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# Our process, framework and approach for setting Transpower's expenditure allowances, quality standards and individual price-quality path for 2020 to 2025

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# Associated documents

| Publication date | Reference | Title |
|---|---|---|
| 28 February 2017 | 1178-2560 | *Transpower Input Methodologies Determination 2010* [2012] NZCC 17, as amended and consolidated as at 28 February 2017 |
| 22 December 2017 | 978-1-869456-27-6 | *Transpower Individual Price-Quality Path Determination 2015* [2014] NZCC 35, as amended and consolidated as at 13 December 2017 |
| 1 June 2018 | 978-1-869456-39-9 | *Transpower Capital Expenditure Input Methodology determination 2012* [2012] NZCC 2, as amended and consolidated as at 1 June 2018 |

Commerce Commission
Wellington, New Zealand

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# Chapter 1 Introduction

**Purpose of this paper**

1.1 This paper outlines the process, framework and approach we intend to follow in setting Transpower's expenditure allowances, quality standards and individual price-quality path (**IPP**) for the 2020 to 2025 regulatory period (**RCP3**).[1]

1.2 The main objectives of this paper are:

1.2.1 to seek initial views from all interested parties about our intended process, framework and approach for setting Transpower's IPP; and

1.2.2 to allow Transpower and other interested parties to plan for future engagement in the IPP-setting process.

**Structure of this paper**

1.3 This paper is structured as follows:

1.3.1 **Chapter 2: Our individual price-quality path reset process** – This chapter sets out the process we intend to follow in setting Transpower's expenditure allowances, quality standards and IPP for RCP3;

1.3.2 **Chapter 3: Regulatory framework for the IPP reset** – This chapter explains our regulatory framework, covering the requirements of the Commerce Act 1986 (**the Act**) and the relevant input methodologies (**IMs**), and how we propose to evaluate Transpower's RCP3 proposal (**RCP3 proposal**);

1.3.3 **Chapter 4: Transpower's progress under our regulatory regime** – This chapter sets out:

1.3.3.1 Transpower's progress under the 2015 to 2020 regulatory period (**RCP2**) and developments we are likely to consider for the RCP3 IPP;[2]

[1] Information about RCP3 can be found on our website at: https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-transmission/transpowers-price-quality-path/setting-transpowers-price-quality-path-from-2020.

[2] Information about the RCP2 IPP for Transpower can be found on our website at: https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-transmission/transpowers-price-quality-path/20152020-transpower-individual-price-quality-path.

1.3.3.2 our current views on the progress we would like to see from Transpower during RCP3 in preparation for potential enhancements to the 2025 to 2030 regulatory period (**RCP4**) IPP;

1.3.3.3 how our evaluation of Transpower's RCP4 proposal may evolve in light of Transpower's expected progress during RCP3; and

1.3.3.4 our focus areas for the RCP3 IPP and for monitoring Transpower's performance during RCP3;

1.3.4 **Chapter 5: Our expenditure assessment approach for forecast IPP expenditure** – This chapter outlines:

1.3.4.1 the process of setting expenditure allowances for base capex and operating expenditure (**opex**) for RCP3;[3]

1.3.4.2 how we intend to apply proportionate scrutiny to Transpower's expenditure proposals, including how we are intending to best utilise the outcomes of Transpower's pilot verification process during our assessment of Transpower's forecast expenditures; and

1.3.4.3 the tools we intend to apply in assessing the forecast expenditures;

1.3.5 **Chapter 6: The link between forecast expenditures and Transpower's revenues and pricing in RCP3** – This chapter sets out our proposed approach to:

1.3.5.1 setting the forecast maximum allowable revenue (**forecast MAR**) and total forecast revenues for each of Transpower's pricing years in RCP3;

1.3.5.2 presenting total forecast revenues in RCP3;

1.3.5.3 smoothing total forecast revenues in RCP3;

1.3.5.4 presenting the impact of forecast expenditures on total forecast revenues;

[3] The terms 'base capex' and 'base capex allowances' are defined in clause 1.1.5 of the *Transpower Capital Expenditure Input Methodology Determination 2012* [2012] NZCC 2 (**Capex IM**).

1.3.5.5 presenting the drivers for changes in the total forecast revenues during RCP3; and

1.3.5.6 modelling the above;

1.3.6 **Attachment A: How Transpower is regulated** – This attachment gives context for setting the IPP by providing an overview of the forms of our regulation that apply to Transpower;

1.3.7 **Attachment B: Independent verification of Transpower's RCP3 proposal** – This attachment summarises the purpose and scope of the pilot independent verification process for RCP3, and explains the factors we intend considering in assessing Synergies Economic Consulting and GHD Advisory's (**the Verifier's**) recommendations;

1.3.8 **Attachment C: A summary of Transpower's forecast expenditures** – This attachment shows the steps we intend to take in summarising on a high level, quantitatively and qualitatively, Transpower's forecast expenditures for both base capex and opex in order to determine the required level of scrutiny;

1.3.9 **Attachment D: Our approach to testing forecast expenditures against the expenditure outcome** – This attachment outlines a set of questions and considerations we intend having regard to in testing the forecast expenditures against the expenditure outcome; and

1.3.10 **Attachment E: Overview of the evaluation criteria for base capex and opex, as specified in the Capex IM and the terms of reference (TOR) for the Verifier** – This attachment provides an overview of the evaluation criteria that we will or may have regard to in reviewing Transpower's base capex and opex proposals.

# Chapter 2 Our individual price-quality path reset process

**Purpose of this chapter**

2.1 This chapter sets out the process we intend to follow in setting Transpower's expenditure allowances, quality standards and IPP for RCP3.

**Proposed process and indicative dates**

2.2 At a high level, our process for setting the IPP is as follows:

2.2.1 Transpower will propose expenditure allowances and quality standards;

2.2.2 We will evaluate Transpower's proposal (evaluation approach below); and

2.2.3 We will then set Transpower's IPP.

2.3 Table 1 below sets out more detail on the process we propose to follow and the indicative dates for completion. We will provide updates to our proposed process and dates if these change during the project.

2.4 We are interested in your views on the process and dates set out below.

**Table 1. Indicative dates for our IPP reset process**

| Indicative date | Process step |
|---|---|
| **3 December 2018** | Transpower is required to provide us with its proposals on base capex allowances, opex allowances and quality standards |
| **4 December 2018** | Transpower's RCP3 proposal and verification report published on our website |
| **7 February 2019** | Issues paper on Transpower's RCP3 proposal published |
| **28 February 2019** | Submissions due on our issues paper |
| **7 March 2019** | Cross submissions due on our issues paper |
| **30 May 2019** | Draft decisions on expenditure allowances, quality standards, compliance obligations and the form of the IPP published for submissions<br>Draft IPP determination published for technical submissions |
| **27 June 2019** | Submissions due on our draft decisions<br>Technical submissions due on our draft IPP determination |
| **11 July 2019** | Cross submissions due on our draft decisions and our draft IPP determination |
| **29 August 2019** | Final decisions on expenditure allowances, quality standards, compliance obligations and the form of the IPP published<br>Revised draft IPP determination published, subject only to price path updates to come later for the Transpower weighted average cost of capital (**WACC**) in October |
| **12 September 2019** | Draft information request provided to Transpower to calculate the forecast MAR for RCP3 |
| **3 October 2019** | Information request issued to Transpower to calculate the forecast MAR for RCP3 |
| **10 October 2019** | Transpower WACC published |
| **31 October 2019** | Transpower's forecast MAR for RCP3 due |
| **14 November 2019** | Final IPP determination and companion paper published |
| **28 November 2019** | Last statutory date to publish IPP determination |

**Opportunities to contribute to the IPP reset for RCP3**

2.5 We will be seeking formal submissions and cross-submissions on the issues paper (to be published 7 February 2019) and draft decisions (to be published 30 May 2019). We will also be seeking technical submissions on the draft IPP determination (also to be published 30 May 2019).

**How you can provide your feedback on the matters discussed in this paper**

2.6 You are invited to provide your written views on this paper no later than **5pm, Thursday 15 November 2018**. You should address your responses to:

Keston Ruxton (Manager, Price-quality Regulation)
c/o regulation.branch@comcom.govt.nz

2.7 Please include "Transpower IPP 2020 – Process, Framework and Approach Paper" in the subject line. We prefer responses to be provided in a file format suitable for word processing in addition to PDF file format.

*Requests for confidentiality*

2.8 We intend to publish all submissions on our website. This is an important step, as it allows us to test all information received from stakeholders in a fully transparent way.

2.9 However, we recognise that there may be cases where submitters wish to provide us with confidential information in a submission.

2.10 Any confidential information in a submission should be clearly marked and preferably included in an appendix. When confidential information is provided in a submission or if you wish the published electronic copies to be 'locked', you should supply both confidential and public versions of your submissions. The responsibility for ensuring that confidential information is not included in a public version of a submission rests with the submitter.

2.11 Submitters must also explain the basis for any claims that information is confidential. Where commercial sensitivity is asserted, submitters must explain why the publication of the information would be likely to unreasonably prejudice their commercial position or that of another person who is the subject of the information.

# Chapter 3 Regulatory framework for the IPP reset

**Purpose of this chapter**

3.1 This chapter describes the high-level framework we intend applying in setting an IPP for Transpower for RCP3. It explains:

3.1.1 the relevant requirements under the Act;

3.1.2 the IMs we must follow to assess the RCP3 proposal and to reach our decisions on an IPP for Transpower; and

3.1.3 how we propose to evaluate the RCP3 proposal.

**What we are required to do under the Commerce Act 1986**

3.2 Part 4 of the Act provides for the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition.[4] For an overview of the regulation applying to Transpower, see Attachment A.

3.3 Transpower is subject to IPP regulation under Part 4.[5] Transpower is also subject to information disclosure regulation under Part 4.[6]

3.4 We are about to commence the process of setting an IPP for Transpower for RCP3. We are aiming to complete that process by no later than 28 November 2019. The IPP will set out:[7]

3.4.1 the maximum revenue which Transpower can charge for each pricing year of RCP3 (an explanation of the link between forecast expenditures and Transpower's revenues and pricing is provided in Chapter 6);[8]

3.4.2 the quality standards that will apply to Transpower, some of which may be revenue linked;[9] and

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4 Commerce Act 1986, s 52.

5 The individual price-quality path provisions of s 53ZC apply to Transpower by way of an Order in Council under s 52N of the Commerce Act. The Order in Council came into force on 1 October 2010 and expires 20 years later, on 30 September 2030.

6 Section 54F of the Act.

7 Section 53M of the Act sets out the necessary components of a price-quality path.

8 Transpower's pricing years run from 1 April through to 31 March. This is to align with the pricing years of electricity distributors, as the Transpower lines charges are combined for consumers with distributors' charges. Transpower's financial forecasts and actual financial performance are measured and reported on the basis of its financial reporting years ending 30 June. We match up each disclosure year with the nearest preceding pricing year for revenue setting purposes.

3.4.3 the regulatory period, for which we will propose five years.

3.5 We have a broad discretion to determine the IPP under section 53ZC of the Act:

> 53ZC Price-quality path for individual businesses
>
> (1) If individual price-quality regulation applies to goods or services supplied by a supplier, the Commission may set the price-quality path for that supplier using any process, and in any way, it thinks fit, but must use the input methodologies that apply to the supply of those goods or services.
>
> (2) The following provisions of subpart 6 apply (with all necessary modifications) where individual price-quality regulation is imposed:
>
> (a) sections 53M and 53N:[10]
>
> (b) section 53ZB.[11]

3.6 In exercising this discretion, we must apply the relevant IMs:

3.6.1 The **Transpower IMs**, which we must apply in determining key inputs of the calculation of maximum revenue under the IPP;[12] and

3.6.2 The **Capex IM**,[13] which we must apply in setting:

3.6.2.1 Transpower's base capex allowances for RCP3;

3.6.2.2 quality standards (referred to as grid output measures in the Capex IM);

3.6.2.3 incentives for Transpower; and

3.6.2.4 the base capex projects or programmes to be included in the IPP as 'listed projects'.

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9 Capex IM, clause 2.2.1.

10 Section 53M relates to the content and timing of price-quality paths, and s 53N relates to monitoring compliance with price-quality paths.

11 Section 53ZB sets out what happens to price-quality paths if IMs change.

12 *Transpower Input Methodologies Determination 2010* [2012] NZCC 17, as amended and consolidated as at 28 February 2017.

13 *Transpower Capital Expenditure Input Methodology determination 2012* [2012] NZCC 2, as amended and consolidated as at 1 June 2018.

3.7 Because IPPs do not have their own express purpose statement under the Act, we must make decisions that promote the purpose of Part 4 of the Act. The purpose of Part 4 as stated in s 52A is:

> … to promote the long-term benefit of consumers … by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or service –
>
> (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
>
> (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
>
> (c) share with consumers the benefits of efficiency gains in the supply of the regulated good or services, including through lower prices; and
>
> (d) are limited in their ability to extract excessive profits.

**Assessing Transpower's base capex proposal**

3.8 In assessing Transpower's base capex proposal, we will be guided by whether the proposal is consistent with an expenditure outcome which represents the efficient costs of a prudent supplier.[14]

3.9 We consider this concept to be consistent with the Part 4 purpose, which is a required consideration under the capex evaluation criteria.[15]

3.10 In applying this concept, we consider that a 'prudent supplier' is a supplier whose planning and performance standards reflect Good Electricity Industry Practice (**GEIP**). A useful definition of GEIP, in relation to electricity transmission services, is found in the Electricity Industry Participation Code 2010 (**Code**).[16]

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[14] Commerce Commission "Transpower capex input methodology review – Decision and reasons" (29 March 2018), para A15.

[15] Clause 6.1.1(2)(b) of the Capex IM.

[16] '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].

3.11 In evaluating the base capex expenditure proposal in the RCP3 proposal, we must apply the evaluation criteria in the Capex IM, being:

3.11.1 the general evaluation criteria set out in clause 6.1.1(2) of the Capex IM (**general capex evaluation criteria**); and

3.11.2 the specific base capex evaluation criteria referred to in clause 6.1.1(3) of the Capex IM and specified in Schedule A of the Capex IM (**base capex evaluation criteria**).

3.12 These are together referred to as the **capex evaluation criteria**.

3.13 The general capex evaluation criteria are:[17]

3.13.1 whether what is proposed is consistent with the Transpower IMs and the Capex IM;

3.13.2 the extent to which what is proposed will promote the purpose of Part 4 of the Act; and

3.13.3 whether the data, analysis, and assumptions underpinning what is proposed are fit for the purpose of the Commission exercising its powers under Part 4 of the Act, which includes consideration of the accuracy and reliability of data and the reasonableness of assumptions and other matters of judgement.

3.14 The base capex evaluation criteria are specified in Schedule A of the Capex IM. They include:

3.14.1 general factors we must have regard to when evaluating the RCP3 proposal, such as reasonableness of key assumptions, overall deliverability of the proposed base capex during the current regulatory period, and the extent to which grid output targets were met in the previous regulatory period;

[17] Capex IM, clause 6.1.1(2).

3.14.2 a non-exhaustive list of criteria we may use when evaluating each identified programme of work set out in the base capex proposal, such as reviewing Transpower's process used to determine each identified programme's reasonableness and cost-effectiveness;[18] and

3.14.3 a list of evaluation techniques we may employ, such as process benchmarking, and process and functional modelling.

3.15 The base capex evaluation criteria are not exhaustive, and the weighting of different criteria is at our discretion. Also, while Transpower is required to submit a base capex proposal,[19] the final decisions on Transpower's base capex allowances ultimately rest with the Commission. We are not required to agree with Transpower about any aspect of the proposed expenditure allowances.

**Assessing Transpower's opex proposal**

3.16 In contrast to base capex, there is no IM that sets out rules about how we should determine or evaluate forecast opex for RCP3. 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.

3.17 Therefore, consistent with our approach to assessing base capex, in assessing opex we will be guided by:

3.17.1 the extent to which what Transpower proposes will promote the purpose of Part 4 of the Act; and

3.17.2 where they can be usefully applied to opex, the base capex evaluation criteria.

3.18 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).

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[18] Identified programmes are base capex projects or programmes of work which are forecast to be undertaken by Transpower in the next regulatory period (in this case, RCP3), and they are selected by reference to categories or criteria agreed between the Commission and Transpower under clause 2.2.1 of the Capex IM prior to Transpower submitting its expenditure proposal.

[19] Capex IM, clause 2.2.1(3) and Part 7.

**Assessing Transpower's proposed grid output measures**

3.19 As defined in the Capex IM, a 'grid output measure':[20]

> means a measure that quantifies the output or benefit (where 'benefit' may include reduction in risk) delivered by the **grid**, investment in the **grid**, or expenditure facilitating or enabling future investment in the **grid**

3.20 The Capex IM requires Transpower to propose, and for us to set, certain types of grid output measures, while providing Transpower with the opportunity to also propose other grid output measures.[21]

3.21 In setting the grid output measures, we are primarily seeking to provide Transpower with incentives to provide services at a quality that reflects consumer demands, in line with the Part 4 purpose. We must also apply the criteria in Schedule A of the Capex IM relating to grid output measures, which include (for example):[22]

3.21.1 the extent to which a measure is a recognised measure of either or both:

3.21.1.1 risk in the supply of electricity transmission services; and

3.21.1.2 performance of the supply of electricity transmission services; and

3.21.2 the relationship between the grid output measure and expenditure by Transpower.

3.22 The Capex IM provides for two types of grid output measures: revenue linked and non-revenue linked.[23]

3.23 Under any revenue-linked grid output measures, Transpower will be rewarded for outperforming the performance targets and penalised for underperforming the performance targets, as a quality incentive under section 53M(2) of the Act.

3.24 For the revenue-linked grid output measures, we will determine:[24]

3.24.1 grid output targets;

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[20] Capex IM, clause 1.1.5
[21] Capex IM, clause 2.2.2.
[22] Capex IM, clause A4-A6.
[23] Capex IM, clause 2.2.2.
[24] Capex IM, clause 2.2.2(1)(d).

3.24.2 caps – to limit the amount of positive revenue adjustment;

3.24.3 collars – to limit the amount of negative revenue adjustment; and

3.24.4 grid output incentive rates – the amount of money at risk for each unit of output between the cap and the collar.

3.25 We determine how the quality standards we set for Transpower are prescribed, but these standards must be based on, and be consistent with, any quality standards for Transpower as set by the Electricity Authority under the Code.[25]

[25] Sections 53M(3) and 54V(6) of the Act.

# Chapter 4 Transpower's progress under our regulatory regime

**Purpose of this chapter**

4.1 This chapter sets out:

4.1.1 Transpower's progress under our regulatory regime and developments we are likely to consider for the RCP3 IPP;

4.1.2 our current views on the progress we would like to see from Transpower during RCP3 in preparation for potential enhancements to the RCP4 IPP;

4.1.3 how our evaluation of Transpower's RCP4 proposal may evolve in light of Transpower's expected progress during RCP3; and

4.1.4 our focus areas for the RCP3 IPP and for monitoring Transpower's performance during RCP3.

**Transpower's progress under the RCP2 IPP and developments we consider for the RCP3 IPP**

4.2 In our final decisions on the RCP2[26] IPP in August 2014, we set out our view of Transpower's progress under the IPP since the 2011 to 2015 regulatory period (**RCP1**)[27] and the consequential enhancements we had made to the RCP2 IPP.[28]

4.3 For RCP2, we adopted a more refined building blocks approach. In particular, we assumed cash-flows to occur mid-year and implemented a more structured approach to setting and adjusting capex. Also, incentives on Transpower to become more efficient were introduced in a structured and transparent way. This was the first time that Transpower was required to use the Capex IM for a reset.

4.4 Transpower provided capex and quality standards information in templates that were specified under the Capex IM, and opex information in opex templates in response to a customised information request we issued under s 53ZD of the Act.

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[26] Information about the RCP2 IPP for Transpower can be found on our website at: https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-transmission/transpowers-price-quality-path/20152020-transpower-individual-price-quality-path.

[27] Information about the RCP1 IPP for Transpower can be found on our website at: https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-transmission/transpowers-price-quality-path/20112015-transpower-individual-price-quality-path.

[28] *Setting Transpower's individual price-quality path for 2015-2020* [2014] NZCC 23, 29 August 2014, Chapter 3 and Attachment A.

4.5 Transpower's responsiveness to the key features of the RCP2 IPP has been sufficiently positive such that we are confident that further enhancements can be made to the RCP3 IPP.

4.6 We set out below in Table 2 key elements from the RCP2 IPP and a comparison with developments we are likely to now consider for the RCP3 IPP. The RCP3 developments are indicative features only and are still subject to further analysis and consultation.

**Table 2. Elements of the RCP2 IPP and comparison with possible RCP3 IPP features**

| Feature | RCP2 (2015-2020) | RCP3 (2020-2025) – indicative features only |
|---|---|---|
| **Overview** | Refined building blocks approach. Annual price path updates. Structured incentives. More structured approach to setting and adjusting approved capex expenditure. | Same building blocks approach will apply in setting the IPP. We may consider updating the price path only once at the start of a new RCP, rather than the annual approach in RCP2, but further consultation is required before we make any decisions on this. Annual price path updates may still be required to account for over/under-recovery of revenue balances that can build up materially during the regulatory control period (**RCP**). |
| **Setting the expenditure envelope and the quality standards** | Transpower provided capex and quality standards information under requirements (templates) specified in the Capex IM, and opex information in response to a customised information request issued by us under s 53ZD. The process under the Capex IM was used to set the base capex allowance. | Transpower will continue to provide information as specified in the Capex IM and a customised information request issued by us. We intend to consider the extent to which Transpower's asset health and criticality framework in its current state can be used as a cross-check for the proposed expenditure (also with a view to further developing it for RCP4). |
| | Full building blocks basis for setting of the price path. Building blocks were refined using mid-year cash-flow timing assumptions. | Full building blocks basis for setting of the price path, using mid-year cash-flow timing assumptions. |
| | Used IMs as set in 2010, plus Capex IM set in 2012. | IMs set in 2010 and Capex IM set in 2012, updated for IM review in 2016 and Capex IM review in 2018.[29, 30] |
| | Unsmoothed price path. Building blocks applied as the forecast MAR. | Possible smoothed price path for RCP3. Building blocks used to inform the forecast MAR. |
| | Structured bottom-up style of proposal, with high intensity of Commission scrutiny of proposed expenditure. | Clear expectations for pilot verifier role agreed, with a view to test verification as a pre-proposal form of scrutiny. Our scrutiny is likely to focus particularly on areas the Verifier considers need further review. |

[29] Information on the 2015/16 IM review is available at: https://comcom.govt.nz/regulated-industries/input-methodologies/projects/201516-im-review.
[30] Information on the 2017/18 Capex IM review is available at: https://comcom.govt.nz/regulated-industries/input-methodologies/projects/2017-capex-im-review.

| Feature | RCP2 (2015-2020) | RCP3 (2020-2025) – indicative features only |
|---|---|---|
| **Adjusting the expenditure envelope during the RCP** | We considered whether the IPP should allow for contingent expenditure – the listed projects mechanism allows for limited base capex reopening during the RCP. | May include the base capex listed projects mechanism and staged approvals of enhancement and development (**E&D**) capex. Will likely allow limited base capex and E&D capex reopening during the RCP. |
| | Greater fungibility between opex and capex allowances was provided for to allow Transpower the flexibility to substitute opex for capex if appropriate during the RCP on individual projects. | RCP2 basis likely to be applied. |
| **Ex post scrutiny of performance** | Includes an annual revenue wash-up and annual approved revenue updates for the five-year RCP. Forecast revenues included wash-up and incentive amounts brought forward from RCP1. Results of revenue wash-ups in years 4 and 5 of RCP2 will be carried forward into RCP3. | Transpower may propose to wash-up any over/under-recovery of revenue only once at the start of a new RCP, with any wash-up balance accruing in RCP3 carried forward into RCP4. At a minimum, we would expect Transpower to provide visibility of the wash-up that has accrued each year, so we could step in and update Transpower's revenue requirements if the accrued adjustments became material. |
| | Grid output measures are revenue linked, with targets, caps, collar, and incentive rates. | Revenue-linked performance measures to be further developed. |

| Feature | RCP2 (2015-2020) | RCP3 (2020-2025) – indicative features only |
|---|---|---|
| **Other IPP process matters** | Full five-year RCP. | Full five-year RCP, subject to consultation with Transpower and its stakeholders (Note: the standard five-year period is the default unless compelling reasons suggest otherwise). |
| | Annual compliance report provided by Transpower. | Annual compliance report to be provided by Transpower. |
| | Audited wash-ups, incentive calculations and updates to the forecast MAR. | Audited accrued wash-ups and incentive adjustments. |
| | Director certified updates to forecast MAR and application of forecast MAR to pricing. | Director certified pricing. |
| | Commission determines forecast MAR update annually for RCP2. | Commission determines forecast MAR for RCP3 based on smoothed price path in advance. No annual determination updates. |
| | Economic value (**EV**) account balances cleared in each annual update of the forecast MAR unless Transpower applies for alternative spreading due to price shock effects. | EV account balances may be cleared at the end of the RCP when the price path is reset for RCP4. |
| | Transpower is able to voluntarily price below the revenue cap set by the forecast MAR each year, subject to reporting on the reasons why. | Transpower is able to voluntarily price below the revenue cap set by the smoothed forecast MAR each year, subject to reporting on the reasons why. No intention to limit the extent to which Transpower can price below the revenue cap (in a way it is limited for electricity distribution businesses (**EDBs**) under the default price-quality path (**DPP**)) as Transpower has no incentive to under-recover (for reasons other than price smoothing). |

**Progress sought in RCP3 in preparation for potential enhancements in the RCP4 IPP**

4.7 When we set the IPP for RCP2 we outlined our view of what the IPP might look like for RCP3 and beyond. We consider that a similar approach is appropriate for RCP3. This approach requires us to work out what progress Transpower would be expected to make during RCP3 in preparation for RCP4.

4.8 Once we understand what progress is necessary we will then also be able to identify the reporting requirements we will need during RCP3 to allow us to monitor Transpower's progress in preparing for potential improvements in RCP4. It also helps us understand the expenditure that Transpower might be expected to incur (and that we might be expected to allow in the interests of customers) to get to that more advanced regulatory state.

4.9 We currently consider that by the end of RCP3, Transpower should be in a state where:

4.9.1 it is consistently developing and reporting on grid output measures that reflect customer preferences (where appropriate);

4.9.2 there is ongoing engagement by Transpower and us on service expectations and the amount of outage risk customers are prepared to accept;

4.9.3 its grid output measures reflect the outputs of Transpower's risk-based asset management framework, using outage risk as a more immediate and forward-looking measure (as opposed to grid output measures that only reflect Transpower's reactive monitoring of historic performance);

4.9.4 its calculation of outage risk captures and reflects the value of lost load (**VoLL**) to New Zealand electricity consumers; and

4.9.5 its investment decision making framework is underpinned, where appropriate, by a risk-based asset management approach that includes considering both asset health and criticality.

**Our evaluation of Transpower's RCP4 proposal may evolve in light of Transpower's expected progress during RCP3**

4.10 We consider that Transpower's expected incremental advances outlined in paragraph 4.9 will influence our evaluation of Transpower's RCP4 proposal later in RCP3.

4.11 In particular, we expect to be able to move to a more high-level approach to assessing and setting forecast expenditures, subject to matters such as our evaluation of Transpower's actual spending in RCP3. In that regard:

4.11.1 we will be looking for evidence that Transpower's actual spending (capex and opex) is prudent, efficient, and underpinned by a risk-based asset management approach as outlined in paragraph 4.9.5; and

4.11.2 if we are not satisfied with Transpower's actual spending, or parts thereof, we are likely to apply a more bottom-up approach in scrutinising Transpower's RCP4 proposal, focusing our in-depth review on targeted areas we will identify in the lead-up to Transpower submitting its RCP4 proposal.

4.12 We are also likely to confirm the use of independent verification as part of the pre-application scrutiny of Transpower's RCP4 proposal, and will use the Transpower IMs and Capex IM as updated following any reviews of these IMs that occur prior to the RCP4 reset.

**Our focus areas for the RCP3 IPP and for monitoring Transpower's performance during RCP3**

4.13 Taking into account what we think the IPP might look like for RCP3, and where we think it might head to for RCP4, our proposed focus areas for the RCP3 IPP and for monitoring Transpower's performance during RCP3 are:

4.13.1 Setting appropriate expenditure allowances;

4.13.2 Asset health and criticality;

4.13.3 Transpower's engagement with customers;

4.13.4 Revenue-linked performance measures; and

4.13.5 Revenue and pricing impacts.

4.14 Each of these focus areas is discussed further below.

*Setting appropriate expenditure allowances for RCP3*

4.15 Setting appropriate expenditure allowances for Transpower in RCP3 is a key focus for us as the opex and capex allowances will impact on the revenue Transpower will be able to recover from its customers in RCP3 and beyond.

4.16 As we explain in Chapter 3, in setting these allowances we aim to ensure they are consistent with:

4.16.1 an expenditure outcome that reflects the efficient cost of a prudent supplier; and

4.16.2 the relevant criteria specified in the Capex IM.

4.17 We provide more detail on our approach for setting these allowances in Chapter 5.

*Asset health and criticality*

4.18 We intend to consult on how Transpower is developing and implementing its risk-based asset management approach. Two foundation inputs into an asset risk framework are asset health (or condition) and asset criticality.[31]

4.19 We consider that a well-functioning transmission asset owner should understand the criticality of its assets and that this understanding should be used to inform an investment decision-making framework; a framework that also has considerations of asset health informing the outage impact.

4.20 Having a risk-based asset management approach that includes both asset health and criticality considerations should improve Transpower's investment decision-making process. It would be more robust and defendable as prioritising investments across the grid would be done in a more consistent and predictable way.

4.21 Also, for a risk-averse transmission network owner, developing and implementing a risk-based asset management approach should result in more efficient spending over time, as it reduces the scope for premature investment in asset replacement and renewal. In other words, it will help with identifying the optimal timing for investment (including by taking into account potential capex/opex trade-offs).

4.22 During RCP2, Transpower has been improving its asset health assessment processes and procedures, and in parallel, has been developing its network asset criticality framework. We understand that Transpower is still refining these tools, but has begun using them to inform its investment and work program decision making.

[31] 'Asset health' reflects the likelihood of particular assets failing, while 'asset criticality' reflects the consequences of the relevant assets failing.

4.23 In our evaluation of Transpower's RCP3 proposal, we intend to:

4.23.1 assess the extent to which Transpower already has appropriately implemented a risk-based asset management approach;

4.23.2 identify any potential gaps in the approach and its implementation; and

4.23.3 make recommendations on how Transpower should progress the approach and its implementation in order to inform its RCP4 proposal.

4.24 In our consultation on Transpower's RCP3 proposal, we intend to seek views from interested parties, particularly from those with experience in asset health and criticality, on:

4.24.1 their relevant experience with the use of asset criticality frameworks in their business environments;

4.24.2 how asset health and condition measures are used to inform these frameworks;

4.24.3 how useful these frameworks are in deciding priorities for a work programme; and

4.24.4 whether Transpower should approach its use of asset health and asset criticality in a different way.

*Transpower's engagement with customers*

4.25 Customer engagement, including running an effective process that strikes an appropriate balance between the volume of engagement and the benefits extracted from it, is a challenging task.

4.26 For EDBs that apply for a customised price-quality path (**CPP**) we have specified, at a high level, the relevant requirements in the IMs.[32] However, in our June 2018 open letter seeking feedback on Powerco's and Wellington Electricity's CPP processes, we acknowledged the difficulty in maximising the benefits from this engagement process.[33] In particular, we proposed to 'explore ways in which the consumer consultation can be improved ahead of further customised price-quality path applications'.

[32] Part 5 of the Electricity distribution services input methodologies determination 2012.

[33] https://comcom.govt.nz/__data/assets/pdf_file/0035/89585/Open-letter-seeking-feedback-on-Powerco-and-Wellington-Electricity-CPP-processes-3-July-2018.pdf.

4.27 We acknowledge that Transpower faces similar issues when engaging with its customers in the lead-up to an RCP proposal. We expect Transpower to proactively address those issues with a view to maximising the benefits from this process.[34]

4.28 Generally, we consider that customer engagement should be based on a model where customer preferences drive grid output targets where appropriate, and where those targets define forecast expenditures. In that context, we consider it crucial that customers can make an informed decision on the amount of risk they are prepared to accept in exchange for the price they have to pay for transmission services (Transpower's revenues).

4.29 For clarification, we note that when we mention 'customers' in this paper, we refer only to Transpower's customers, including EDBs, generators and major electricity users, that are directly connected to Transpower's transmission network.[35]

4.30 Our scope for actively shaping this customer engagement is limited, as the Transpower IMs do not specify customer engagement requirements in the way that the CPP IMs do for CPP applicants. However, we do have some high-level expectations that we will be looking for in Transpower's RCP3 proposal, and that we expect Transpower to build into its customer engagement model in RCP3:

4.30.1 We want to see clear evidence of how Transpower has considered customer preferences in shaping its expenditure forecasts and proposed quality measures and targets (revenue-linked where applicable) for RCP3.

4.30.2 We expect Transpower to develop a customer engagement model where customer preferences drive the grid output targets, where appropriate, and where those targets define the expenditure proposal. This includes providing for transparent engagement on the trade-off Transpower's customers have to make in weighing-up the amount of risk they are prepared to accept in exchange for the price they have to pay for transmission services (Transpower's revenues).

[34] We acknowledge and appreciate Transpower's efforts to establish a consumer panel. Our focus, however, will be on how Transpower engages, now and in the future, with its connected customers.

[35] To avoid any misunderstanding, unless explicitly stated, we do not refer to households or any other small-scale electricity users in this paper.

4.31 In our consultation on Transpower's RCP3 proposal, we intend to focus on the extent to which Transpower's customers consider they have had an opportunity to genuinely engage with Transpower and, more specifically, potentially influence the content of the RCP3 proposal. We also intend to seek views on how we see Transpower developing its customer engagement further (consistent with our views expressed in paragraph 4.30.2).

*Revenue-linked performance measures*

4.32 We intend to consult on the performance measures that Transpower will be subject to in RCP3, the direction we would like Transpower to take for RCP4, and how effective the RCP2 performance measures have been.

4.33 In setting an IPP for RCP2, we considered it appropriate to introduce a range of quality incentives that linked performance measures to revenue, being mindful that a balance needed to be struck between incentives to reduce inefficient spending, while maintaining existing service quality levels.

4.34 In RCP2, Transpower proposed, and we set, 23 revenue-linked performance measures categorised as Asset Performance (**AP**) measures, Grid Performance (**GP**) measures, and Asset Health (**AH**) measures. Each of these revenue-linked incentive measures had targets, caps, collars and an incentive rate. The cap and collar set the range of performance for which Transpower would be penalised or rewarded, with the cap being the upper bound for rewards. The incentive rate was the dollar amount of revenue loss or gain for each unit of deviation from the target.

4.35 Transpower has been consulting on a range of performance measures as it builds its RCP3 proposal, although these were not finalised at the time this paper was drafted.[36] These are very similar to those proposed for RCP2 in that they are quality-outcome based (ie, they demonstrate a direct or indirect effect on consumer outcomes either via direct outages, or assets not being in service, which may constrain the electricity market and lead to higher prices).

4.36 While setting performance measures on a quality outcome in transmission is common regulatory practice, there are often significant delays between transmission asset investment and quality outcomes. Specifically, a lack of investment may not necessarily manifest in poor quality outcomes for many years, while investment strategies made many years ago may only start to become evident in quality outcomes now.

[36] https://www.transpower.co.nz/transpower-service-level-refresh-rcp3.

4.37 We have been encouraging Transpower to develop an asset criticality model of its network assets in conjunction with improved asset health modelling so that risk-based asset management will analytically underpin asset investment decision making. As noted above, this type of framework has considerable advantages such as robust and defendable decision making.

4.38 We are proposing that Transpower starts contemplating performance measures that reflect the outputs of its risk-based asset management framework as a more immediate and forward-looking measure of quality outcomes.

4.39 Such outputs could be used to demonstrate how much outage risk different asset classes carry in any given year. In addition, performance measures of this sort would show how such outputs would drive investment decision making into the future, and also inform customers of how much outage risk they are likely to face each year.

4.40 Consistent with our expectation that Transpower should explore ways to consult on the price/risk trade-offs with its customers (paragraph 4.30.2), such performance measures would help customers to make more informed decisions about any strategies they have to mitigate outage risk.

4.41 In our consultation on Transpower's RCP3 proposal, we intend to seek views from interested parties on a range of areas including the appropriateness and effectiveness of the RCP2 performance measures to inform our consideration of Transpower's RCP3 performance measures, and whether using a risk-based asset management framework to set quality measures has merit.

4.42 We will also consult on how we propose to link the performance measures to revenue, where appropriate. This revenue linkage will seek to reward Transpower for exceeding the targets and penalise it if its performance is worse than the targets. In setting the revenue linkages, we will aim to ensure they strike an appropriate balance with the incentives to achieve cost efficiencies under our expenditure schemes (ie, to avoid a perverse incentive for Transpower to reduce cost in exchange for a deterioration in quality).

*Revenue and pricing impacts*

4.43 We intend to consult on the impact of Transpower's forecast expenditures in RCP3 on the revenue that Transpower will be allowed to recover from its customers and, to a lesser extent, the impact Transpower's revenue allowance will have on electricity prices.[37]

4.44 Our consultation will cover both the immediate impact on revenue and pricing in transitioning from RCP2 to RCP3, as well as the estimated subsequent impact in transitioning from RCP3 to RCP4.

4.45 We consider that creating transparency around the impact of Transpower's forecast expenditures in RCP3 on revenue and pricing is an important component of consultation, as understanding this linkage is crucial for interested parties in forming a view on:

4.45.1 whether Transpower's revenue allowances between RCPs should be smoothed to mitigate the impact of any potential step changes; and

4.45.2 if Transpower's revenue allowances were smoothed, the extent of such smoothing.

4.46 We propose to largely focus our consultation on transmission charges, as Transpower's revenue allowances will have an immediate impact on the transmission charges that Transpower's customers have to pay. Given the impact of changes in Transpower's revenues on electricity prices for household consumers is less direct and proportionately smaller, we do not intend to make this a key part of our analysis and consultation.

4.47 It is our intention, when consulting on the upcoming EDB DPP reset in 2019, to reflect Transpower's revenues in distribution charges applicable to the next DPP regulatory period, including the effect on electricity prices.[38]

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[37] In this paper we focus on Transpower's total forecast revenues (and not forecast MAR) as total forecast revenues is more reflective of what Transpower is entitled to earn in RCP3. In Figure 6.1 we explain the components that make up Transpower's revenue. We distinguish between the total forecast MAR and the total forecast revenues that Transpower is entitled to earn in an RCP. The major difference between the two types of revenue is that total forecast revenues also include Transpower's forecast pass-through and recoverable costs.

[38] Transpower's revenues (transmission charges) are a recoverable cost for EDBs and become part of the distribution charges an EDB will charge its customers.

4.48 We discuss this topic in greater depth, as well as the link between forecast expenditures and Transpower revenues and pricing in RCP3 more generally, in Chapter 6.

# Chapter 5 Our expenditure assessment approach for forecast IPP expenditure

**Purpose of this chapter**

5.1 We will set expenditure allowances for base capex and opex for RCP3. In setting these, we intend to apply proportionate scrutiny to Transpower's RCP3 proposal and use a range of tools, which will provide guidance to us in exercising judgement when assessing Transpower's forecast expenditures.

5.2 In this chapter, we outline:

5.2.1 the process of setting expenditure allowances for RCP3;

5.2.2 how we intend to apply proportionate scrutiny, including how we are intending to best utilise the outcomes of Transpower's pilot verification process during our assessment of Transpower's forecast expenditures; and

5.2.3 the tools we intend to apply in assessing the forecast expenditures.

**The process of setting expenditure allowances for RCP3**

5.3 Figure 5.1 illustrates, on a high level, the process of setting expenditure allowances for Transpower in RCP3.

5.4 Essentially, this process comprises four major stages:

5.4.1 The 'proposal stage', covering Transpower's process of preparing and submitting forecast expenditure proposals as part of its RCP3 application.

5.4.2 The 'review stage', covering both the Verifier's and our review of Transpower forecast expenditures. This stage includes our process of forming a view on the appropriateness of the Verifier's conclusions as well as our own targeted reviews of specific forecast expenditure proposals, particularly where:

5.4.2.1 we are not satisfied with the Verifier's conclusions;

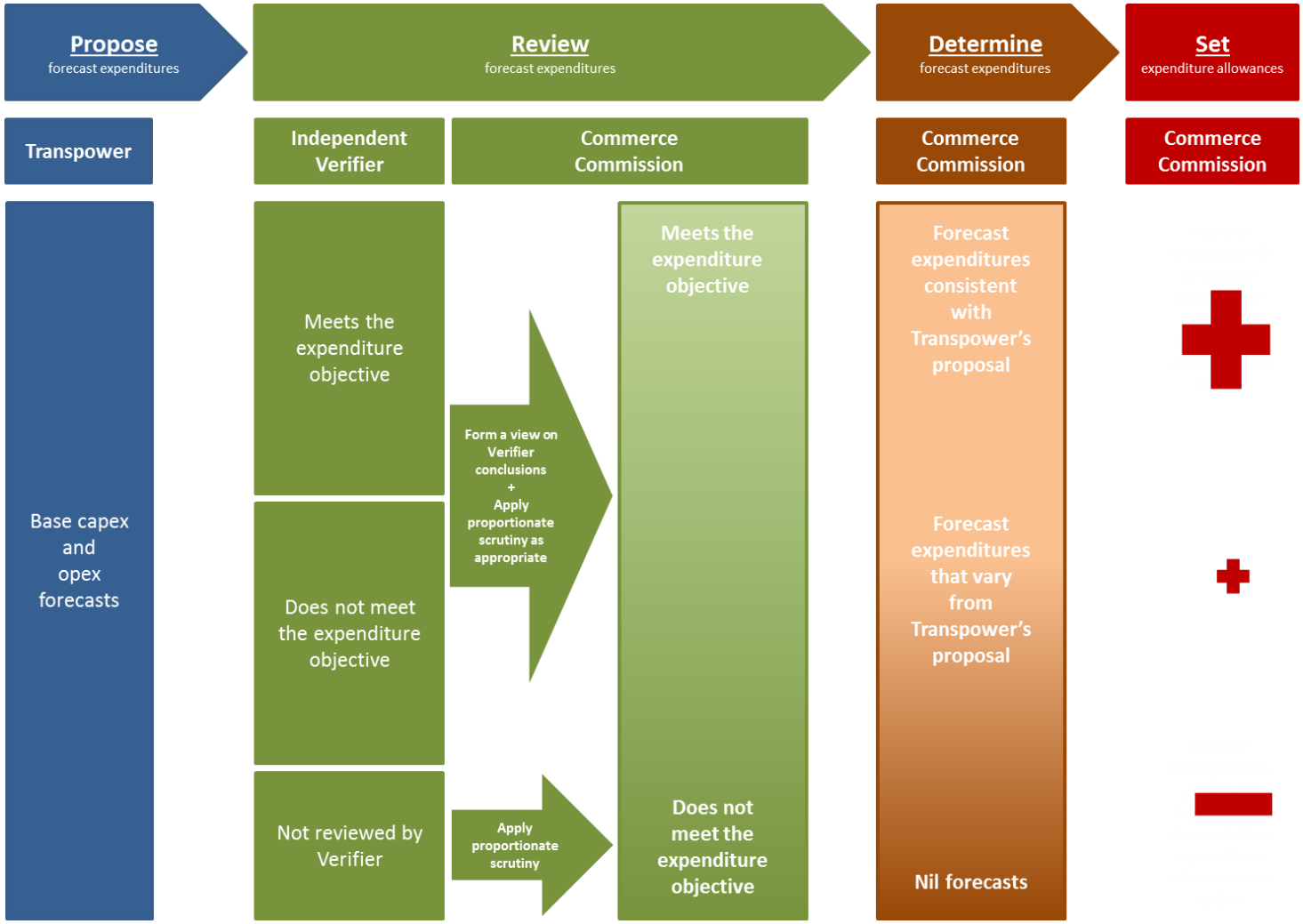
5.4.2.2 the Verifier considers an expenditure forecast does not meet the expenditure objective; or

5.4.2.3 a forecast was not subject to verification scrutiny.

5.4.3 The ‘determine stage’, at which we determine appropriate expenditure forecasts for RCP3 based on the review stage. These forecasts could either be consistent with, or variations of, Transpower’s expenditure forecasts, including instances where we may find a nil forecast is appropriate.

5.4.4 The ‘set stage’, at which we aggregate the expenditure forecasts determined at the previous stage into expenditure allowances.

**Figure 5.1 The process of setting expenditure allowances for RCP3**



**We intend applying proportionate scrutiny to Transpower's forecast expenditures**

5.5 In defining the scope, covering both the breadth and depth of our review, we intend applying proportionate scrutiny to Transpower's forecast expenditures in its RCP3 proposal.

5.6 In broad terms, 'proportionate scrutiny' means that we will apply the level of scrutiny that is commensurate with potential price and quality impacts of forecast expenditures on Transpower's customers and where we consider the benefits of such scrutiny to customers outweigh the associated costs over time.[39] Where appropriate, we use a process of incrementally higher levels of scrutiny if the lower levels of scrutiny are insufficient. We consider that proportionate scrutiny should guide our evaluation of Transpower's expenditure proposals as well as the setting of IPPs more generally.[40]

5.7 In exercising proportionate scrutiny we will be supported by the outcome of Transpower's pilot independent verification process. Similar to how we would use the verification process in helping us assess a CPP proposal, we consider the verification process will be useful in helping us define the scope of our review.

5.8 Based on our assessment of the draft verification report, we consider the final verification report will be of sufficient quality to inform the scope of our review. In particular, it will help define:

5.8.1 the **breadth** of our review, by highlighting forecast expenditures that are likely to meet the expenditure outcome, but also by pointing us to forecast expenditures the Verifier considers fail to do so. Our review focus will be on the latter. We will only perform significant further scrutiny on those forecast expenditures the Verifier considers are likely to meet the expenditure outcome where we are not satisfied with the Verifier's conclusions; and

[39] These costs can be immediate costs on us or Transpower, eg, additional analysis we undertake or further evidence Transpower has to provide.

[40] Commerce Commission "Transpower capex input methodology review – Proposed focus areas for the capex IM review" (15 May 2017), para 83-85.

5.8.2 the **depth** of our review, by identifying forecast expenditures that need to be investigated at greater depth – eg, this may refer to areas where Transpower did not provide sufficient information to the Verifier for it to assess those against the expenditure outcome, areas where sufficient information was provided, but the Verifier was still unable to come to a conclusion, and/or areas where we are not satisfied with the Verifier's conclusions. Again, our review focus will be on those areas as opposed to areas the Verifier (and we) consider have been subject to sufficient in-depth scrutiny.

5.9 Having established the breadth and depth of our review on the basis of the verification outcome, we will overlay it with our own review of scope before we make a decision on what we intend to cover in our review.

5.10 Having understood where, and to what extent, we will apply particular scrutiny to the forecast expenditures, the tools discussed later in this chapter will guide us and help ask the right questions in applying such scrutiny.

**Our tools in assessing Transpower's forecast expenditures**

5.11 We intend to use a range of tools in applying proportionate scrutiny to Transpower's forecast expenditures for RCP3. These tools are:

5.11.1 factors we will consider in assessing the Verifier's conclusions (see Attachment B);

5.11.2 a quantitative and qualitative summary of Transpower's forecast expenditures (see the template in Attachment C);

5.11.3 questions and considerations we may refer to in testing forecast expenditures against the expenditure outcome (see Attachment D); and

5.11.4 an overview of the base capex evaluation criteria as specified in the Capex IM and any additional criteria applying to opex as set out in the TOR for the Verifier (see Attachment E).

5.12 It is important to note that scrutinising Transpower's forecast expenditures is not a mechanistic process. The process necessarily involves exercising professional judgement, including, but not limited to, engineering expertise. We nevertheless consider that these tools provide us with valuable guidance in exercising our judgement. They are also designed to provide transparency, to the extent possible, to interested parties about our approach to scrutinising forecast expenditures.

5.13 A high-level overview of what these tools are designed for is provided below. Further detail is provided in Attachment B to Attachment E.

*Attachment B – Factors we will consider in assessing the Verifier's conclusions*

5.14 In addition to explaining the purpose of trialling independent verification for Transpower's RCP3 proposal, the purpose of Attachment B is to summarise the key factors we will consider in forming our decisions when assessing the Verifier's conclusions.

5.15 Understanding the extent of our agreement/disagreement with the Verifier's conclusions is an important step in applying proportionate scrutiny to Transpower's expenditure forecasts, as the verification report will inform our assessment where we agree with the Verifier's conclusions.

*Attachment C – A summary of Transpower's forecast expenditures*

5.16 The purpose of the template in Attachment C is to summarise the forecast expenditures – quantitatively and qualitatively. It will guide us in reviewing the RCP3 base capex and opex proposals and particularly help define the level of scrutiny of our review.

5.17 We will group forecast expenditures by total expenditure, expenditure type, expenditure category, asset/opex category and asset/opex class. For each of these groupings, there are six analysis steps:

5.17.1 Analysis step 1 – a quantitative expenditure overview – RCP2 versus RCP3.

5.17.2 Analysis step 2 – a qualitative analysis of the verification process, including the extent to which we agree with the Verifier's conclusions. Any expenditure forecasts the Verifier does not consider meet the expenditure outcome, or any recommendation by the Verifier we disagree with, are likely to be subject to higher levels of our scrutiny.

5.17.3 Analysis step 3 – a quantitative analysis based on the values in analysis step 1. This will allow us to better understand the financial materiality of a proposed expenditure. For example, we are likely to apply more scrutiny to an opex forecast reflecting a material step change as opposed to one that is consistent with actual spend in RCP2.

5.17.4 Analysis step 4 – a qualitative analysis looking at the key drivers of expenditure (eg, to meet quality standards, to connect generation capacity). This step will help us to understand whether there is a clearly defined need for the expenditure and what this is. In the absence of such a need (including a lack of clear explanation by Transpower) for an expenditure generally and/or a step change, a proposed expenditure is unlikely to achieve the expenditure outcome. Any shortcomings in this area will likely result in us applying higher levels of scrutiny.

5.17.5 Analysis step 5 – a qualitative analysis assessing the (immediate or more indirect) relevance of expenditure for the defined key focus areas in our evaluation of the RCP3 proposal. If expenditure relates to any of these key focus areas, we may want to apply higher levels of scrutiny.

5.17.6 Analysis step 6 – taking steps 1-5 into consideration, our conclusion on the level of scrutiny we will apply in our evaluation of the forecast expenditures.

*Attachment D - Testing the forecast expenditures against the expenditure outcome*

5.18 The purpose of Attachment D is to outline a set of particular questions and considerations we will have regard to in testing the forecast expenditures against the expenditure outcome.

5.19 Attachment D aims to delineate areas that are relevant in testing prudency of expenditure versus areas relevant in testing cost efficiency of expenditure. However, these areas overlap and they are not mutually exclusive.

5.20 To some extent, these areas reflect the capex evaluation criteria, but cover a broader range. This is important, as in our view, the capex evaluation criteria are relevant considerations, but do not necessarily capture the full range of questions we should ask ourselves in reviewing the forecast expenditures.

5.21 Because judgement is involved, Attachment D is not intended to be exhaustive. We may apply other questions and considerations in reviewing the forecast expenditures and/or change scope where we consider the principle of proportionate scrutiny indicates it is necessary.

*Attachment E - An overview of the evaluation criteria for base capex and opex as specified in the Capex IM and the TOR for the Verifier*

5.22 The purpose of Attachment E is to provide an overview of the capex evaluation criteria that we will or may have regard to in reviewing Transpower's base capex proposal. It also includes any additional criteria we may apply in reviewing Transpower's opex proposal as indicated in the TOR for the verification process. However, as explained in Chapter 3, our general assumption is that the capex evaluation criteria do apply to opex as well.

5.23 In providing this overview, Attachment E:

5.23.1 identifies common themes, and then groups the criteria into categories;

5.23.2 specifies whether a criterion applies to capex and opex, or to opex only;

5.23.3 indicates whether a criterion is associated with one of our defined focus areas for the review of the RCP3 proposal; and

5.23.4 identifies whether there are similarities, including the strength of these, between the criteria applicable to the general evaluation of base capex proposals and the criteria applicable to the evaluation of identified programmes.

5.24 The latter is of particular importance, as the criteria applicable to the general evaluation of base capex proposals apply to all base capex, as opposed to the criteria applicable to the evaluation of identified programmes, which, obviously, only apply to identified programmes. Understanding similarities, including the strength of these, therefore reduces the scope for efficiency losses during our assessment process.

# Chapter 6 The link between forecast expenditures, revenues and pricing in RCP3

**Purpose of this chapter**

6.1 In this chapter we set out:

6.1.1 the roles the base capex allowances and opex allowances have in our setting of the forecast MAR (the forecast maximum allowable revenue is the key component of the price path that we will set for each year of RCP3);

6.1.2 how the forecast MAR will be combined each year with Transpower's forecast pass-through costs, recoverable costs and forecast EV adjustments to derive total forecast revenues that will be applied by Transpower in setting its pricing for each year of RCP3;

6.1.3 that we will consider smoothing the total forecast revenues and the forecast MAR in RCP3 to limit volatility of Transpower's pricing;

6.1.4 that we will consider to accumulate revenue and expenditure wash-up amounts, arising from forecast values we will initially set being different from actual values, to be carried forward and spread across RCP4;

6.1.5 our view of likely drivers of changes in total forecast revenues during RCP3;

6.1.6 that we will be considering how further expenditure allowance approvals in RCP3 for listed projects base capex and major capex projects would be factored into the forecast MAR and the total revenue cap for each year of RCP3; and

6.1.7 how we intend to model total forecast revenues in our price path and pricing sensitivity analyses.

**Role of expenditure allowances in setting the RCP3 forecast MAR**

*The forecast MAR is the key component of Transpower's total forecast revenues*

6.2 In this section we explain the components that make up Transpower's revenue, including how total forecast revenues are derived from forecast MAR.

6.3 Total forecast revenues comprise forecast MAR, Transpower's forecast pass-through costs and recoverable costs, and any potential voluntary revenue adjustments to limit pricing volatility. Of these components, forecast MAR is the most significant.

6.4 In our analysis and consultation, we intend to focus primarily on Transpower's total forecast revenues, as these most accurately reflect what Transpower is allowed to earn in RCP3. This is because pass-through and recoverable costs can cause pricing volatility. For example, Transpower explains in its consultation paper on RCP3 that the pass-through of costs "has added volatility and unpredictability to the price path during RCP2". In particular, revenue moved by +7% in 2017/18 and -6.3% in 2018/19.[41]

*We have discretion when setting the IPP*

6.5 The form of calculation of the price path is not specified in the Transpower IMs. The 'specification of price' IM sets 'price' as a total revenue cap net of pass-through costs and recoverable costs.[42] It does not set out how that cap is to be calculated.

6.6 The form of calculation of the price path for Transpower must therefore be set out in the IPP determination, which, consistent with the approach taken in RCP2, should determine the price path in the form of:

6.6.1 the forecast MAR that Transpower can recover;

6.6.2 the way in which forecast MAR is to be calculated;

6.6.3 the way in which the forecast MAR is to be updated (if at all) during the regulatory period; and

6.6.4 the calculation of any adjustments, incentives and wash-ups to be made as part of those updates.

*Forecast values of building blocks will determine the forecast MAR for RCP3*

6.7 Consistent with our approach to determining Transpower's forecast MAR for RCP2, we intend using the sum of the forecast building block values for each year in determining the forecast MAR for RCP3.

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[41] Transpower "Securing our Energy Future 2020-2025 Regulatory Control Period 3" (August 2018), pages 53-54.

[42] *Transpower Input Methodologies Determination 2010* [2012] NZCC 17, as amended and consolidated as at 28 February 2017, clause 3.1.1.

6.8 Significant features of the application of the building block values are:

6.8.1 the building block values are calculated based on the expenditure and asset forecasts for disclosure years ending 30 June 2021 to 2025;

6.8.2 the timing factors used to reflect the estimate of when costs and revenues will arise within each disclosure year ending 30 June;[43] and

6.8.3 the timing factors used to reflect that revenues are earned by Transpower on the basis of pricing years ending 31 March.

**Combining the forecast MAR with other inputs to derive total forecast revenues**

6.9 Forecast pass-through costs and recoverable costs are not part of the forecast MAR, but will instead be added to the forecast MAR to arrive at Transpower's total forecast revenues that will be used in setting Transpower's prices each year.

6.10 Figure 6.1 illustrates at a high level how the forecast MAR and Transpower's total forecast revenues are calculated based on the building blocks. This is also available in more detail in the RCP2 forecast MAR building blocks calculation on our website in Schedule D of the RCP2 IPP determination.[44]

6.11 The building blocks of the forecast MAR calculation for each disclosure year are:

6.11.1 a forecast of Transpower's regulatory asset base (**RAB**), including a forecast of the opening RAB value and forecast commissioned assets for the disclosure year;

6.11.2 a forecast capital charge, which is the forecast return on Transpower's forecast RAB at the WACC rate;

6.11.3 a forecast of the depreciation of Transpower's forecast RAB;

6.11.4 the forecast opex allowance;

6.11.5 a forecast allowance for income tax based on Transpower's transmission revenues;

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[43] Transpower's pricing years run from 1 April through to 31 March. This is to align with the pricing years of electricity distributors, as the Transpower lines charges are combined for consumers with the charges made by the distributors. Transpower's financial forecasts and actual financial performance are measured and reported on the basis of its financial reporting years ending 30 June. We match up each disclosure year with the nearest preceding pricing year for revenue setting purposes.

[44] Commerce Commission "Transpower Individual Price-Quality Determination 2015" [2014] NZCC 35, Schedule D: Forecast MAR building blocks calculation.

6.11.6 an allowance for Transpower's term credit spread differential (essentially an adjustment to the capital charge building block);

6.11.7 the EV adjustments covering revenue adjustments for previous under/over-recovered revenues;[45] and

6.11.8 the EV adjustments covering revenue adjustments resulting from the incentive mechanisms in the IMs.

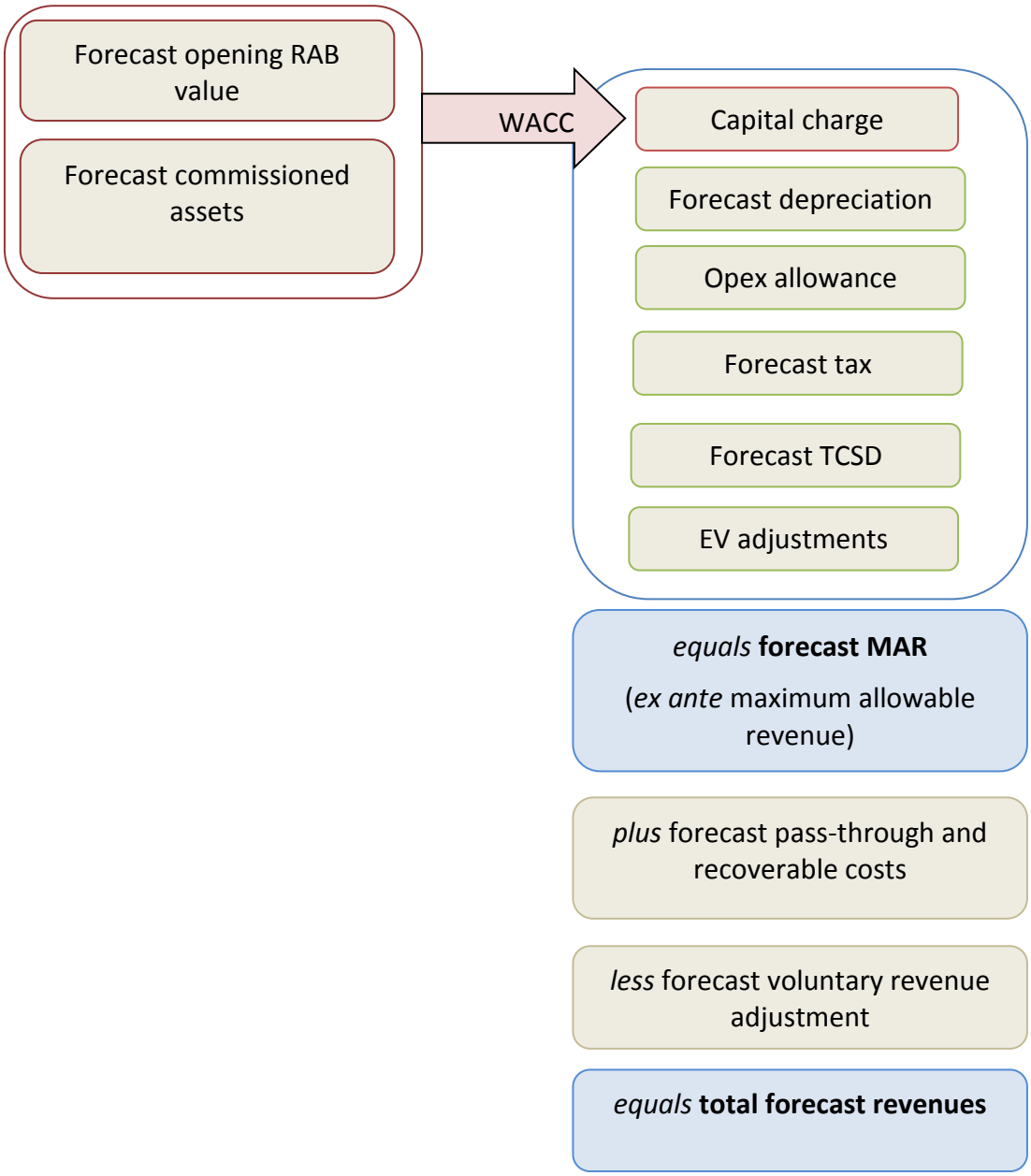
6.12 We set the forecast capex allowance (impacting on Transpower's forecast capital charge and depreciation building blocks) and forecast opex allowance building block net of the expected future efficiency savings. This is because our regime provides incentives for Transpower to pursue efficiency improvements in opex and capex, and to share a proportion of these savings with its customers.[46] Transpower's customers benefit from improved efficiencies through lower transmission charges in future regulatory periods.[47]

[45] The EV account is used to account for under/over-recovered revenues until the next available pricing year, with balances carried forward being adjusted at the WACC rate. These balances include annual price path wash-up calculations and incentive calculations that have not yet been recovered from or returned to Transpower in revenue calculations.

[46] Building the expectation of future efficiency savings into the expenditure allowances would defeat the purpose of the incentive mechanisms as there would be no sharing of these savings between Transpower and its customers. Transpower's customers would benefit unilaterally from such efficiency savings.

[47] There are incentive mechanisms in place to reduce opex, base capex and major capex. We provide more information on what these incentives are designed for in: Commerce Commission "Transpower capex input methodology review – Decision and reasons" (29 March 2018), Chapter 2.

**Figure 6.1 Forecast MAR and total forecast revenues building blocks**[48]




[48] The building block 'Forecast TCSD' captures the 'term credit spread differential', which is used to adjust funding cash-flows of regulated suppliers which have issued longer-term debt than that assumed when calculating the WACC rate.

**Potential smoothing of total forecast revenues**

6.13 Transpower has publicly indicated through its August 2018 draft proposal for consultation on its RCP3 proposal that it will be proposing a smoothed price path to us for RCP3.[49]

6.14 We currently consider that there could be benefits if Transpower's total forecast revenues are smoothed for RCP3:[50]

6.14.1 across individual years in RCP3 (**intra-period smoothing**); and

6.14.2 potentially, between the last year of the preceding RCP (RCP2) and the first year of RCP3 and/or between the last year of RCP3 and the first year of the subsequent regulatory period (RCP4) (**inter-period smoothing**).

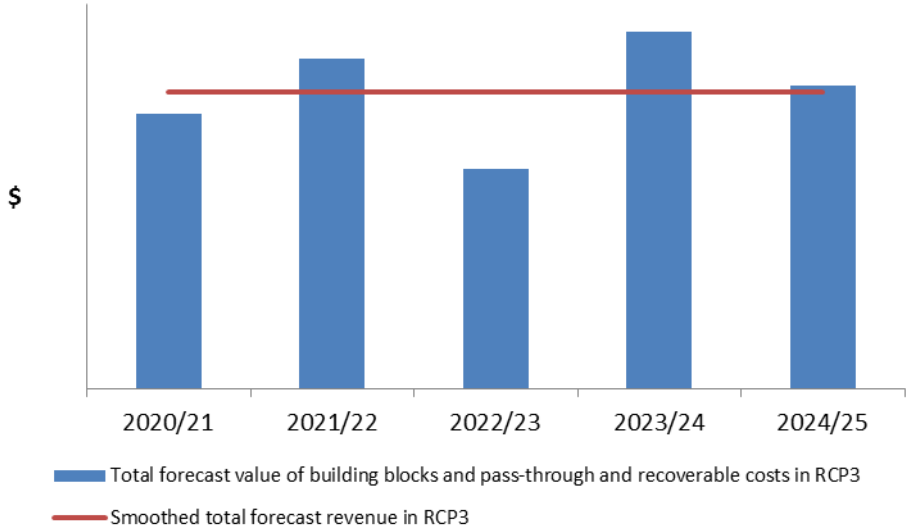
6.15 Figure 6.2 illustrates intra-period smoothing. Any fluctuations in the total forecast revenues as a result of varying yearly forecast values of building blocks and pass-through and recoverable costs would initially be smoothed across RCP3 at the time that we first set the price path in 2019.

6.16 We note the illustrative smoothed total forecast revenues series does not assume any growth factor. Applying such a factor might be a useful consideration, in particular when considering inter-period smoothing (see below).

[49] https://www.transpower.co.nz/keeping-you-connected/industry/rcp3/securing-our-energy-future-2020-%E2%80%93-2025 : see Regulatory Options on pages 53 to 55, and Appendix 6 – Revenue smoothing on pages 91 to 95.

[50] Any smoothing would be done in a net present value-neutral way.

**Figure 6.2 Intra-period smoothing (illustrative example, not to scale)**




6.17 Figure 6.3 illustrates inter-period smoothing. Any step changes in transitioning from one regulatory control period to another could be closed by:

6.17.1 using starting total forecast revenues for RCP3 equal to the closing revenues of RCP2 (in real terms); and

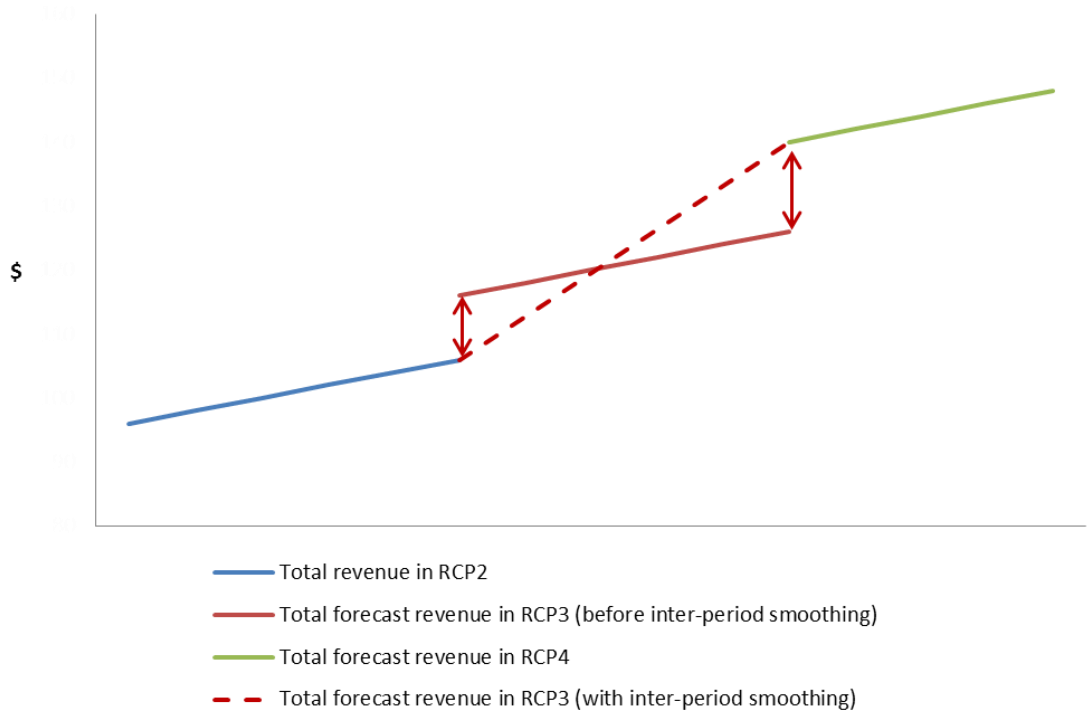
6.17.2 then applying a constant growth factor to the starting total forecast revenues of RCP3 that results in a closing total forecast revenues for RCP3 that is equal to the anticipated starting total forecast revenues of RCP4 (again, in real terms).[51]

6.18 However, the extent to which inter-period smoothing is practically possible depends on the size of the step changes in the total forecast revenues between regulatory control periods. If the step changes are large, only partial inter-period smoothing (ie, in a way that any step changes in the total forecast revenues between regulatory control periods are only partially closed) may be practically possible, as otherwise the tilt of the curve of the resulting total forecast revenues series might become too steep.

[51] This can only be indicative, as the starting total forecast revenues for RCP4 will be set when we make a decision on the IPP that applies to RCP4 in 2024.

6.19 The arrows in Figure 6.3 illustrate the extent to which inter-period smoothing is theoretically possible. Another option is to only mitigate any potential step changes between RCP2 and RCP3. This would remove some uncertainty from our decision on total forecast revenues as we would not have to anticipate, when setting total forecast revenues for RCP3, what the starting total forecast revenues in RCP4 might be.

**Figure 6.3 Inter-period smoothing (illustrative example, not to scale)**




*Smoothing total forecast revenues promotes pricing predictability*

6.20 Smoothing the total forecast revenues could be beneficial, as it reduces volatility in Transpower's year-on-year total forecast revenues, and therefore would promote pricing predictability for Transpower's customers and, to a proportionately lesser extent, household consumers.

6.21 We did not smooth the total forecast revenues when we initially set the IPP for RCP2. We concluded that smoothing was not justified because any wash-up values and pass-through costs and recoverable costs up to then had not been material to the yearly revenue totals, and pricing predictability had not been an issue for Transpower's customers or electricity consumers.

6.22 However, such updates to revenues have to date become more substantial during RCP2, and we are of the view that the associated potential benefits of smoothing may now outweigh any additional costs and complexity (which we consider to be low).[52] Also, smoothing the total forecast revenues would align the approach to setting revenues across the sector.[53]

*We intend to consult on the long-term total forecast revenues impact of forecast expenditures*

6.23 In making a decision on the extent of any inter-period smoothing, it is necessary to understand whether there are any step changes in the total forecast revenues for RCP3, relative to the total revenues applicable to the last year of RCP2, as well as the total forecast revenues of the first year of RCP4 (which can be indicative only).

6.24 In order to achieve this, we intend to consult on the impact of the forecast expenditures for RCP3 on the:

6.24.1 change in the total forecast revenues in transitioning from RCP2 to RCP3 (the **immediate total forecast revenues impact**); and

6.24.2 the potential range for changes in the total forecast revenues in transitioning from the RCP3 price path to current forecasts for the RCP4 price path (the **subsequent total forecast revenues impact**).

6.25 Both the immediate and the subsequent total forecast revenues impacts together form the **long-term total forecast revenues impact**.

6.26 Looking at both the immediate and subsequent total forecast revenues impacts is important, as the expenditure allowances we will set for RCP3 have different timing implications for the total forecast revenues:

6.26.1 The opex allowances we will set for RCP3 have an immediate total forecast revenues impact, as they are fully recoverable when they are forecast to be incurred within RCP3.

---

[52] In the December 2017 update of the RCP2 forecast MAR, Transpower made an application under clause 25 of the RCP2 IPP determination to spread forward a large EV adjustment over the remaining years of RCP2. The Commission agreed to this smoothing request, as otherwise there would have been material volatility in the forecast MAR across those years. There would have been an initial large reduction in the forecast MAR and a bounce back up in the forecast MAR in the following years. Transpower's customers supported the smoothing of the forecast MAR for the remaining years.

[53] We smooth the building blocks that make up forecast MAR for non-exempt EDBs under the DPP and under CPPs.

6.26.2 The capex allowances we will set for RCP3 have both an immediate and a subsequent total forecast revenues impact, as the return 'on and of' capex (ie, capital charge and forecast depreciation – see Figure 6.1) will occur over the lifetime of an asset. The full extent of the long-term total forecast revenues impact will therefore only be visible when the RAB includes all of the capex commissioned in RCP3.

**Whether to hold RCP3 expenditure wash-up amounts and incentive amounts for recovery in RCP4**

6.27 As Transpower illustrates in its draft proposal for consultation (see above) and consistent with the RCP2 IPP, we are likely to continue to require Transpower to apply the annual price path wash-up approach, which will give rise to annual EV account entries that would ordinarily be recovered through forecast MAR updates that we currently determine each year.

6.28 For simplification, we will consider moving to an approach where wash-up amounts and annual incentive amounts are accumulated for RCP3 in the EV account, but with its balance only applied to Transpower's maximum revenues when we reset the IPP for RCP4 in 2024 (as opposed to the current practice of annual updates).

6.29 As Transpower identifies, the practical implementation issue that may arise is a build-up of the EV account balance (in favour of either customers or Transpower) to unacceptable levels that could potentially result in a price shock when we set Transpower's total forecast revenues for RCP4.

6.30 In order to avoid such a build-up, we will therefore be looking at whether there needs to be a mechanism under the RCP3 IPP that would allow for an annual forecast MAR update to release some or all of the EV account balance into the setting of the total forecast revenues.

**Drivers of changes in RCP3 total forecast revenues**

6.31 When analysing and consulting on the long-term impact of total forecast revenues, it is important to understand the various drivers of changes in the total forecast revenues. This is because our focus for RCP3 will be on evaluating Transpower's base capex and opex proposal, whereas the final design of Transpower's total forecast revenues will also be driven by other factors that do not form part of our final RCP3 IPP expenditure decisions.

6.32 Amongst other factors, these include the impact of the WACC rate, as well as the financial impacts of capex commissioned prior to RCP3. To some extent, these other factors contributing to the total forecast revenues will offset or amplify the impact of the forecast expenditures.

6.33 For example, we expect the WACC rate to have a significant offsetting impact on total forecast revenues for RCP3, as the cost of debt has dropped significantly when compared to the cost of debt in the WACC rate we used when setting Transpower's total forecast revenues for RCP2.

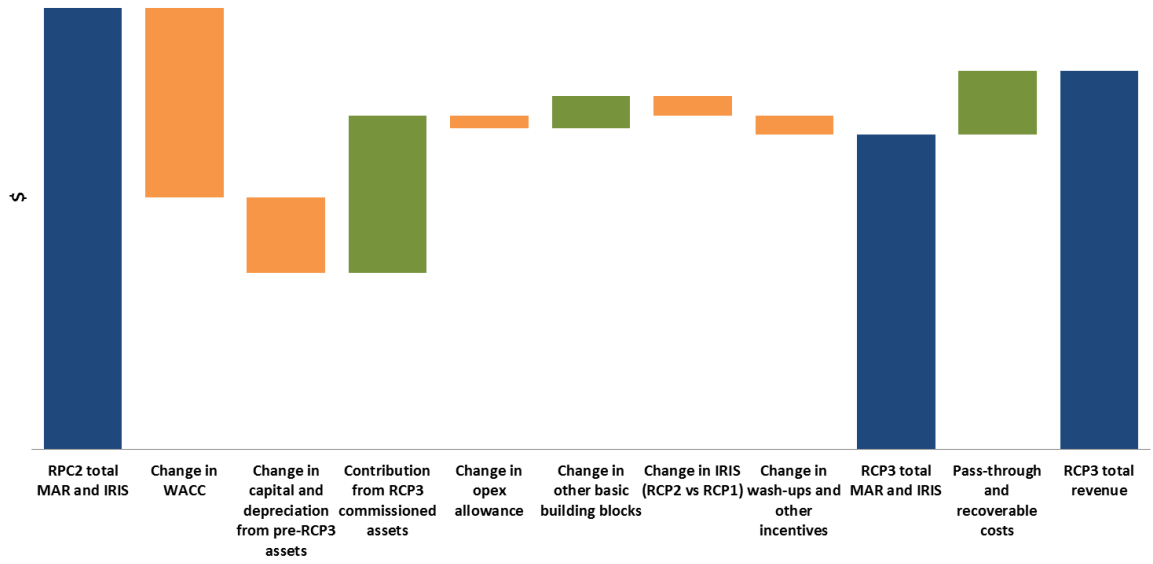
6.34 We will therefore aim to focus our analysis and consultation on those drivers that are subject to our review, namely base capex and opex, but will do this in the context of those other drivers of total forecast revenues for RCP3.

6.35 In presenting the drivers for changes in the total forecast revenues in RCP3, we intend to use a waterfall diagram, as these are commonly used and we have found them to be generally easily understood.

6.36 The idea is that any waterfall introduced in the issues paper in February 2019 would be progressively refined and published across our overall draft decision in May 2019, and in our final decision later in 2019.

6.37 Figure 6.4 illustrates what such a waterfall diagram could look like, reconciling RCP2's total MAR to RCP3's total forecast MAR, and eventually to RCP3's total forecast revenues.

**Figure 6.4 Revenue reconciliation (illustrative example, not to scale)**




**Impact of approvals of further capex in RCP3 on the forecast MAR and the price path**

6.38 In our future issues paper, draft decisions paper and final reasons paper, we propose to present Transpower's total forecast revenues in a way that reflects the three different stages at which we will approve Transpower's capex allowances:

6.38.1 We set the initial base capex allowance when we reset the IPP in 2019.

6.38.2 We approve additional base capex allowances for listed projects following our approval of a listed project during the course of RCP3.

6.38.3 We approve capex allowances for major capex projects when we approve or amend a major project.

*Base capex allowance*

6.39 We approve a base capex allowance when we reset the IPP for an upcoming RCP. Base capex includes asset replacement and refurbishment (all project sizes) and asset enhancements (under $20 million).

6.40 Asset replacement and refurbishment projects forecast to each cost over $20 million are subject to certain stakeholder consultation obligations and can form part of the base capex listed project mechanism.[54]

6.41 Listed projects are identified prior to the commencement of an RCP. They must meet criteria specified in the Capex IM, and carry significant timing and costing uncertainty. When resetting the IPP for an RCP, we exclude any monetary amounts for identified listed projects from the base capex allowance.

6.42 When the timing and cost of a listed project becomes more certain, Transpower can apply to us for approval and inclusion of additional base capex in the base capex allowance of the current RCP. The price path is reopened to accommodate the impact of that additional base capex allowance on the forecast MAR and the total forecast revenues for the remaining years of the RCP.

*Major capex allowance*

6.43 Our approval process for major capex projects is separate from the process of setting a base capex allowance as part of an IPP reset. Major capex is limited to asset enhancement projects that each cost over $20 million. Transpower can apply for the inclusion of such projects in its capex allowance when, amongst other things, the need and scope of such a project has firmed up.

6.44 Similar to base capex listed projects, we will re-open Transpower's price path and update the forecast MAR and total forecast revenues after approving a major capex project.

*Our proposed presentation of total forecast revenues will reflect the staged approval of capex allowances*

6.45 As part of our consultation processes, we intend to present total forecast revenues that reflect the staged approval described above of Transpower's capex allowances. Basically, our presentation of total forecast revenues will distinguish between allowances for:

6.45.1 capex that has been and is yet to be approved; and

6.45.2 base capex and major capex.

[54] The listed project mechanism allows Transpower more time to do technical studies and refine its expenditure forecasts before submitting its proposal for approval and inclusion in the base capex allowance.

6.46 More specifically, we intend to present total forecast revenues for:

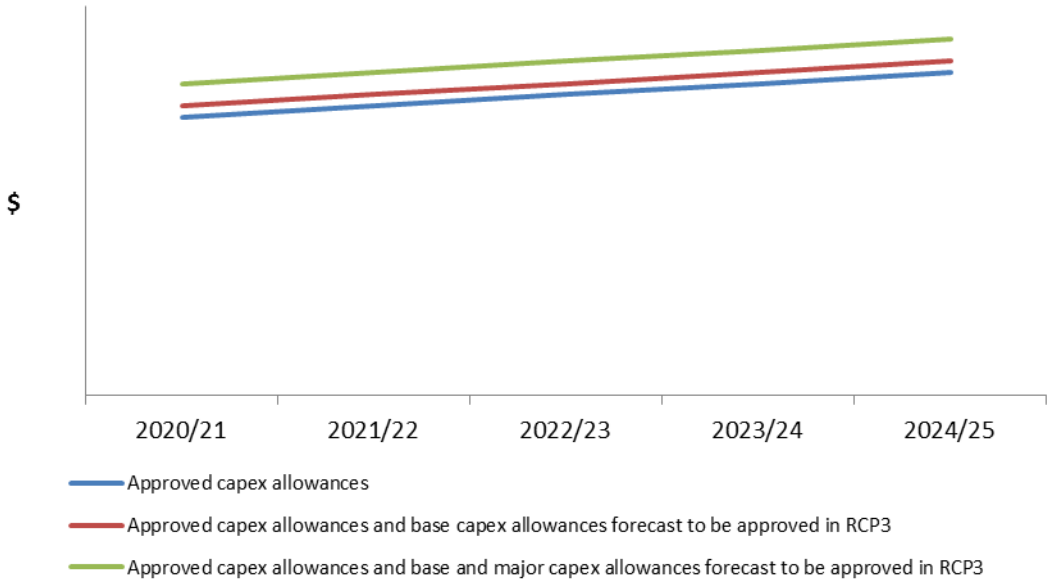
6.46.1 **Approved capex allowances used in initially setting the RCP3 price path** – in this scenario total forecast revenues will use the values set out in Transpower's RCP3 base capex (and opex) proposal (including any potential adjustments we propose), and will take account of the forecast commissioning of listed project base capex and major capex allowances that have already been approved.

6.46.2 **Approved capex allowances and base capex allowances forecast to be approved in RCP3** – in this scenario total forecast revenues will use the values in paragraph 6.17.1 above, and will also take into account estimates of the impacts on total forecast revenues of RCP3 forecast commissioned base capex from listed projects that are listed for approval in RCP3 (if any).

6.46.3 **Approved capex allowances and base and major capex allowances forecast to be approved** – in this scenario total forecast revenues will use the values in paragraph 6.17.2, and will also take into account an estimate of the impact on total forecast revenues of RCP3 forecast commissioned major capex from major capex proposals that are forecast to be approved in RCP3 (if any).

6.47 Figure 6.5 illustrates what these total forecast revenues series may look like.

**Figure 6.5 Total forecast revenues (illustrative example, not to scale)**



6.48 Although we intend to present total forecast revenues for the various components that make up the total capex allowance (as in Figure 6.5), our focus will be on total forecast revenues that takes into account all approved capex allowances including the base and major capex allowances forecast to be approved in RCP3 (ie, the green line).

6.49 We consider this appropriate, as it will properly reflect Transpower's maximum total forecast revenues attainable in RCP3 as at the time we set the IPP for RCP3. We also note that we do not expect the impact of different capex assumptions on total forecast revenues in RCP3 to be vastly different, as capex is recovered over the lifetime of the assets and not immediately as is the case for opex.

**Modelling total forecast revenues**

6.50 In determining a preliminary estimate of Transpower's total forecast revenues for RCP3, we intend to rely on the financial model that Transpower will provide with its RCP3 proposal.

6.51 We are confident Transpower's financial model will provide a reliable and accurate estimate of the total forecast revenues, as, by the time Transpower submits its RCP3 proposal, it will have been subject to a comprehensive and independent review undertaken by PricewaterhouseCoopers (**PwC**), which we understand will cover:

6.51.1 compliance with the relevant IMs;

6.51.2 accuracy in the historical data used to determine input parameters such as the opening RAB; and

6.51.3 accuracy and mathematical correctness in the calculations relevant to calculating total forecast revenues.

6.52 We have already carried out our own high-level review of a draft of Transpower's financial model and we did not identify any material inaccuracies or mathematical errors.

6.53 We note that for the purpose of making a decision on Transpower's RCP3 proposal, we consider the probability and impact of any potential modelling error in the total forecast revenues that we will finally set in November 2019 will be low given the various reviews carried out by Transpower, PwC and us. This is because setting the forecast MAR and total forecast revenues is an iterative process during which the model will be subject to further review, consultation and potential refinements.

6.54 In particular:

6.54.1 at the time of making our draft decision on Transpower's RCP3 proposal, the total forecast revenues will only be a preliminary estimate, using draft expenditure allowances and a preliminary WACC rate;

6.54.2 at the time of making our final decision on Transpower's RCP3 proposal, total forecast revenues will remain a preliminary estimate, because WACC, a key input parameter into the total forecast revenues, will not be available until after we have made our expenditure decisions on Transpower's RCP3 proposal; and

6.54.3 the final and potentially smoothed total forecast revenues will only be set after we have made our final decision on Transpower's RCP3 proposal, when the final WACC rate and the final IPP determination are available.

6.55 Overall, to estimate the long-term impact on the total forecast revenues of our decision on forecast expenditures, we do not consider that any potential associated benefits outweigh the cost of creating a financial model ourselves.

6.56 We therefore intend to use Transpower's financial model to estimate the total forecast revenues in making our decisions on Transpower's RCP3 proposal. This will extend to any associated analysis covering, but not limited to, the reconciliation analysis of the total forecast revenues, as illustrated in Figure 6.4.

**Testing of pricing sensitivity in RCP3**

*How forecast expenditures for RCP3 affect electricity prices*

6.57 As electricity transmission comprises only a part of the electricity supply chain, changes to Transpower's total forecast revenues will not translate directly into corresponding proportionate changes in electricity prices for household consumers.

6.58 The Electricity Authority estimates that transmission charges make up about 9.9% of a typical household electricity bill.[55] This means, for example, that an immediate total forecast revenues impact of +2% and a subsequent total forecast revenues impact of 5% would only translate in an immediate increase in electricity prices of 0.2% and a subsequent increase in electricity prices of 0.5% for a typical household (if Transpower's customers pass this on fully to household consumers).

[55] See http://www.ea.govt.nz/consumers/about-your-power-bill/.

*Scope and depth of our analysis*

6.59 Our analysis is likely to largely focus on the impact of long-term total forecast revenues, as changes in Transpower's total forecast revenues will have an impact on transmission charges that Transpower's customers will pay over the longer term.

6.60 For the purposes of our consultation with interested persons, we do not consider that the impact of changes in the total forecast revenues on electricity prices for household consumers is out of scope. However, given this impact is less direct and proportionately smaller, we do not intend making this a key part of our analysis and consultation.

6.61 In defining the depth of our analysis of the impact of long-term total forecast revenues, we intend to cover both overall changes in the total forecast revenues as well as a breakdown of transmission charges at a grid exit point (**GXP**) level.

6.62 Receiving the information on a GXP level from Transpower when it submits its RCP3 proposal will allow us to better consult on Transpower's proposal, as changes to transmission charges could be allocated to Transpower's customers, including electricity generators, EDBs and some major electricity users.

6.63 Having transmission charges available for each EDB separately has further advantages. In particular, it will allow us, when consulting on the upcoming EDB DPP reset in 2019, to more accurately reflect those charges in distribution charges applicable to the next DPP regulatory period, including the effect on electricity prices.[56]

[56] Transmission charges are a recoverable cost for EDBs and become part of the distribution charges an EDB will charge its customers.

# Attachment A How Transpower is regulated

**Purpose of this attachment**

A1 The purpose of this attachment is to give context for the IPP by providing an overview of our forms of regulation that apply to Transpower.

**Transpower's role**

A2 Transpower is a state-owned enterprise that owns and operates New Zealand's high voltage electricity transmission system (ie, 'the national grid'). Transpower transmits electricity from generators to substations at GXPs where it is supplied to local EDBs or large industrial consumers.

A3 In addition to transmitting electricity throughout the national grid, Transpower also manages the real-time coordination of the power system as the system operator. Transpower provides system operator services under its system operator service provider agreement (**SOSPA**) with the Electricity Authority,[57] and according to the requirements of the Code.

**How Transpower is regulated**

A4 Both we, and the Electricity Authority, have a role in regulating the electricity lines services provided by Transpower.[58]

*How we regulate Transpower*

A5 We regulate Transpower under Part 4 of the Act. Part 4 "provides for the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition."[59]

[57] System operator service provider agreement between the Electricity Authority and Transpower New Zealand Limited, February 2016, available at: https://www.ea.govt.nz/dmsdocument/20547-system-operator-service-provider-agreement-sospa-2016.

[58] See our fact sheet about our role in the electricity sector: Commerce Commission "Electricity and the Commerce Commission's role" (November 2012), available at: http://www.comcom.govt.nz/dmsdocument/9673.

[59] Section 52 of the Act.

A6 The purpose of Part 4 is:[60]

> … to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—
>
> (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
>
> (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
>
> (c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
>
> (d) are limited in their ability to extract excessive profits.

A7 Section 54Q of the Act is also relevant to the Capex IM. Section 54Q requires us to promote incentives, and avoid imposing disincentives, for suppliers of electricity lines services to invest in energy efficiency and demand-side management, and to reduce energy losses. Demand-side management and reduction of energy losses are of particular relevance to the Capex IM. The Capex IM provides for such matters to be taken into account in the assessment of Transpower's capital expenditure proposals. For example:[61]

A7.1 loss reductions are included as a market benefit under our quantitative investment test for major capex.[62] This is intended to promote investment options that result in lower transmission losses over those that do not (other factors being equal);

A7.2 we require close attention be given to the process for identification and consideration of transmission alternatives.[63] This is intended to result in greater consideration being given to investment options that improve network utilisation: for example, load shifting or peak shaving, demand-inter-trip schemes, and operation of local generation.

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[60] Section 52A of the Act.

[61] Commerce Commission "Transpower Capital Expenditure Input Methodology: Reasons paper" (31 January 2012), para 1.3.11-1.3.12.

[62] The investment test is an assessment of the costs and benefits of potential investments using discounting of relevant costs and benefits in the electricity market over a defined calculation period to identify a preferred investment option (set out in Schedule D of the Capex IM).

[63] Transmission alternatives are alternatives to investment in the grid. Where use of a transmission alternative avoids a transmission investment that would otherwise be major capex, the transmission alternative is classified as a 'non-transmission solution' (see the definition of 'non-transmission solution' in the Capex IM).

A8 Under Part 4, Transpower is subject to two types of regulation:

A8.1 IPP regulation:[64] Under Part 4 of the Act we are responsible for determining an IPP in relation to the electricity lines services supplied by Transpower. The IPP we set under this regulation determines the maximum revenues that Transpower can recover from consumers, as well as the quality standards it must meet, for each year of each five-year regulatory period.[65] The IPP for RCP2, which applies for the five-year regulatory period ending 31 March 2020, is set out in the *Transpower Individual Price-Quality Path Determination 2015* [2014] NZCC 35 (the **Transpower IPP Determination**).

A8.2 Information disclosure (**ID**) regulation:[66] This form of regulation enables us to set requirements on Transpower to publicly disclose certain information to allow interested persons to assess whether the Part 4 purpose is being met. The ID requirements for Transpower are set out in the *Transpower Information Disclosure Determination 2014* [2014] NZCC 5 (the **Transpower ID Determination**). The ID requirements do not apply to a specific regulatory period and continue to apply until they are revoked or amended under s 52Q of the Act.

A9 These regulatory mechanisms are supported by IMs, which set out the underlying rules, requirements, and processes that must be applied by us when we determine Transpower's IPP and ID requirements.[67] There are two IM determinations that apply to Transpower:

A9.1 *Transpower Input Methodologies Determination 2012* [2012] NZCC 17 (the **Transpower IM Determination**). This determination was reviewed as part of the 2015-2016 IM review.[68] It sets out methodologies for:

A9.1.1 Cost allocation;

A9.1.2 Asset valuation;

A9.1.3 Treatment of taxation;

A9.1.4 Cost of capital;

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64 The Commerce (Part 4 Regulation – Transpower) Order 2010.

65 Under s 53M(4) of the Act, a regulatory period must be five years, but under s 53M(5) the Commission may set a period of four years if it considers this would better meet the Part 4 purpose.

66 Section 54F of the Act.

67 Both we and Transpower are required to apply the IMs.

68 We published the majority of our decisions on the 2015-2016 IM review in December 2016. Those decisions covered all aspects of the Transpower IM Determination except for decisions on the IRIS, which were published on 29 June 2017.

A9.1.5 Specification of price;

A9.1.6 IRIS; and

A9.1.7 Reconsideration of the price-quality path.

A9.2 *Transpower Capital Expenditure Input Methodology Determination 2012* [2012] NZCC 2 (**Capex IM**). Broadly, the Transpower Capex IM sets out five things:

A9.2.1 the process for submitting, assessing, and approving Transpower's base capex proposals;

A9.2.2 the process for submitting, assessing, and approving Transpower's major capex proposals;

A9.2.3 a number of capex-related incentives, which are applied through the IPP;

A9.2.4 the requirements for Transpower to propose grid output measures, which are then set as quality measures in the IPP; and

A9.2.5 the requirements for Transpower to provide an ITP. The purpose of the ITP is to explain Transpower's view of the long-term operation and development of the grid.

A10 Part 4 applies to both the transmission services and system operator services supplied by Transpower.[69] However, we have not included the revenues and costs associated with Transpower's system operator services in the IPP. This is because we consider the existence of a separate arm's-length contract (the SOSPA referred to above) between Transpower and the Electricity Authority for these services should result in outcomes consistent with the Part 4 purpose for those services. As such, the Capex IM does not currently apply to capital expenditure relating to the SOSPA.[70]

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[69] Section 150(1) of the Electricity Industry Act 2010 amended the definition of 'electricity lines services' under section 54C(1) of the Act to clarify that system operator services are included as part of the conveyance of electricity by line, and hence are regulated services under Part 4.

[70] For similar reasons, the Capex IM will not usually apply to capital expenditure relating to contracts for transmission services between Transpower and another party where the party that is contracting with Transpower agrees in writing that the terms and conditions are reasonable or reflect workable or effective competition for the provision of the goods and services. These are referred to as 'new investment contracts'. See: Commerce Commission "Transpower Capital Expenditure Input Methodology: Reasons paper" (31 January 2012), para 2.4.14.

*The Electricity Authority's role in regulating Transpower*

A11 The Electricity Authority's statutory objective is to promote competition in, reliable supply by, and the efficient operation of, the New Zealand electricity industry for the long-term benefit of consumers.[71] The Electricity Authority develops, administers and enforces the Code; contracts with service providers to operate the electricity market and system; and analyses and monitors performance of the electricity market and industry.

A12 The Electricity Authority's functions with respect to Transpower include:

A12.1 Setting the grid reliability standards (**GRS**).[72] The GRS are a set of standards against which the reliability performance of the existing grid (or future developments to it) can be assessed.

A12.2 Setting the guidelines that Transpower must follow when developing the transmission pricing methodology (**TPM**). The TPM sets out how Transpower's total transmission revenue (as approved by the Commission) is allocated between transmission customers that are required to pay the charges calculated under the TPM. The Electricity Authority is currently reviewing the TPM guidelines.

A12.3 Setting requirements regarding the use, and contents, of transmission agreements, including setting a default transmission agreement. Transmission agreements are the contracts Transpower has with distribution companies, major users that are directly connected to the grid, and generators that are directly connected to the grid.

A12.4 Establishing requirements regarding interconnection asset services – for example, providing information on capacity, reliability, and availability of those assets.[73]

A12.5 Contracting Transpower to provide system operator services. The system operator is responsible for the real-time coordination of the power system, including scheduling and dispatching electricity in a manner that avoids undue fluctuations in frequency and voltage on the transmission grid.

A12.6 Contracting Energy Market Services, a division of Transpower, to act as financial transmission rights (**FTR**) manager. The FTR manager is responsible for the creation and allocation of FTRs.

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[71] See: http://www.ea.govt.nz/.
[72] The GRS are set out in Schedule 12.2 of the Code.
[73] Subpart 6 of Part 12 of the Code.

*Linkages between our regulation of Transpower and that of the Electricity Authority*

A13 Section 54V of the Act sets a number of requirements for us and the Electricity Authority to interact on certain matters relating to our respective roles in regulating the electricity industry, including Transpower. We also have a memorandum of understanding with the Electricity Authority with respect to our respective roles in the electricity industry.[74]

A14 Some aspects of the Electricity Authority's role with respect to Transpower are particularly relevant to the Capex IM:

A14.1 The GRS that the Electricity Authority has set in the Code are incorporated by reference into our definition of 'major capex' as well as the investment test we apply when assessing major capex proposals.[75]

A14.2 The Electricity Authority's concept of GEIP is incorporated by reference into the Capex IM as follows:[76]

A14.2.1 as a factor we may consider when evaluating a major capex proposal;[77]

A14.2.2 Transpower must demonstrate how a proposed major capex investment reflects GEIP;[78] and

A14.2.3 under the investment test for major capex, Transpower must quantify its project costs using GEIP.[79]

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[74] Memorandum of Understanding between the Electricity Authority and the Commerce Commission, (December 2010), available at: http://www.comcom.govt.nz/dmsdocument/9414.

[75] Capex IM, clause 1.1.5 & Schedule D.

[76] '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].

[77] Capex IM, clause C2(a)(i).

[78] Capex IM, clause G5(12).

[79] Capex IM, clause D6(6).

A15 GEIP is also relevant to our assessment of Transpower's IPP proposals. As noted in our RCP2 decision paper, we consider that GEIP reflects the appropriate planning and performance standards for a prudent supplier.[80] As such, we had regard to GEIP when considering whether Transpower's RCP2 base capex proposal was consistent with an expenditure outcome representing the efficient costs of a prudent supplier. We consider this concept to be consistent with the Part 4 purpose, which is a required consideration under the capex evaluation criteria.[81]

A16 The Electricity Authority is currently reviewing the TPM guidelines and considering new TPM guidelines that would lead to a change in the way transmission charges are shared among transmission customers.[82] Relevantly, the Electricity Authority is considering changing the TPM guidelines to make transmission charges more service-based and cost-reflective. The Electricity Authority is preparing a formal proposal for consultation purposes.[83] If the Electricity Authority ultimately changes the TPM guidelines in the manner noted above, we expect this would heighten the interests of parties that would benefit from (and pay for) specific transmission investments in our processes for assessing Transpower's capex proposals.

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[80] *Setting Transpower's individual price-quality path for 2015 – 2020* [2014] NZCC 23 (29 August 2014), para 5.29.

[81] Capex IM, clause 6.1.1(2)(b).

[82] See: http://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/transmission-pricing-review/.

[83] See: https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/transmission-pricing-review/development/next-steps-june2018/.

# Attachment B Independent verification of Transpower's RCP3 proposal

**Purpose of this attachment**

B1 The purpose of this attachment is to summarise the purpose and scope of the pilot independent verification process for RCP3, and explain the factors we will consider when assessing the Verifier's recommendations.

**We are piloting independent verification of Transpower's RCP3 proposal**

B2 As part of the Capex IM review, we decided to pilot independent verification for RCP3 via agreement with Transpower.

B3 We considered that piloting the use of independent verification, rather than amending the IMs to formally introduce independent verification requirements, was prudent because:

B3.1 it allows an opportunity to evaluate the success of independent verification in the Transpower context before committing us, Transpower and other stakeholders to the considerable effort that would be required to formally prescribe a verification process in the IMs; and

B3.2 if we do subsequently consult on formally introducing verification requirements in the IMs prior to RCP4, we will be better placed to develop the formal verification requirements as a result of having been through the pilot verification process for RCP3.

**Independent verification of IPP proposals presents an opportunity for the reset process**

B4 Independent verification presents an opportunity to increase the effectiveness and efficiency of the IPP reset process. This will create benefits for consumers, us, and Transpower.

B5 We consider the key benefits of independent verification are that it will:

B5.1 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. This will 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;

B5.2 provide useful insights to Transpower in terms of potential operational improvements it could make;

B5.3 help to mitigate the risk of any potential incentives on Transpower to provide overly generous estimates of forecast expenditure; and

B5.4 result in better scrutiny of Transpower's investment proposals prior to them being submitted to the Commission, which may result in a more appropriate level of forecast expenditure in the proposal.

**Independent verification of Transpower's RCP3 proposal**

B6 Transpower has engaged Synergies Economic Consulting and GHD Advisory as the Verifier to undertake independent pre-application verification of its RCP3 proposal. The key output of this verification process will be a verification report, which Transpower will submit alongside its RCP3 proposal on 3 December 2018.

B7 The TOR for the verification process were agreed (in April 2018) between the Commission, Transpower and the Verifier, via a tripartite deed.[84]

B8 Broadly, the purpose of the verification process is for the Verifier to provide an opinion on whether Transpower's RCP3 expenditure forecasts (for base capex and opex) and associated grid output measures are consistent with an expenditure outcome that represents the efficient costs of a prudent supplier having regard to GEIP.[85]

**Factors we propose considering in assessing the Verifier's conclusions**

B9 In assessing the Verifier's conclusions, we propose considering the following factors:

B9.1 The Verifier's general approach to assessing the RCP3 proposal, including the depth of the Verifier's investigation and the process the Verifier has undertaken against the TOR;

B9.2 The extent to which the Verifier has tested the RCP3 proposal's compliance with the relevant IMs;

B9.3 The extent to which the Verifier has tested Transpower's proposed expenditure allowances against the expenditure outcome (ie, do the forecast expenditures reflect the efficient cost of a prudent supplier?);

[84] The tripartite deed and TOR for verification are available on our website at: https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-transmission/transpowers-price-quality-path/setting-transpowers-price-quality-path-from-2020?target=documents&root=91269.

[85] See paragraph 3.10 for a definition of GEIP.

B9.4 The extent to which the Verifier's approach to assessing the RCP3 proposal is sufficiently explicitly explained and whether its conclusions are comprehensible. In case the Verifier proposes to not include certain expenditure in the expenditure allowances, this includes understanding whether any identified problems are systematic for the RCP3 proposal or specific to a certain expenditure area; and

B9.5 Whether there are any relevant areas that point to limitations in the Verifier's expertise and the extent to which they have been filled appropriately.

# Attachment C Quantitative and qualitative summaries of Transpower's forecast expenditures

## Figure C1 A summary of Transpower's forecast base capex

| Total expenditure | Expenditure type | Expenditure Category | Asset/Opex Category | Asset/Opex Class | Step 1 - Value overview | | | | Step 2 - Verification Outcome | | | Step 3 - Quantitative Assessment (Materiality analysis) | | | Step 4 - Qualitative Assessment (Key driver Analysis) | | | | | | Step 5 - Focus Area Relevance | | | | Step 6 - Conclusion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RCP3 proposed spend | RCP2 proposed spend | RCP2 actual spend | RCP2 allowance | In scope | Outcome | Level of reliance | Share of total spend | Five-year step change | Performance against forecast | Need clearly explained | To meet quality standards | To meet demand | To connect generation capacity | To comply with health and safety | To comply with other legislation | Asset health and criticality | Price impacts | Revenue linked performance measures | TP's engagement with stakeholders | Level of scrutiny |
| Total expenditure | Base capex | Replacement and Renewal | AC Substations | Power Transformers | | | | | | | | | | | | | | | | | | | | | |
| | | | | Indoor Switchgear | | | | | | | | | | | | | | | | | | | | | |
| | | | | Outdoor Circuit Breakers | | | | | | | | | | | | | | | | | | | | | |
| | | | | Outdoor Instrument Transformers | | | | | | | | | | | | | | | | | | | | | |
| | | | | Structures & Buswork | | | | | | | | | | | | | | | | | | | | | |
| | | | | Other AC Substation Equipment | | | | | | | | | | | | | | | | | | | | | |
| | | | | Outdoor 33kv switchyards: Outdoor to Indoor Conversion | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **ACS Buildings & Grounds** | ACS Buildings & Grounds | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Transmission lines** | TL Structures and Insulators | | | | | | | | | | | | | | | | | | | | | |
| | | | | TL Conductor and Hardware | | | | | | | | | | | | | | | | | | | | | |
| | | | | TL Grillage | | | | | | | | | | | | | | | | | | | | | |
| | | | | TL Foundation and Access | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **HVDC & Reactive Assets** | HVDC | | | | | | | | | | | | | | | | | | | | | |
| | | | | Reactive Assets | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Secondary Assets** | SA Protection, Battery Systems and Revenue Meters | | | | | | | | | | | | | | | | | | | | | |
| | | | | SA Substation Management Systems | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Total R&R capex** | | | | | | | | | | | | | | | | | | | | | | |
| | | **Enhancement & Development** | **Grid E&D** | Grid E&D | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Total E&D capex** | | | | | | | | | | | | | | | | | | | | | | |
| | | **ICT Capex** | **Asset Management Systems** | Asset Management Systems | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Corporate Systems** | Corporate Systems | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **ICT Shared Services** | ICT Shared Services | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **IT Telecoms, Network and Securtiy** | IT Telecoms, Network and Securtiy | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Transmission Systems** | Transmission Systems | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Total ICT capex** | | | | | | | | | | | | | | | | | | | | | | |
| | | **Business Support Capex** | **Business Support Capex** | Business Support | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | **Total BS capex** | | | | | | | | | | | | | | | | | | | | | | |
| | | **Total capex** | | | | | | | | | | | | | | | | | | | | | | | |
| | | **Total opex** | | | | | | | | | | | | | | | | | | | | | | | |
| | **Total expenditure** | | | | | | | | | | | | | | | | | | | | | | | | |

## Figure C2 A summary of Transpower's forecast opex

| Total expenditure | Expenditure type | Expenditure Category | Asset/Opex Category | Asset/Opex Class | Step 1 - Value overview | | | | Step 2 - Verification Outcome | | | Step 3 - Quantitative Assessment (Materiality analysis) | | | Step 4 - Qualitative Assessment (Key driver Analysis) | | | | | | Step 5 - Focus Area Relevance | | | | Step 6 - Conclusion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RCP3 proposed spend | RCP2 proposed spend | RCP2 actual spend | RCP2 allowance | In scope | Outcome | Level of reliance | Share of total spend | Five-year step change | Performance against forecast | Need clearly explained | To meet quality standards | To meet demand | To connect generation capacity | To comply with health and safety | To comply with other legislation | Asset health and criticality | Price impacts | Revenue linked performance measures | TP's engagement with stakeholders | Level of scrutiny |
| Total expenditure | Opex | Network opex | Preventative maintenance | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | Predictive Maintenance | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | Corrective Maintenance | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | Proactive Maintenance | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | **Total** | | | | | | | | | | | | | | | | | | | | | | | |
| | | Non-network opex | Business Support | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | ICT opex | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | | Insurance | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | ..... | | | | | | | | | | | | | | | | | | | | | |
| | | | | **Total** | | | | | | | | | | | | | | | | | | | | | |
| | | **Total** | | | | | | | | | | | | | | | | | | | | | | | |
| | **Total opex** | | | | | | | | | | | | | | | | | | | | | | | | |
| | **Total capex** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Total expenditure** | | | | | | | | | | | | | | | | | | | | | | | | | |

# Attachment D Our proposed approach to testing forecast expenditures against the expenditure outcome

**Expenditure outcome**

*Forecast expenditures reflect the **efficient cost** of a **prudent** supplier having regard to **Good Electricity Industry Practice** (GEIP).*

**GEIP**

*The exercise of that degree of skill, diligence, prudence, foresight and economic management, as determined by reference to good international practice, which would reasonably expected from a skilled and experienced asset owner engaged in the management of a transmission network owner 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.*

**Application of GEIP to an expenditure proposal**

In this section we have been guided by the Transpower independent Verifier's application of GEIP

**Prudency**

Scope

*Forecast expenditures directed to maintaining the safety, quality, reliability and security of supply of regulated services*

Practical application

*Forecast expenditures are required to meet Transpower's ongoing legal and regulatory obligations, or its contracts with customers (including quality targets)*

-

*Forecast base capex are required to meet forecast demand growth or renewal of exisiting infrastructure both in a timely manner, or it achieves an increase in the reliability or the quality of supply that is explicitly desired by customers or required by the Electricity Industry Participation Code ( **Code** ).*

**Cost efficiency**

Scope

*Forecast expenditures related to the provision of regulated services in a least cost manner having regard to conditions in relevant markets for labour, capital and materials inputs*

Practical application

*Forecast expenditures are underpinned by robust cost estimation and forecasting methodologies, including incorporating reported actual costs into the development of forecasts and having regard to the efficiency incentives applying under the Part 4 regulatory framework*

-

*Base Capex reflect Transpower's asset management and capex planning processes which are likely to reliably provide for the best means of achieving identified needs (legal, regulatory, environmental or contractual) having regard to available options, including the substitution possibilities between Base Capex and opex, such as transmission alternatives*

**Forecast Expenditures Assessment - Potentially Relevant Considerations**

| **Need analysis** | | **Customer engagement** | **Assumptions analysis** | **Forecasting methodologies** | **Economic evaluation** | **Consideration of alternatives** | **Challenge process** |
|---|---|---|---|---|---|---|---|
| Policy driven | Planning driven | | | | | | |
| 1) Are there internal policies driving the need for proposed work programmes/projects? | 1) Is forecast demand growth, including the need to connect new generation, driving the need for proposed work programmes/projects? | 1) Has there been customer engagement on the identified needs and the proposed solutions? | 1) Are there policies and planning standards driving the use of assumptions? | 1) Are there policies and planning standards specifying what forecasting methodologies to use? | 1) Are there policies suggesting there are net economic benefits to proposed work programmes/projects? | 1) Have transmission alternatives been considered? | 1) Has the work programme/project been subject to internal and/or external challenge processes? |
| 2) Are those policies consistent with the defintion of prudency above? | 2) Is the forecast demand scenario the most reasonable? | 2) Does the level of engagement seem appropriate? | 2) Are the assumptions clearly outlined and are source information provided? | 2) Are the forecasting methodoligies (eg, bottom-up, base-step trend) clearly outlined? | 2) Unless there are such policies, is the decision making process underpinned by an economic evaluation? | 2) Is the consideration of alternatives consistent with the relevant policies and planning standards? | 2) Have aggregated work programmes/projects been subject to a top-down challenge process? |
| 3) Do these policies promote net economic benefits in the long-term? | 3) Are the majority of customers explicitly asking for outcomes that require invesment in the grid? | 3) Is there clear evidence how customer preferences have been considered? | 3) Is the rationale for using specific assumptions clear and appropriate? | 3) Is the selected approach appropriate? | 3) Is such an evaluation consistent with the relevant policies and planning standards? | 3) Are the considered transmission alternatives credible? | 3) Has the market been or will it be tested (ie, can a third party deliver the project more efficiently)? |
| 4) Is the need triggered by a change in the Code ? | 4) Do the planning standards require investment in the grid because of a change in health and safety legislation? | 4) In addition to 3, in case of customer disagreement, are the reasons for pursuing needs/solutions that differ from customer preferences reasonable and well explained? | 4) Have the assumptions been consulted on? | 4) Have contingencies been built into the forecast to account for uncertainty? | 4) Is the proposed solution the most economic solution (compared to other feasible solutions)? | 4) Has the market been or will it be tested for alternatives? | 4) Has deliverability been considered as part of the challenge process? |
| 5) Are the proposed work programmes/projects likely to address the identified needs, including in a timely manner? | 5) Are the proposed work programmes/projects likely to best meet the above needs, including in a timely manner? | 5) Have customers been consulted on the price/quality trade-off? | 5) Has the economic outcome been tested for sensitivity to variations in the assumptions? | 5) What is the confidence level (eg, P10-P50-P90) of the resulting forecasts? | 5) Is the modelling fit-for-purpose? | 5) How well does the proposed solution address the project need as opposed to the alternatives? | 5) In the event of an identified deliverability constraint, has a single work programme or the aggregated scheduled work been appropriatley adjusted? |
| | | | | 6) To what extent have actual efficiency improvements been built into the expenditure forecasts. | 6) Has the modelling been reviewed/audited? | 6) Has the capex/opex trade-off been considered? | |
| **Transpower's proposed opex and replacement and renewal capex forecasts are largely policy driven** | **Transpower's proposed enhancement and development capex forecasts are largely planning driven** | | | | | | |

# Attachment E Overview of evaluation criteria for base capex and opex as specified in the Capex IM and the TOR for the Verifier

**General evaluation of base capex proposals - Capex IM, Schedule A, Clause A1 (and Verifier's Terms of Reference as indicated)**

| Category | Policies and planning standards | | | Models and Assumptions | | | | | Quality outputs | | | Efficiencies | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| **Criteria (we will have regard to)** | **Have the proposed base capex allowances been prepared in accordance with Transpower's policies and planning standards for the grid and for each base capex category?** | **Are the policies and planning standards upon which the proposed base capex allowances rely directed towards achieving cost-effective and efficient solutions?** | **Do policies regarding the need for, and prioritisation of projects and programmes demonstrate a risk-based approach consistent with good asset management practice?** | **Are the key assumptions, key input data and forecasting methods used in determining demand forecasts reasonable?** | **Are the key assumptions relevant to base capex relied upon reasonable, including (a) the method and information used to develop them (b) how they were applied and (c) their effect on the proposed base capex allowances** | **Have demand forecasts and other key assumptions in determining the proposed base capex allowances been used appropriately?** | **The reasonableness and adequacy of any asset replacement models used to prepare the proposed base capex allowances, including (a) inputs to the models and (b) the methods used to check the reasonableness of the forecasts and related expenditure.** | **The reasonableness of the methodologies used in establishing the proposed opex allowances (such as cost benchmarking or internal historic cost trending), including the relationship between the proposed opex allowance and the proposed base capex allowance.** | **The dependencies between the proposed grid output measures and the proposed base capex allowances at the level of the grid and for each base capex category.** | **The dependencies between the proposed grid output targets and the proposed base capex allowances at the level of the grid and for each base capex category.** | **The extent to which the grid output targets were met in the previous regulatory period.** | **The type of efficiency improvements obtained in the current and previous regulatory periods.** | **The reasonableness of any efficiencies built into the proposed opex allowance as a result of the investment programme carried out under RCP1 and RCP2.** | **The scope for efficieny improvements during the regulatory period in question.** |
| **Source** | Capex IM, Schedule A, Clause A1(a) | Capex IM, Schedule A, Clause A1(b) | Capex IM, Schedule A, Clause A1(d) | Capex IM, Schedule A, Clause A1(j) | Capex IM, Schedule A, Clause A1(c) | Capex IM, Schedule A, Clause A1(k) | Capex IM, Schedule A, Clause A1(i) | Verifier's ToR, Attachment A, Clause A2(b) | Capex IM, Schedule A, Clause A1(e) | Capex IM, Schedule A, Clause A1(f) | Capex IM, Schedule A, Clause A1(g) | Capex IM, Schedule A, Clause A1(l) | Verifier's ToR, Attachment A, Clause A2(d) | Capex IM, Schedule A, Clause A1(m) |
| **Applicable to capex/opex** | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex | opex | capex/opex | capex/opex | capex/opex | capex/opex | opex | capex/opex |
| **Associated Focus Area** | - | #Price impacts (more broadly) | #Asset health and criticality | #Price impacts (more broadly) | #Price impacts (more broadly) | #Price impacts (more broadly) | #Asset health and criticality | #Asset health and criticality | #Revenue linked performance measures | #Revenue linked performance measures | #Revenue linked performance measures | #Price impacts (more broadly) | #Asset health and criticality | - |

**Evaluation of identified programmes - Capex IM, Schedule A, Clause A2 (and Verifer's Terms of Reference as indicated)**

similar | similar | very similar | similar

| Category | Policies and planning standards | | | | Models and Assumptions | | Linkages | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| # | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| **Criteria (we may have regard to)** | **Were other relevant policies and planning standards applied appropriately?** | **Transpower's process, including its use of cost-benefit analysis, to determine the identified programme's reasonableness and cost-effectiveness.** | **Do policies regarding the need for the identified programme and its priority demonstrate a risk-based approach consistent with good asset management practice and were they applied appropriately.** | **Transpower's internal processes for challenging a need for an identified programme and the possible alternative solutions** | **How grid outputs, key drivers, assumptions, and cost modelling were used to determine its forecast capital expenditure.** | **The capital costing methodology and formulation, including unit rate sources, the method used to test the efficiency of unit rates and the quantum of included contingencies.** | **The effect of forecast capital expenditure on other cost categories, including the relationship with operating expenditure.** | **Links with other projects or programmes, whether proposed or in progress.** | **Mechanisms for controlling actual capital expenditure with respect to the proposed based capex allowances and ensuring performance of proposed grid output targets.** | **The efficiency of the proposed approach to procurement of associated goods and services.** |
| **Source** | Capex IM, Schedule A, Clause A2(b) | Capex IM, Schedule A, Clause A2(c) | Capex IM, Schedule A, Clause A2(a) | Capex IM, Schedule A, Clause A2(d) | Capex IM, Schedule A, Clause A1(e) | Capex IM, Schedule A, Clause A1(f) | Capex IM, Schedule A, Clause A2(g) | Capex IM, Schedule A, Clause A2(h) | Capex IM, Schedule A, Clause A1(i) | Capex IM, Schedule A, Clause A1(j) |
| **Applicable to capex/opex** | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex | capex/opex |
| **Associated Focus Area** | - | #Price impacts (more broadly) | #Asset health and criticality | #Transpower's engagement with customers | #Price impacts (more broadly) and #Revenue linked performance measures | #Price impacts (more broadly) | #Asset health and criticality | #Asset health and criticality | - | - |