

# **Invitation to have your say on Transpower's individual price-quality path and proposal for the next regulatory control period**

## **Issues paper**

Date: 10 February 2014

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# 1. Introduction

## Purpose of paper

- 1.1 We are in the process of setting Transpower's price-quality path for the next regulatory control period, to apply from 1 April 2015 (RCP2). This will determine the maximum revenue Transpower may receive for providing transmission services over RCP2 and the level of quality it must provide to consumers.
- 1.2 The purpose of this paper is to seek your views on our proposed approach to setting Transpower's price-quality path for RCP2, and the levels of expenditure and quality proposed by Transpower for this period.
- 1.3 To give us time to consider submissions and meet our statutory timeframes for this process:
  - 1.3.1 submissions on this paper are due by **5pm on 3 March 2014**; and
  - 1.3.2 cross-submissions on matters raised in submissions by other parties are due by **5pm on 10 March 2014**.

## Transpower's individual price-quality path

- 1.4 Transpower is the owner and operator of New Zealand's national transmission grid. As the system operator, Transpower also manages the real time operation of the grid.
- 1.5 Under Part 4 of the Commerce Act 1986 (the Act), the Commerce Commission is responsible for determining an individual price-quality path (IPP) for the electricity lines services supplied by Transpower.<sup>1</sup> The IPP that we determine sets out the maximum allowable revenue (MAR) that Transpower may receive for providing transmission services over RCP2 and the level of quality it must provide to consumers.
- 1.6 We first set an IPP in 2010 to apply for the four year regulatory control period from 1 April 2011 to 31 March 2015 (RCP1). We will now be setting the IPP for the subsequent regulatory control period, commencing 1 April 2015. We will reach a final decision on the IPP to apply for RCP2 by October 2014. Our process for reaching a final decision is outlined further in chapter 2.

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<sup>1</sup> The IPP provisions of s 53ZC apply to Transpower by way of an Order in Council under s 52N. Electricity lines services include both transmission services and system operator services. However, Transpower's system operator services are not covered by our IPP determination. This is because we consider the existence of a separate arm's-length contract between Transpower and the Electricity Authority for these services results in outcomes consistent with those that would be observed in a workably competitive market.

- 1.7 At this stage, we propose to establish the IPP for RCP2 using a similar approach to RCP1. Our view at this time is that Transpower's forecast MAR in the IPP for RCP2 should be determined using a building blocks approach and that the incentive mechanisms established in the input methodologies (IMs) applicable to Transpower will apply. However, there are a number of refinements we are considering to ensure the IPP better promotes the purpose of Part 4. These are discussed in chapter 3.

**Transpower has proposed an expenditure allowance and grid output measures for the RCP2 IPP**

- 1.8 We are required to determine Transpower's expenditure allowance and quality standards (also referred to as grid output measures) for RCP2.<sup>2</sup> These are an important determinant of the IPP.
- 1.9 On 2 December 2013 we received a proposal from Transpower for the expenditure allowances and grid output measures to apply for RCP2.<sup>3</sup> A copy of Transpower's proposal can be found on our website.<sup>4</sup> Our proposed approach to assessing this proposal is summarised in chapter 4.
- 1.10 Two types of expenditure are covered in Transpower's proposal:
- 1.10.1 base capital expenditure (base capex); and
  - 1.10.2 operating expenditure (opex).<sup>5</sup>
- 1.11 Our initial review of Transpower's proposal indicates that the level of expenditure proposed is broadly similar to RCP1 but that the composition differs. To help understand the appropriateness of this proposal, we have examined Transpower's expenditure in RCP1. Our initial review of Transpower's historic performance has raised some concerns with the robustness of its expenditure planning and forecasting and Transpower's capability to deliver the projects and programmes that it has proposed.

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<sup>2</sup> Commerce Commission "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, clause 2.2.2.

<sup>3</sup> Transpower's proposal was required by the Capex IM and an information gathering notice we issued in accordance with s 53ZD (the RCP2 s 53ZD notice) of the Act. See Commerce Commission "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012 and Commerce Commission "Notice to supply information to the Commerce Commission under section 53ZD of the Commerce Act 1986", 2 July 2013.

<sup>4</sup> <http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/>

<sup>5</sup> Transpower's proposal does not include major capex. Transpower submits individual applications to the Commission for approval as the need for these projects arises.

- 1.12 Furthermore, Transpower's ongoing work to improve its asset management planning capabilities complicates our assessment of Transpower's RCP2 proposal. For example, it is unclear how much of the RCP2 expenditure forecast has been developed using good electricity industry practice (GEIP) asset management approaches or how much is simply based on historical approaches. Transpower's proposed expenditure allowance for RCP2 and its performance in RCP1 is discussed further in chapter 5.
- 1.13 Transpower has proposed a number of new grid output measures for inclusion in its IPP. As required by the IMs, Transpower proposes to link its performance against a number of these measures with the amount of revenue it receives. Transpower's proposal is that up to 1% of its revenue is at risk under this incentive mechanism. Chapter 6 summarises the proposed grid output measures and financial impact of Transpower's performance against these measures.

### **Why we want your views**

- 1.14 We have undertaken an initial review of Transpower's proposal, but intend to do a more targeted and detailed assessment. This paper provides our initial observations only.
- 1.15 Your views will assist us in identifying where to undertake more detailed reviews of Transpower's proposal and to reach a draft decision that promotes the long term benefit of consumers. There will be an opportunity to submit on our draft decision.
- 1.16 We have identified a number of issues that we would like to hear your views on. Specific questions are provided throughout the remainder of this paper. These are not exhaustive of the issues that may arise once more detailed investigation of Transpower's proposal is undertaken. We encourage you to explain any other concerns or comments you have with our proposed approach and Transpower's proposal.

## 2. How you can provide your views

### Purpose of this chapter

- 2.1 This section explains our process to reaching a final decision on Transpower's IPP for RCP2. We expect to make our final decision by 31 October 2014.

### We want to hear and consider your views

- 2.2 We intend to issue our draft determination on Transpower's IPP for RCP2 on 16 May 2014 for consultation. There will be an opportunity for submissions on this draft decision, and then for cross-submissions on matters raised in submissions by other parties.
- 2.3 We will make draft decisions on:
- 2.3.1 Transpower's base capex and opex allowances for RCP2;
  - 2.3.2 Transpower's grid output measures for RCP2; and
  - 2.3.3 the IPP determination, including Transpower's compliance obligations, the approach to establishing the MAR and the incentive mechanisms that apply for RCP2.
- 2.4 A summary of our process is shown in Table 2.1 below.<sup>6</sup>

**Table 2.1 Process steps and indicative dates**

Indicative date	Process step
3 March 2014	Submissions due on our issues paper
10 March 2014	Cross-submissions due on our issues paper
16 May 2014	Publish our draft decision on expenditure allowances and grid output measures Publish our draft IPP determination
27 June 2014	Submissions due on our draft decisions
11 July 2014	Cross-submissions due on our draft decisions
29 August 2014	Publish our final decision on expenditure allowances and grid output measures
29 August 2014	Issue information request to Transpower to calculate revenue
31 October 2014	Publish our final IPP determination

<sup>6</sup> This process and the indicative dates are consistent with that signalled previously in our process paper for the IPP (see <http://www.comcom.govt.nz/dmsdocument/11285>).



- 2.5 To give us time to consider submissions and meet our statutory timeframes for this process:
- 2.5.1 submissions on this paper are due by **5pm on 3 March 2014**; and
  - 2.5.2 cross-submissions on matters raised in submissions by other parties are due by **5pm on 10 March 2014**.
- 2.6 We will consider all submissions received by these dates in reaching our draft decision.
- 2.7 Submissions should be addressed by email to Paolo Ryan at:  
regulation.branch@comcom.govt.nz
- 2.8 Please include 'Transpower RCP2 submission - Attention: Paolo Ryan' as the subject line of your email.
- 2.9 All submissions will be published on our website.

#### **Amendments to the IMs**

- 2.10 We are currently considering a number of amendments to the IMs that apply to how we regulate Transpower. These include amendments to the incremental rolling incentive scheme (IRIS).
- 2.11 The process and timeline for the IM amendments applicable to Transpower are included in our Notice of Intention of 10 February 2014. There will be a period for submissions and cross-submissions.
- 2.12 Because the IMs involved in that consultation may affect other regulated sectors under Part 4 of the Act as well as Transpower, the consultation processes are separate from our public consultation process for the RCP2 IPP.<sup>7</sup>
- 2.13 Transpower has applied for three IM amendments that we consider are more practical to include in the consultation on the draft RCP2 IPP, as they are specific to the setting of Transpower's price-quality path. The consultation on the draft IPP may also require additional consequential IM amendments.

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<sup>7</sup> Details of the IM consultations can be found on our website at: <http://www.comcom.govt.nz/regulated-industries/input-methodologies-2/>

- 2.14 In this paper we invite your comments on the following Transpower IM requests:
- 2.14.1 an approval mechanism for replacement and refurbishment projects with a high cost, broad scope and/or uncertain timing (for example, reconductoring projects);<sup>8</sup>
  - 2.14.2 a baseline expenditure allowance for demand response expenditure;<sup>9</sup> and
  - 2.14.3 an expenditure allowance for the cost of indemnities for quality of service under the Consumer Guarantees Act.<sup>10</sup>

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<sup>8</sup> This is discussed further in paragraphs 3.25 to 3.27.

<sup>9</sup> This is discussed further in paragraphs 5.36 to 5.38.

<sup>10</sup> This is discussed further in paragraphs 6.24 to 6.27.

### 3. Shaping Transpower's next price-quality path

#### Purpose of this chapter

- 3.1 We are required to determine the price-quality path that we consider is appropriate for Transpower. The form of the price path is not specified in Transpower's IMs.<sup>11</sup> It must therefore be set out in the IPP for Transpower, which determines:
- 3.1.1 the MAR that Transpower can receive; and
  - 3.1.2 a suite of mechanisms that collectively provide incentives for Transpower to improve efficiency, to deliver outputs within approved expenditure, and to provide services at a quality that reflects consumer demands.
- 3.2 In 2010 we set a form of price-quality path for RCP1 that we consider has so far generally worked well. We propose to follow that general design for RCP2. However, some modifications may better promote the Part 4 purpose.
- 3.3 This chapter outlines how we propose to update the components of the IPP from RCP1 to construct Transpower's MAR for RCP2. It also summarises the incentive mechanisms we propose to include as part of this price-quality path. We are interested in your views on whether the proposed approach and mechanisms promote appropriate incentives and outcomes. In particular, whether potential refinements to the way we set the MAR for Transpower will improve these incentives and outcomes.
- 3.4 Attachment A summarises the key features of the IPP for RCP2 based on the IPP for RCP1, and taking into account the incentive mechanisms that will come into full effect in RCP2.

#### Similar to RCP1, we propose to use a building blocks approach for RCP2

- 3.5 We propose to set the forecast MAR for RCP2 on a building blocks basis. This means the forecast MAR for each year of RCP2 would be set on a forward looking (*ex ante*) basis using forecast values for each building block.<sup>12</sup> We propose that the length of RCP2 is five years, consisting of the period 1 April 2015 to 31 March 2020.<sup>13</sup>

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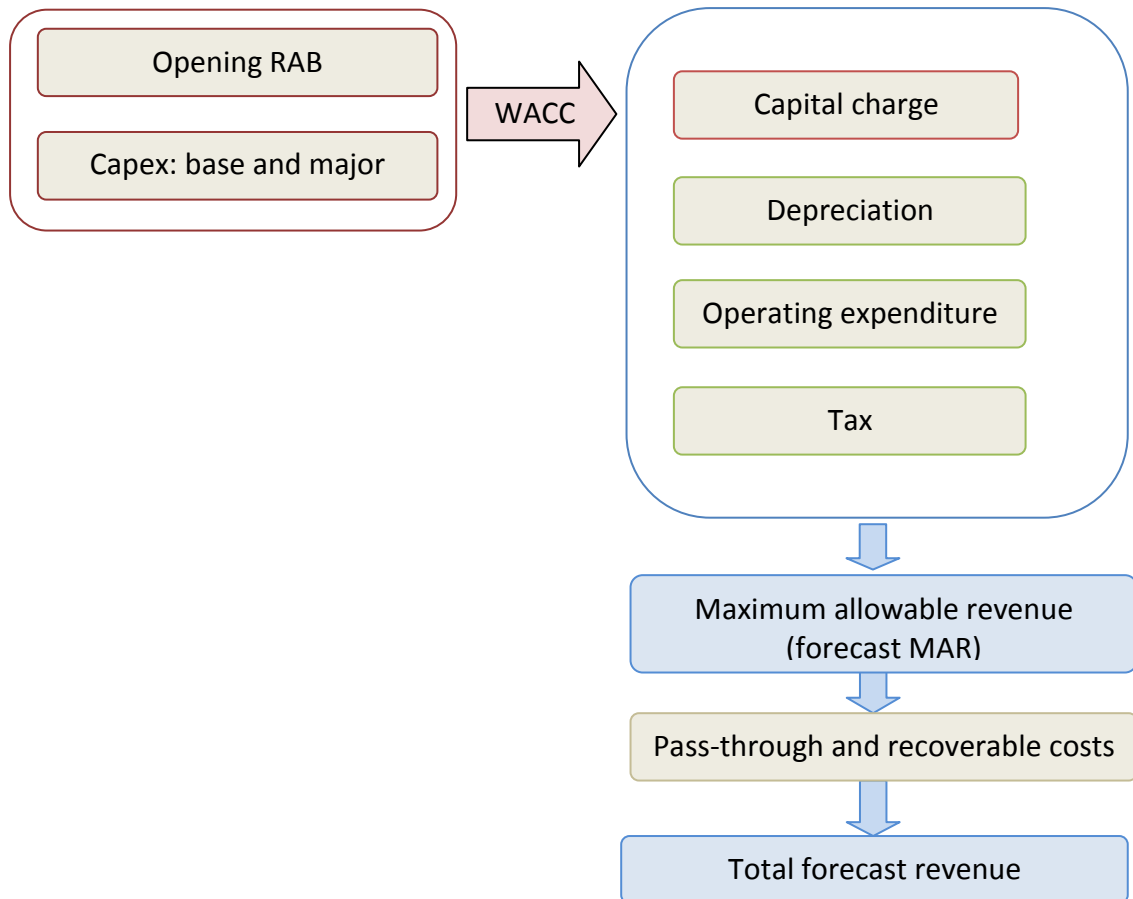
<sup>11</sup> This is in contrast to the customised price-quality paths specified in the IMs for electricity distribution businesses and gas pipeline businesses.

<sup>12</sup> Transpower will be required to apply the forecast MAR for each disclosure year to the equivalent pricing year ending 31 March when it sets its transmission pricing each year under the Transmission Pricing Methodology (TPM). The Electricity Authority is currently consulting on the TPM and it is possible that the way the price path compliance in the IPP is described may need to be amended at some later stage.

<sup>13</sup> The Act precludes us from setting an IPP beyond the five years of the RCP2 IPP.

- 3.6 The main building blocks of the forecast MAR calculation are:
- 3.6.1 a forecast of Transpower's regulatory asset base (RAB);
  - 3.6.2 a forecast of the return on Transpower's RAB (i.e., the weighted average cost of capital, or WACC);
  - 3.6.3 the forecast opex allowance;
  - 3.6.4 a forecast of the depreciation of Transpower's RAB over the life of the transmission assets; and
  - 3.6.5 a forecast allowance for income tax on Transpower's transmission revenues.
- 3.7 Figure 3.1 illustrates how the MAR and total forecast revenue are calculated based on these building blocks. Each of these components is discussed further below.

**Figure 3.1 Building blocks**



- 3.8 The value of Transpower's RAB depends on the levels of capex we approve. It comprises:
- 3.8.1 the capex we approve for groups of smaller projects for RCP2 (base capex allowance). Typically, base capex will comprise capex projects up to \$20 million;<sup>14</sup> and
  - 3.8.2 the capex we approve for individual major projects (major capex allowances). Major capex is approved on a project-by-project basis.
- 3.9 The WACC rate for RCP2 will not be part of the IPP decision for RCP2. The WACC is specified in the IMs and is determined separately.<sup>15</sup> The WACC for RCP2 will be calculated as at 1 September and published on our website by 30 September 2014.
- 3.10 The depreciation allowance is a function of the forecast value of the RAB and of the lives of the assets comprising the RAB.
- 3.11 As with base capex, we set an overall opex allowance for a regulatory period. Opex is the costs incurred in the everyday operation of the grid. It excludes those amounts that are defined in the IMs as pass-through costs or recoverable costs.<sup>16</sup>
- 3.12 The taxation allowance is primarily determined by the corporate tax rate and the forecast values of the other building blocks. The corporate tax rate is currently 28%.

**We intend to continue to use revenue wash-ups and an economic value account**

- 3.13 Following the conclusion of each year, Transpower is required to carry out a revenue wash-up calculation where forecast values used to calculate the forecast MAR are replaced by actual values for that year.<sup>17</sup> This results in the MAR.

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<sup>14</sup> The classification between base capex and major capex and the approval rules for major capex and base capex are set out in Commerce Commission, "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012.

<sup>15</sup> Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 5.

<sup>16</sup> Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, clauses 3.1.2 and 3.1.3. Although Transpower proposes its opex allowance by categories and for each year of the regulatory period, Transpower has the ability to transfer its operating expenditure between classifications and years.

<sup>17</sup> Commerce Commission, "Commerce Act (Transpower Individual Price-Quality Path) Determination 2010", Decision No. 714, 30 October 2013, Schedule E.

- 3.14 Any resulting revenue difference between the MAR and actual net revenues received (net of pass-through costs and recoverable costs) is recorded in the economic value (EV) account. Any balance in the EV account is then used to adjust the forecast MAR for Transpower's pricing in the next available pricing year.<sup>18</sup>
- 3.15 The forecast MAR has proven to be an effective mechanism for the *ex ante* setting of Transpower's maximum revenues based on forecast values. The MAR wash-up is designed to ensure that, over time, Transpower's actual financial performance reflects the impact of Transpower's incentives to improve efficiency, to deliver outputs within approved expenditure, and to provide services at a quality that reflects consumer demands. These incentive mechanisms are discussed further below.
- 3.16 The EV account at the start of RCP1 contained large balances. In our decision for RCP1 we determined that those initial EV account balances should be spread over eight years of Transpower's revenues, including three years of RCP1.<sup>19</sup> Therefore, the amounts of the original RCP1 opening EV account balances remaining at the end of RCP1 will be spread over the five disclosure years of RCP2. This will clear all of the historical EV account balances that existed at the start of RCP1.

**We propose to continue to set the forecast MAR on an annual basis**

- 3.17 Consistent with RCP1, we do not propose to smooth the forecast MAR across RCP2. The experience with the price path for RCP1 so far is that the allowed revenue resulting from the building blocks is not sufficiently variable between disclosure years to cause problems for Transpower or its consumers in predictability of its pricing.
- 3.18 There is a single point of compliance for Transpower's price path each year. The total revenues used by Transpower in setting its prices for the pricing year under the transmission pricing methodology (TPM), less pass-through costs and recoverable costs (as defined in the IMs), must not exceed the calculated forecast MAR for the equivalent disclosure year.<sup>20</sup>

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<sup>18</sup> The wash-up can adjust the future forecast MAR either up or down depending on the result of the wash-up calculation.

<sup>19</sup> Being the 3 years of the Remainder Period of RCP1 (the 2012/13 through 2014/15 disclosure years of RCP1) and the next 5 disclosure years, on the assumption that RCP2 would be the standard length of an RCP of 5 disclosure years, as reflected in sections 53ZC(2)(a) and 53M(4) of the Act.

<sup>20</sup> Commerce Commission, "Commerce Act (Transpower Individual Price-Quality Path) Determination 2010", Decision No.714, 30 October 2013, clauses 3.1 and 3.4.

### Specific mechanisms to strengthen Transpower's incentives to improve its performance

- 3.19 By setting Transpower's MAR in advance, the IPP provides Transpower with incentives to improve its performance. This is because Transpower may retain the benefits of any outperformance of the assumptions underpinning the price-quality path. For example, Transpower is incentivised to deliver the specified grid output measures at a more efficient cost than the expenditure allowances. These benefits are then shared between Transpower and consumers through the incentive rates that apply to each incentive.
- 3.20 In addition, we will provide specific incentive mechanisms to strengthen Transpower's incentives to improve its efficiency and deliver services at a quality that reflects consumer demands. There are four groups of incentive mechanisms that will fully apply in RCP2 and that will ultimately determine Transpower's revenue, namely:
- 3.20.1 incentives that apply to base capex;<sup>21</sup>
  - 3.20.2 incentives that apply to individual major capex projects;<sup>22</sup>
  - 3.20.3 the revenue-linked grid output measures.<sup>23</sup> This is discussed further in chapter 6; and
  - 3.20.4 the IRIS that applies to opex.<sup>24</sup>

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<sup>21</sup> The base capex incentives are revenue-linked and they replace the minor capital expenditure incentives that apply in the RCP1 IPP. See Commerce Commission, "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, Schedules B1 and B2.

<sup>22</sup> These are revenue-linked and became operational for part of RCP1 once that IM came into effect in January 2012. They replaced the major capital expenditure incentives that previously applied in the RCP1 IPP. See Commerce Commission, "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, Schedules B4 to B7.

<sup>23</sup> These performance measures replace the quality standards that Transpower is currently required to report against under the RCP1 IPP, but which are not revenue-linked. See Commerce Commission, "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, Schedule B3.

<sup>24</sup> Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Subpart 6. As discussed in chapter 2, we are currently consulting on a number of amendments to the IMs, including amendments to the IRIS.

### **The regulatory framework Transpower operates under is maturing and modifications to the IPP may better promote the Part 4 purpose**

- 3.21 The reasons papers accompanying our decision on setting the IPP for RCP1 in 2010 and the capital expenditure input methodology (Capex IM) in 2010 describes the incentive regulation framework under which we set the IPP and the values of each component in detail.<sup>25</sup>
- 3.22 The RCP1 IPP had a number of transitional features as Transpower moved from the Settlement Agreement to the IPP-based regime.<sup>26</sup> We now expect to develop the IPP into a regulatory instrument that is better-integrated with the overall package of IMs and information disclosure reporting requirements.
- 3.23 In setting the IPP for RCP2 we will be considering and commenting on the direction we expect the IPP to take in the future. In doing so, we will draw on the experience with the incentive regulation in other jurisdictions such as the UK and Australia.
- 3.24 There are a number of refinements we are considering to ensure the IPP better promotes the purpose of Part 4. In the course of working with the RCP1 IPP the Commission and Transpower have identified a number of matters where changes to the IPP determination might make the determination more workable and integrate it better with the other regulatory instruments set since the IPP was first determined in 2010.<sup>27</sup>

#### *Allowances for contingent expenditure*

- 3.25 We are considering whether the IPP determination should allow for resets of the forecast MAR for contingent expenditure. This would be a list of proposed expenditure that is excluded from the base capex and opex allowances used to set the forecast MAR for RCP2. However, this proposed expenditure could be included in resets of the forecast MAR during RCP2 if specified trigger conditions were met.<sup>28</sup>

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25 Commerce Commission, "Individual Price-Quality Path (Transpower), Reasons Paper", December 2010; Commerce Commission, "Transpower Capital Expenditure Input Methodology Reasons Paper", 31 January 2012.

26 See Commerce Commission, "Individual Price-Quality Path (Transpower), Reasons Paper", December 2010, paragraphs 1.2.6 to 1.2.9.

27 The Capex IM was set in January 2012 and the information disclosure determination will be set in 2014.

28 For background discussion on how the contingent expenditure mechanism currently works in the gas transmission sector, see Commerce Commission, "Setting Default Price-Quality Paths for Suppliers of Gas Pipeline Services", 28 February 2013 and the Commerce Commission, "Gas Transmission Services Input Methodologies Determination 2012", 25 February 2013, pages 121 and 122.



- 3.26 For example, Transpower has asked to us to consider an IM amendment to allow replacement and refurbishment projects that have a high cost, broad scope and/or uncertain timing (such as reconductoring) to be included as part of the major capex approval process. We are considering whether this should be included as an IM amendment to give full effect for RCP2.
- 3.27 However, at this stage, we consider that it may be more appropriate to exclude that proposed expenditure from the initial determination of the expenditure allowances for RCP2 if the need, timing or cost of the project was uncertain when the expenditure proposal was submitted. The request could instead be dealt with through a contingent expenditure allowance mechanism in the IPP.

*Impact of catastrophic events*

- 3.28 We are reviewing whether the IPP for RCP2 should include any mechanisms to take account of the impacts of catastrophic events. As the national grid operator, Transpower has a geographical exposure to such events across New Zealand and a geographical spread of risk to such events. We will be considering how the IPP would deal with insurance or self-insurance proceeds following a catastrophic event and whether changes need to be made to make that more explicit in the IPP.

*Refining how the forecast MAR reset mechanism works each year*

- 3.29 The Commission currently makes amendments to the IPP determination each year to calculate the annual forecast MAR. We propose to replace this with a process where Transpower would make these amendments based on defined conditions set out in the IPP. Transpower would also be required to report on these calculations in its annual compliance reporting. This is a less complex procedure than the current annual process. It also potentially reduces the cost of the IPP compliance for both the Commission and Transpower.<sup>29</sup>

*Use of mid-year cash flow timing assumptions*

- 3.30 We propose that the building block calculations used in setting the forecast MAR and the MAR wash-up each year of RCP2 would apply mid-year cash flow timing assumptions. This is similar to the assumptions we have adopted in other regulated sectors.<sup>30</sup> Currently, the building block calculations and MAR wash-up uses an end of year cash flow timing assumption.

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<sup>29</sup> The current process for forecast MAR resets is described in the IPP determination at Commerce Commission, "Commerce Act (Transpower Individual Price-Quality Path) Determination 2010", Decision No. 714, 30 October 2013, clauses 3.3(2) and 5.4(3). The resets are currently limited by the Transpower IMs to the revenue impact of major capex approved by the Commission or an EV adjustment.

<sup>30</sup> For background discussion on the cash flow timing assumptions adopted in the electricity distribution sector and in the gas distribution and transmission sectors for customised price-quality paths, see Commerce Commission, "Electricity and Gas Input Methodologies Determination Amendments (No.2) 2012, Reasons Paper", 15 November 2012.

*Spreading of EV adjustments over more than one year to avoid price shocks*

- 3.31 We are reviewing whether EV account entries should be spread over more than one year to avoid price shocks in exceptional circumstances. This might include particularly large entries from MAR wash-ups or the results of the incentive mechanisms applying to capex and grid output measures. For example, it might apply to large major capex overspend adjustments. This issue was signalled in the Capex IM reasons paper.<sup>31</sup>

*Allowing Transpower to voluntarily set its prices below the forecast MAR*

- 3.32 We propose that the IPP will allow Transpower to voluntarily set its transmission prices below the level that results in total revenues that are equal to the forecast MAR in any year.<sup>32</sup> We will require Transpower to disclose the reasons for any voluntary reductions in its revenue requirement in its annual compliance report. This will help us understand the effectiveness of the price-quality path incentives.

*Reclassification of capex and opex during RCP2*

- 3.33 We propose that the IPP for RCP2 will provide greater flexibility in its description of major capex projects and the base capex allowance. This is intended to reflect that there may be some circumstances where the expenditure amounts we approve may ultimately be treated under GAAP accounting as opex. This will require an adjustment mechanism to allow the approved expenditure amounts to be reclassified in the course of RCP2 between the approved capex and the approved opex allowance.

**The IMs that will apply in RCP2**

- 3.34 The IMs are the core rules that describe how the building blocks are to be calculated. The core provisions of the IMs that are in place when the IPP is determined for RCP2 will apply for the entirety of RCP2. Any amendments to the IMs during a regulatory period will not flow through to the setting of price, revenue caps or grid output measures during the period.<sup>33</sup> As discussed in chapter 2, possible amendments to the IMs are being considered. We have a separate process for providing any comments on these amendments.

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<sup>31</sup> Commerce Commission, "Transpower Capital Expenditure Input Methodology, Reasons Paper", 31 January 2012, paragraph 2.3.8.

<sup>32</sup> If Transpower did this for its own commercial reasons in RCP1, the MAR wash-up mechanism would increase the forecast MAR revenue cap in a later year. This would negate the impact of Transpower's decision to price lower than the cap and would prevent any benefit from this reduction in the allowable revenue from being passed on to consumers.

<sup>33</sup> Commerce Act 1986, sections 53ZC(2)(b) and 53ZB(1). Although the Capex IM was determined after the IPP was set for RCP1, there was an allowed timing exception under the Act.

- 3.35 The IMs that will apply in setting the forecast MAR for each disclosure year in RCP2 relate to:
- 3.35.1 specification of price;<sup>34</sup>
  - 3.35.2 capital expenditure;<sup>35</sup>
  - 3.35.3 cost allocation;<sup>36</sup>
  - 3.35.4 asset valuation;<sup>37</sup>
  - 3.35.5 treatment of taxation;<sup>38</sup>
  - 3.35.6 cost of capital;<sup>39</sup>
  - 3.35.7 IRIS;<sup>40</sup> and
  - 3.35.8 reconsideration of an IPP.<sup>41</sup>
- 3.36 The above IMs will have full effect for RCP2. These IMs will be used to set for RCP2 the base capex allowance for each year of RCP2, the base capex incentive rate, the major capex incentive rate, and the components of the grid output measures (each measure having a cap, collar, target and grid output incentive rate).

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34 Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 1.

35 Commerce Commission, "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012.

36 Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 2.

37 Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 3.

<sup>38</sup> Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 4

39 Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 5

40 Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012, Part 3, Subpart 6. Our consultation on the IMs could impact on the way IRIS is applied.

41 Commerce Commission, "Transpower Input Methodologies Determination [2012]" NZCC 17, 29 June 2012 Part 3, Subpart 7. Parts of the Capex IM relating to major capex came into effect for RCP1 at the time the IM was set in January 2012. The parts relating to the base capex allowance and the setting of the grid output measures come into effect from RCP2.

## 4. Our approach to evaluating Transpower's proposal

### Purpose of this chapter

- 4.1 This chapter outlines our proposed approach to assessing the levels of the base capex allowance, opex allowance, and grid output measures proposed by Transpower for RCP2. We seek views on whether you consider this approach is appropriate.

### We will evaluate Transpower's expenditure proposal against specific criteria

#### *Our approach to determining base capex expenditure*

- 4.2 The assessment of forecast expenditure is not a mechanistic process and necessarily involves the exercise of judgement. We will apply the evaluation criteria for base capex specified in the Capex IM.<sup>42</sup> These criteria achieve an expenditure outcome which represents the efficient costs of a prudent supplier.
- 4.3 In practice, we consider that GEIP reflects the appropriate planning and performance standards for a prudent supplier. A useful definition of GEIP, in relation to electricity transmission services, is found in the Electricity Industry Participation Code:<sup>43</sup>

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 technology status of the relevant transmission network and applicable law.

- 4.4 As a first step in confirming that the proposal complies with the relevant IMs, we will assess whether the proposal complies with the content requirements for expenditure proposals set out in the IMs.<sup>44</sup>

#### *Our approach to determining opex expenditure*

- 4.5 Unlike base capex, there are no specified evaluation criteria for opex in Transpower's IMs. However, we do not believe the criteria to be applied should be significantly different, particularly given the need for capex expenditure to be directed towards achieving cost-effective and efficient solutions, and the potential cost trade-offs between capex and opex that this implies.

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<sup>42</sup> Commerce Commission "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, clause 6.6.1 and Schedule A.

<sup>43</sup> Electricity Authority "The Electricity Industry Participation Code [2010]", 3 October 2013.

<sup>44</sup> Commerce Commission "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, clause 6.1.1(2)(a)).

- 4.6 Therefore, in evaluating Transpower's opex proposal we will have regard to the efficient costs of a prudent supplier and will be guided, where it is useful, by the Capex IM criteria and GEIP.
- 4.7 We also assess compliance with our information gathering notice (s 53ZD Notice) for Transpower RCP2 opex information dated 2 July 2013.

*Criteria for considering grid output measures*

- 4.8 The Capex IM sets out the criteria that we will take into account in considering Transpower's proposed grid output measures.<sup>45</sup>

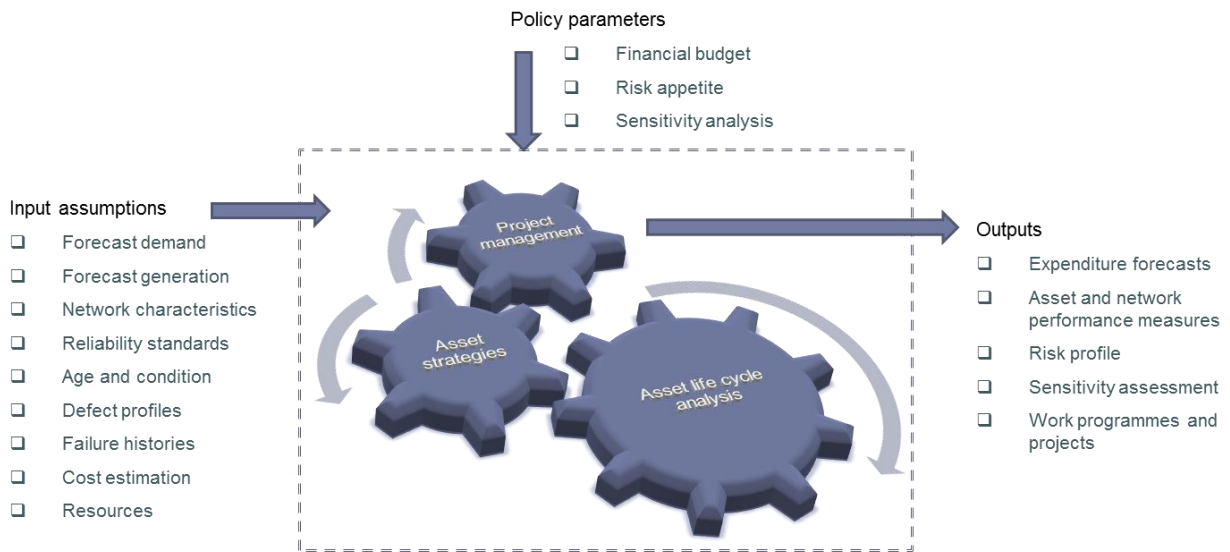
**We propose to assess the framework under which the forecast expenditure has been derived**

- 4.9 A major challenge for regulators in assessing regulatory proposals is to evaluate an expenditure forecast, which has taken considerable time to develop by experienced asset managers, through an efficient and effective process within a relatively short period of time.
- 4.10 We consider an appropriate approach to assessing Transpower's regulatory proposal is to assess the asset management framework under which the proposal was developed and the input assumptions relied upon.
- 4.11 Achieving the required levels of service, at least-cost, over the full life of the network assets requires expenditure to be planned and implemented through business processes that are based on sound grid strategies, asset management principles and methodologies. Figure 4.1 represents such an approach as a gearbox through which output forecasts and key performance measures are produced from a range of input assumptions and policy parameters.

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<sup>45</sup> Commerce Commission "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, Sections A4 to A6.

**Figure 4.1 Asset management approach**



Source: Strata Energy Consulting Ltd

- 4.12 In evaluating the proposal against the evaluation criteria we will assess the quality of the framework used and the extent to which Transpower has applied its framework in practice. GEIP provides a useful reference for the sound grid strategies, asset management principles and methodologies that a prudent transmission operator could be expected to have in place.
- 4.13 We consider this approach is appropriate as the extent to which Transpower's expenditure forecasts are efficient and prudent will depend upon the quality of its asset management framework and the appropriateness of the input assumptions.
- 4.14 We do not propose to undertake detailed reviews of each project and programme. An assessment of Transpower's proposal can be achieved through an assessment of a representative sample of projects and programmes. The extent to which the underlying strategies, policies and assumptions are robust and consistent with the Capex IM evaluation criteria will determine the extent to which we need to perform detailed reviews of project/programme expenditure and make our own judgements about what level of expenditure is appropriate.
- 4.15 As an example of how this works, in its proposal Transpower states that it considers that its expenditure forecasts are prudent. In reaching this conclusion Transpower states that it has placed reliance on the application of a top-down review and challenge of its expenditure forecasts. We consider a top-down challenge to forecasts produced on a bottom-up basis is very important and if done rigorously provides some assurance that expenditure forecasts are reasonable and prudent. If we can see evidence that that these challenges have been applied with appropriate rigour, this should reduce the extent and depth of direct testing that we need to perform to conclude that the forecast expenditure is appropriate.

- 4.16 Our consideration of efficiency would take into account the information available at the time. We expect Transpower to mitigate risks that lead to cost inefficiencies to the extent they are foreseeable and controllable. For risks that are not within Transpower's control, it should seek to minimise costs through planning and implementing a reasonable mitigation strategy. However, we also recognise that some of these risks may not be foreseeable at the time of approval.
- 4.17 We have appointed Strata Energy Consulting Limited (Strata) to assist with our evaluation. Strata will adopt the approach outlined above in its review of Transpower's RCP2 proposal.

Q1 To what extent do you consider the approach based on an assessment of Transpower's asset management framework is appropriate?

**What we propose to do if Transpower's proposed expenditure does not meet our standard of efficient and prudent costs**

- 4.18 Where we find the proposed expenditure is not justified, we consider the following options are available to us in determining the appropriate expenditure allowance:
- 4.18.1 taking account of Transpower's historical levels of expenditure;
  - 4.18.2 use a 'step and trend' approach similar to that used previously in setting the electricity distribution default price-quality path determination (DPP);<sup>46</sup> or
  - 4.18.3 undertake a more detailed analysis of the expenditure and determine an appropriate amount based on the information available.

Q2 To what extent do you think these alternative approaches are suitable?

**Our approach to assessing Transpower's grid output measures**

- 4.19 We will apply the Capex IM criteria in considering Transpower's proposed grid output measures and the relationship between service performance and revenue.
- 4.20 We have engaged Partna Consulting Group (Partna) to review the grid output measures developed by Transpower and how they compare with international practice in Australia and in the UK.<sup>47</sup> This work will be peer-reviewed by Strata. Strata's review will incorporate the consideration of the link between the grid output measures and expenditure.

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46 Commerce Commission, "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors", 30 November 2012, Attachment C.

47 Partna is also the secretariat for the ENA Quality of Supply and Incentives Working Group. The Commission is an observer on this group.

- 4.21 Submissions on this paper will also assist us in assessing the proposed grid output measures, by identifying the extent to which the proposed level of quality reflect consumer demands. Transpower has been consulting with its customers on customised reliability and availability targets for individual connection assets. We will consider whether Transpower's consultation process was adequate and resulted in targets that reflect aspects of performance that are valued by consumers.



## 5. Transpower's proposed expenditure allowance

### Purpose of this chapter

- 5.1 On 2 December 2013, we received the RCP2 proposal on expenditure and grid output measures from Transpower. This outlines the amount of base capex and opex that Transpower considers represents a prudent, least-cost proposal to provide an appropriate transmission service in RCP2.<sup>48</sup>
- 5.2 This chapter outlines Transpower's proposed base capex and opex for RCP2. We are interested in your views on what areas of this expenditure we should focus our efforts on when assessing Transpower's proposal.
- 5.3 The remainder of this chapter:
- 5.3.1 summarises Transpower's proposed base capex and opex allowance for RCP2;
  - 5.3.2 compares this expenditure with Transpower's historic expenditure performance; and
  - 5.3.3 highlights some specific issues we seek your feedback on.
- 5.4 Further information on Transpower's proposed expenditure allowance can be found in chapters 5 to 9 of Transpower's proposal and attachments.<sup>49</sup>

### Level and composition of the proposed base capex allowance

- 5.5 Transpower's focus for base capex in RCP2 is the management of its installed assets. During RCP1, Transpower has completed a number of major capital projects that have increased the capacity and security of the transmission system in some regions, most notably into and through Auckland. Completion of these projects means that Transpower's focus will move away from building new capacity towards lifecycle management of the installed assets.

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<sup>48</sup> Transpower's proposal does not include major capex. Transpower submits individual applications to the Commission for approval as the need for these projects arises.

<sup>49</sup> The relevant attachments to Transpower's RCP2 proposal are RT01, RT04 to RT07, PD01 to PD57, CR01 to CR04, IP01 to IP22, BR01 to BR03 and BR5 to BR07. These attachments are available at: <https://www.transpower.co.nz/about-us/industry-information/rcp2-submission-and-itp/rcp2-business-reports>.

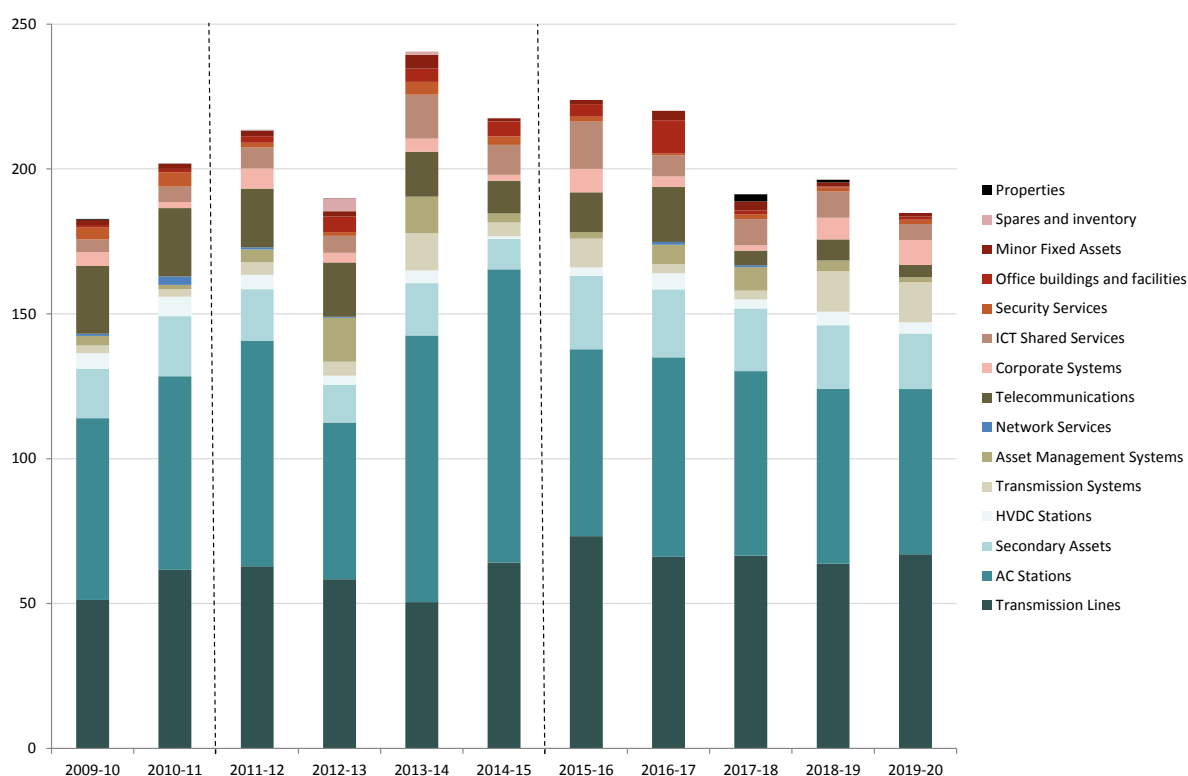
- 5.6 Following a period of gradual increase that commenced in 2009/10, base capex is forecast to remain relatively level for RCP2 and RCP3 in real terms. However, the underlying composition of total base capex is forecast to change. Transpower had forecast a trend of decreased grid asset expenditure counterbalanced by increased expenditure in non-network assets.
- 5.7 Transpower's base capex proposal for RCP2 is an increase of \$70m or 6% (in real terms) relative to its base capex for RCP1. Transpower's expected base capex for the five years 2010/11 – 2014/15 is forecast to be \$1,119m. Transpower's forecast base capex for RCP2 is \$1,189m.<sup>50</sup> We will review the accuracy of the 2013/14 forecast expenditure once we get the actual numbers for that year and will consider whether any material differences between that forecast and the actual numbers causes us to think differently about the RCP2 base capex proposal.
- 5.8 However, the proposed base capex for RCP2 may not be directly comparable with reported RCP1 expenditure. There are two factors that affect the comparability and it is not clear how these have been dealt with in the base capex values proposed by Transpower in its expenditure proposal. These factors are:
- 5.8.1 the change in definition of base capex from RCP1 (capex < \$5m) to RCP2 (capex < \$20m); and
  - 5.8.2 the omission of some base capex projects for RCP2 by treating them as major capex projects. For example, Transpower states that proposes to submit a number of reconductoring projects totalling \$240m for RCP2 for separate approval.<sup>51</sup> No reconductoring expenditure was included in major capex for the preceding five years.<sup>52</sup>
- 5.9 Figure 5.1 shows the trends in the make-up of the subcategories of base capex over a 10 year period (2009/10-2019/20).

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<sup>50</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, Table 19.

<sup>51</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 45.

<sup>52</sup> Similarly, the asset divestment programme would seem to pose issues with respect to the comparability of RCP1 and RCP2.

**Figure 5.1 Base capex by category, 2009/10-2019/20 (\$m)**

Note: For comparability, this graph excludes enhancement and development projects as the definition of base capex differs between RCP1 (<\$5m) and RCP2 (<\$20m). base capex is in real terms (2013 prices)

Source: Transpower Integrated Transmission Plan (RT06)

### Transpower's base capex performance in RCP1

5.10 Transpower's expected base capex for RCP1 is lower by \$54m (or 6.8% less) than its RCP1 allowance of \$794m. The most significant underspend is in the grid category (a \$67m projected underspend representing 11% of the grid capex allowance).<sup>53</sup> Transpower has provided explanations of the most significant components of the variance. Many of these appear to be driven by commissioning delays.<sup>54</sup>

5.11 Furthermore, at a portfolio level, there are material differences between forecast and actual expenditure. This means that, in practice, Transpower delivered a significantly different programme to the one on which its RCP1 proposal was based.

<sup>53</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 22.

<sup>54</sup> For example, Transpower reports that variances against plan for grid capex associated with AC Stations have been driven by substitutions (ie, substituting an unplanned activity for a previously planned activity) and commissioning delays (which are seen as "roll ins", as projects planned for commissioning prior to RCP1 were not in fact commissioned until RCP1, and "roll outs", as projects planned for commissioning during RCP1 are not now expected to be commissioned until RCP2). Similar performance can be observed within Transmission Lines (particularly in respect of tower painting) and Other Grid Capex portfolios. Reference - Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 24.

- 5.12 This forecast RCP1 performance against plan raises questions in respect of Transpower's ability to adequately forward plan work for a whole regulatory control period and to deliver against that plan. At this point, we consider that Transpower has developed some core asset management capabilities to mitigate this. However, it has yet to demonstrate that it can plan and execute a programme of work for a whole regulatory control period. This has raised concerns about the likelihood that Transpower's actual spend for RCP2 may diverge from its proposed capex.

Q3 At this stage do you have any comments on Transpower's proposed base capex expenditure that we should consider?

### Implications of Transpower's RCP1 initiatives

- 5.13 Transpower has provided information in its proposal on a number of explicit initiatives identified in RCP1. These initiatives include actions that would provide core business improvements in the areas of safety management, asset risk management, performance targets and cost estimation. Transpower states that it has completed the majority of the identified RCP1 initiatives with the status of the uncompleted projects given as 'ongoing'.<sup>55</sup>
- 5.14 We have been unable to identify the extent to which the benefits arising from the completed initiatives have been taken into consideration when establishing the expenditure forecasts for RCP2. Further, the implications of the uncompleted initiatives for the proposed expenditure are unclear.

Q4 What are your views on the progress that Transpower has made in delivering the initiatives identified in RCP1, in particular where these initiatives have been used to inform Transpower's plans and justify the resulting proposal of capex and opex allowances?

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<sup>55</sup> The initiatives that are not completed are to define a framework and principles for asset management and achieve PAS 55 compliance, to align contracted service delivery with Transpower's objective and move towards condition-based risk maintenance and to improve polices and processes for managing, monitoring and prioritising expenditure. Reference - Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 21, Table 2.

### **Extent to which Transpower's forecasts for replacement and refurbishment capex are efficient and based on GEIP asset management planning approaches**

- 5.15 GEIP requires that asset management strategies and forecast expenditure for asset fleets are determined within an integrated planning framework. This framework should systematically analyse the condition of ageing assets and optimise investment while maintaining service performance within targets. Such an approach includes development of robust asset health models for asset fleets and considers asset criticality within a wider risk management framework.<sup>56</sup>
- 5.16 Where Transpower has based its fleet expenditure forecasts on mature health assessment models, supported by high quality condition assessment and criticality data and tested by rigorous sensitivity analysis, we would expect to be able to develop confidence that the forecast expenditures would meet the evaluation criteria.
- 5.17 Transpower's proposal describes the work it has done (and continues to progress) during RCP1 to improve its asset management planning capabilities. The ongoing nature of this work complicates our assessment of Transpower's RCP2 proposal. For example, it is unclear how much of the RCP2 expenditure forecast has been developed using GEIP asset management approaches or how much is simply based on historical approaches.
- 5.18 For asset fleets where GEIP asset management approaches have been developed, we would expect that sensitivity analysis for varying levels of expenditure would have been completed. We would expect this to be a key component of Transpower's top-down reviews.<sup>57</sup>
- 5.19 For asset fleets where GEIP asset management approaches have not (yet) been developed, we may expect to have lower levels of confidence in the forecast expenditures.

**Q5** To what extent do you consider the current rate of progress for completing GEIP asset management processes for all asset fleets is appropriate?

**Q6** What assessment approaches should we consider where forecast expenditure is not based on GEIP asset management approaches?

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<sup>56</sup> One commercialised example of such a framework is the Condition Based Risk Management software platform, developed by EA Technology, known as CBRM 2.0.

<sup>57</sup> For example, the resulting changes in asset health indices, average asset age, probability and consequence of failure for variations in expenditure levels in both capex and opex.

### Transpower's proposal includes a productivity adjustment for base capex

- 5.20 In its proposal Transpower has made an adjustment of 7.5% from the bottom-up total capex to account for expected productivity improvements relating to grid capex and ICT. In particular, Transpower has explained that this adjustment addresses a combination of factors which should lead to productivity improvements in grid and ICT capex:
- 5.20.1 some identified needs met with alternative (lower cost) project solutions;
  - 5.20.2 efficiency savings in procurement and delivery processes;
  - 5.20.3 improved asset management and innovation allowing service performance targets to be met at lower cost;
  - 5.20.4 increased levels of asset divestment;
  - 5.20.5 improvements to cost estimation and risk management processes reducing the potential for cost overruns; and
  - 5.20.6 integration with other capex works (including major projects) leading to reduced outage costs and increased resource utilisation.

Q7 To what extent do you consider the proposed level of the productivity adjustment, in light of the rationale given by Transpower, to be reasonable?

### Level and composition of the proposed opex allowance

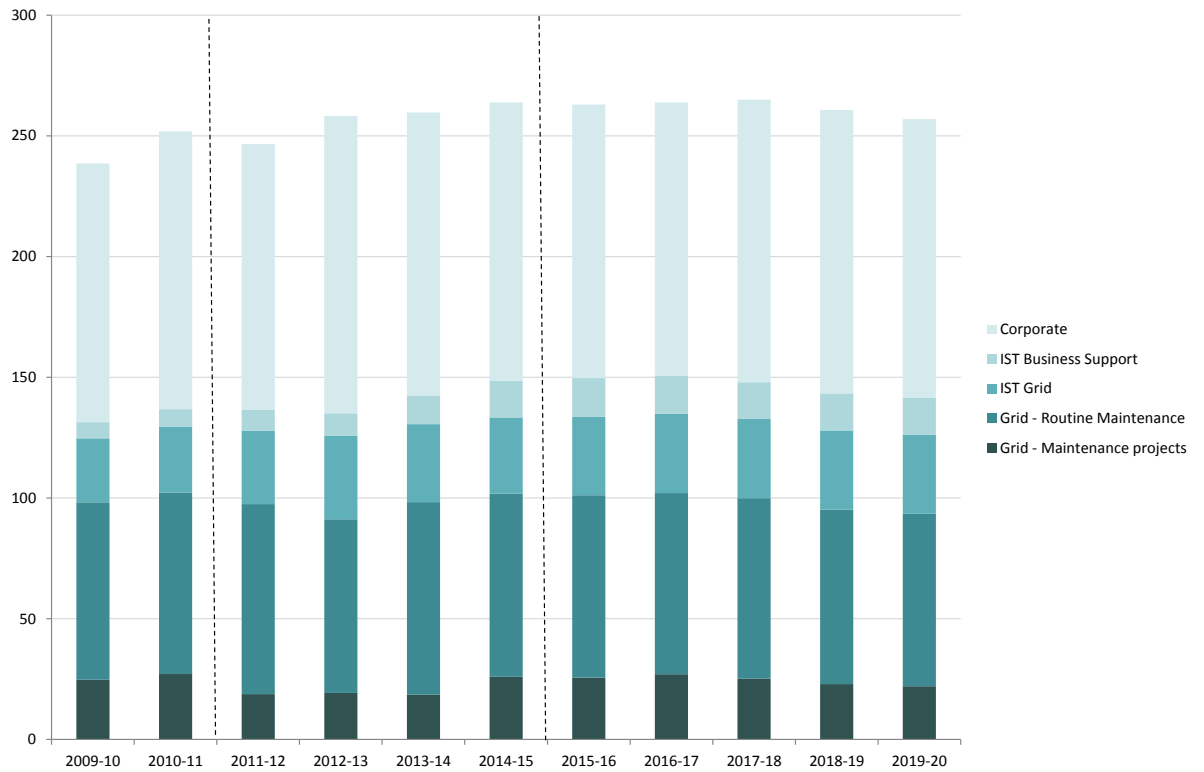
- 5.21 Transpower is proposing to spend \$1,309m on total opex during RCP2.<sup>58</sup> Transpower's opex proposal for RCP2 shows a profile that peaks in 2017/18 and reduces over the final two years of RCP2 (2018/19 and 2019/20).
- 5.22 The total opex proposed for RCP2 is essentially flat in comparison with the immediately preceding 5-year period. Transpower's proposal is 2% or \$28m higher than its opex in the immediately preceding 5-year period (2009/10 – 2014/15).<sup>59</sup>
- 5.23 Figure 5.2 shows the proposed and historic level of opex over time, including the main areas of expenditure.

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<sup>58</sup> In real terms (2012/13 prices). Transpower "RT01 - RCP2 Forecasts and Revenue", December 2013.

<sup>59</sup> Transpower "RT01 - RCP2 Forecasts and Revenue", December 2013.

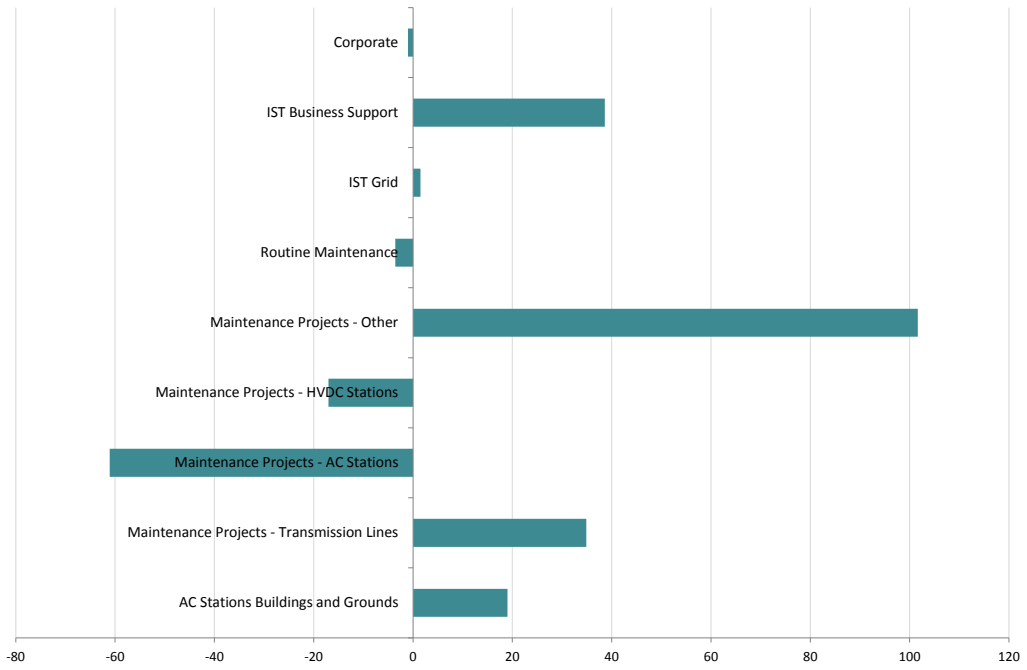
**Figure 5.2 Real opex by category, 2009/10 to 2019/20 (\$m)**



Source: Data sourced from Transpower "Integrated Transmission Plan"

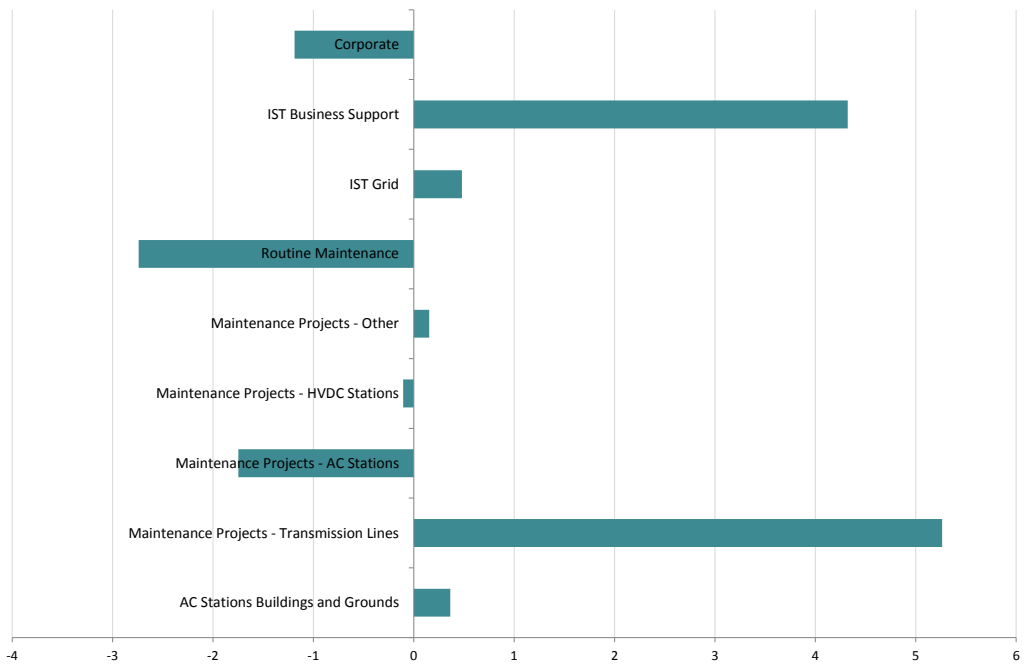
5.24 As shown in Figure 5.3 and Figure 5.4, variances are apparent at an opex category level. Transpower’s forecast opex indicates that maintenance expenditure may be shifting from substations to transmission lines. Transpower has also proposed a step change in expenditure on IST Business Support. The main driver for the step change is forecast increase in expenditure on ICT Shared Services that covers systems used across Transpower’s related businesses.

**Figure 5.3 Comparison of RCP1 and RCP2 average annual opex (%)**



Source: Data sourced from Transpower "RCP2 Forecasts and Revenue"

**Figure 5.4 Comparison of RCP1 and RCP2 average annual opex (\$m)**



Source: Data sourced from Transpower "RCP2 Forecasts and Revenue"



### Transpower's opex performance in RCP1

- 5.25 Transpower forecasts that for last three years of RCP1 (i.e., 2012/13-2014/15), in nominal terms it will spend \$29m (or 3.6%) less than its RCP1 opex allowance for those disclosure years.<sup>60</sup> We will review the accuracy of the 2013/14 forecast expenditure once we get the actual numbers for that year and will consider whether any material differences between that forecast and the actual numbers causes us to think differently about the RCP2 opex proposal.
- 5.26 The most significant underspend is in the grid category, where there is a \$48m projected underspend representing 14% of the grid opex allowance.<sup>61</sup> At the same time, Transpower forecasts that non-network ICT and Corporate opex will be overspent by \$30m against the RCP1 allowance for these categories by the end of RCP1.<sup>62</sup>
- 5.27 Transpower has provided a brief commentary on these variances in its RCP2 proposal. The variance indicates a significant underspend on the network and overspend on non-network (or network support) functions. This will require further detailed analysis.

Q8 At this stage do you have any comments on Transpower's proposed opex expenditure that we should consider?

- 5.28 Transpower points out that a significant portion of the underspend results from scope reductions in maintenance projects and it provides a variety of reasons for these.
- 5.29 In the absence of any adjustment, the IRIS would treat all underspent RCP1 opex as being a result of efficiency gains and would as a result attribute future revenue benefits to Transpower under the IRIS incentive mechanism.
- 5.30 Transpower proposes to voluntarily forego the portion of the IRIS benefit it ascribes to RCP1 opex project scope reductions. Transpower forecasts underspend against its RCP1 opex allowance of \$29m on a nominal basis, which could result in it retaining an IRIS benefit valued at \$46m over RCP1 and RCP2.<sup>63</sup> It proposes to make revenue adjustments to its forecast MAR in RCP2 in order to forego \$19m of the estimated \$46m benefit.

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<sup>60</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 35.

<sup>61</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 30.

<sup>62</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 33.

<sup>63</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, section 4.4.5.

- 5.31 In our evaluation of the RCP2 expenditure proposal and in our setting of the forecast MAR for RCP2 we will examine the accuracy of Transpower's forecast IRIS adjustment calculation and review the implications of the RCP1 underspend. It will be important to understand the causes of the underspent amount and whether that has any implications for Transpower's ability to deliver against its proposed expenditure for RCP2.

Q9 Do you agree that the portion of the benefit that Transpower proposes to forego is appropriate in the circumstances?

Q10 Have you any comment on Transpower's reasoning for voluntarily foregoing part of the IRIS benefit?

### **Transpower's proposal does not include a productivity adjustment for opex**

- 5.32 Transpower does not consider an adjustment for expected productivity gains in opex is appropriate. It expects that achieving capex productivity improvements will increase cost-pressure on Departmental and ICT opex due to the interdependence between capex and opex and the additional analysis and oversight needed to drive productivity improvements.<sup>64</sup>

Q11 Do you agree that it is inappropriate to make a similar adjustment for opex?

### **Cost escalation forecasts**

- 5.33 Transpower uses forecasts of the changes in the cost of inputs to convert its constant price expenditure forecasts (expressed in 2012/13 dollars) into the nominal expenditure forecasts used in its proposal. The identified costs for cost escalation cut across both capex and opex, with labour costs making up the largest category. In reaching these forecasts for Transpower, NZIER:

5.33.1 identified cost items for escalation based, amongst other things, on cost materiality.<sup>65</sup> NZIER assessed cost materiality in terms of the value at risk from cost escalation;

5.33.2 selected indices or reference prices to understand how cost inflation has occurred historically and how it might then change over RCP2. The chosen indices or reference prices for each cost item are then forecast to derive the cost escalation factors; and

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<sup>64</sup> Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 46.

<sup>65</sup> NZIER also considered Transpower's RCP1 proposal, costs commonly escalated by Australian transmission operators, and the perceived likelihood of cost inflation, as well as the views of Transpower.

- 5.33.3 used different methodologies to forecast different types of cost escalation. In some instances NZIER chose to use third-party forecasts of cost escalation.<sup>66</sup>
- 5.34 A summary of Transpower's proposed cost escalation and foreign exchange forecasts are contained in Table 5.1 below.

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<sup>66</sup> For metals prices NZIER used futures prices, market consensus and World Bank forecasts. For Labour Cost Indices (LCI) and the Producer Price Index (PPI) NZIER used econometric models. NZIER forecasts the USD/NZD exchange rate over RCP2 by taking an average of NZ banks forecasts. The banks forecasts reach out to 2017, and NZIER extrapolates the 2017 forecast of the USD/NZD rate out to 2020. NZIER notes its CPI forecasting approach is consistent with the requirements of the Capex IM.

**Table 5.1 Summary of Transpower's proposed cost escalation and foreign exchange forecasts (2013-20)**

Cost item	Applied to	Forecast measure	Methodology/source	Average USD annual growth (USD) (%)	Average annual growth (NZD) (%)
<b>Labour</b>					
Grid opex labour	Labour for routine maintenance and maintenance project portfolios	LCI all groups	Econometric time series model	n/a	2.2
Grid base capex labour	Labour for grid base capex portfolios	LCI Construction	Econometric time series model	n/a	2.2
IST Labour	Labour for IST base capex and opex portfolios	LCI Professional and technical Services industry	Econometric time series model	n/a	2.5
Departmental Labour	Departmental labour – excludes labour capitalised to projects	LCI for Electricity, Gas and Water industry	Econometric time series model	n/a	2.2
<b>Metals</b>					
Copper	Base capex and maintenance projects	LME Copper price (USD)	Futures prices and average of market forecasts	-1.4	1.2
Aluminium	Base capex and maintenance projects	LME Aluminium price (USD)	Futures prices and average of market forecasts	3.4	6.1
Steel	Base capex and maintenance projects	Hybrid of World Bank steel price index and Asia Hot-Rolled Coil (USD)	Median of market forecasts	4.8	7.6
Other metals	Base capex and maintenance projects	World Bank Metals and Mineral Price Index (USD)	World Bank Forecast	0.5	3.2
<b>Other</b>					
Construction	Base capex and maintenance projects	PPI – Outputs, for Heavy and Civil Engineering industry	Econometric time series model	n/a	3.9
IST base capex and opex portfolios	IST base capex and opex portfolios	All groups CPI	Extrapolation of RBNZ forecast	n/a	2.0
Foreign exchange	Used to Convert USD forecasts into NZD forecasts	USD/NZD market exchange rate	Average of NZ bank's forecasts and extrapolation	n/a	-2.5

Note: LCI: Labour Cost Index, IST: Information, services and technology, LME: London Metals Exchange, PPI: Producer Price Index

Source: NZIER report to Transpower "Cost escalation forecasts - Frameworks, forecasts and forecast methods" October 2013

- Q12 Do you agree with the cost items chosen for escalation?
- Q13 Do you agree with the choice of indices or reference prices used to escalate the selected cost items?
- Q14 Are there alternative sources of information that may assist in evaluating the choice of indices or reference prices?
- Q15 Do you agree with the methodologies used to forecast cost escalation?
- Q16 Is it expected practice for forecast hedging transactions to be taken into account when forecasting cost escalation?
- Q17 Are there alternative forecasting methodologies or forecasts that may provide robust alternative cost escalation forecasts?

### **Linkage between expenditure and grid output measures**

- 5.35 In reviewing Transpower's expenditure we would expect to see an explicit linkage between its expenditure and the expected level of service delivered to consumers (captured by Transpower's proposed grid output measures). Transpower has stated that its long term targets are based on the performance it estimates could be delivered in 2025 given the make-up of the grid and planned asset management improvements. At this stage in the review process the link between expenditure, the level of service delivered to consumers, and the quality cost trade-off made is unclear. We intend to undertake further work in this area.

- Q18 Do you have any comments on the link between expenditure and service delivery?

### **Transpower requests for further expenditure allowances**

- 5.36 We have been asked by Transpower to consider IM amendments to allow for the costs of indemnities under the recently-amended Consumer Guarantees Act (CGA) and to fund baseline demand response activities. Transpower's request in relation to the CGA is discussed further in paragraphs 6.24 to 6.27.
- 5.37 Transpower considers expenditure for baseline demand response activities should be treated as opex and has suggested the progressive approval of expenditure for demand response activities as it becomes justified on net market benefit terms. Transpower argues in its IM amendment request that baseline expenditure for demand response activities cannot be accommodated within the existing provisions for approving major capex non-transmission solutions. We do not know at this stage what the proposed level of expenditure for RCP2 might be and are seeking further information from Transpower.

5.38 We will consider whether this request should be included in the consultation on IM amendments necessary to give full effect to the IPP for RCP2. Alternatively, it may be possible to deal with the request through the IPP, either in setting the opex allowance or in the revenue-setting mechanisms in the IPP, such as a contingent expenditure allowance.

Q19 Do you agree that we should set a baseline demand response expenditure opex allowance?

Q20 Do you agree that we should be considering an approach to approving contingent expenditure if the proposed expenditure is material but has a high level of uncertainty?

## 6. Transpower's proposed grid output measures and associated incentive scheme

### Purpose of this chapter

- 6.1 Under the Capex IM, Transpower is required to propose grid output measures. These grid output measures generally reflect the quality of service Transpower proposes to provide to consumers (also referred to as service performance measures in Transpower's proposal).<sup>67</sup> Transpower is also required to link a proportion of its revenue with the delivery of these grid output measures. We must then determine the grid output measures that will apply during RCP2 and the proportion of revenue that is linked to these outputs.<sup>68</sup>
- 6.2 This chapter outlines the grid output measures Transpower has proposed for RCP2 and how it intends to link its performance on the grid output measures with its revenue. We seek your views on whether the measures and levels of the grid output measures proposed are appropriate, and to what extent Transpower's revenue should reflect its performance in this area.
- 6.3 Further information on these grid output measures and the associated incentive mechanisms can be found in chapter 10 of Transpower's RCP2 proposal and attachments BR04 and RT03 of Transpower's proposal.<sup>69</sup>

### Transpower's performance in RCP1

- 6.4 To help us to assess the appropriateness of the grid output measures and the targets set for RCP2, we have examined Transpower's performance during RCP1 against the performance measures set for RCP1.
- 6.5 Transpower's performance in RCP1 indicates that it has largely outperformed the targets set. The RCP1 quality measures each relate to an aspect of network performance and Transpower has to this point met its targets in all but one category (unplanned HVAC circuit unavailability in 2011/12). Table 6.1 summarises Transpower's performance against the measures established for RCP1.

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<sup>67</sup> The grid output measures may also include other aspects of service which are not directly experienced by consumers.

<sup>68</sup> Commerce Commission, "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, clause 2.2.2(1).

<sup>69</sup> Available at <https://www.transpower.co.nz/about-us/industry-information/rcp2-submission-and-itp/rcp2-business-reports>.

**Table 6.1 Grid output performance in RCP1**

Measure	Target	Performance
<b>Number of loss of supply events &gt; 0.05 system minutes</b>		
2011/12	21	19
2012/13	19	12
<b>Number of loss of supply events &gt; 1.0 system minutes</b>		
2011/12	3	2
2012/13	2	2
<b>HVAC unplanned unavailability (%)</b>		
2011/12	0.056	0.064
2012/13	0.054	0.032
<b>Total impact of unplanned interruptions - system minutes</b>		
2011/12	16.69	14.45
2012/13	16.69	7.62

*Source: Transpower "2011/12 Annual Regulatory Report", page 64 and "2012/13 Annual Regulatory Report, page 49.*

6.6 These results seem to reflect a generally satisfactory performance stage in RCP1 so far. However, Transpower has reported a North Island wide Automatic Under Frequency Load Shedding (AUFLS) loss of supply incident in December 2011 amounting to 6.9 system minutes of supply interruption. A further AUFLS initiated interruption has occurred in 2013/14 that has not yet been captured in an annual quality performance report.

#### **Grid output measures proposed by Transpower for RCP2**

6.7 Transpower has developed a number of new grid output measures for RCP2. These represent a change to how Transpower relates to the market and its customers. In its expenditure proposal Transpower states that it has selected measures:

- 6.7.1 that reflect the service received by its customers;
- 6.7.2 are tailored, based on the criticality of the points being served; and
- 6.7.3 contain targets that are forward looking and based on consumer's expectations, rather than on historical performance.

6.8 In developing the proposed measures, Transpower states that it has undertaken a number of consultation rounds with stakeholders, including workshops and seeking feedback from submitters.

**Q21 Are there other factors that Transpower could have considered to improve the consultation process?**



Q22 Are there any important and valuable aspects of consumer service quality overlooked in Transpower's consultation?

6.9 Transpower has proposed three grid performance measures, two asset performance measures and six other measures. For each measure, Transpower has developed generic targets for each point of service category (POS). These measures and the proposed targets are summarised in Table 6.2 and Table 6.3, along with Transpower's historic performance against each measure.

**Table 6.2: Transpower's proposed grid output measures and targets**

Grid output measure	Number of POS	Historic average <sup>70</sup>	Long term target	RCP2 target
<b>GP1: Number of interruptions (per POS per annum)</b>				
High Priority	23	0.30	0.1	0.22
Important	43	0.30	0.2	0.25
Standard	78	0.42	0.5	0.42
Generator	40	0.27	0.5	0.27
N-security	46	1.5	by POS	1.46
<b>GP2: Average duration of interruptions (minutes per annum)</b>				
High Priority	23	89	30	65
Important	43	161	30	100
Standard	78	72	60	65
Generator	40	177	60	130
N-security	46	93	60	80
<b>GP3: P90 longest durations (minutes per annum)</b>				
High Priority	23	137	60	100
Important	43	341	90	240
Standard	78	131	130-240	130
Generator	40	436	240	350
N-security	46	215	215-240	215

Source: Transpower "Service Performance Measure" October 2013, page 31

<sup>70</sup> Average for 2006/07 to 2012/13.

**Table 6.3 Asset performance measures and targets**

Asset performance measure	Number of circuits	Historic average <sup>71</sup>	Long term target	RCP2 target
AP1: HVDC availability (%)	Poles 2 and 3	97.3	98.50	98.50
AP2: HVAC availability (%)	23	99.0	99.60	99.60

Source: Transpower "Service Performance Measure" October 2013, page 31

6.10 Transpower has defined five categories of customer points of service for the grid performance measures. These are intended to reflect the different needs and expectations of its customers and the relative impact of interruptions at different POS. Transpower has based these categories on critically levels and assigned each of its POS to one of these categories.<sup>72</sup>

6.11 Transpower states that the targets reflect customer expectations.<sup>73</sup>

- Q23 To what extent do the proposed measures reflect stakeholder feedback on aspects of Transpower's performance that customers' value?
- Q24 If the proposed measures do not adequately reflect customer demands, what additional measures do you consider would be most valuable to consumers (for example, energy not supplied, interruptions caused by AUFLS)?
- Q25 To what extent do the criteria that Transpower has used to determine the criticality of the POS reflect feedback from stakeholders?
- Q26 To what extent do you consider that monitoring the performance of 23 circuits will provide a reasonable level of information on the availability of HVAC circuits?
- Q27 To what extent do you consider that Transpower's selection of the HVAC circuits for its HVAC availability measure is adequate and appropriate (AP2)? If you consider that Transpower should also include other circuits, please specify which ones.
- Q28 To what extent do you consider that the *RCP2 targets* proposed by Transpower reflect the level of performance demanded by the customers?
- Q29 To what extent do you consider that the *long term targets* proposed by Transpower reflect the level of performance demanded by consumers?

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<sup>71</sup> Average for 2006/07 to 2012/13.

<sup>72</sup> Transpower has explained the criteria it used to assign criticality levels to POS in Transpower "Service Performance Measure" October 2013, section 8.4.

<sup>73</sup> See Transpower "Expenditure Proposal - Regulatory Control Period 2", December 2013, page 22 for a list of aspects of performance that Transpower considers matter to its customers.

- 6.12 Transpower has not proposed any asset capability grid output measures or asset health grid output measures. These are optional measures that Transpower could have proposed at its discretion.
- 6.13 We consider that, compared to practices in overseas jurisdictions, Transpower's proposal is relatively weak on the customer service related measures. Transpower has not included overall customer satisfaction as a measure. This can include such aspects as:
- 6.13.1 quality of connection design solutions and support;
  - 6.13.2 timeliness of planning processes associated with connections;
  - 6.13.3 performance on the handling and resolution of complaints and reporting;
  - 6.13.4 performance and reliability of notifications for planned interruptions; and
  - 6.13.5 time taken to respond to written requests for information.<sup>74</sup>

Q30 Do you consider that reporting on additional customer service measures would be appropriate, and if so, which measures would be most valuable?

#### **Grid output adjustment for RCP2**

- 6.14 Under the Capex IM Transpower is required to link the proposed grid output measures to the amount of revenue it receives.<sup>75</sup> This 'grid output adjustment' means that Transpower is rewarded for improvements in the grid output measures through higher revenue. The adjustment also means Transpower may also have its revenue reduced if it fails to meet the grid output measure targets. The incentive scheme is intended to incentivise Transpower to provide services at a quality that reflects consumers demand for an efficient cost.
- 6.15 Transpower has proposed including targets for the following grid output measures in the incentive scheme:
- 6.15.1 number of interruptions;
  - 6.15.2 average duration of interruptions;
  - 6.15.3 duration of P90 (i.e., longest) interruptions;

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<sup>74</sup> This type of information is utilised in the UK. For example under RIIO, Ofgem have set incentives of +/- 1% on customer satisfaction in order to reflect a range of outcomes for customers that are not included in other output measures. See Ofgem "Strategy for the next transmission price control – RIIO-T1 Outputs and Incentives", 31 March 2011, pages 27 to 30.

<sup>75</sup> Commerce Commission "Transpower Capital Expenditure Input Methodology Determination [2012]" NZCC 2, 31 January 2012, clause B3.

6.15.4 availability of HVDC; and

6.15.5 availability of HVAC.

6.16 Therefore Transpower's revenue will, to some extent, be dependent on its performance in these areas.

*The amount of revenue Transpower proposes should be at risk*

6.17 Transpower proposes that up to 1% of its revenue is at risk under this incentive. This means that it may be penalised by up to approximately \$10m a year if it fails to meet minimum quality standards set, or receive up to an additional \$10m in revenue if these standards are exceeded.<sup>76</sup> Given the grid output measures set, the amount of revenue at risk is driven by:

6.17.1 the value placed on each incident, such as an interruption (referred to as the 'incentive rate'); and

6.17.2 the range of performance that is subject to the incentive scheme (the upper and lower bands of this range is referred to as the 'cap' and the 'collar' respectively).

*The incentive rate*

6.18 The incentive rate is the amount of revenue Transpower may receive or be penalised for as a result of an incident. The value varies for the different grid output measures and for the different categories of criticality. The differences are intended to reflect the relative importance of different aspect of service and the costs to different types of customers. Table 6.4 summarises Transpower's estimate of the value of lost load per interruption.<sup>77</sup>

**Table 6.4 Implied cost to customers per 30 minute interruption**

Category of POS	\$k
High priority	429
Important	280
Standard	162

*Transpower "Service Performance Measure" October 2013, page 33*

<sup>76</sup> Transpower "Service Performance Measure" October 2013, page 30.

<sup>77</sup> This is based on an average system-wide load of 4,500MW, a value of lost load of \$20,000 MWh and an interruption of 30 minutes.

- 6.19 Transpower has not provided an estimate of the cost of unavailability of the HVDC and HVAC services.<sup>78</sup> It has placed a value of \$1m per percentage of HVDC availability and \$2.5m per percentage of HVAC availability.<sup>79</sup>

Q31 To what extent does the incentive rate appropriately reflect the cost to consumers of these interruptions?

Q32 What alternative sources of information may assist in evaluating the values proposed by Transpower?

- 6.20 As shown in Table 6.5 below, Transpower's analysis indicates that the incentive rate captures between 39%-83% of the value of the lost load per 30 minute interruption. It is unclear to what extent Transpower considers the incentive rate reflects the cost to consumers of losses and constraints for the HVDC and HVAC systems.

**Table 6.5 Proportion of value of load reflected in the incentive scheme**

Category of POS	% at risk under incentive scheme
High priority	83
Important	76
Standard	39

Source: Transpower "Service Performance Measure" October 2013, page 33

Q33 To what extent should Transpower be exposed to the cost of the interruptions to consumers?

Q34 To what extent should individual consumers be compensated for Transpower's failure to meet grid output measure targets, and how?

### *The cap and collar*

- 6.21 The extent to which Transpower is rewarded or penalised is subject to a 'cap' and a 'collar'. This establishes a range of quality for which Transpower may be penalised or rewarded. Transpower does not receive any additional reward or penalty if quality falls outside this range.

<sup>78</sup> Energy Link estimates that the overall cost of losses and constraints is \$150m a year and that \$120m of this represent losses across the HVAC system. Transpower "Service Performance Measure" October 2013, page 33.

<sup>79</sup> Transpower "Service Performance Measure" October 2013, page 33.

6.22 The purpose of the cap and collar is to ensure that the financial impact of each incentive is appropriate, and Transpower is not overly rewarded or penalised. Table 6.6 summarises the target, cap and collar for each performance measure included in the incentive scheme. In their proposal, Transpower notes that the spread between the cap and collar is based on a review of historic performance and their view of the likely range of performance.

**Table 6.6 Caps and collars**

Grid output measure	Cap	RCP2 target	Collar
<b>GP1: Number of interruptions (per annum)</b>			
High Priority	2	5	8
Important	6	11	16
Standard	16	33	50
Generator	2	11	20
N-security	55	67	80
<b>GP2: Average duration of interruptions (min)</b>			
High Priority	30	65	100
Important	365	100	135
Standard	30	65	100
Generator	80	130	180
N-security	60	80	100
<b>GP3: P90 longest durations (min)</b>			
High Priority	40	100	160
Important	170	240	310
Standard	50	130	210
Generator	200	350	500
N-security	90	215	340
<b>Asset performance</b>			
AP1: HVDV availability (%)	99.5	98.5	97.5
AP2: HVAC availability (%)	100	99.6	99.2

Source: Transpower "Service Performance Measure" October 2013, page 31.

**Q35 To what extent do you consider this range of performance is appropriate?**

### *Other proposed grid output measures*

- 6.23 Transpower has elected not to link its revenue to other grid output measures it intends to report on for RCP2 (referred to by Transpower as 'Other Measures'). These include the time taken to provide information following unplanned interruptions, the extent to which customers are placed on 'N' security and the number of momentary interruptions.

Q36 Is it appropriate to include these other aspects of service quality in the grid output adjustment, and if so, how should Transpower be incentivised in relation to performance in these areas?

### **The costs of indemnities for quality of service under the CGA**

- 6.24 Transpower has requested an IM amendment that would enable it to 'pass-through' or otherwise recover in its pricing the costs of new indemnity obligations arising under the CGA. The Act recently implemented a new guarantee for the quality of electricity and gas services, and a new liability provision for electricity lines services, including electricity transmission services.<sup>80</sup>
- 6.25 We have not at this stage resolved whether or not to make an IM amendment. However, our initial view is that the treatment of this cost as a pass-through cost is not appropriate and we would need to be persuaded otherwise before allowing this amendment.
- 6.26 In setting the grid output measures and the opex allowance for RCP2 we will consider instead whether an allowance for the CGA indemnity amounts should be allowed. The treatment of these costs will likely have an impact on the incentive effects intended by the CGA or by Part 4.<sup>81</sup> Specifically, allowing Transpower to pass-through these costs directly to consumers would weaken incentives for Transpower to efficiently manage its costs and to provide quality that reflects consumer demands.
- 6.27 At this stage the total of Transpower's RCP2 indemnity amounts is unknown and the expense may be difficult to estimate. It is not certain whether Transpower will be able to manage or contest what could turn out to be an accumulation of relatively small claim amounts for any breach of quality.

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<sup>80</sup> The new section 46A of the CGA allows an electricity retailer to seek an indemnification from the lines company for the costs of remedying a breach of quality where the breach was caused by the lines company. The liability for a breach may rest with Transpower in some cases.

<sup>81</sup> Our objective is not to undermine the policy intent of the CGA amendment, and to ensure the incentive effects are consistent and complementary to the CGA.

Q37 What is your view on the materiality of Transpower's exposure to the new indemnity obligations arising under the CGA?

Q38 Do you have a preferred view on how Transpower's exposure to the (at this time) unknown cost impacts of the amendment to the CGA should be treated for RCP2?



## Attachment A: Summary of proposed key features of the IPP for RCP2

- A1 This attachment summarises the proposed key features of the IPP for RCP2. These are based on the IPP that applied in RCP1 and the Capex IM.
- A2 At this time, we propose:
- A2.1 a five year regulatory period, from 1 April 2015 to 31 March 2020;
  - A2.2 the initial maximum allowable revenues will be the forecast MAR set in October 2014;
  - A2.3 annual wash-ups of the MAR against Transpower's actual revenues;
  - A2.4 annual resets of the forecast MAR. This will include the results of MAR wash-ups, the results of the incentive mechanisms and the effects of approvals of major capex projects that have not been taken into account for the initial MAR;
  - A2.5 an EV account that Transpower will maintain to enable the Commission and others to track all EV adjustments to the forecast MAR;
  - A2.6 the quality measures will consist of the grid output measures set in October 2014;
  - A2.7 the IPP will specify the caps, collars, targets and incentive rates for the grid output measures;
  - A2.8 the major capex incentive rate and the base capex incentive rate will be based on our evaluation of Transpower's RCP2 expenditure proposal;
  - A2.9 Transpower will provide an annual report of compliance with the price path. This will be supplied to us and published in the October following each disclosure year. The compliance report will be certified by Transpower's directors and will be required to be audited;
  - A2.10 Transpower will be required to supply to us and publish a progress update on the expenditure and performance measures set out in its RCP2 expenditure proposal. We propose this is provided at the end of the 2015/16 disclosure year;<sup>82</sup> and

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<sup>82</sup> This is the approximate mid-point of the period between the submission of the RCP2 proposal and when the RCP3 proposal will be due to us from Transpower.

A2.11 Transpower will calculate and publish its updated forecast MAR for each year. This will be published in October of each year.