different cost estimation system than the preventive maintenance expenditure, so did not result in same pricing error.
- 4.194 We are satisfied with Transpower's explanation for the increase in prices in this expenditure programme.

Overall conclusion

- 4.195 Having considered the Verifier's review, Transpower's proposal and our subsequent enquiries, our draft view is that the proposed predictive maintenance expenditure of \$428.2 million has been sufficiently justified as prudent and efficient and is consistent with the Part 4 purpose.

Corrective maintenance overview

- 4.196 Transpower's proposed expenditure for corrective maintenance consisting of a base year amount of \$24.5 million, no step changes and downward trend of \$0.5 million as a productivity challenge across all of RCP4, directed towards volumetric work to fixing faults.

Verifier's review – Corrective maintenance

- 4.197 The Verifier reviewed and verified the proposed expenditure and noted this is a decrease in expenditure from RCP3. In assessing this expenditure, the Verifier noted the proposed expenditure was consistent with historical expenditure.

⁸² GHD Advisory and Castalia, [IV Report](#), p 331 where the Verifier concluded predictive maintenance bottom-up build component.

- 4.198 The key drivers for this expenditure are safety and reliability. The quantity of corrective maintenance is driven by asset condition and asset criticality that orders and prioritises the failure defects to be addressed. The level of defects have been stable over the last few years in RCP3, and likely to continue at that level.⁸³
- 4.199 The Verifier also concluded the level of expenditure is reasonable when considering the forecast work quantity.

Our review – Corrective maintenance

- 4.200 We have assessed the Verifier’s review and have considered this in our assessment as this is consistent with the assessment criteria under the Capex IM (as it applies to opex). The Verifier considered a breadth of information in its assessment of whether the expenditure is prudent and efficient.
- 4.201 In particular, we are satisfied that Transpower take a risk-based approach to corrective maintenance and forecast volumes being similar to RCP3 is consistent with Transpower’s view that the proposal is to maintain existing levels of reliability.

Overall conclusion

- 4.202 After reviewing the Verifier’s review and Transpower’s proposal, we consider that the proposed corrective maintenance expenditure of \$23.9 million has been sufficiently justified as prudent and efficient and is consistent with the Part 4 purpose.

Proactive maintenance overview

- 4.203 Transpower is proposing a base year of \$3.9 million for pro-active maintenance opex, a step change of \$1.6 million, and downward trend of \$0.1 million across RCP4.

Verifier’s review – Proactive maintenance

- 4.204 The Verifier noted that proactive maintenance planning is based on Transpower’s Grid Asset Management Framework. The overall driver for the expenditure increase is a greater level of improvement work initiated from formal analysis and investigation by engineering and reliability teams. Forecasting and planning for level of work appears to be determined by expert analysis.
- 4.205 In its review, the Verifier noted that proactive maintenance “is very limited to specific reliability initiatives and specialised condition monitoring or root cause analysis inspections.”⁸⁴

⁸³ GHD Advisory and Castalia, [IV Report](#), p 338.

⁸⁴ GHD Advisory and Castalia, [IV Report](#), p. 338

- 4.206 The Verifier considered the cost estimation was reasonable and likely to be efficient. It noted that individual proactive projects are costed and added to the base expenditure.⁸⁵

Our review – Proactive maintenance

- 4.207 We have assessed the Verifier’s review and Transpower’s proposal and consider Transpower has reasonably justified the proposed expenditure and the increase when compared to RCP3.

Overall conclusion

- 4.208 Our preliminary view is that the proposed proactive maintenance expenditure of \$5.4 million has been sufficiently justified as prudent and efficient and is consistent with the Part 4 purpose.

Sustainability opex

- 4.209 Transpower has proposed \$2.4 million for opex related to its sustainability programme.⁸⁶ This proposed expenditure was not reviewed by the Verifier.

Draft decision

- 4.210 Our draft decision is to approve the proposed \$2.4 million for sustainability opex. The expenditure will be used to investigate, understand, and incorporate improved sustainability outcomes into Transpower’s design processes, grid service provider services, wider supply chain, and to mitigate future carbon cost risks.

Our review

- 4.211 In our 2023 IM Review, we considered whether sustainability expenditure related to biodiversity could be recovered within our Capex IM framework. We noted in our 2023 IM Review final decision that:⁸⁷

3.180 Transpower can recover costs to remedy biodiversity loss as long as the biodiversity loss results from a project or programme, and there is an obligation to remedy biodiversity losses arises from relevant environmental laws or regulations such as obligations under the Resource Management Act 1991 or local planning regulations.

3.181 Outside of the above circumstances, improving existing biodiversity is not a Part 4 regulated service and cannot be approved by us for recovery from consumers of electricity transmission services. It follows that we are not satisfied that a change in response to this submission would better promote the Part 4 purpose and our other framework objectives.

⁸⁵ GHD Advisory and Castalia, [IV Report](#), p. 338

⁸⁶ Transpower RCP4 proposal, p. 202-203.

⁸⁷ Commerce Commission “[IM Review 2023 – Transpower Investment Topic paper](#)” (13 December 2023), paras 3.180 and 3.181.

- 4.212 Our view is that sustainability opex can be allowed where this is directly related to electricity transmission services.
- 4.213 In its proposal, Transpower described its sustainability work programme and the initiatives it is proposing. We consider these initiatives can be linked to specific capex and opex projects and programmes related to electricity transmission services. Specific examples include:⁸⁸
- 4.213.1 consideration of lower-carbon timber options for a substation control room – considers this will result in overall project cost savings;
 - 4.213.2 investment in SF6-free switchgear to reduce ETS costs;
 - 4.213.3 installation of light-weight solar panels for warehouses – considers long-term cost savings to project including opex savings;
 - 4.213.4 planting indigenous vegetation around assets – considers long-term maintenance cost reductions; and
 - 4.213.5 improving waste management practices – considers options that allows Transpower to increasingly generate income from waste and end-of-asset-life equipment, which may offset some of the project costs.
- 4.214 Transpower expects that the expenditure will result in longer term cost savings and efficiencies related to its project and programme work, and that it is consistent with the Part 4 purpose.
- 4.215 Following our review, we agree that Transpower has made a reasonable case for the expenditure although we note that the justifications are based on subjective reasoning rather than a CBA – with costs and benefits largely unquantified until issues and solutions can be more accurately defined.
- 4.216 The investigations may help Transpower quantify the scope of likely cost savings, which may inform analysis on whether the initiative is economic and provides long-term savings for consumers. As such, we consider the sustainability opex to be appropriate and our draft decision is to approve the \$2.4 million for sustainability opex.
- 4.217 We consider Transpower has reasonably demonstrated the proposed expenditure related to electricity transmission services based on its case studies, and that the opex for these sustainability initiatives are likely to be consistent with promoting the long-term benefit of consumers under the Part 4 purpose.

⁸⁸ Transpower RCP4 proposal, p 202-203.