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**Public** version

# **Amendments to input methodologies for electricity distribution services and Transpower New Zealand**

## **Incremental Rolling Incentive Scheme**

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## Executive summary

### Purpose of paper

- X1 This paper outlines and explains amendments to the Incremental Rolling Incentive Scheme (IRIS) in the input methodologies for electricity distribution services and Transpower New Zealand. The amendments will affect incentives to control expenditure under default and individual price-quality paths.

### Scope of amendments

- X2 At this stage, the scope of the amendments is limited to the input methodologies for electricity distribution and transmission services. We intend to finalise our decisions on the proposed amendments to the input methodologies for gas pipeline services in 2015.

#### *Scope of amendments for electricity distribution services*

- X3 The scope of the amendments to input methodologies for electricity distribution services is limited at this time to situations in which distributors are subject to default price-quality paths from one regulatory period to the next. The amendments made to date are therefore not intended to cover situations in which:

X3.1 Distributors are subject to a customised price-quality path; or where

X3.2 Distributors transition between default and customised price-quality paths.

- X4 Further amendments to the input methodologies for electricity distribution services will be progressed alongside those for gas pipeline services. The remaining amendments relate to customised price-quality paths and the transitions between default and customised price-quality paths. We therefore do not respond in this paper to submissions that relate to the situations listed above.<sup>1</sup>

#### *Scope of amendments for electricity transmission services*

- X5 The scope of the amendments for electricity transmission services is limited to operating expenditure. This is because the input methodology for Transpower's capital expenditure proposals already ensures Transpower will have a symmetric and equal incentive to control base capital expenditure in each year of future regulatory periods.

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<sup>1</sup> For example, we have not responded to many of the points raised by Orion New Zealand in its submission. Refer: Orion New Zealand, Submission on the proposed amendments to IMs: IRIS, 28 August 2014.

### Time consistent incentive to control expenditure

- X6 Consistent with our July 2014 draft decision, we have put in place an incentive to control expenditure that is the same in each year of the regulatory period. Unlike the existing asymmetric IRIS for operating expenditure, the revised IRIS would provide incentives that are the same in each year.
- X7 The practical effects of applying a time consistent incentive include:
- X7.1 Suppliers are no longer exposed to the full cost of responding to external events that have a temporary impact on expenditure; and
- X7.2 Suppliers are unable to boost profits by concentrating costs in a particular year.<sup>2</sup>
- X8 A time consistent incentive also means that the payoff from improving efficiency is greatest at the time an improvement is identified.<sup>3</sup> A symmetric IRIS therefore helps minimise the perverse incentive that previously existed to delay efficiency improvements. Instead, profits are maximised by making an efficiency improvement as early as possible.
- X9 In addition, under the amended IRIS, the short-term benefit to suppliers of achieving efficiencies will be outweighed by the long-term benefit to consumers of the efficiencies being achieved. The amended IRIS is therefore consistent with promoting the purpose of Part 4.

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<sup>2</sup> The proposed approach is therefore consistent with promoting s 52A(1)(d) of the Act. As noted in Chapter 2, suppliers that are subject to default/customised price-quality regulation currently have an incentive to increase expenditure in the base year used to determine the baseline for operating expenditure.

<sup>3</sup> Consistent with s 52A(1)(b).

*Application to operating and capital expenditure*

- X10 The revised IRIS provides a time consistent incentive to control operating expenditure and, for default price-quality paths, the revised IRIS provides a time consistent incentive for capital expenditure too.
- X10.1 For operating expenditure, the retention period for savings and losses is five years following the year of the gain and loss, which is equivalent to a retention factor of around 35% for a supplier.
- X10.2 As explained in Chapter 6, the strength of the incentive applying to capital expenditure can be varied relative to the incentive strength applying to operating expenditure. The choice of retention factor for capital expenditure will be decided at the time of each reset.
- X11 Amongst other things, the ability to vary the retention factor for capital expenditure will help address concerns about the risk of forecasting error when setting default price-quality paths.

*Incentive properties are consistent with s 54Q of the Act*

- X12 Applying a 'time consistent' incentive scheme to control expenditure helps avoid some of the potential issues identified by the ENA in relation to incentives to invest in energy efficiency and demand side management, and the reduction of line losses. In particular the revised IRIS:
- X12.1 Neutralises the existing incentive to invest in long lived assets over short lived assets by washing up for the difference between forecast and actual return on and of capital before applying the incentive adjustment for capital expenditure; and
- X12.2 Reduces the maximum difference between the marginal incentive to control operating expenditure relative to capital expenditure that exists without time consistent incentives.
- X13 Neutralising the incentive to invest in long lived assets over short lived assets was considered by the ENA to be important as it ensures that suppliers are not penalised for opting for short lived assets if these assets form part of delivering a more efficient solution.
- X14 Reducing the difference between the marginal incentive to control operating expenditure relative to capital expenditure is important because the difference affects the trade-off between different options for meeting demand. For example, large differences in the incentive strength may mean that capital intensive solutions (such as expanding substation capacity) would be preferred over more economical operational solutions (such as contracting for demand-side response).

**Overview of paper**

- X15 Amongst other things, in this paper, we:
- X15.1 Outline and explain the issues with incentives under the existing arrangements;
  - X15.2 Provide an overview of the amended IRIS for operating expenditure for electricity distribution and transmission services; and
  - X15.3 Provide an overview of the amended IRIS for capital expenditure for electricity distribution services.
- X16 We also provide responses to submissions received during consultation on the proposed amendments. The most common submission received was that the IRIS should be asymmetric, ie, the rewards for achieving efficiency gains should be higher than the penalties for efficiency losses.
- X17 The marginal incentive is not constant under an asymmetric scheme because the reward from saving an additional dollar depends on whether the supplier spends more or less than the expenditure baseline. Under a symmetric scheme, the reward from saving an additional dollar is always the same.
- X18 Therefore, a symmetric approach is the only way to ensure that the marginal incentive is 'time consistent', ie, where the incentive to control expenditure remains constant throughout the regulatory period. Any form of asymmetry in the IRIS will result in deviations away from a time consistent incentive, and the benefits listed in paragraphs X6 to X9 would not be realised.

# 1. Introduction

## Purpose of paper

- 1.1 This paper outlines and explains amendments to the Incremental Rolling Incentive Scheme in the input methodologies for electricity distribution services and Transpower New Zealand. The amendments will affect incentives to control expenditure under default and individual price-quality paths.

## Incentives to control expenditure

- 1.2 Under Part 4 of the Commerce Act 1986, we are periodically required to make decisions that affect the price that certain suppliers can charge for transporting energy in New Zealand. Each 'price-quality path' also specifies minimum standards for service quality.
- 1.3 Each supplier has an incentive to economise on expenditure when subject to a price-quality path. This is because we place a limit on the average price the supplier can charge, or the total revenue that can be recovered. That limit is fixed for up to five years before it is reset at the end of the 'regulatory period'.
  - 1.3.1 During the regulatory period, the supplier is rewarded with higher profits if expenditure is controlled.
  - 1.3.2 At the end of the regulatory period, the benefits of any efficiency gains are shared with consumers, including through lower prices.
- 1.4 Ultimately, the prospect of a beneficial impact on prices is a key reason why we provide suppliers with an incentive to control expenditure in the first place.<sup>4</sup>

## *Sharing of benefits between suppliers and consumers*

- 1.5 At present, the benefit sharing arrangements in place under Part 4 primarily depend on the type of regulation applying to each type of service. Table 1.1 matches each type of price-quality regulation to each type of service.

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<sup>4</sup> Refer: s 52A(1). For a full discussion of how price-quality paths promote the purpose of Part 4, please see: Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010).

**Table 1.1: Price-quality regulation applying to each type of service**

Type of regulation	Type of service(s)
Default/customised price-quality regulation	Electricity distribution services provided by 17 electricity distributors Gas distribution services provided by three gas distributors Gas transmission services provided by 2 gas transmission businesses
Individual price-quality regulation	Electricity transmission services provided by Transpower New Zealand

- 1.6 For each of the four types of service shown in Table 1.1, we have determined up-front rules, requirements, and processes of regulation, which are collectively referred to as ‘input methodologies’. Input methodologies promote certainty in relation to a range of matters specified in the Act.
- 1.7 Amongst other things, the input methodologies include an Incremental Rolling Incentive Scheme (or ‘IRIS’).<sup>5</sup> The IRIS provides a mechanism by which suppliers can retain the benefits of efficiency gains beyond the end of a regulatory period. This mechanism is the subject of the proposed amendments discussed in this paper.
- 1.8 An IRIS was included in input methodologies to help address an issue that occurs when price-quality paths are reset at periodic intervals. In particular, as we explained in December 2010, periodic resets create an incentive to achieve efficiency gains that declines as the regulatory period progresses.<sup>6</sup> In this paper, we refer to the declining incentive as the ‘natural incentive’.
- 1.9 In an attempt to counteract the declining strength of the natural incentive, the existing IRIS was designed to allow suppliers to ‘carry forward’ the benefit of a saving in operating expenditure after the end of the regulatory period. In the absence of a carry forward mechanism, the natural incentive applies.

#### *Consultation on amendments to the Incremental Rolling Incentive Scheme*

- 1.10 In July 2014, we sought feedback on a draft version of the amended IRIS, and gave interested persons the opportunity to give their views on the draft methodology.<sup>7</sup> We had originally issued a notice of intention to amend the IRIS in April 2013, and a Process and Issues Paper in September 2013 outlining the existing arrangements.

<sup>5</sup> This IRIS was set under s 52T(1)(c).

<sup>6</sup> Refer: Commerce Commission, Input Methodologies (Electricity Distribution and Gas Pipeline Services) - Reasons Paper, December 2010.

<sup>7</sup> As required under s 52V of the Act.

- 1.11 The amendments we proposed in July 2014 were for the input methodologies that apply to price-quality regulation in the following sectors:
- 1.11.1 Electricity distribution services;
  - 1.11.2 Electricity transmission services;
  - 1.11.3 Gas distribution services; and
  - 1.11.4 Gas transmission services.
- 1.12 The consultation on the amendments to the Incremental Rolling Incentive Scheme in July 2014 occurred in parallel with consultation on the reset of individual and default price-quality paths for electricity distribution and transmission services (respectively).
- 1.13 In October 2014, we sought further views on the revised drafting of the amendments for electricity distribution and transmission services.<sup>8</sup> We noted in October 2014 that we would invite views on the drafting of the amendments for gas distribution or gas transmission services at a later date.

*Feedback taken into account in reaching the decisions outlined in this paper*

- 1.14 In reaching the decisions outlined in this paper, we have taken into account feedback received from stakeholders across in the electricity and gas sectors, and we have also considered any relevant responses provided as part of the parallel consultation on the periodic resets of price-quality paths.

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<sup>8</sup> Refer: Commerce Commission “How we propose to implement amendments to input methodologies for electricity lines businesses subject to price-quality regulation: Incremental Rolling Incentive Scheme (IRIS)” (20 October 2014).

### **Scope of amendments discussed in this paper**

1.15 As explained in Chapter 2, the scope of the amendments is currently limited to the input methodologies for electricity distribution and transmission services. We currently intend to finalise our decisions on the proposed amendments to the input methodologies for gas pipeline services in 2015.

#### *Scope of amendments for electricity distribution services*

1.16 At this stage, the scope of the amendments to input methodologies for electricity distribution services is limited to situations in which distributors are subject to default price-quality paths from one regulatory period to the next. The amendments made to date are therefore not intended to cover situations in which:

1.16.1 Distributors are currently subject to a customised price-quality path; or

1.16.2 Distributors transition between default and customised price-quality paths.

1.17 Further amendments to the input methodologies for electricity distribution services will be progressed alongside those for gas pipeline services. Those amendments will relate to customised price-quality paths and the transitions between default and customised price-quality paths. We therefore do not respond in this paper to submissions that relate to the situations listed in paragraphs 1.16.1 and 1.16.2.<sup>9</sup>

1.18 The reason for deferring consideration of the amendments listed in paragraphs 1.16.1 and 1.16.2 is that the formulas are more complicated, and require further work than has been possible in the time available to date. However, we are aware of the changes that would be required to give effect to similar incentives across the various situations.

#### *Scope of amendments for electricity transmission services*

1.19 The scope of the amendments for electricity transmission services is limited to operating expenditure. This is because the input methodology for Transpower's capital expenditure proposals already ensures Transpower will have a symmetric and equal incentive to control base capital expenditure in each year of future regulatory periods.

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<sup>9</sup> For example, we have not responded to many of the points raised by Orion New Zealand in its submission. Refer: Orion New Zealand, Submission on the proposed amendments to IMs: IRIS, 28 August 2014.

**Material released alongside this paper**

1.20 Alongside this paper, we have published:

- 1.20.1 determinations that amend the IRIS in input methodologies for electricity distribution and transmission services;<sup>10</sup> and
- 1.20.2 models that demonstrate how the formulas in the determination give effect to the intended incentives.

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<sup>10</sup> *Incremental Rolling Incentive Scheme Input Methodology Amendments Determination 2014* [2014] NZCC 32.

## 2. Original Incremental Rolling Incentive Scheme

### Purpose of chapter

- 2.1 This chapter outlines and explains the key features of the original Incremental Rolling Incentive Scheme, and provides background to the amendments.

### Original Incremental Rolling Incentive Scheme

- 2.2 The original IRIS:
- 2.2.1 only affected incentives under customised and individual price-quality paths; and
  - 2.2.2 was 'asymmetric'; and
  - 2.2.3 only affected incentives to control operating expenditure.
- 2.3 Incentives were affected under customised and individual price-quality paths because, when an individual or customised price-quality path comes to an end, the original IRIS meant that suppliers may be able to retain the benefit of efficiency gains for a set period of time.<sup>11</sup>
- 2.4 The original IRIS did not apply to default price-quality paths because, at the time the IRIS was introduced, we had not established an approach for setting expenditure baselines for default price-quality paths. An 'expenditure baseline' is needed because it provides the basis for assessing whether a gain or loss has been made.
- 2.5 The original IRIS has been described as 'asymmetric' because:
- 2.5.1 It could result in revenues being higher in the next regulatory period than they would be in the absence of an IRIS; but
  - 2.5.2 Revenues could not be reduced by more than they would be in the absence of an IRIS.
- 2.6 The original IRIS only affected incentives to control operating (not capital) expenditure. Therefore, capital expenditure was subject only to the natural incentive to achieve efficiencies, ie, the strength of the incentive to control expenditure changed as the regulatory period progresses.

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<sup>11</sup> Since any additional rewards are applied after the price-quality path comes to an end, the amounts do not affect the price-quality path that the supplier is subject to at the time any savings are made.

*Notice of Intention to amend the Incremental Rolling Incentive Scheme*

- 2.7 On 30 April 2013, we issued a notice of intention to begin work on potential amendments to the IRIS.<sup>12</sup> Our decisions in December 2010 for the original IRIS reflected a cautious approach to the new Part 4 regime. We noted at the time that the asymmetric approach was likely to be interim, and we contemplated revisiting the IRIS at a later date, once the regime was operational.<sup>13</sup>
- 2.8 Since input methodologies were determined in December 2010, we have:
- 2.8.1 reset the 2010–2015 default price-quality paths for 16 electricity distributors after developing low cost approaches for forecasting expenditure;
  - 2.8.2 set a customised price-quality path for Orion New Zealand that applied the original IRIS; and
  - 2.8.3 determined the input methodology for Transpower’s capital expenditure proposals, which included an incentive mechanism for ‘base capital expenditure’.<sup>14</sup>
- 2.9 Notably, the input methodology for Transpower’s capital expenditure proposals ensures Transpower will have a symmetric and equal incentive to control base capital expenditure in each year of future regulatory periods.

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<sup>12</sup> We also indicated to the High Court in the input methodology appeals that we intended to consult on amendments to the IRIS. See *Wellington International Airport Ltd v Commerce Commission* [2013] NZHC 3289 at paragraph 1937.

<sup>13</sup> Regulators in other jurisdictions have also made incremental improvements to incentive mechanisms as their regulatory regime matures. In the United Kingdom, for example, Ofgem first introduced an equalised incentive on in 2009. More recently, the Australian Energy Regulator has introduced an incentive mechanism similar to the EBSS for capital expenditure in order to strengthen incentives for suppliers to deliver capital projects efficiently. The Capital Expenditure Sharing Scheme results in suppliers retaining 30% of any underspend or overspend. Refer: Australian Energy Regulator, Capital expenditure incentive guidelines for electricity network service providers, November 2013.

<sup>14</sup> ‘Base capital expenditure’ includes the majority of capital investment programmes that are due for completion, except large-scale capacity driven programmes that cost more than \$20 million. The definition of base capital expenditure can be found in the Transpower Input Methodologies Determination 2012 [2012] (NZCC 17).

*Process and Issues Paper considered incentives under existing arrangements*

- 2.10 In September 2013, we published a 'Process and Issues Paper' to invite submissions and cross-submissions on the incentives that suppliers have to control expenditure under the existing arrangements. We also hosted a workshop after publishing that paper to allow people to ask questions about our analysis.
- 2.11 Chapter 3 provides further detail on our findings about the issues with incentives under the current arrangements.

### 3. Issues with existing incentives

#### Purpose of chapter

- 3.1 In this chapter, we set out our view on the issues with the incentives that suppliers have to control expenditure under the existing arrangements. We have identified four main themes.
- 3.1.1 Treatment of events that are outside a supplier's control.
  - 3.1.2 Perverse incentives created by time inconsistency.
  - 3.1.3 Trade-off between capital and operating expenditure.
  - 3.1.4 Complications caused by an asymmetric IRIS.
- 3.2 These issues were sufficient to satisfy us that there were good reasons to make amendments to the IRIS.

#### Treatment of events that are outside a supplier's control

- 3.3 The current treatment of events that are outside a supplier's control means that supplier profitability may be affected differently depending on whether the effects of an event are temporary or permanent in nature.
- 3.4 Under the existing arrangements, a supplier may be exposed to:
- 3.4.1 100% or more of the costs of responding to events that have a temporary impact on expenditure; and
  - 3.4.2 Less than 50% of the costs of events that have a permanent impact on expenditure.
- 3.5 In our view, there is little reason why supplier profitability should be affected differently depending on whether the effects of the event are temporary or permanent in nature. We agree with submitters that it is not necessary for suppliers to be fully exposed to "large increases of expenditure (100% or more in a single year) to deal with a newly identified potential hazard in a timely manner".<sup>15</sup>

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<sup>15</sup> Refer: Maui Development Limited, Untitled letter (in response to Process and Issues Paper), 18 October 2013, p. 2.

3.6 Submissions on our draft decision generally agreed with our view that there was scope to improve these existing incentives. For example, the ENA agreed that “the temporary or permanent nature of a higher or lower expenditure than forecast should not be a determinant in the penalty or reward associated with it”.<sup>16</sup>

3.7 PwC submitted that:<sup>17</sup>

We agree that [electricity distributors’] profitability is affected differently within a regulatory period, depending on whether the events which impact [operating expenditure] are temporary or permanent. We consider, consistent with the IRIS Paper, that it is problematic that [distributors] currently bear 100% of the costs of responding to one-off adverse events.

3.8 In addition, expenditure decisions can often be affected by temporary events that are outside a supplier’s control. For example, Powerco submitted that “most expenditure is driven by the practical needs of the businesses concerned and is not discretionary”.<sup>18</sup>

*Exposure to risk associated with expenditure forecasts*

3.9 Submissions on our draft decision highlighted that the retention factor affects the extent to which suppliers are exposed to the risk of forecasting errors. Most submissions on this topic focussed on the risk of forecasting error when setting default price-quality paths. This is because default price-quality paths must be set in a relatively low cost way.

3.10 The retention factor that applies to savings and losses under the default price-quality path is determined implicitly without an IRIS. With an IRIS, it would be possible to vary the retention factor for capital expenditure in response to concerns about forecasting risk.

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<sup>16</sup> Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 21.

<sup>17</sup> PwC "Submission to the Commerce Commission on proposed amendments to input methodologies: Incremental Rolling Incentive Scheme - Made on behalf of 19 Electricity Distribution Businesses" 29 August 2014, paragraph 15.

<sup>18</sup> Refer: Powerco Limited "Re: Incentives for Suppliers to Control Expenditure During a Regulatory Period" 21 October 2013, p.2. Eastland Network made similar points in their submission, suggesting (for example) that “any regulatory savings will not be sufficient enough to outweigh the other business factors and therefore does not materially affect any decision making”. Refer: Eastland Network “Submission to Commerce Commission Incentives for Suppliers to Control Expenditure During a Regulatory Period: Process and Issues Paper” 21 September 2013, p.1. A final example would be the point raised by Transpower New Zealand: “some expenditure is driven by weather events, regulatory changes, or industry events”. Refer: Transpower New Zealand “Incentives for suppliers to control expenditure” 21 October 2013, p.1.

### **Perverse incentives created by time inconsistency**

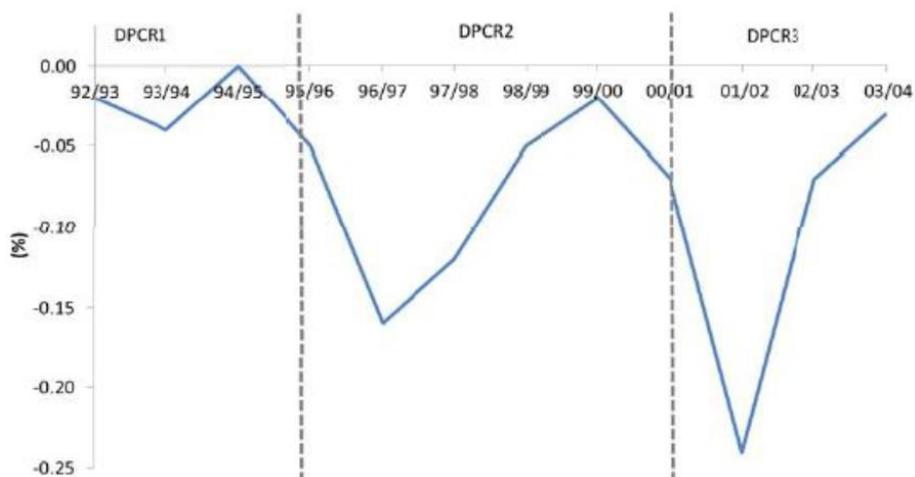
- 3.11 The analysis we presented in the ‘Process and Issues Paper’ demonstrated that, under the existing arrangements, efficiency gains and losses are rewarded differently depending on the year in which they occur.<sup>19</sup> Most submitters agreed with our analysis. Some said the existing incentives were ‘not time consistent’.<sup>20</sup>
- 3.12 Time inconsistency creates incentives for suppliers to delay efficiency improvements. This perverse incentive was demonstrated in a number of worked examples in the ‘Process and Issues Paper’. We showed that the profitability of an efficiency enhancing investment could be increased by altering its timing.<sup>21</sup>
- 3.13 We also highlighted a specific perverse incentive created by time inconsistency, which is created when prices are reset based on a forecast that is reliant on a ‘base year’. This analysis demonstrated that the use of a base year creates incentives for suppliers to:
- 3.13.1 shift operating activities into the ‘base year’; and/or
  - 3.13.2 find other ways of inflating operating expenditure in that year.
- 3.14 Several submissions on our ‘Process and Issues Paper’ recognised that time inconsistent incentives could have an impact on the timing of expenditure. For example, Vector’s cross-submission illustrated the impact of regulatory timeframes on changes in operating expenditure by UK distributors (refer Figure 3.1).

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<sup>19</sup> The analysis and terminology in this paper is explained in detail the Process and Issues Paper. For example, we assumed for simplicity that a supplier achieves an efficiency gain in a year if the actual level of expenditure for that year differs from the expenditure forecast. The change in expenditure is referred to as a ‘saving’ or ‘loss’ (respectively).

<sup>20</sup> Refer: Electricity Networks Association, Comment on the Commerce Commission’s Incentives Paper, 18 October 2013.

<sup>21</sup> Refer, for example: Figure 9, Process and Issues Paper.

**Figure 3.1: Growth in real unit operating expenditure (UK distributors)**

- 3.15 We did not receive any submissions on our draft decisions that challenged this analysis. Some submitters simply noted that the existing incentives were ‘not time consistent’.
- 3.16 In light of these issues, our view is that it is preferable to change the IRIS to remove any time inconsistencies. Suppliers would then have a financial incentive to achieve efficiencies as soon as they are identified.

#### **Trade-off between capital and operating expenditure**

- 3.17 The existing arrangements provide an incentive to prefer one type of expenditure over another.<sup>22</sup> The analysis presented in our ‘Process and Issues Paper’ outlined how cost savings made by distributors can be rewarded differently depending on whether they are classified as operating expenditure or capital expenditure.<sup>23</sup>
- 3.18 Some submitters on our ‘Process and Issues Paper’ indicated that aligning incentives for controlling operating and capital expenditure should not be the primary focus, due to limits on the amount of possible substitution. For example, the ENA submitted that “[t]he opportunities for [an electricity distributor] to substitute [capital expenditure for operating expenditure] are modest.”

<sup>22</sup> In the ‘Process and Issues Paper’ we stated that there was a risk suppliers would attempt to reclassify costs if there was a different retention factor for operating efficiencies relative to capital efficiencies. However, we acknowledge that distributors have limited opportunity to reclassify costs due to GAAP, as noted by some submitters. The real issue at hand is whether or not suppliers have an incentive to prefer one type of expenditure over another.

<sup>23</sup> Commerce Commission “Incentives for suppliers to control expenditure during a regulatory period: Process and issues paper” (20 September 2013).

- 3.19 However, an important element in achieving efficiency is to make the correct decision on whether operating or capital expenditure is appropriate. The existing arrangements can provide incentives to undertake operational expenditure, eg, asset maintenance, when capital expenditure, eg, asset replacement, might be more appropriate (or vice-versa).
- 3.20 Under the existing arrangements for Transpower New Zealand, we are able to vary the retention factor for base capital expenditure, relative to other types of expenditure, when we reset the individual price-quality path. However, an amendment to the original IRIS is required to allow a similar approach to be taken in other sectors.

### **Complications caused by an asymmetric IRIS**

- 3.21 Efficiency gains and efficiency losses are not treated symmetrically under the original IRIS. The asymmetry in the original IRIS can result in revenues being higher in the next regulatory period than they would have been in the absence of an IRIS; but revenues cannot be lower than they would have been in the absence of an IRIS.
- 3.22 In addition to the time inconsistency issue and the treatment of one-off events, the asymmetric nature of the IRIS significantly complicates the incentives facing suppliers. This is because the incentive facing a supplier is dependent on:
- 3.22.1 How the supplier expects to perform relative to the baseline in the year of the gain or loss; and
  - 3.22.2 How the supplier has performed relative to the baseline in the years preceding the gain or loss.
- 3.23 We therefore disagree with the view expressed by Transpower New Zealand that, under an asymmetric IRIS, a bad year would not wipe out good work in previous years. This is because, under the original asymmetric IRIS, a bad year would still reduce or eliminate any positive amounts carried forward from previous periods.<sup>24</sup>

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<sup>24</sup> Refer: Transpower New Zealand “Incentives for suppliers to control expenditure” 21 October 2013, p.1.

## 4. Incentive properties from amendments

### Purpose of chapter

- 4.1 This chapter outlines and explains the incentives we are putting in place by amending the existing Incremental Rolling Incentive Scheme.

### Time consistent incentive to control expenditure

- 4.2 Consistent with the draft decision, we have put in place an incentive to control expenditure that is the same in each year of the regulatory period. Unlike the existing asymmetric IRIS for operating expenditure, the revised IRIS would provide incentives that are the same in each year.
- 4.3 Put another way, in contrast to the IRIS introduced in 2010, the revised IRIS would result in suppliers retaining the same proportion of a saving or a loss, irrespective of:
- 4.3.1 the year of the saving or the loss;
  - 4.3.2 expenditure relative to the baseline in the year of the saving or loss; and
  - 4.3.3 expenditure relative to the baseline in any previous year.
- 4.4 A symmetric approach is the only way to ensure that incentives are ‘time consistent’, ie, where the incentive to control expenditure remains constant throughout the regulatory period. Any form of asymmetry in the IRIS will result in deviations away from a time consistent incentive.

### *Practical effects of applying a time consistent incentive*

- 4.5 The practical effects of applying a time consistent incentive include:
- 4.5.1 Suppliers are no longer exposed to the full cost of responding to external events that have a temporary impact on expenditure; and
  - 4.5.2 Suppliers are unable to boost profits by concentrating costs in a particular year.<sup>25</sup>

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<sup>25</sup> The proposed approach is therefore consistent with promoting s 52A(1)(d) of the Act. As noted in Chapter 3, suppliers that are subject to default/customised price-quality regulation currently have an incentive to increase expenditure in the base year used to determine the baseline for operating expenditure.

- 4.6 A time consistent incentive also means that the payoff from improving efficiency is greatest at the time an improvement is identified.<sup>26</sup> A symmetric IRIS therefore helps minimise the perverse incentive that previously existed to delay efficiency improvements. Instead, profits are maximised by making an efficiency improvement as early as possible.
- 4.7 In addition, under the amended IRIS, the short-term benefit to suppliers of achieving efficiencies will be outweighed by the long-term benefit to consumers of the efficiencies being achieved.<sup>27</sup>

*Application to operating and capital expenditure*

- 4.8 The revised IRIS provides a time consistent incentive to control operating expenditure and, for default price-quality paths, capital expenditure too.
- 4.8.1 For operating expenditure, the retention period for savings and losses is five years following the year of the gain and loss, which is equivalent to a retention factor of around 35% for a supplier.
- 4.8.2 As explained in Chapter 6, the strength of the incentive applying to capital expenditure can be varied relative to the incentive strength applying to operating expenditure. The choice of retention factor for capital expenditure will be decided at the time of each reset.
- 4.9 Amongst other things, the ability to vary the retention factor for capital expenditure will help address concerns about the risk of forecasting error when setting default price-quality paths.

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<sup>26</sup> Consistent with s 52A(1)(b).

<sup>27</sup> Consistent with s 52A(1).

*Incentive properties are consistent with s 54Q of the Act*

- 4.10 The ENA Energy Efficiency Incentives Working Group identified a number of regulatory and market settings that may act as disincentives to distributors investing in energy efficiency and demand side management initiatives.<sup>28</sup>
- 4.11 Applying a ‘time consistent’ incentive scheme to control expenditure helps avoid some of the potential issues identified by the ENA. In particular the new incentive mechanism to control expenditure:
- 4.11.1 Neutralises the existing incentive to invest in long lived assets over short lived by washing up for the difference between forecast and actual return on and of capital before applying the incentive adjustment; and
- 4.11.2 Reduces the maximum difference between the incentive to invest in operating and capital expenditure that exists without time consistent incentives.
- 4.12 Neutralising the incentive to invest in long lived assets over short lived assets was considered by the ENA to be important as it ensures that suppliers are not penalised for opting for short lived assets if these are part of delivering a more efficient solution.
- 4.13 Reducing the difference between the marginal incentive to control operating expenditure relative to capital expenditure is important because the difference affects the trade-off between different options for meeting demand. For example, large differences in the incentive strength may mean that capital intensive solutions (such as expanding substation capacity) would be preferred over more economical operational solutions (such as contracting for demand-side response).

**Asymmetric approaches rejected due to incentive effects**

- 4.14 The marginal incentive is not constant under an asymmetric scheme because the reward from saving an additional dollar depends on whether the supplier spends more or less than the expenditure baseline. Under a symmetric scheme, the reward from saving an additional dollar is always the same.

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<sup>28</sup> Electricity Networks Association (ENA) Energy Efficiency Incentives Working Group, Options and Incentives for Electricity Distribution Businesses to Improve Supply and Demand-Side Efficiency: Report to the to the Commerce Commission, April 2014.

4.15 Therefore, a symmetric approach is the only way to ensure that the marginal incentive is 'time consistent', ie, where the incentive to control expenditure remains constant throughout the regulatory period. Any form of asymmetry in the IRIS will result in deviations away from a time consistent incentive, and the benefits listed in paragraphs 4.5 to 4.7 would not be realised.

4.16 Submitters reasons for preferring an asymmetric scheme included:

4.16.1 the low cost forecasting approach in a default price-quality path meant that IRIS rewards/penalties were likely to be more dependent on forecast error than any realised efficiencies;

4.16.2 the application of the capital expenditure cap means that forecasts are biased downwards for some distributors and so a symmetric IRIS is not appropriate; and

4.16.3 an asymmetric scheme is simpler to implement and easier for distributors to understand the revenue impact.

4.17 The ENA suggested that the retention factors should be different for expenditure that exceeded forecasts and expenditure that was less than forecast:

The asymmetry of incentives should be retained by having a shorter retention period for [operating expenditure] and a lower retention factor for [capital expenditure] for over-expenditure compared to those that apply when expenditure is less than the forecast. This asymmetry reflects the approximate nature of the Commission's forecasting approach and strengthens the incentive to reveal where the true costs are lower than the forecast, but does not impose an equivalently strong penalty where the ENB's true costs are higher than the Commission's forecast.

4.18 We have not applied an asymmetric scheme because:

4.18.1 it is not consistent with providing a time consistent incentive; and

4.18.2 it further complicates the incentive facing suppliers.

4.19 Also, the ability to vary the retention factor for capital expenditure will help address concerns about the risk of forecasting error when setting default price-quality paths.

## 5. Approach for operating expenditure

### Purpose of chapter

- 5.1 This chapter outlines and explains the general approach we are applying to operating expenditure to give effect to the desired incentives, as well as explaining how the adjustments to allowed revenue are calculated.

### General approach for operating expenditure

- 5.2 This section outlines and explains the general approach we have taken for operating expenditure. Notable features include:
- 5.2.1 The approach for operating expenditure is based on the Australian Energy Regulator's Efficiency Benefit Sharing Scheme, but we have tailored it to Part 4 to give effect to equivalent incentives; and
  - 5.2.2 The retention period for savings and losses is five years following the year of the gain and loss, which is equivalent to a retention factor of around 35% for a supplier.
- 5.3 The approach is intended to incentivise year-on-year improvements in operating efficiency, which can then be passed onto consumers through prices that are lower than they otherwise would have been. In particular, any efficiencies in operating expenditure that are revealed by the IRIS will feed into future forecasts of operating expenditure.

### *Approach for operating expenditure based on that of the Australian Energy Regulator*

- 5.4 For operating expenditure, the approach we are applying is based on that applied by the Australian Energy Regulator under the Efficiency Benefit Sharing Scheme.<sup>29</sup> In particular, suppliers are able to retain the benefits of each saving, and are exposed to each loss, for a set period of time before sharing it with consumers.

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<sup>29</sup> Refer, for example: Australian Energy Regulator, Electricity distribution network service providers: Efficiency benefit sharing scheme, June 2008. <http://www.aer.gov.au/node/6851>

- 5.5 A number of features in the Part 4 regime mean that we must modify the approach used by the Australian Energy Regulator to achieve similar incentives. These features include:
- 5.5.1 At the start of a default price-quality path, prices may be adjusted or rolled over, so we cannot assume that efficiencies will necessarily be shared with consumers at the end of the regulatory period;<sup>30</sup>
  - 5.5.2 Except for Transpower New Zealand, suppliers may transition between default and customised price-quality paths, while others may remain on a default price-quality path throughout the regulatory period;<sup>31</sup>
  - 5.5.3 Price-quality paths can be of varying lengths, and there is the possibility of suppliers returning to a default price-quality path with only one or two years remaining;
- 5.6 In addition, when setting an individual or customised price-quality path, the forecast of operating expenditure is based on a detailed review of future expenditure requirements, so there is not a direct link with actual expenditure in a base year.

*Retention period of five years for gains and losses*

- 5.7 Consistent with the approach used by the Australian Energy Regulator and our proposal in the draft decision, we have allowed suppliers to retain the benefits of savings and losses for 5 years following the year in which they are realised. This approach is unchanged from the IRIS introduced in 2010. .
- 5.8 Notably, the length of the ‘retention period’ determines the proportion of any savings or losses that are retained by the supplier, ie, before being shared with consumers. In other words, the length of the retention period determines the ‘retention factor’.<sup>32</sup>

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<sup>30</sup> Alternatively, we could assume that prices will only ever be rolled over if an appropriate sharing occurs. In this case, the formula for a roll over would be the same as the formula for a starting price adjustment. However, we have provided a mechanism that will provide an equalised incentive irrespective of whether efficiencies are shared when prices are rolled over.

<sup>31</sup> As discussed in the Introduction, we intend to address the transitions between default and customized price-quality paths at a later date.

<sup>32</sup> This approach contrasts with the approach we propose for capital expenditure, where the retention factor would be specified directly (refer Chapter 5).

- 5.9 Our reasons for selecting a 5 year retention period were set out in our draft decision.<sup>33</sup> We noted that a 5 year retention period is broadly equivalent to a sharing ratio of 35:65 between suppliers and consumers, ie, a retention factor for suppliers of 35%, which is:
- 5.9.1 Consistent with the retention period in the original IRIS scheme, which was supported by a number of submissions at the time of that scheme's introduction; and
  - 5.9.2 Comparable to the strength of the natural incentive in the first year of a 5 year regulatory period without an IRIS.
- 5.10 In addition, a retention period of 5 years is consistent with the strength of the incentive that is favoured by the Australian Energy Regulator.

*Submissions on retention period for operating expenditure*

- 5.11 Submissions were generally supportive of a 5 year retention period, although some submitters felt that this should only be applied when actual expenditure was lower than the baseline. They felt a different retention period should be applied when actual expenditure was higher.<sup>34</sup>
- 5.12 The only submission which explicitly recommended a lower retention period in the context of a symmetric IRIS was from Powerco, who proposed that a retention factor of 15% should apply to operating expenditure.<sup>35</sup>
- 5.13 We noted that a number of submissions on the length of the retention period are linked to the symmetry or asymmetry of the regime. Submissions from suppliers generally supported a longer retention period under an asymmetric IRIS, but a shorter retention period under symmetric IRIS.

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<sup>33</sup> Refer: Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 11; Powerco "Submission on proposed amendments to amendments to input methodologies: Incremental Rolling Incentive Scheme" 29 August 2014, paragraph 57–59.

<sup>34</sup> PwC "Submission to the Commerce Commission on proposed amendments to input methodologies: Incremental Rolling Incentive Scheme - Made on behalf of 19 Electricity Distribution Businesses" 29 August 2014, paragraph 41 and Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 29.

<sup>35</sup> Powerco "Submission on proposed amendments to amendments to input methodologies: Incremental Rolling Incentive Scheme" 29 August 2014, paragraph 59.

5.14 We did not consider that the arguments in favour of a shorter retention period for operating expenditure were persuasive. Applying a lower retention period as part of an asymmetric approach would be associated with the time inconsistency issues identified previously. In addition, the additional risk associated with forecast errors is relatively low relative to the existing arrangements.<sup>36</sup> Consequently, our preference is for a five year retention period for the reasons given in paragraph 5.9.

#### **How adjustments to allowed revenue are calculated**

5.15 This section explains the method for calculating the recoverable cost term that is allowed under the IRIS for operating expenditure.<sup>37</sup> The intention behind applying this method is to ensure that, in each year of the regulatory period, suppliers would retain the same proportion of any incremental saving or loss in operating expenditure.

5.16 The steps in this method are:

5.16.1 Amounts that are generally equal to the incremental change in operating expenditure are carried forward from earlier years in which the savings or losses are made; and

5.16.2 The amounts carried forward into each year are added together to determine the recoverable cost term.

5.17 In the second full year after the price-quality path starts to apply to the supplier, a one-off adjustment is made after the carry forward amounts are added together. As explained further below, this adjustment is required to give effect to the desired sharing of benefits between suppliers and consumers.

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<sup>36</sup> The IRIS only 'sees' incremental changes in expenditure relative to the expenditure baseline. This means that any error in the forecast is only recognised as an incremental change in the first year of the regulatory period. Under the natural incentive, ie, without an IRIS, the supplier bears the impact of this incremental change until the end of the regulatory period, ie, for 4 years. Under the amended IRIS, the supplier would only bear the impact of this incremental change for one additional year, as a result of carrying forward the incremental change for five years. In addition, due to the effects of the time value of money, the impact on the retention factor is less than one fifth.

<sup>37</sup> Consistent with the IRIS introduced in 2010, the adjustment to allowed revenue is provided through a recoverable cost term.

- 5.18 This approach is designed to make compliance as straight forward as possible for suppliers. The amounts to be carried forward each year are always calculated the same way.<sup>38</sup> The one-off adjustment occurs only once during each price-quality path,<sup>39</sup> and have been simplified as far as practicable.

*Calculation of amounts to be carried forward*

- 5.19 For operating expenditure, the amounts carried forward are calculated in a similar way to the way that they would be calculated under the approach used by the Australian Energy Regulator, and under the IRIS introduced in 2010. The amount carried forward from each year will be calculated as the difference (or 'increment') between:

5.19.1 The saving or loss experienced in the current year, relative to the expenditure baseline; and

5.19.2 The saving or loss experienced in the previous year, relative to the expenditure baseline.

- 5.20 The reasons for calculating incremental savings and losses in this way are explained in the 2010 input methodologies reasons paper.<sup>40</sup> In summary, operating expenditure is generally recurring. For example, if a supplier reduces staff numbers in year one of the regulatory period, then operating expenditure will likely be lower than forecast not just in that year but in subsequent years too.

- 5.21 As a result, when assessing the extent of a gain relative to the forecast, it is appropriate to focus on incremental changes from one year to another, rather than simply the performance relative to the forecast in that year. This approach ensures that suppliers have an incentive to improve performance year-on-year, while also ensuring that past gains or losses are not double counted.

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<sup>38</sup> The requirements for information disclosure could be amended so that suppliers would disclose the carry forward amounts on an annual basis.

<sup>39</sup> Generally the adjustment amounts will be calculated once every five years.

<sup>40</sup> Refer: Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), Chapter 8 and appendix J3.

*Simplifying assumptions in the first and final years of a price-quality path*

- 5.22 Simplifying assumptions are required in the first and the final years of a price-quality path. These assumptions are explained by the fact that, at the time prices are set at the start of a new price-quality path, a supplier's actual expenditure in the final year of the previous price-quality path will not be known. Consequently, it is not possible to calculate the amount carried forward from the final year of the previous price-quality path.
- 5.23 Recognising this issue, and consistent with the approach used by the Australian Energy Regulator, under the revised IRIS:<sup>41</sup>
- 5.23.1 The incremental change in the final year of a price-quality path is assumed to be nil, ie, the carry forward amount is zero; and
- 5.23.2 After the first year of the subsequent price-quality path, an adjustment must be made to correct for the incremental change that actually occurred in the final year.
- 5.24 Where a supplier is only subject to a price-quality path for one year or less, that period of time is treated as the final year of the price-quality path (rather than the first). This is because information about expenditure will not be available at the time the supplier sets prices at the start of the next price-quality path.

*One-off adjustment in second full year of a price-quality path*

- 5.25 As noted above, a one-off adjustment must be made in the second full disclosure year to give effect to the desired incentives. The 'adjustment amount' is added to the sum of any amounts carried forward from previous years. In general, the adjustment amount will be calculated the same way by all suppliers; however, the method for calculating the adjustment amount does vary in a number of situations.
- 5.26 Most obviously, the one-off adjustment in the second year is required to correct for the difference between the actual and assumed level of operating expenditure in the final year of the preceding price-quality path. This adjustment is required because the incremental change in the final year of a price-quality path is assumed to be nil.

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<sup>41</sup> The same approach is adopted under the EBSS but the formulas differ for the reasons given at paragraph 63.

- 5.27 The adjustment amount is included in recoverable costs in the year in which it is calculated, ie, the second year of the price-quality path. This contrasts with the approach used by the Australian Energy Regulator, in which the adjustment treated like a carry forward amount, ie, carried forward for five years following the date of the adjustment.<sup>42</sup> We have achieved a similar outcome by making the adjustment sooner but with an adjustment for the time value of money.<sup>43</sup>
- 5.28 The calculations for the adjustment amount vary depending on the situation that the supplier is in. More detail on the reasons why the various adjustments are required in the different situations can be found in Attachment A.

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<sup>42</sup> We have taken this approach because of the complications caused by possible transitions between default and customised price-quality paths, which affect the time at which carry forward amounts materialise in recoverable costs. For example, if a supplier transitions to a customised price-quality path, then the amounts carried forward under the default price-quality path will materialise in recoverable costs during the term of the customised price-quality path, rather than during the next regulatory period for the default price-quality path.

<sup>43</sup> In the models that we published alongside this paper, we have included both approaches to help demonstrate how both approaches compare.

## 6. Approach for capital expenditure

### Purpose of chapter

- 6.1 This chapter sets out and explains the approach we have applied for capital expenditure for electricity distributors under a default price-quality path. For Transpower, a similar incentive mechanism is already provided for through the input methodology for capital expenditure proposals.

### General approach for capital expenditure

- 6.2 This section outlines and explains the general approach for capital expenditure. Notable features include:
- 6.2.1 The approach for capital expenditure is similar to that applied to Transpower's base capital expenditure;
  - 6.2.2 Unlike the approach for operating expenditure, we specify the retention factor directly for capital expenditure, rather than specifying a retention period; and
- 6.3 In addition, the choice of retention factor will be decided at the time of each price-quality path reset.

### *Approach for capital expenditure is similar to that used for Transpower New Zealand*

- 6.4 We have provided a time consistent incentive for capital expenditure that is similar to the incentive on base capital expenditure for Transpower New Zealand.<sup>44</sup> The IRIS introduced in 2010 for other suppliers did not apply to capital expenditure.

### *Retention factor is specified directly rather than through a retention period*

- 6.5 Unlike the approach for operating expenditure, in which the retention period implies a retention factor, we specify the retention factor for capital expenditure directly. This approach is similar to the approach applied to Transpower's base capital expenditure.

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<sup>44</sup> We do not propose to amend the incentives on capital expenditure for Transpower New Zealand.

- 6.6 The approach for capital expenditure therefore operates in a slightly different way than the approach for operating expenditure, but with a similar effect. The difference in approach from operating expenditure is due to:
- 6.6.1 differences in the way capital expenditure is recovered over time, ie, through a return on and of capital; and
  - 6.6.2 the fact that efficiency gains in one year are unlikely to have a direct bearing on efficiency gains in subsequent years.
- 6.7 In keeping with the approach that applies to Transpower New Zealand, the capital expenditure incentive requires the Commission to determine a retention factor for each supplier at the time of each price-quality path reset. Suppliers therefore have certainty that the retention factor will be specified in advance of any efficiency improvements being achieved.

*Choice of retention factor at the time of each reset*

- 6.8 We outlined in the draft decision that we did not consider it necessary or desirable to specify the retention factor for capital expenditure in the input methodologies, but instead it should be specified at the time of each reset.<sup>45</sup> This approach ensures the retention factor can be set in the most appropriate way possible, taking into account any relevant considerations at the time of each reset.
- 6.9 As an example:
- 6.9.1 the retention factor could be aligned to the retention factor implied for operating expenditure, which might help address the issues identified in Chapter 3; or
  - 6.9.2 it may be appropriate to vary the retention factor for capital expenditure in light of the approach taken to aspects of the reset, eg, in combination with the setting of the capital expenditure allowance.

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<sup>45</sup> Commerce Commission "Proposed amendments to input methodologies: Incremental Rolling Incentive Scheme" (18 July 2014), paragraph 72.

- 6.10 PwC and Vector were in agreement with our approach to specify the retention factor at the time of each reset.<sup>46</sup> The ENA believe that in principle it should be specified in the input methodologies, however they support determining the retention factor at each reset until such time that the forecasting approach for capital expenditure becomes more settled.<sup>47</sup>

*Alignment of incentives between operating expenditure and capital expenditure*

- 6.11 Although we consider it appropriate to determine the retention factor for capital expenditure at the time of each reset, our likely starting position for future resets is that the retention factor for capital expenditure should generally be equal to the retention factor for operating expenditure, except where there are good reasons to prefer a different value.

- 6.12 Submissions on our draft decision generally recognised the benefit of aligning the incentives for operating expenditure and capital expenditure. For example, Wellington Electricity:<sup>48</sup>

...supports the principle of ensuring that the [operating and capital expenditure] incentive schemes have equally balanced incentive rates to ensure that distributor (EDB) decision making in relation to [operating and capital expenditure] trade-offs is optimal for consumers over the long term, and is not unduly influenced by differing incentive rates under the two schemes.

- 6.13 Aligning the incentives for controlling operating and capital expenditure would be consistent with the recommendations from an ENA working group on Energy Efficiency. The report published by the group in April 2014 stated that:<sup>49</sup>

The costs of providing electricity lines services should be treated equally (whether operating or capital expenditure), with incentives that are consistent over time.

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<sup>46</sup> PwC "Submission to the Commerce Commission on proposed amendments to input methodologies: Incremental Rolling Incentive Scheme - Made on behalf of 19 Electricity Distribution Businesses" 29 August 2014, paragraph 43 c) and Vector "Submission on Input Methodology amendments for the Incremental Rolling Incentive Scheme" 29 August 2014, paragraph 54.

<sup>47</sup> Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 43.

<sup>48</sup> Wellington Electricity "Proposed amendment to input methodologies: Incremental Rolling Incentive Scheme" 29 August 2014, p.2.

<sup>49</sup> Electricity Networks Association (ENA) Energy Efficiency Incentives Working Group "Options and Incentives for Electricity Distribution Businesses to Improve Supply and Demand-Side Efficiency: Report to the to the Commerce Commission" April 2014, p.viii.

- 6.14 However, in our view, incentives would be improved simply by avoiding large differences in the strength of the incentive to economise on operating relative to capital expenditure, which would occur if a symmetric IRIS is applied to one type of expenditure but not the other.

#### **Calculation and application of adjustment for capital expenditure**

- 6.15 The adjustment for capital expenditure will be calculated in the second year of each regulatory period for the default price-quality path.
- 6.16 In the draft decision we invited views on the timing of this adjustment and in particular whether the adjustment should be spread over time, or applied in full in a single year.
- 6.17 Submissions suggested that spreading the adjustment amount over time would be more appropriate as this evens out any large one-off impacts and minimises the price shocks to consumers.<sup>50</sup>
- 6.18 We agree that it seems more appropriate to spread the adjustment over time for these reasons. We have revised the determination to spread it in equal amounts across the remainder of the regulatory period.

#### *Calculation of required adjustment*

- 6.19 For capital expenditure, the required adjustment should reflect the amount of capital expenditure incurred in each year. The proposed amendment would ensure that suppliers share a certain percentage of each additional dollar spent with consumers.

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<sup>50</sup> PwC "Submission to the Commerce Commission on proposed amendments to input methodologies: Incremental Rolling Incentive Scheme - Made on behalf of 19 Electricity Distribution Businesses" 29 August 2014, paragraph 43 b), and Powerco "Submission on proposed amendments to amendments to input methodologies: Incremental Rolling Incentive Scheme" 29 August 2014, paragraph 64.

- 6.20 The calculation of the adjustment is complicated by the fact that capital expenditure is recovered over time, ie, through the return on and of capital. Consequently, in calculating the required adjustment, it is important to correct (or 'wash up') for the difference between:<sup>51</sup>
- 6.20.1 The revenue we allow, over the regulatory period, based on the forecast of capital expenditure relied on when setting the price-quality path;<sup>52</sup> and
  - 6.20.2 The revenue required, over the regulatory period, based on the supplier's actual capital expenditure after the price-quality path started.
- 6.21 By first calculating the adjustment required to wash up for this difference, the penalty/reward is more straightforward to calculate. In particular, after the wash up, the penalty/reward is simply the retention factor multiplied by the loss/gain.
- 6.22 In practice we use the value of commissioned assets as a proxy for capital expenditure for the purposes of the capital expenditure incentive calculation. We do this because using actual capital expenditure results in additional complexity when calculating the required revenue adjustments to the price path.
- 6.23 Using the value of commissioned assets ensures consistency with the building blocks approach used to calculate current and projected profitability.

*Wash up addresses issues raised about asset life assumption*

- 6.24 In addition, as a result of performing the wash up outlined above, we have solved two problems identified by stakeholders about the asset life assumption(s) relied on when setting default price-quality paths. The two issues identified were as follows.
- 6.24.1 The average asset lifetime assumption is an approximation and will not be accurate for all suppliers.
  - 6.24.2 Irrespective of the assumed asset life, suppliers currently have an incentive to invest in longer lived assets because depreciation will be lower before prices are reset.
- 6.25 The wash up would address both of these issues. This is because the wash up is based on actual depreciation, which is based on the actual life of the installed asset.

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<sup>51</sup> For capital expenditure, the revenue allowed, and the revenue required, are dependent on the return *on* and *of* capital *less* any revaluation gains.

<sup>52</sup> In practice, the amounts used in the calculation are for the aggregate value of commissioned assets, which is dependent on capital expenditure.

## Attachment A: Calculation of adjustments for operating expenditure

### Purpose of attachment

- A1 This attachment outlines and explains the adjustments required in the second year of a price-quality path for electricity distributors subject to a default price-quality path, and Transpower under an individual price-quality path. These adjustments depend on the way the expenditure baseline is set.

### Baseline for assessing gains and losses based on Commission forecast

- A2 The baseline used to assess gains and losses will be equal to the forecast determined by the Commission when setting the price-quality path for the supplier.

### *Baseline for operating expenditure for default price-quality paths*

- A3 For suppliers that are subject to default price-quality paths, expenditure baselines will be set irrespective of:<sup>53</sup>
- A3.1 Whether starting prices are set under s 53P(3)(a) or (b); and
  - A3.2 Whether the distributor transitions from a customised price-quality path.<sup>54</sup>
- A4 Our approach assumes that, if starting prices are set under s 53P(3)(a), then no efficiencies are shared with consumers. In other words, the supplier's actual level of operating expenditure has no impact on the revenue in the next period when prices are rolled over.
- A5 Therefore, we have assumed that the baseline will be determined by projecting forward the (historic) level of operating expenditure that was used the last time efficiency gains were shared with consumers. In other words, the Commission's forecasting model would be extended by five years, and the initial level would remain the same, ie, it would not reflect recent actual expenditure.

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<sup>53</sup> As discussed in this section, irrespective of whether prices are adjusted or rolled over at the start of a default price-quality path, we expect to determine a baseline for operating expenditure by projecting forward an initial level of operating expenditure from a single year.

<sup>54</sup> We will address these situations in 2015.

- A6 If starting prices are reset under s 53P(3)(b), the Commission’s forecasting model for that reset would be used to determine the baseline. This has meant that the forecast has been developed by projecting forward an initial level of operating expenditure. In future, this initial level would be the most recently disclosed data prior to the reset.<sup>55</sup>

*Baseline for operating expenditure for individual price-quality paths*

- A7 For an individual price-quality path, the baseline for operating expenditure is set by reviewing a supplier’s forecast in detail. A range of techniques may be used, including full audit, verification, and approval processes.
- A8 As a consequence, the forecast of operating expenditure that is used when setting the individual price-quality path is not linked to expenditure in a previous period. A discontinuity therefore arises for individual price-quality paths that does not arise for default price-quality paths.

**Calculation of adjustment amount in second full disclosure year of the price-quality path**

- A9 The formula for calculating the adjustment amount varies depending on whether the supplier is subject to a default price-quality path or an individual price-quality path. As discussed in the Introduction, we do not consider in this paper the calculations that would be required to determine the appropriate adjustment amounts for transitions between default and customised price-quality paths.

*Adjustment amounts under a default price-quality path*

- A10 Under a default price-quality path, the formula primarily depends on whether prices were adjusted based on the current and projected profitability of each supplier, or rolled over from the prices that previously applied.<sup>56</sup>
- A10.1 If starting prices set under s 53P(3)(b), then efficiency gains from the previous period will have been explicitly shared with consumers.
- A10.2 If starting prices are set under s 53P(3)(a), then efficiency gains from the previous period will not have been shared with consumers.

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<sup>55</sup> For example when a supplier moves from one standard default price-quality path to another the initial level of operating expenditure would come from the disclosed data in Year 4 of the preceding period.

<sup>56</sup> Notably, additional adjustments are required if the supplier was only subject to the previous price-quality path for one year or less immediately before their existing price-quality path. This is because the carry forward amount will have been assumed to be nil for two consecutive years in a row. Consequently, the adjustment amount must correct for the difference between the assumed and actual level of expenditure in both years. We will address this issue at a later date, as it is not likely to occur for a number of years.

- A11 In the case of a starting price adjustment under s 53P(3)(b), the adjustment amount generally just corrects for the delay in disclosing information about actual expenditure in the final year of the preceding price-quality path. In these cases, the ‘base year adjustment term’ is calculated in a way that is consistent with the approach used by the Australian Energy Regulator.
- A12 In the case of a roll over s 53P(3)(a), the adjustment amount also ensures that efficiency gains under the previous price-quality path are shared with consumers. In the amendment determination, this adjustment term is referred to as the ‘roll over adjustment term’. It is added to the base year adjustment term when determining the overall adjustment amount.

*Adjustment amounts under individual price-quality regulation*

- A13 In the draft decision, we noted that an adjustment would be required to re-establish the link between expenditure in one period and the next. The required adjustment was dependent on the extent to which any under- or over-expenditure in the penultimate year of the regulatory period was permanent or temporary in nature.
- A14 In the draft decision, we proposed a ‘conditional’ formula that was intended to calculate the relevant adjustment amount. We also modelled the impact of applying the formulas to allow interested parties to assess whether they achieve the desired outcomes.
- A15 Transpower’s submission on the draft decision identified issues with the conditional formula, which were flagged to Commission staff during the consultation period. Transpower identified these issues by testing the conditional formula against more complex, plausible patterns of efficiency gains and losses. The finding was that the retention factor varied considerably depending on the pattern of expenditure.
- A16 As a result of the issues identified by Transpower, we have instead chosen to determine the relevant amount having regard to the views of interested persons. This approach is consistent with that applied by the Australian Energy Regulator,<sup>57</sup> and avoids the issues associated with a more prescriptive formula-based approach.
- A17 The relevant adjustment amount is equal to the value of any temporary (or ‘non-recurrent’) differences between forecast and actual expenditure in the penultimate year of the preceding regulatory period. We refer to this adjustment amount as a ‘baseline’ adjustment because it has the effect re-establishing the link between the expenditure baseline and expenditure in the previous period.

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<sup>57</sup> Australian Energy Regulator, Better Regulation Explanatory Statement Efficiency Benefit Sharing Scheme for Electricity Network Service Providers, November 2014, p. 20.

**Models demonstrate how formulas work**

A18 For operating expenditure, the models published alongside this paper demonstrate how the formulas work. We have released separate workbooks that demonstrate the formulas work for:

- A18.1 Consecutive default price-quality paths that are five years in length;
- A18.2 Consecutive default price-quality paths in which at least one is only four years in length;
- A18.3 Consecutive individual price-quality paths that are five years in length; and
- A18.4 Consecutive individual price-quality paths in in which at least one is only four years in length.

## Attachment B: Responses to issues raised in submissions

### Purpose of attachment

- B1 This attachment responds submissions on other aspects of the IRIS and capital expenditure incentive. In particular it explains our approach to the practical implementation of the incentive mechanisms under a default price-quality path.

### Implementing an IRIS and capital expenditure incentive

- B2 In order to implement an IRIS we have needed to make some high-level assumptions that ensures it is workable under the low cost environment of the default price-quality path. Our approach to implementation ensures that the complexity of the scheme and the compliance requirements on suppliers is manageable.
- B3 Submitters were generally of the view that minimising the complexity of the scheme as much as possible was a worthwhile goal.<sup>58</sup>
- B4 We agree with this view and in order to make the scheme workable we have applied some simplifying assumptions when implementing the incentive mechanisms. It is impractical to take into account all of the detail in the main financial model when calculating the gains and losses under the IRIS.
- B5 Making simplifying assumptions is appropriate as the main goal of an incentive scheme to influence a firm's behaviour. Under an IRIS and the capital expenditure incentive the use of simplifying assumptions does not change the marginal incentive to reduce expenditure.

### Aligning operating and capital expenditure forecasts with those in the price path

- B6 The revised IRIS refers to 'forecast Opex' and 'actual Opex', and 'forecast value of commissioned assets' and 'actual value of commissioned assets'.
- B6.1 The 'forecasts' are equal to the forecast allowances for the in the relevant price-quality path determination; and
- B6.2 The 'actuals' are equal to expenditure reported under information disclosure.
- B7 Submissions noted that there may be expenditure that is excluded from the default price-quality path (DPP) allowances that should also be removed from the IRIS calculation.

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<sup>58</sup> Powerco "Submission on proposed amendments to amendments to input methodologies: Incremental Rolling Incentive Scheme" 29 August 2014, paragraph 67.

- B8 In particular they suggested that additional operating expenditure associated with assets transferred from Transpower, that was not covered in the forecast for operating expenditure for the default price-quality path, should be included in forecast operating expenditure for the purposes of calculating the carry forward amount under the IRIS.<sup>59</sup>
- B9 In general we consider that the allowances for IRIS and the capital expenditure incentive should be aligned with the forecasts used in the determination of the price-quality-path
- B10 There may be reasons why a different forecast value should be used under certain situations, however any divergence from the forecasts can significantly increase both the complexity of the IRIS calculation and the also reporting of expenditure. For example initial differences may result in the ongoing ring-fencing of certain types of expenditure types.
- B11 We do not consider that any of the issues raised in submissions provide sufficient reason to justify the increased complexity that would arise from diverging from forecasts used in the price-quality path.
- B12 This small additional risk from the IRIS is symmetric to distributors as they achieve gains from out-turn expenditure that is lower than forecast as well as achieve losses from out-turn expenditure that is higher than forecast.

### **Out-turn adjustments**

- B13 Some submissions have suggested that we should try to remove the impact on IRIS gains and losses from factors that affect the out-turn values of capital and operating expenditure but are outside their control.
- B14 In particular the ENA, supported by other submitters, suggest that we should exclude the differences between forecast and actual input price changes.<sup>60</sup>
- B15 Although we have some sympathy for this request given the lack of control that distributors have on input prices, we believe this is a symmetric effect that could have a positive or negative impact. It does not affect the objective of the IRIS to create a consistent marginal incentive.

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<sup>59</sup> Eastland Network "Default price-quality paths from 1 April 2015 for 17 electricity distributors" 29 August 2014, paragraph 40 and Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 49.

<sup>60</sup> Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 30.

- B16 On the whole, we do not consider that the issues raised in submissions provide sufficient reason to justify the increased complexity that would arise from adjusting forecasts for factors that affect the out-turn values of capital and operating expenditure but are outside their control.<sup>61</sup>
- B17 In making this decision, we note that having an IRIS, compared to not having an IRIS, generally only slightly accentuates the impact on suppliers due to differences between forecast and out-turn.
- B18 We think that a small increase in symmetric risk is acceptable in order to ensure the incentive benefits associated with the IRIS are introduced. We also note there are also circumstances in which the existence of an IRIS will reduce the impact of differences between forecast and out-turn expenditure on suppliers.<sup>62</sup>

### **Adjusting IRIS expenditure baselines for certain events**

- B19 A number of submissions suggested that an IRIS should be suspended following a catastrophic event.<sup>63</sup>
- B20 We consider that as a general principle the incentives to control expenditure should not be automatically suspended following a catastrophic event. In particular the IRIS should help provide incentives for suppliers to prepare appropriately for such events.
- B21 Despite this we believe that there should be some discretion for the Commission to modify the impact of the IRIS under certain circumstances which result in a material impact on the gains and losses to suppliers under IRIS.
- B22 To ensure this is possible we have amended the input methodologies so that we are able to revise (under certain circumstances) the forecasts of operating expenditure and capital expenditure used to set the baselines under the IRIS and capital incentive scheme.<sup>64</sup>

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<sup>61</sup> An exception is made for certain one-off circumstances (e.g. when a price-quality path has been amended), and which are described in the following section.

<sup>62</sup> For example, an IRIS will reduce the impact of temporary efficiency gains or losses on suppliers compared to the situation without an IRIS.

<sup>63</sup> For example, see PwC "Submission to the Commerce Commission on proposed amendments to input methodologies: Incremental Rolling Incentive Scheme - Made on behalf of 19 Electricity Distribution Businesses" 29 August 2014, paragraph 16 and Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 47.

<sup>64</sup> Incremental Rolling Incentive Scheme Input Methodology Amendments Determination 2014 [2014] NZCC 32, clause 3.3.10 and 3.3.11.

- B23 The circumstances under which the forecasts can be revised are for:
- B23.1 Reconsiderations of the price-quality path, whereby any amended forecasts of operating and capital expenditure will be provided in the amended price-quality path; and
- B23.2 In the event of an amalgamation, merger, major transaction; or change to information disclosure requirements, whereby any amended forecasts of operating and capital expenditure will be notified to the supplier.
- B24 We have provided the option for an amendment to IRIS baselines under these circumstances because the impact of these events on IRIS gains and losses could be substantial and outside of the supplier's control. Therefore we believe a sensible option is to provide an opportunity to amend the baseline forecasts by taking into account specific events with information known at the time.
- B25 The events covered are those that can result in a change in the allowable notional revenue during the price-quality path as well as any providing for any change to reporting requirements under information disclosure that result in out-turn expenditure being reported on a different basis to the forecasts.
- B26 We believe the approach outlined above provides sufficient flexibility to ensure appropriate adjustments can be made to take into account the impact of a catastrophic event without requiring any scheme suspension.

### **Retention factors for mergers and acquisitions**

- B27 Following the Process and Issues Paper some submissions suggested that suppliers should be able to retain a higher share of any efficiencies resulting from mergers and acquisitions.<sup>65</sup>

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<sup>65</sup> For example, the ENA and Unison submitted that a retention period of 10 years (or 50% retention factor) would be appropriate for gains from a merger or acquisition. They argue that these incentives need to be stronger than day-to-day business improvements as there are higher risks and effort required to achieve gains from a merger or acquisition.

- B28 In the draft decision paper we proposed that there would not be a higher retention factor for efficiencies resulting from mergers and acquisitions because:
- B28.1 it is not clear that efficiencies arising from mergers and acquisitions differ significantly from other types of efficiencies;
  - B28.2 practically, it is not possible to distinguish between efficiencies resulting from mergers and acquisitions and other operational efficiencies; and
  - B28.3 in any event, it is not clear that the source of the efficiencies should have any bearing on the extent to which benefits are shared.
- B29 Further submissions from the ENA and PwC on the draft decision disagreed with our approach and suggested a 10 year retention factor should apply due to the risks and effort required to undertake them.<sup>66</sup>
- B30 However we did not receive any further evidence on why the efficiencies arising from mergers and acquisitions should not be shared with the consumer at the same rate as other types of efficiencies.
- B31 We have therefore maintained the decision made in the draft and not provided a higher retention period for efficiencies resulting from mergers and acquisitions.

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<sup>66</sup> PwC "Submission to the Commerce Commission on proposed amendments to input methodologies: Incremental Rolling Incentive Scheme - Made on behalf of 19 Electricity Distribution Businesses" 29 August 2014, paragraph 1 i), and Electricity Networks Association "Submission on proposed amendments to IMs: Incremental rolling incentive scheme" 29 August 2014, paragraph 46.