ISBN no. 978-1-869453-38-1
Project no. 14.16/14068

Public version

Amending Transpower's allowance and outputs for the North Island Grid Upgrade Project

Our proposed approach and issues to consider

Date: 29 November 2013

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Contents

1. Why we have written this paper

1.1 On 30 September 2013, Transpower New Zealand Limited (Transpower) applied to us to amend the allowance that was approved for the North Island Grid Upgrade Project (NIGU Project), and certain outputs that Transpower was required to deliver.[1]

Purpose of this paper

1.2 We have written this paper to:

1.2.1 provide some context for Transpower's application;

1.2.2 explain how interested persons can inform our assessment of Transpower's application;

1.2.3 explain, and seek feedback on, our proposed approach for assessing Transpower's application;

1.2.4 briefly summarise, and seek feedback on, Transpower's application, including the key factors identified by Transpower that led to the application; and

1.2.5 seek your views on the areas we may analyse further to assess whether Transpower planned and delivered the NIGU Project efficiently.

1.3 We invite you to provide your views on this paper.

1.3.1 Submissions are due by 17 January 2014.

1.3.2 Cross submissions are due by 31 January 2014.

1.3.3 For further details on how to make a submission, please refer to paragraph 1.16.

[1] The allowance is the maximum amount that Transpower can recover from consumers from a major capital expenditure (major capex) project. In this paper "allowance" reflects the term "major capital allowance" as set out in Commerce Commission, *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, 31 January 2012, clause 1.1.5 (2).

Transpower has applied to us to amend its North Island Grid Upgrade Project approval

1.4 Transpower has recently completed upgrading parts of its North Island network, known as the NIGU Project.

1.5 Transpower has applied to us for an amendment to the allowance originally approved for the NIGU Project. Transpower seeks to increase the allowance to $894 million from $824 million.[2] However, Transpower states that it intends to recover $876 million of expenditure.[3]

1.6 The allowance of $824 million is expressed as the sum of forecast nominal expenditure over the project life, plus interest during construction, assuming a project completion date of 2011. Transpower's actual expenditure of $894 million is calculated as the sum of actual nominal expenditure, plus interest during construction, over the duration of the project which was commissioned in October 2012.[4]

1.7 The way expenditure has been calculated / recognised is consistent with the definition of 'major capital allowance' in the Transpower Capital Expenditure Input Methodology Determination (Capex IM)[5] and how the value of commissioned assets enters the regulatory asset base (RAB).

1.8 Under the input methodologies, assets do not enter RAB until commissioned. Therefore, in order for Transpower to earn a return on its expenditure, capital expenditure accrues interest during construction until the point that the asset is commissioned and enters RAB.

1.9 Unless otherwise stated, all expenditure in this paper is expressed in nominal terms, ie, as cash flows occurred.

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2 The former Electricity Commission determined the original maximum allowance for the project as part of its approval in July 2007. We have since assumed responsibility for projects approved by the Electricity Commission.

3 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, appendix 2.

4 Setting the allowance based on a targeted completion date creates incentive for Transpower to commission a project at the agreed time. Holding all else equal, the longer a project takes to complete the greater the chance the allowance will be exceeded because of inflation.

5 Commerce Commission, *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, 31 January 2012.

1.10 The $894 million that Transpower is seeking as the amended allowance:

1.10.1 represents what Transpower considers was reasonable and efficient expenditure to deliver the project;[6]

1.10.2 excludes a $51.1 million loss on re-sale of the properties purchased freehold by Transpower to obtain required easements. Transpower is not allowed to treat the gains or losses on purchase and sale of property as regulated income or expenses;[7]

1.10.3 excludes certain investigation costs incurred in the 2004/05 year by Transpower which it has expensed rather than added to its RAB;

1.10.4 excludes a net gain of $2.1 million for the cost of and income from dismantling the Arapuni-Pakuranga 110kV line which has been expensed. Transpower's original approval included $5 million for these dismantling costs;[8]

1.10.5 reflects the reduced set of outputs that Transpower delivered for the project; and[9]

1.10.6 reflects the actual consumer price index (CPI) and foreign exchange (FX) rates that affected the NIGU Project.

1.11 We have included a summary of Transpower's application as Attachment A. This summary does not aim to replace or replicate Transpower's application. Transpower's full application can be found on our website.[10]

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6 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p. 4, paragraph 3.

7 Commerce Commission, *Transpower Input Methodologies Determination [2012] NZCC17,* 29 June 2012, clause 2.2.7.

8 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Amended proposal, Application for approval*, 20 October 2006, p.6.

9 Refer Chapter 5 for an outline of the output amendments Transpower has made.

10 http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-major-capital-proposal/amending-the-allowance-and-outputs-for-the-north-island-grid-upgrade-project/.

Why Transpower needs our approval to amend the allowance and the outputs for the project

1.12 Transpower must seek our approval to amend the components of approved major projects, including the allowance for a project and the outputs that Transpower is required to deliver.

1.13 The rules relating to Transpower's major capital investments are explicitly addressed in the Capex IM.

1.14 The Capex IM requires Transpower to seek approval for major capital projects, and to deliver these projects to a set of approved components in order to recover the full cost of its major capital investments from consumers.[11]

1.15 If Transpower does not manage spending within the maximum allowance, or does not deliver the outputs for a project, it has to apply to us to amend the respective component.

1.16 If we decide not to approve the requested amendment, Transpower will not be able to recover the full cost of its investment.

1.17 If the requested allowance amendment for the NIGU Project was not approved, Transpower would be unable to recover approximately $150 million from consumers via the overspend adjustment. This figure is based on the difference between the actual costs of the project, and the original allowance adjusted for disparities between the actual CPI and FX rates and the forecast rates that were used to calculate the original allowance.[12] This difference of $150 million also assumes that Transpower delivered all of the approved outputs for the project.[13]

1.18 When the amount that was originally approved on the NIGU Project is adjusted for CPI and FX rates, the overspend totals $150 million. The difference between the actual costs of the NIGU Project and the allowance approved by the Electricity Commission using forecasts of CPI and FX rates totals $70 million.

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11 Commerce Commission, *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, 31 January 2012, clause 3.3.3 (5).

12 Transpower has advised that CPI and FX rate disparities total $80.3 million; $50.8 million for CPI and $29.5 million for FX. Transpower New Zealand Limited, *NIGUP – CPI and FX adjustments,* MS Excel workbook, 26 November 2013.

13 We discuss in paragraph 2.8.2 how the allowance can be lowered if Transpower proposes to deliver a reduced scope of outputs than that originally approved.

We are required to make a decision on the output amendments and allowance amendment

1.19 We are making a decision on the output amendments and allowance amendment proposed by Transpower.

1.20 We must act within the scope of the powers given to us by the Commerce Act and follow all relevant input methodologies. When evaluating Transpower's application to amend the allowance and outputs of the NIGU Project, we cannot:

1.20.1 reconsider the decision to approve the NIGU Project made by the former Electricity Commission;

1.20.2 change the way in which Transpower's assets are valued in the regulated asset base (RAB); or

1.20.3 adjust Transpower's weighted average cost of capital (WACC).

What we discuss in this paper

1.21 The remaining chapters of this paper set out:

1.21.1 an outline of our proposed assessment approach to assess Transpower's application (Chapter 2);

1.21.2 the key factors identified by Transpower that led to its application (Chapter 3);

1.21.3 some potential areas we have identified for further consideration (Chapter 4); and

1.21.4 the output amendments proposed by Transpower (Chapter 5).

Invitation to provide your views

1.22 We invite you to provide your views on this paper, or any other issue that we should consider when assessing Transpower's application. Submissions are due by 5:00 pm on 17 January 2014.

1.23 We will publish submissions on our website and invite cross submissions on matters raised in submissions. Cross submissions are due by 5.00 pm on 31 January 2014. We do not expect to be able to take into account any material provided after these due dates.

1.24 All submissions should be sent by email to regulation.branch@comcom.govt.nz. Please title the email '[your organisation name] submission on issues paper concerning Transpower's NIGU Project Amendment 2013.'

1.25 We intend to publish all submissions on our website. Please provide your submission in a form that readily enables us to do this, and allows us to copy and paste submissions for our analysis.

Our next steps

1.26 Our next steps for assessing Transpower's application and indicative dates are set out in Table 1.1 below.[14]

Table 1.1: Process steps and indicative dates

Indicative date	Process step
17 January 2014	Submissions due on Transpower's application and our issues paper
31 January 2014	Cross submissions due on matters raised in submissions
14 April 2014	Publish our draft decision on whether to amend Transpower's allowance and outputs for the NIGU Project
16 May 2014	Submissions due on our draft decision
30 May 2014	Cross submissions due on matters raised in submissions
8 August 2014	Publish our decision on whether to amend Transpower's allowance and outputs for the NIGU Project

[14] Given the complexity and size of this project, we have decided to extend these timeframes beyond the date specified in the Capex IM. Transpower has agreed to these timeframes. Our process steps and indicative dates may change. Any changes to these dates will be posted on our website.

2. How we propose to assess Transpower's application

Purpose of this chapter

2.1 In this chapter we set out:

2.1.1 how the Capex IM guides us in making our decision on allowance amendments;

2.1.2 what we have considered in determining our proposed approach for assessing allowance amendments; and

2.1.3 our proposed approach for determining an appropriate allowance that Transpower can recover from consumers for the NIGU Project.

2.2 We welcome any feedback on our proposed approach.

Rules set out in the Capex IM guide us in making our decision

2.3 When a proposal to amend the allowance is submitted to us, we apply regulatory judgement to specify whether the allowance should be amended, and if so, by how much. Rules set out in the Capex IM guide us in making this decision.

We are required to evaluate allowance amendments against certain criteria

2.4 We must evaluate an application to amend the allowance for the NIGU Project against the following criteria:[15]

2.4.1 whether a proposed amendment to the allowance is consistent with the Capex IM and Transpower's other input methodologies;

2.4.2 the extent to which a proposed amendment to the allowance promotes the purpose of Part 4 of the Commerce Act;

2.4.3 whether the data, analysis and assumptions provided by Transpower are fit for purpose;

2.4.4 the extent to which each key factor relevant to the proposed amendment:

2.4.4.1 was reasonably foreseeable by Transpower before the project was approved; and

2.4.4.2 was within Transpower's control.

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15 Commerce Commission, *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, 31 January 2012, clause 6.1.1 (5).

2.4.5 if a key factor was outside Transpower's control, we look at:

2.4.5.1 the reasonableness of any applicable mitigation strategy devised by Transpower; and

2.4.5.2 the reasonableness and extent of mitigation actions taken by Transpower.

2.4.6 the effect of any amendment on the expected net electricity market benefits for the project; and

2.4.7 the extent to which Transpower has already incurred any capital expenditure before it applies for the amendment.

Circumstances under which we will not lower the original approved allowance

2.5 We have given careful consideration to whether, when we receive a request from Transpower to amend the allowance, an amendment should operate symmetrically. That is, whether we can and should lower an allowance below what was originally approved. While the overall context of the Capex IM provides some support for the proposition that our discretion extends to reducing the allowance below the amount that was originally approved, we note that:

2.5.1 the words of the Capex IM do not provide absolute clarity on the application of the rule;

2.5.2 none of the Capex IM, the other Transpower input methodologies, or the Reasons Papers that support those input methodology determinations provide any description of an intention to conduct an *ex post* review of major capex projects for the purpose of adjusting Transpower's allowed revenue;

2.5.3 there is no reference to a general discretionary power to undertake a downwards adjustment; and

2.5.4 the *Otahuhu* decision[16] includes general statements on the operation of the Capex IM which do not include the possibility of a downwards review of the original approved allowance.

2.6 In the circumstances, we consider it is appropriate to limit our discretion to amend an allowance above what was originally approved (that is, for an allowance to operate asymmetrically in Transpower's favour).

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16 Commerce Commission, *Decision on the Otahuhu Substation Diversity Project Major Capital Allowance Amendment [2013] NZCC8, 12 April 2013.*

2.7 However, given the application of the rule is unclear, as a matter of good regulatory practice, we intend to issue a notice of intention and invite views of interested parties on whether it should be symmetrical in a separate process.

Circumstances under which the original approved allowance can be lowered

2.8 We note that the original allowance approved for a major capex project *can* be lowered. For example:

2.8.1 the allowance can be adjusted for FX and CPI movements. Such adjustments can occur irrespective of an application to amend an allowance. The adjustment mechanism is set out in clause 3.3.7, and the relevant formulas are set out in clause B4 of the Capex IM; and

2.8.2 the information requirements set out in Schedule H of the Capex IM anticipate that changes in outputs are expected to have an impact on the allowance. We consider that where Transpower requests us to amend the outputs for a major capex project, that we are entitled to make a corresponding amendment to the approved allowance to reflect the change in outputs.

What we have considered in determining our proposed approach

2.9 We consider the incentives that our decision has for Transpower's future behaviour in order to promote the purpose of Part 4 of the Commerce Act.

2.10 The Capex IM approval framework that governs Transpower's investment aims to incentivise efficient investment. This means Transpower should seek to minimise avoidable costs when making such investments.

2.11 The allowance for a project is set *ex ante*. In the case of the NIGU Project's allowance, it was set to the P90 to account for identified risks and uncertainty associated with the project.[17] Conceptually this means that before the project started, if it was planned and delivered cost efficiently there was a 10% probability that the actual costs for the project would exceed the allowance.

2.12 In the event that actual project costs exceed the P90 allowance, and upon an application from Transpower for an amendment, the allowance amendment process permits us to review whether Transpower's planning and delivery of the project was cost efficient. However, this does not mean that it is necessary, nor is it practical, for us to determine the cost efficient value of the entire project.

[17] In principle a P90 value is set to allow for project uncertainty given the information available at the time. The P90 is not designed to allow scope for inefficient project delivery.

2.13 We can, however, assess whether Transpower incurred any unjustified inefficiencies. Doing so identifies any material cost inefficiencies, and ensures that Transpower bears some, if not all, of those costs. We expect that efficient over runs (ie, where we do not identify any inefficiencies), would usually be passed on to consumers.[18]

2.14 Other considerations that have influenced our proposed approach are set out below.

2.14.1 We do not assess the justification of expenditure incurred above budgeted amounts, as this does not necessarily indicate whether a project was planned and delivered efficiently.

2.14.2 We prioritise our work as we have limited resources. This requires us to make trade-offs based on the information we have available to us, and the materiality of identified potential inefficiencies.

2.14.3 To identify cost inefficiencies, Transpower's performance must be measured against an appropriate benchmark. We consider Good Electrical Industry Practice (GEIP) to be an appropriate benchmark of performance.

2.14.4 The criteria for assessing key factors in the Capex IM guide us in determining whether costs were *avoidable,* ie, whether the causes of these costs were reasonably foreseeable, within Transpower's control, and whether the mitigation actions undertaken by Transpower were reasonable.

2.14.5 Transpower's application is the starting point for considering whether Transpower incurred any avoidable costs on the NIGU Project. However, we consider other information we deem relevant to assist us to assess whether Transpower's performance was appropriate in the circumstances. We take into account the information Transpower knew, or should have known, when it made relevant decisions. We also have regard to any unavoidable constraints and Transpower's response to them when we form our view.

2.14.6 Not all allowance amendments will require the same level of analysis. In this case, the proposed allowance amendment is significant and therefore warrants an examination of the efficiency of the project and its delivery.

[18] The P90 does not constitute an efficient cost and should not be treated as such.

Our proposed approach for determining the appropriate allowance for the project

2.15 We propose to follow a three stage process to reach a decision on Transpower's application.

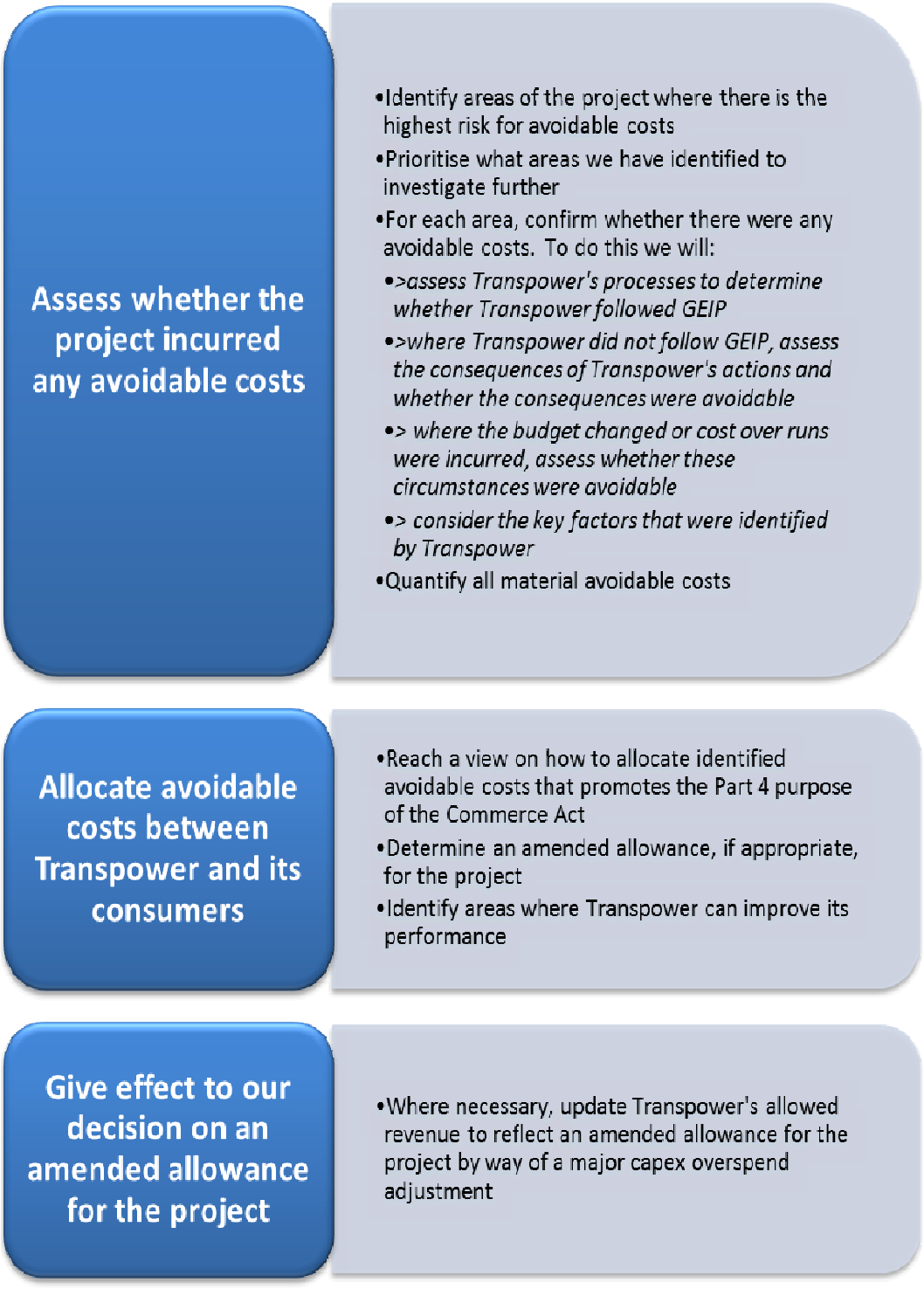
2.15.1 In the first stage, we will identify areas of the project with the highest risk of avoidable costs. We will then investigate these areas further to determine whether Transpower incurred any avoidable costs.

2.15.2 In the second stage, we will determine an amended allowance, if necessary. Our decision on the amended allowance will be guided by the avoidable costs that we identify in the first stage, the guidance in the Capex IM, and the overarching regulatory goal of promoting the purpose of Part 4.

2.15.3 The third stage is to give effect to our decision and, if necessary, make an adjustment to the revenue Transpower will earn in the future to recover its investment.

2.16 Figure 2.1 over the page sets out a schematic of our proposed approach. We explain each of the stages of our proposed approach in the text that follows.

Figure 2.1 Our proposed approach to determine an allowance amendment for the NIGU Project



Stage 1: Assessing whether the project incurred any avoidable costs

2.17 The objective of this stage is to quantify any avoidable costs in the planning and delivery of the project. We intend to focus on the areas of the project where avoidable costs are likely to be material.

Identifying areas with the highest risk for avoidable costs

2.18 Following our initial analysis of Transpower's application and supporting information we have reached a preliminary view on the areas where we consider there is the highest risk of avoidable costs occurring.

2.19 Our initial list was informed by areas that:

2.19.1 are often prone to material inefficiencies in projects of this size;

2.19.2 have incurred significantly higher costs than forecast;

2.19.3 we require additional information to be able to determine that the project was delivered efficiently; and

2.19.4 have been identified by Transpower's key factors that led to the overspend.

Prioritising the areas we investigate further

2.20 We propose to prioritise the areas we will investigate further based on:

2.20.1 the potential for avoidable costs to be material;

2.20.2 Transpower's previous experience on similar matters; and

2.20.3 the feasibility of being able to reach a robust conclusion on whether Transpower incurred avoidable costs.[19]

2.21 Chapter 4 outlines our proposed areas for further investigation. We seek your views on the areas we have outlined, and their prioritisation.

[19] We note that there may be areas where re-considering outcomes may not be appropriate. For example re-determining the terms of a commercially negotiated contract that was subject to a comprehensive tendering process would be difficult to justify. A more appropriate approach would be to rely on the processes in place and resulting competitive tension of a market run process to ensure the best outcome was achieved.

Identifying costs that Transpower could have reasonably avoided

2.22 The objective of this stage is to identify whether Transpower incurred any avoidable costs and quantify those costs. To do this we propose to assess targeted areas against the following:

2.22.1 whether Transpower followed GEIP;

2.22.2 where Transpower did not follow GEIP, assess the consequences of Transpower's actions and whether those consequences were avoidable;

2.22.3 where the budget changed or cost over runs were incurred, assess whether these additional costs were avoidable; and

2.22.4 consider the key factors identified by Transpower that led to the overspend.

Assessing whether Transpower followed Good Electricity Industry Practice

2.23 In determining whether Transpower incurred avoidable costs, it may be necessary to benchmark Transpower's actions against an appropriate standard. We consider GEIP to represent such a standard. We expect of Transpower, and are confident that Transpower also holds itself to this standard.[20]

2.24 A useful definition of GEIP, in relation to electricity transmission services, is found in the Electricity Industry Participation Code.[21]

> 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.

2.25 Using GEIP is consistent with the approval process for major capex projects. The Capex IM allows us to have regard to whether the proposed investment option reflects GEIP when approving a major capex proposal.

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20 As opposed to frontier or best practice performance, which we expect it to target where efficient to do so.

21 Electricity Authority, *The Electricity Industry Participation Code [2010]*, 3 October 2013.

2.26 We consider that if Transpower follows GEIP, it is unlikely to incur avoidable costs. Conversely, if Transpower does not follow GEIP, there is a higher risk of inefficiency. For example, Transpower may have decided to implement Process A rather than Process B, which would have better reflected GEIP and cost less. We consider that the cost difference is likely to result from inefficiency, assuming all other things were equal.

2.27 We consider using GEIP to benchmark Transpower's performance will assist us in promoting the purpose of Part 4 of the Commerce Act. [22]

2.28 We do not view the definition of GEIP as prescriptive. Interpreting GEIP and applying it against Transpower's performance will require regulatory judgement.

2.29 We seek submitter's views on benchmarking Transpower's performance against GEIP. For example, does GEIP give us sufficient guidance to assess Transpower's performance to be useful in practice?

Assessing whether certain costs were avoidable

2.30 When assessing whether certain risks led to avoidable costs, we will be guided by the criteria for assessing key factors in the Capex IM.[23] That is:

2.30.1 whether the causes of the higher than expected costs were reasonably foreseeable, and within Transpower's control or influence;

2.30.2 whether Transpower mitigated against these causes, or could have had better mitigation; and

2.30.3 how Transpower shared the risks of the higher than expected costs with other parties.

2.31 To incur expenditure efficiently, it is necessary to account for reasonably foreseeable factors which will contribute to the level of costs spent on project planning and delivery.

2.32 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. We also recognise that some of these risks may not be foreseeable at the time of approval. Therefore our consideration of efficiency would take into account the information available at the time.

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[22] We consider GEIP is appropriate, as benchmarking Transpower's performance to a standard such as best or frontier performance may have negative effects on incentives to invest.

Assessment of Transpower's key factors

2.33 Transpower's application provides that the cost of the NIGU Project was reasonably and efficiently incurred. To support this, Transpower has outlined the key factors that it considers led to the cost exceeding the original approved allowance.

2.34 Transpower's identification of key factors will help inform our analysis. However, Transpower's views on why the actual costs for the project exceeded the original approved allowance may not necessarily equate to identifying all avoidable costs.

2.35 Chapter 3 outlines the key factors that Transpower considers led to the cost of the project exceeding the original approved allowance. As part of its application, Transpower is required to set out the reason for applying, including:

2.35.1 a description of the key factors leading to the application;

2.35.2 an explanation as to the extent to which each key factor is within Transpower's control; and

2.35.3 an explanation as to the extent to which each key factor was reasonably foreseeable by Transpower before the relevant major capex proposal was approved.

Quantifying any avoidable costs

2.36 Where we identify any avoidable costs, there may be a combination of systemic or specific inefficiencies that need to be quantified.

2.37 Systemic inefficiencies are inefficiencies that affect the entire project. If we identify a systemic inefficiency, such as an inefficiency associated with poor project management practices, then we would consider applying that inefficiency across all subprojects.

2.38 Specific inefficiencies are inefficiencies that only affect one part or subproject of the overall project. If we identify a specific inefficiency, such as avoidable delays in a subproject, then we would apply that inefficiency to that subproject only.

Stage 2: Allocating avoidable costs incurred by the project

2.39 The objective of this stage is to determine how any avoidable costs incurred by the project should be shared between Transpower and consumers, and therefore decide an appropriate allowance for the NIGU Project.

2.40 In doing this, we will consider how best to promote outcomes consistent with workably competitive markets that are in the long-term benefit of consumers. Before making a decision on the amended allowance, we will also reach a decision on the proposed output amendments and take into account any effect that may have on the amended allowance. Our approach to the output amendments is outlined in Chapter 5.

The extent to which the proposal promotes the purpose of Part 4

2.41 Our decision must promote the purpose of Part 4 of the Commerce Act. To further promote the purpose of Part 4 we may decide to amend the allowance to reflect additional considerations alongside cost efficiency, such as dynamic efficiency.[24] These considerations will result in an allowance which is guided by the efficient cost of the project but is also consistent with the overarching regulatory goal of promoting the purpose of Part 4.

Determining how costs should be shared between Transpower and consumers

2.42 For an allowance amendment, we will determine how costs over and above the original approved allowance should be shared between Transpower and consumers. We may apply our regulatory judgement in determining how costs over and above the original approved application are allocated between Transpower and consumers.

2.43 For example:

2.43.1 we may have regard to the impact our decision has on promoting future investment. We could consider that by not allowing Transpower to recover short term inefficient costs we may disincentivise investments that are in the long-term interests of consumers. Transpower may not progress more risky projects due to uncertainty around cost recovery if the allowance is exceeded. This dynamic inefficiency is not in the long-term benefit of consumers. We may consider that, on balance, the interests of consumers are best promoted by a decision that allows some inefficient cost recovery while promoting dynamic efficiency;

2.43.2 we will not have perfect information on the project. We will recognise this when determining an amended allowance through being prudent in both classifying expenditure as inefficient and in creating incentives to influence Transpower's future behaviour.

Identifying areas where Transpower can improve its performance

2.44 In assessing Transpower's application we may come across matters that have not necessarily impacted on the cost efficiency of the NIGU Project, but if left unchecked, could cause issues for future projects.

2.45 If this circumstance arises, we may note any observations and, where appropriate, suggest business improvement initiatives.

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[24] Dynamic efficiency considers the framework for future decision making. Dynamic efficiency can improve future cost efficiency.

Stage 3: Giving effect to our decision on the amended allowance

2.46 Once we make a decision on the amended allowance for the NIGU Project, there is a separate adjustment process.[25] This adjustment process affects the revenue Transpower is able to earn from the NIGU Project. [26]

2.47 There are two major capex adjustments that apply to the NIGU Project which may result in an adjustment to Transpower's revenue. They are the major capex overspend adjustment and the major capex project output adjustment.

The major capex overspend adjustment may reduce Transpower's allowable revenue

2.48 The overspend adjustment is a penalty only incentive mechanism that results in a revenue adjustment only when Transpower's spend is greater than an allowance for a project that is adjusted for:

2.48.1 any amendments to the allowance determined in Stage 2;

2.48.2 any disparities between forecast and actual CPI and FX rates for the project; and

2.48.3 the time value of money so that the revenue adjustment is the present value of the revenue that Transpower would normally expect to recover on the inefficient expenditure.

2.49 In determining the amended allowance in Stage 2 we will take account of actual CPI and FX movements that affected the project. This means that there will be no disparities between the CPI and FX rates that affected the actual cost of the project and the rates that are implied for the amended allowance.[27]

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25 There is a distinct difference between an amendment and an adjustment in the Capex IM. Transpower has applied for an amendment to the allowance and an amendment to the outputs of the NIGU Project. The primary purpose of our evaluation approach is to determine an amended allowance for the NIGU Project. The adjustments discussed in Stage 3 are made after the amended allowance is determined and may result in a reduction to Transpower's revenue for the next pricing year. Both the overspend adjustment and the output adjustment potentially apply to all commissioned projects and are applied as part of a separate process to considering any amendments.

26 This adjustment process is important because the total amount of $894 million that was spent on the NIGU Project will appear in Transpower's regulatory asset base (RAB). Transpower is able to recover the costs, and receive a return on the assets in its RAB.

27 That is, the value of the p and q terms in equation clause B4 (4) of the Capex IM would be zero.

The major capex project output adjustment may also reduce Transpower's allowable revenue

2.50 As discussed in Chapter 5, amendments may be made to the approved project outputs of the NIGU Project in consideration of outputs that Transpower has not met.

2.51 If these amendments are not made and Transpower has not met an output, a major capex project output adjustment may be made.

2.52 The major capex project output adjustment will be a revenue adjustment. This revenue adjustment is calculated by multiplying the amount spent on the NIGU Project that does not deliver an approved output multiplied by the incentive rate, currently 33%.[28]

How any adjustments are reflected in Transpower's revenue and prices

2.53 The overspend adjustment and the output adjustment are made by way of Transpower's economic value account. The economic value account is the mechanism that is used to adjust Transpower's revenue from year to year.

2.54 We are usually required to make a decision on the revenue adjustment resulting from a major capex overspend by the end of the first November after the disclosure year in which the last asset was commissioned. However, given the complexity of the NIGU Project and the amount of information required to be analysed, we will make a decision by 30 November 2014. Given this extended time frame, any revenue adjustment made in Transpower's economic value account will take into account the time value of money.[29]

2.55 Currently, any overspend adjustments included in the balance of the economic value account will be applied to the maximum allowable revenue of a single pricing year. Depending on the size of the adjustments, this may cause some pricing volatility for consumers. From 2015, we intend to allow the adjustment to be spread over more than one pricing year to avoid price shocks.[30]

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28 Commerce Commission, *Re Transpower Capital Expenditure Input Methodology Determination* [2012]NZCC 2, 31 January 2012, clause B5 (1).

29 This is done by rolling forward the balance of the economic value account at the WACC rate.

30 Commerce Commission, *Transpower Capital Expenditure Input Methodology Reasons Paper*, 31 January 2012, p. 15, paragraph 2.3.10.

Transpower proposes to recover $876 million of expenditure

2.56 In its application, Transpower proposes to not recover $18 million of expenditure relating to the project. Therefore $876 million is the amount of expenditure that Transpower proposes to recover from the NIGU Project.

2.57 Transpower maintains that the full expenditure amount of $894 million was efficiently incurred. However, it identifies that later than ideal planning led to the costs of the line construction increasing by $18 million.[31]

2.58 Transpower proposes to voluntarily reduce its revenue over the next six pricing years so that customers are not charged for the $18 million of expenditure. Transpower estimates that this will result in total revenue reductions, of approximately $22 million, as it would normally expect to receive a return on investment equal to its WACC.

2.59 Transpower will reduce its revenue by $4 million for the 2014/15 pricing year. Transpower then proposes to spread the remaining revenue adjustments over the next regulatory period from the 2015/16 pricing year to the 2019/20 pricing year.

2.60 In the event that a major capex overspend adjustment applies to the NIGU Project, Transpower's revenue reductions would count towards the overspend adjustment. We would also revisit the spreading of the revenue adjustments as proposed by Transpower. In the event that the overspend adjustment is less than $18 million, Transpower has stated that it will still not seek to recover this $18 million of expenditure in the RAB.

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31 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, appendix 2.

3. The key factors identified by Transpower

Purpose of this chapter

3.1 In this chapter we:

3.1.1 outline the key factors that Transpower provided in its application;

3.1.2 set out how the Capex IM requires us to also consider the key factors that led to Transpower's application; and

3.1.3 seek your views on Transpower's key factors.

Transpower is required to identify the key factors that led to its application

3.2 The Capex IM requires Transpower to provide the key factors that led to the application to amend the allowance for the NIGU Project.[32] This includes commentary on the extent that the key factors were within Transpower's control and were reasonably foreseeable.

3.3 Transpower must also explain why the proposed amendment is in the long-term benefit of consumers.

3.4 Transpower set out what it considers to be the key factors that led to its application in sections 6 to 12 of its application.[33] Transpower provided us with a summarised list of key factors after submitting its application, provided below in Table 3.1.

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32 Commerce Commission, *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, 31 January 2012, schedule H6.

33 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, appendix 3. The information requirements in Schedule H of the Capex IM require Transpower to explain what key factors, in its view, led to the application.

Table 3.1 Transpower's key factors leading to its application

Key factors leading to the application as identified by Transpower	
Key factor	**Contributing factors**
Inappropriate Major Capital Allowance calculation	• Assumption that cost categories were independent was incorrect
Actual Brownhill-Whakamaru transmission line property costs exceeded those included in the Electricity Commission approval	• Actual costs exceeded estimated costs • Some actual costs were not included in the original estimates • Protracted approvals
Actual Brownhill-Whakamaru transmission line costs exceeded those included in the Electricity Commission approval	• Actual costs exceeded estimated costs • Some actual costs were not included in the original estimates • Protracted approvals • Late planning • Limited access

Source: Transpower (Email from Transpower staff, received 8 November 2013)

We are required to assess the key factors which we consider relevant to Transpower's application

3.5 The criteria for assessing the key factors that led to Transpower's application are set out in paragraph 2.4.

3.6 The evaluation criteria in Part 6 of the Capex IM require us to assess the key factors that are relevant to the proposed amendment. In doing so we will consider the information submitted by Transpower as key factors.

We seek your views on Transpower's key factors

3.7 We would appreciate your views on the reasons Transpower identified in its application. Specific questions we have are set out below.

3.7.1 Are the key factors identified by Transpower the underlying cause of the overspend?

3.7.2 Do the reasons provided by Transpower fully explain the rationale for the application, and justify the amendment as being in the long-term benefit of consumers?

3.7.3 Do you think it is clear from Transpower's application, and the supporting table of key factors in Table 3.1 above, that the key factors were:

3.7.3.1 unforeseeable before the approval of the project; and

3.7.3.2 outside of Transpower's control?

3.7.4 If the key factor was outside the control of Transpower:

3.7.4.1 the reasonableness of any mitigation strategy devised; and

3.7.4.2 the reasonableness and extent of any mitigation actions taken.

3.7.5 Is there any other information that would be important for us to evaluate when considering what key factors led to the application?

4. Areas we have identified and propose further analysis

Purpose of this chapter

4.1 The purpose of this chapter is to set out:

4.1.1 the proposed areas we have selected for further analysis;

4.1.2 why and how we propose to focus on these areas;

4.1.3 our approach for the treatment of areas that we do not propose to assess; and

4.1.4 for the areas we propose to evaluate further:

4.1.4.1 why we are interested in each area;

4.1.4.2 what we are likely to consider; and

4.1.4.3 outline some questions we have.

4.2 We welcome your views on any of the above.

We have identified aspects of the North Island Grid Upgrade Project for further analysis to examine potential cost inefficiencies

4.3 We consider that there are areas of the NIGU Project that we should examine to determine if there are potential costs inefficiencies. These areas are:

4.3.1 project governance, project management and contract procurement processes;

4.3.2 property strategy and implementation; and

4.3.3 the delivery of the overhead lines project.

4.4 In the sections below we discuss each of these areas, including why we consider they are important and what we are likely to consider. We then outline some questions on which we seek your views.

4.5 The aspects of the project we propose to examine are not exhaustive and do not limit our investigation or decision in any way at this stage.

4.6 We welcome your views on the aspects of the NIGU Project we have proposed for further analysis and whether there are other aspects of the NIGU Project we should consider.

Why we plan to focus our analysis

4.7 Rather than attempting to analyse all the information available to us to reach a decision on the amendments, we propose to focus on specific aspects of the project.

4.8 The NIGU Project is a large and complex project. The project has run for around ten years from the original identification of the project need to its completion in 2012.

4.9 The NIGU Project has many interdependencies and feedback loops, making it difficult to isolate single causes for outcomes. We need to be able to analyse issues at a sufficient level of detail to reach a robust conclusion. However, we do not have limitless resources and time to reach our decision on the amendment of the allowance for the NIGU Project. We must therefore consider the impact of our choices on Transpower and stakeholders.

How we plan to focus our analysis

4.10 Supported by external advisors, we have arrived at the subset of areas we propose to investigate on the basis that these had greater potential for cost inefficiencies. We reviewed the original approval for the NIGU Project, Transpower's application and the supporting information. We considered, among other things:

4.10.1 the extent to which an activity was new to Transpower. There is a risk that a lack of knowledge or experience and understanding in dealing with the activity could lead to cost inefficiencies. This includes where Transpower applied 'business as usual' processes and controls to what was Transpower's first experience of an activity of this size and complexity for twenty years;

4.10.2 where a subproject incurred a significant proportion of the expenditure for the NIGU Project;

4.10.3 the extent to which actual costs were materially different to those forecast by Transpower in the original application for approval. This includes where the actual scope was in excess of the original forecast, or where items were not included in the forecast. This allows us to evaluate how issues were foreseen by Transpower, what mitigation strategies were planned and how they were carried out; and

4.10.4 where, upon considering the information presented to us at this time, we had concerns that Transpower had not fully explained why the activities it carried out were reasonable and efficient or we had concerns that GEIP may not have been followed in planning and delivering the project.

Our approach for the treatment of areas we do not analyse

4.11 By proposing to focus our attention on areas that have a higher potential for inefficiencies, we will not be looking at all aspects of the project.

4.12 This approach relies on assuming that Transpower has delivered the unexamined areas of the project efficiently and that any unidentified efficiencies were not material.

4.13 Do you consider this approach to be reasonable given the areas of the NIGU Project that we are proposing to evaluate further within this paper?

Areas that we propose to evaluate further

4.14 We consider that there will be significant connections between the different areas we propose to investigate. Connections and flow on effects from one area to other areas are likely to be an important part of our evaluation. We will need to be conscious of these interrelationships when assessing each area.

4.15 Project governance, project management and contract procurement processes are functions that can influence aspects of a project throughout its lifecycle. These functions play a critical role in determining the ultimate outcome of the project. As such, these functions have the potential to interact with other areas of the project.

4.16 We consider that it is important to understand how Transpower has applied these functions for the NIGU Project, and what role, if any, these functions had in Transpower applying for an amendment to the allowance for the project.

We will seek appropriate expert advice to support our decision

4.17 We recognise that we are not expert in all the areas we propose to evaluate further. We intend to take appropriate expert advice to inform our decision on amending the allowance. This advice will inform our views on what is GEIP, assess Transpower's performance against GEIP, identify issues from this and assess the cost implications for the areas under evaluation.

Project governance

Why we are interested in project governance for the NIGU Project

4.18 Project governance relates to the management framework in which a business carries out its project related activities.

4.19 Project governance has a systemic effect in a project like the NIGU Project; its influence covers all aspects of the project lifecycle. Project governance should provide a top down discipline on a project. Lack of discipline and challenge may result in outcomes that are not in accordance with GEIP.

4.20 Transpower has not identified project governance as a key factor in its application, or discussed the project governance activities carried out in any detail.

4.21 As part of assessing how Transpower has applied project governance we intend to investigate how:

4.21.1 decisions were made for setting the budget, agreeing to reforecasts of the budget including working to the allowance and the use of any contingencies;

4.21.2 responsibility and accountability was delegated for the project, including the controls established to ensure good governance was applied;

4.21.3 risk was managed by Transpower, including whether risk was managed by Transpower in line with GEIP and whether risk was transferred to a more appropriate party given the conditions faced by Transpower;

4.21.4 decisions were made around accepting changes to approved outputs; and

4.21.5 important issues were raised within the project and how those charged with governance responded to issues encountered throughout the project.

4.22 Transpower's application provides that many of its increased costs were related to the increased amount of time that various aspects of the project took. As a result, Transpower had to fund the increased cost of the extended activities and manage the flow on impact of increased costs for meeting the now constrained timeline. Transpower also encountered some tasks that it had not planned for and these tasks also put pressure on the project timeline.

4.23 It is recognised that for a given scope of work there is a relationship between cost, quality and time. Holding to a fixed time constraint will impact on cost and quality.

4.24 We propose to examine how Transpower arrived at its assessment of timeframes, including the consideration of risk concerning the timeline and the inclusion of any flexibility in setting and managing the timeline. This information will assist us in understanding how Transpower understood the risks of the project, how it arrived at the need date, how it acted when the timeline came under pressure and if this aligns with GEIP.

4.25 We also propose to examine how Transpower took into account issues like the changing demand and generation balance that would have affected the possible need date for the project. In examining how Transpower has updated original forecasts and assumptions in response to better information, we can understand how it evaluated the cost benefit trade-offs the updated information implied. We can then better understand how Transpower took into account and responded to known issues.

4.26 We will also consider how Transpower responded to issues outside its control, like the global financial crisis.

We seek your views on project governance

4.27 We seek your views on Transpower's project governance and our proposed evaluation of this area. Specific questions we have are set out below.

4.27.1 Do you have any additional information that we should consider relevant in evaluating the project governance applied to the NIGU Project?

4.27.2 What are the standards, methodologies or guidelines for project governance that interested parties have used, or specified as appropriate, for delivering large infrastructure projects?

4.27.3 What are your views on the information Transpower has presented on how project governance was applied to, and specific project governance decisions were made in the NIGU Project?

4.27.4 Are there any aspects of project governance we should give particular consideration to? We propose to assess the project governance applied to the decisions made around the efforts to meet the need date.

Project management

Why we are interested in this area

4.28 Project management is the discipline of planning, organising, motivating, and controlling resources to achieve the delivery of a project.

4.29 It is recognised that good project management reduces costs for the delivery of a project. The extent to which an event is foreseen, planned for and mitigated, as opposed to reacted to, is indicative of effective project management.

4.30 Transpower has not discussed project management in any detail within its application. Transpower has said that it believes appropriate project management processes were in place to ensure that the expenditure was reasonably and efficiently incurred, given the circumstances.[34] However, we consider that we need further information to consider how Transpower has implemented project management in the NIGU Project in a number of areas. The areas we intend to look at are set out below.

4.30.1 Were major risks to the project foreseen, planned for and mitigated in accordance with GEIP? This includes any provision for risk in the project costs and timeline, the response to risks that eventuated, and any extra costs and/or time delays to the project they imposed.

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[34] Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p.5.

4.30.2 Was project management carried out in line with GEIP for the NIGU Project, and can this be verified through the documentation of the project?

4.30.3 How was project management supported by the governance structure, and did the project management processes ensure that those in governance roles were suitably informed?

4.30.4 We may consider Transpower's project management policies, the performance metrics of the project managers, the performance evaluation processes of the project managers and the project accounting (including accuracy and timeliness of reporting to project managers and by project managers) in our evaluation of project management.

4.30.5 How were scope, timeline, design and other changes managed within the project, including the justification for any change?

4.30.6 How was the original budget formulated, challenged and assigned to individual areas of the NIGU Project? Where risk or uncertainty remained, how was this mitigated or managed?

Issues that we are interested in submitters views on

4.31 We are interested in your views on Transpower's project management of the NIGU Project and our proposed evaluation of this area, in particular your views on:

4.31.1 the information Transpower has provided for how it applied project management to the NIGU Project;

4.31.2 any additional information we should consider as part of our proposed evaluation of Transpower's project management of the NIGU Project;

4.31.3 any specific aspects of project management we should consider in our proposed evaluation; and

4.31.4 any methodologies or practices we should consider when assessing GEIP for project management, eg, PRINCE2 or the Project Management Body of Knowledge (PMBOK).

Contract procurement processes

Why we are interested in this area

4.32 Procurement determines how costs are incurred and how risks are transferred between stakeholders of projects. Procurement decisions can have flow on effects in the project lifecycle and throughout different aspects of the project.

4.33 Transpower has provided some discussion of procurement in its application for various aspects of the project and mentions a general procurement policy for the NIGU Project.[35] However, little has been provided in its application on how Transpower requested for and assessed the proposals of the overhead line contractor who was responsible for delivering the majority of the project.

4.34 We propose to look at how Transpower has procured goods and services for the NIGU Project. This will include the appropriateness of any business as usual processes for what is effectively a step change to business as usual.

4.35 In particular, we propose to consider the following aspects of the Alliance contract in order to inform our decision on amending the allowance.

4.35.1 What governance was applied around deciding the form and content of the contract?

4.35.2 If applicable, what have been the outcomes of this form of contract in other jurisdictions and for other activities?

4.35.3 On what basis did Transpower decide to enter the Alliance with Balfour Beatty United Group Limited as opposed to alternative options?

4.35.4 What peer review and expert advice did Transpower seek and how was it applied to the decision to enter into the contract?

4.35.5 What consideration was given to scope, risk allocation, cost, quality and timing provisions in agreeing the Alliance contract? What were the risks, penalties and incentives for different parties as a result of this? This would include such analysis as:

4.35.5.1 Did the terms of the Alliance contract allow for a flexible completion date should that be the most optimal outcome for the Alliance?

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35 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p.21.

4.35.5.2 $9 million in Alliance costs were incurred due to the Board of Inquiry delays[36] – what were these costs for, could the risk of this delay been better managed in setting the contract?

4.35.5.3 How valid is Transpower's statement that, if not for the Alliance, Transpower would have had to pay approximately $47 million instead of the $18.8 million that Transpower expects to pay?

Issues that we are interested in submitters views on

4.36 We are interested in your views on procurement in the NIGU Project and our proposed evaluation of this area. In particular, we seek advice from parties that have experience with procurement procedures for large infrastructure projects on the issues set out below.

4.36.1 Whether procurement information provided by Transpower will enable us to assess if it incurred any avoidable costs, and if not, what other information should Transpower make available?

4.36.2 What standards, methodologies or guidelines would be recognised as good practice for procurement in a project such as the NIGU Project?

4.36.3 What are the main aspects of procurement in the NIGU Project that we should consider relevant in reaching our decision?

4.36.4 What weight we should give to any peer review or independent advice that Transpower received concerning the establishment of the Alliance contract?

Property strategy and implementation

Why we are interested in this area

4.37 We consider we need to review how Transpower executed certain aspects of its property strategy as this area was a material cost for Transpower and was an activity in which Transpower had not had experience of the scale, and processes involved, before starting the NIGU Project.

4.38 We are however conscious that we will need to consider the extent to which gaining access to land to assess site conditions was outside of Transpower's control prior to the Board of Inquiry (BOI) decision.

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[36] Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p.78.

4.39 We are also aware that we cannot revisit the original Electricity Commission approval or the BOI decision. We will operate on the assumption that the designated line route arrived at by the BOI was the best option for New Zealand taking into account the information known at the time. We are also conscious that the route designation process may have driven unavoidable cost overruns and delays.

4.40 Transpower identifies property issues as a key factor leading to the application, and in particular the impact of time pressure in delivering this aspect of the NIGU Project.

4.41 However, we need to understand how timely Transpower's actions were to address the risks it faced as a result of the BOI decision. We propose to look at:

4.41.1 the steps Transpower took to ensure site access was achieved as soon as practically possible so that construction activities and scope changes could be appropriately considered;

4.41.2 where possible, whether Transpower put itself in a position to negotiate as effectively as possible given the result of the BOI ruling; and

4.41.3 given Transpower's property acquisition strategy we need to understand how Transpower easements costs were valued, particularly in cases where Transpower purchased property and then on sold it with the easement in place.

Issues that we are interested in submitters views on

4.42 We are interested in your views on our proposed evaluation of Transpower's property strategy and implementation for the NIGU Project, in particular:

4.42.1 the experience of interested persons in obtaining resource management approval and property rights in large infrastructure projects;

4.42.2 how Transpower's planning and risk management, and in particular any matters relating to assessing site conditions, was affected by the delay in obtaining property rights; and

4.42.3 Transpower's decision not to obtain all property rights as required by the approval and instead to seek an amendment to the approved project outputs.

The delivery of the overhead lines by the Alliance

Why we are interested in this area

4.43 The reasons we are interested in the overhead lines subproject are set out below.

4.43.1 This is where a large portion of higher than forecast costs occurred. The original P90 estimate for the overhead lines construction works was $340 million. The total costs incurred, or likely to be incurred, are $398.8 million. This includes $326.8 million incurred by the Alliance, and Transpower costs of $72 million.[37]

4.43.2 There were a number of unforeseen issues and scope variations that occurred.

4.43.3 The Alliance contract was a new approach for Transpower; we are interested in the day-to-day running of the Alliance, how decisions were made, and the Alliance's interaction with Transpower during lines construction.

4.43.4 The low productivity rates due to the inability to use highly-skilled overseas tower installers until domestic labour had been fully investigated.[38]

4.43.5 The overhead lines contract accounted for 45% of the projects total cost.

Issues that we are interested in submitters views on

4.44 We are interested in your views on the Alliance delivery of the overhead lines subproject and our proposed evaluation of this area, in particular:

4.44.1 issues associated with ground conditions, geotechnical factors, site access and preparation, including the Alliance's planning and response to this;

4.44.2 actions taken by the Alliance to meet the need date; and

4.44.3 anything else that you consider we should investigate further and why.

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37 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p.69.

38 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p.84.

5. Output amendments that Transpower has proposed

Purpose of the chapter

5.1 In this chapter we:

5.1.1 set out the output amendments that Transpower has proposed;[39]

5.1.2 explain the criteria we are required to follow to assess output amendments;

5.1.3 set out Transpower's key factors that led to the changes in outputs; and

5.1.4 consider the impact of these changes in project outputs on the amended allowance.

Transpower has met some but not all outputs

5.2 Transpower has applied for three output amendments to reflect changes that were made during the project's delivery. These changes are set out below.

5.2.1 Transpower built an Air Insulated Substation (AIS) at Pakuranga, rather than a Gas Insulated Substation (GIS).

5.2.2 Transpower has divided the 350MVAr static reactive plant over three substations, rather than installing it entirely at Otahuhu.

5.2.3 Transpower has deferred acquiring easements over two kilometres of the Brownhill-Otahuhu cable route that traverses Auckland Council and Crown reserve lands.

We are required to assess Transpower's output amendments against certain criteria

5.3 An application from Transpower to amend certain components of major capex projects must be assessed in accordance with the evaluation criteria set out in Part 6 of the Capex IM. We will assess any output amendments using the same criteria as set out in paragraph 2.4.

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[39] There is a distinct difference between an amendment and an adjustment in the Capex IM. Transpower has applied for an amendment to the allowance and an amendment to the outputs of the NIGU Project. The primary purpose of our evaluation approach is to determine an amended allowance for the NIGU Project. The adjustments referred to in Chapter 2, Stage 3 of out proposed approach are made after the amended allowance is determined and may result in a reduction to Transpower's revenue for the next pricing year. Both the overspend adjustment and the output adjustment potentially apply to all commissioned projects and are applied as part of a separate process to considering any amendments.

Transpower's key factors relevant to the output amendments

The construction of the Gas Insulation Substation was a specific contingency provision under the original allowance

5.4 The original approval of a GIS was only provided to account for the uncertainty over obtaining the necessary consent for an AIS at the time of the approval process.

5.5 We consider that installing the AIS is sensible, given the AIS was a cheaper option compared to the GIS and it provided the same level of functional capability.

5.6 If the output is amended, we consider that the contingency was specifically provided to deliver the more expensive GIS option and should therefore be removed from the original allowance. The value of the contingency is $24.7 million. Lowering the allowance in such circumstances is discussed in paragraph 2.8.2.

The 350MVAr was spread across Auckland to provide better reactive support

5.7 Transpower decided to spread reactive support across Auckland because studies showed that the installation of 200MVAr at Otahuhu, 100MVAr at Penrose and 50MVAr at the Hepburn Road substations would provide better reactive support. This amendment appears to have had minimal impact on project cost.

The acquisition of easements was deferred by Transpower until closer to the time of construction

5.8 Transpower deferred acquiring easements over this land as it considers securing the rights closer to the time of construction would be more cost effective.[40]

5.9 From the information provided by Transpower it does not appear it has set aside funds from the allowance to purchase these easements at a future date, or to have reduced its proposed recovery on this matter as it has not offered to do this at its own cost in the future.

5.10 We consider this output amendment to be in the long-term benefit of consumers given the designation secures Transpower's future right to acquire the land, while deferring expenditure until an easement is required.

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[40] Note it is planned for an underground cable to be installed from the Brownhill substation to the Otahuhu substation when required, the application forecasted a need date of 2021. The approved budget did not forecast the cost of installing the cable. However it did recognize the cost of acquiring easements over the land. This was provided for within the original allowance given the Resource Management Act process. Under the Resource Management Act a designation would be secured over the land which would allow landowners the right to force the purchase of the easement at any time.

5.11 If the output was amended it would reduce the scope of outputs for the project, and therefore we would expect that, if the output was adjusted, it would result in a reduction to the approved allowance. We do not have a view on what this value would be at this stage.

Attachment A: Summary of Transpower's application

A1 On 31 September 2013, we received Transpower's proposal seeking additional costs and changes to three outputs for its NIGU Project which they commissioned in October 2012, eight months ahead of the need date of June 2013.

An overview of the North Island Grid Upgrade Project

A2 The NIGU Project built a new 400kV capable transmission line from Whakamaru, in central North Island to Pakuranga in South Auckland, a distance of 196km. The main components of the project were:

A2.1 186km of 400kV overhead lines strung on 426 towers from Whakamaru North substation to Brownhill substation;

A2.2 10km of dual 220kV underground cables from Brownhill substation to Pakuranga substation;

A2.3 three new substations at Pakuranga, Otahuhu and Brownhill and the extension of the existing Whakamaru substation;[41]

A2.4 the acquisition of properties or property rights for 266[42] properties to construct the transmission line, lay the cable and enable the substation projects;[43]

A2.5 the construction of a new switching station at Drury, the thermal uprating of the Huntly-Hamilton-Whakamaru section of the Otahuhu-Whakamaru C line and the installation of 350MVar static compensation in the Auckland region to defer the forecast system need date for the transmission line from 2010 to 2013.

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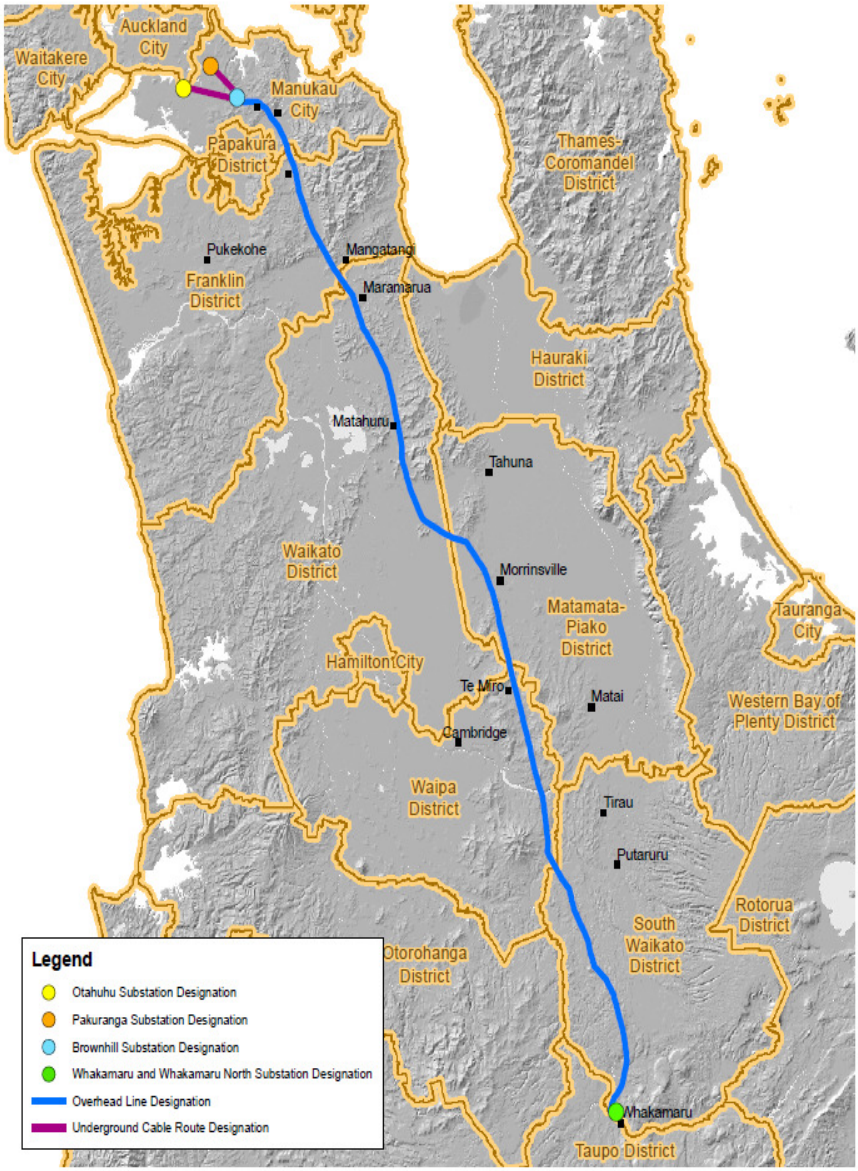
41 Note it is planned for an underground cable to be installed from the Brownhill substation to the Otahuhu substation when required, the application forecasted a need date of 2021. The approved budget did not forecast the cost of installing the cable. However it did recognize the cost of acquiring easements over the land. This was provided for within the budget given the Resource Management Act process would secure a designation over the land. This would allow landowners the right to force the purchase of the easement as a result of the designation.

42 Deliotte *NIGU Project land analysis*, 07 August 2013, appendix 1 – budget analysis by individual property.

43 Transpower secured easements over all properties except for two kilometers of properties along the cable route between Brownhill to Otahuhu that crosses Auckland Council and Crown reserve land. This land is designated therefore the landowners can call to be compensated for this land at any time.

Figure 5.1 NIGU Project transmission line route



Transpower's proposal asks for an increase in the allowance to $894 million

A3 The allowance for the NIGU Project was $824 million.[44] Transpower is seeking for this amount to be increased to $894 million.[45]

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44 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Amended proposal, Application for approval*, 20 October 2006, p.7.

45 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, p.10.

A4 Over the page, in Table A1, is a financial summary of the NIGU Project. It shows:

A4.1 the original allowance for the project ($824 million), based on forecast nominal expenditure given assumed CPI and FX rates and a targeted completion date of 2011;

A4.2 the original allowance adjusted for differences between the forecast and actual CPI and FX rates over the course of the project. This adjusted allowance is the allowance that would have been approved by the Electricity Commission if CPI and FX rates were able to be forecast accurately;

A4.3 how Transpower allocated the $824 million original allowance across the main subprojects / reporting categories it used to provide updates to its board; and

A4.4 the nominal sum of actual expenditure ($894 million) incurred by Transpower to deliver the project, which they commissioned in October 2012.

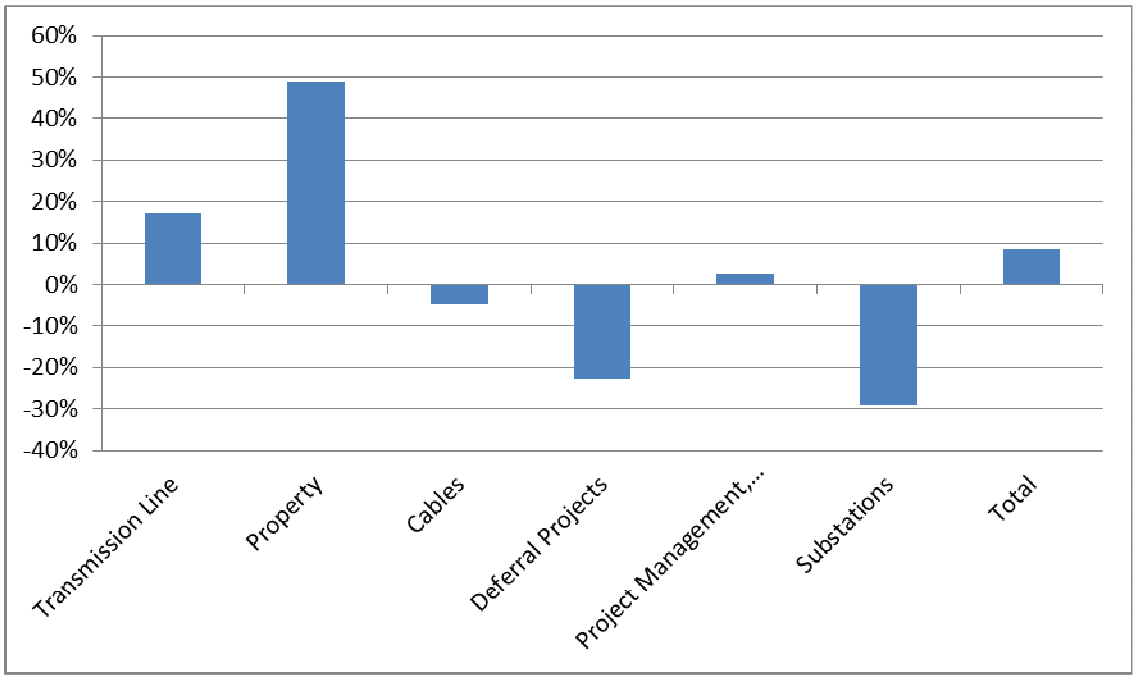
A5 Each subproject / reporting category in Table A1 is inclusive of any interest during construction incurred by Transpower.

Table A1: Financial summary of NIGU Project

	Transmission Line	Property	Cables	Deferral Projects	Project Management, Investigations, Environmental	Substations	Total
	$m	$m	$m	$m	$m	$m	$m
Original allowance							**824**
Adjusted allowance for actual CPI/FX							**744**
Transpower's budget	340	126	158	49	38	113	**824**
Actual dpend	399	188	150	38	39	80	**894**
Variance of actual spend to Transpower's budget ($)	59	62	-8	-11	1	-33	**70**
Variance of actual spend to Transpower's budget (%)	17.4%	49.2%	-5.1%	-22.5%	2.6%	-29.2%	**8.5%**
Variance of actual spend to adjusted allowance ($)							**150**
Variance of actual spend to adjusted allowance (%)							**20.2%**

A6 Figure A1 graphically displays the percentage variances for subprojects to the original allowance.

Figure A1: NIGU Project variance of actual spend to Transpower's budget



A7 Overall, Transpower exceeded the allowance by $70 million or 8.5%.

A8 As noted in Chapter 1, the original allowance of $824 million would be reduced by approximately $80 million should the assumed CPI and FX rates at the time the original allowance was approved be replicated with actual CPI and FX rates.

A9 If the difference between actual and forecast CPI and FX rates are taken into account, Transpower exceeded the adjusted allowance by $150 million ($70 million + $80 million) or 20.2%.

A10 Transmission lines and property are the two areas where Transpower most exceeded the allowance.

Transpower proposes to recover some but not all costs

A11 Although Transpower maintains all costs were efficiently incurred, Transpower has identified that a later than ideal start to project planning contributed to a proportion of the additional costs incurred above the allowance, specifically lines costs. Consequently, Transpower considers it is appropriate that the Commission amend the allowance to actual cost ($894 million) with Transpower voluntarily recovering a smaller amount of $876 million from consumers, $18 million less than the allowance sought by Transpower.[46]

Requests for further information

A12 We consider that to assess Transpower's application, we require additional information. To date the information requested from Transpower includes the following:

A12.1 transmission limits, observed demand and demand forecasts for Auckland and Northland for the period 2005 to 2013;

A12.2 the project's risks and issues register so as to understand the risks Transpower identified during the project and how effective Transpower was at managing or addressing matters within its control;

A12.3 the monthly project reports at the programme level (ie, not subproject level);

A12.4 documentation to understand when, and on what basis, Transpower approved increases in the amount it budgeted for the NIGU Project;

A12.5 the project's governance structure and delegations;

A12.6 documentation of the assessment process Transpower followed for the Alliance work and selection of Balfour Beatty United Group Limited; and

A12.7 documentation that shows when and how Transpower reviewed significant project dates (ie, need date and commissioning dates), and the basis on why changes to project dates were or were not made.

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46 Transpower New Zealand Limited, *North Island Grid Upgrade Project, Application for increase of major capex allowance*, September 2013, appendix 2.

Attachment B: List of abbreviations

B1 The following are a list of abbreviations used in this document.

AIS	Air Insulated Substation
BOI	Board of Inquiry
Capex IM	Transpower Capital Expenditure Input Methodology Determination
CPI	Consumer price index
FX	Foreign exchange
GEIP	Good Electrical Industry Practice
GIS	Gas Insulated Substation
NIGU	North Island Grid Upgrade
PMBOK	Project Management Body of Knowledge
RAB	Regulatory asset base
WACC	Weighted average cost of capital