STARTING PRICE ADJUSTMENTS FOR DEFAULT PRICE-QUALITY PATHS DISCUSSION PAPER

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GLOSSARY OF TERMS, ABBREVIATIONS AND DEFINITIONS

Abbreviation	Definition
2006 GPS	Government Policy Statement on Incentives of Regulated Businesses to Invest in Infrastructure, August 2006
2008 GPS	Government Policy Statement on Gas Governance, April 2008
2009 GPS	Government Policy Statement on Electricity Governance, May 2009
Act, the	Commerce Act 1986
Aurora	Aurora Energy Limited
Commission	Commerce Commission
CPI	Consumer Price Index
CPP	Customised Price-Quality Path
DPP	Default Price-Quality Path
Draft IMs	Refers to the Draft Commerce Act (Electricity Distribution Services Input Methodologies) Determination 2010, 2 July 2010; the Draft Commerce Act (Gas Transmission Services Input Methodologies) Determination 2010, 2 July 2010; and the Draft Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010, 2 July 2010
Eastland	Eastland Network Limited
EDBs	Non-exempt Electricity Distribution Businesses
EDIDRs	Electricity Distribution (Information Disclosure) Requirements 2008
Farrier Swier	Farrier Swier Consulting Pty Limited
GDBs	Gas Distribution Businesses
GPS	Government Policy Statement
GTBs	Gas Transmission Businesses
IMs	Input Methodologies
IM Draft Reasons	Refers to the Input Methodologies Electricity Distribution Services, Draft Reasons Paper, 18 June 2010; and the Input Methodologies Gas Pipeline Services, Draft Reasons Paper, 21 June 2010
IRIS	Incremental Rolling Incentive Scheme
MoU	Memorandum of Understanding between the Commerce Commission and the Electricity Commission

Abbreviation	Definition
Order, the	Commerce (Control of Natural Gas Services) Order 2005
Orion	Orion New Zealand Limited
Part 4 Purpose	Purpose of Part 4, as set out in s 52A of the Act
Powerco	Powerco Limited
PwC	PricewaterhouseCoopers
RAB	Regulatory Asset Base
Reset DPP Discussion Paper	Reset of the Default Price-Quality Path for Electricity Distribution Businesses, Discussion Paper, 19 June 2009
ROI	Return on Investment
ROI band	Band centred on the WACC point estimate, for comparing supplier's returns
ROI differential	A measurement of the difference between a supplier's profitability and the nearest upper or lower limit of the ROI band used if the supplier's profitability is determined outside of the ROI band
Section 53K Purpose	Purpose of default/customised price quality regulation, as set out in s 53K of the Act
Starting price adjustments	Relates to the prices set by the Commission in accordance with s 53P(3)(b) of the Act
Supplier returns	ROI statistic for comparing with the ROI band to provide a measure of a supplier's current and projected profitability
Unison	Unison Networks Limited
Vector	Vector Limited
WACC	Weighted Average Cost of Capital
WACC point estimate	The 75th percentile of the vanilla WACC range, consistent with the Draft IMs
WE	Wellington Electricity Limited
X-factor	Under a CPI-X mechanism a regulated business may increase annual prices by no more than CPI, less an annual percentage i.e., the X-factor

EXECUTIVE SUMMARY

X.1 The default price-quality path (**DPP**) is a regulatory instrument provided for under Part 4 of the Commerce Act 1986 (**the Act**). This form of regulation applies to gas transmission businesses (**GTBs**), gas distribution businesses (**GDBs**) and non-exempt electricity distribution businesses (**EDBs**).[1] A fundamental component of a DPP is the starting prices that are specified for each regulated supplier and apply from the beginning of a regulatory period (i.e., the initial cap placed on supplier's prices or revenues).

X.2 The Act provides that the Commission must specify the starting prices for each supplier based on either: (i) the prices that applied at the end of the previous regulatory period, or (ii) those based on an assessment of the current and projected profitability of that supplier. This paper focuses on the process for specifying starting prices in accordance with the second of these options. The paper provides the Commission's current views on:

- a proposed framework for making starting price adjustments;
- the components of the proposed starting price adjustment framework, including why they are used and how they might be determined; and
- the proposed treatment of certain efficiencies in the context of starting price adjustments, including those arising from mergers or acquisitions.

X.3 The paper also includes an illustrative worked example setting out how the proposed starting price adjustment framework, as represented by the current views set out in this paper and is largely consistent with the draft input methodologies (**IMs**) recently issued for consultation, might be applied to EDBs.

Proposed Starting Price Adjustment Framework

X.4 For each supplier, the Commission proposes the following steps to undertake starting price adjustments:

a. calculate the supplier's returns in the form of a return on investment (**ROI**) measure;

b. compare the supplier's returns against an industry-wide ROI band centred on a weighted average cost of capital (**WACC**) point estimate;

c. in the instance of the supplier's returns falling within the ROI band, no starting price adjustment would generally be made; and

d. in the instance of the supplier's returns being above or below the ROI band, the supplier would receive an upward or downward adjustment to the upper or lower limit of the ROI band respectively.

1 Non-exempt refers to electricity distribution businesses that are not exempt from default price-quality regulation under the Act.

Components of the Proposed Starting Price Adjustment Framework

X.5 The following sets out the purpose and proposed approach for setting the values for each of the components of the starting price adjustment framework:

- **Supplier returns**: To estimate suppliers' current and projected profitability, an ROI profitability measure is calculated using suitably normalised historical data. The inputs to the proposed formula for calculating ROI would be consistent with the final IMs and would use information provided by suppliers through information disclosure or, in the event that disclosed information is not yet consistent with the relevant IMs, through information requested by the Commission;

- **WACC point estimate:** The WACC point estimate would be derived from the final WACC IM; and

- **ROI band:** The ROI band is designed to account for uncertainties in suppliers' calculated returns. The WACC point estimate represents the central point of the ROI band. The setting of the ROI band limits is proposed to be informed by statistical analysis.

Treatment of Efficiencies under the Proposed Starting Price Adjustment Framework

X.6 In general, the price path set by a DPP incentivises suppliers to improve their efficiency by allowing any gains from outperforming the allowed price path to be retained until the end of a regulatory period. This includes efficiency gains made through mergers or acquisitions. Under the proposed adjustment framework, a supplier would keep the efficiency gains from a transaction at least until the end of the regulatory period. However, as such gains may take some years to be realised, many of the gains may also be retained until the end of the next regulatory period.

Illustrative Worked example

X.7 The illustrative worked example uses 2008/09 data for EDBs (this is the most recent data disclosed by EDBs but will require updating for the final starting price adjustments). The worked example is designed to demonstrate the potential effects of the proposed framework. While the example applies the proposed framework, the information, data and assumptions used to inform actual starting price adjustments may differ (e.g., supplier information would need to be consistent with final IMs).

X.8 The worked example uses a vanilla WACC 75th percentile point estimate of 8.53% (consistent with draft IMs) and calculates adjustments based on ROI bands centred on this WACC point estimate of ±1.00% and ±1.25%.

X.9 For transparency, the Commission has also published alongside this paper the spreadsheet model used for the worked example, which includes the relevant data, assumptions and calculations.

SECTION 1 INTRODUCTION

Overview

Background

1.1 Part 4 of the Commerce Act 1986 (**the Act**) provides that gas transmission businesses (**GTBs**) and gas distribution businesses (**GDBs**) as suppliers of gas pipeline services, and non-exempt electricity distribution businesses (**EDBs**)[2] as suppliers of electricity lines services, are subject to default/customised price-quality regulation.[3] A fundamental component of a default price-quality path (**DPP**) is the starting prices that are specified for each regulated supplier and apply from the beginning of a regulatory period.

1.2 Starting prices establish the initial upper limit or cap placed on a supplier's prices or revenues at the beginning of the regulatory period.[4] Given that suppliers are permitted to increase prices over the regulatory period by an allowed rate of change, starting price adjustments allow the Commerce Commission (**Commission**) to assess whether the cap at the end of the previous regulatory period is the appropriate starting point for the next regulatory period.

1.3 Pursuant to s 53P(3), the Commission must specify the starting prices for each supplier based on either the prices that applied at the end of the previous regulatory period, or those based on an assessment of the current and projected profitability of that supplier. Where the Commission bases starting prices on an assessment of the current and projected profitability of that supplier, the Commission's assessment may usefully be informed by relevant input methodologies (**IMs**). The Commission published its draft decisions on IMs for electricity distribution services and gas pipeline services respectively on 18 and 21 June 2010 (***IM Draft Reasons***).[5] The Commission published the corresponding draft IM determinations on 2 July 2010 (***Draft IMs***).[6]

Purpose

1.4 The purpose of this *Discussion Paper* is to set out the Commission's current views on key aspects of the starting price adjustment process for DPPs (i.e., the process for basing starting prices on an assessment of the current and projected profitability of the supplier), and seek feedback on those views. The Commission has focussed this

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2 Non-exempt refers to EDBs that do not meet the consumer-owned criteria under s 54D, and are therefore not exempt from default price-quality regulation under s 54G(2). Unless stated otherwise, all statutory references in this paper refer to the Commerce Act 1986.

3 Commerce Act 1986, ss 54G & 55D.

4 For the purpose of this *Discussion Paper*, and consistent with s 53M(a), the term 'price' should be read to include both price and revenue.

5 Commerce Commission, *Input Methodologies Electricity Distribution Services, Draft Reasons Paper*, 18 June 2010; and Commerce Commission, *Input Methodologies Gas Pipeline Services, Draft Reasons Paper*, 21 June 2010.

6 Commerce Commission, *Draft Commerce Act (Electricity Distribution Services Input Methodologies) Determination 2010*, 2 July 2010; Commerce Commission, *Draft Commerce Act (Gas Transmission Services Input Methodologies) Determination 2010*, 2 July 2010; and Commerce Commission, *Draft Commerce Act (Gas Distribution Services Input Methodologies) Determination 2010*, 2 July 2010.

Discussion Paper on the development of the underlying framework for starting price adjustments.

1.5 The Commission set out some preliminary views on its approach to starting price adjustments in its *Reset of Default Price-Quality Path for Electricity Distribution Businesses, Discussion Paper* (***Reset DPP Discussion Paper***), as part of the consultation process on resetting the initial DPP for EDBs.[7] In forming the current views set out in this *Discussion Paper*, the Commission has further developed the views previously consulted on and taken account of submissions from interested parties. The Commission is, however, mindful that the focus of this earlier consultation was on electricity distribution services only. The Commission seeks feedback from all interested parties on the issues discussed in this *Discussion Paper* and its current views. Submissions on this *Discussion Paper* will assist in informing the Commission's decisions on the starting price adjustment process for EDBs, GTBs and GDBs.

Scope of Issues

1.6 The remainder of this *Discussion Paper* is structured as follows:

- *Section 2 – Regulatory Framework:* sets out the regulatory framework under which the Commission is to set starting prices for each supplier subject to a DPP;
- *Section 3 – Starting Price Adjustment Framework:* sets out the Commission's proposed framework for starting price adjustments and includes discussion on the Commission's views of current and projected profitability in relation to a DPP;
- *Section 4 – Components of the Framework:* sets out the Commission's current views on the components of the proposed starting price adjustment framework, including why they are used and how they might be determined;
- *Section 5 – Treatment of Efficiencies:* sets out the proposed treatment of certain efficiencies in the context of starting price adjustments, including those arising from mergers or acquisitions, and those accumulated as part of the Incremental Rolling Incentive Scheme (**IRIS**) under a CPP; and
- *Section 6 – Illustrative Worked Example:* sets out an illustrative worked example of how the proposed starting price adjustment framework, as represented by the current views set out in this paper, might be applied to EDBs.

1.7 The Commission has deliberately focused the scope of this *Discussion Paper* on the development of a starting price adjustment framework and the components of this framework, and ensuring that the starting price adjustment process is consistent with other parts of the regulatory regime. Decisions on these matters will inform the starting price adjustment process for EDBs, GTBs and GDBs.

7 Commerce Commission, *Reset of Default Price-Quality Path for Electricity Distribution Businesses, Discussion Paper*, 19 June 2009, pp. 57-80.

1.8 As the starting price adjustment process requires an assessment of a regulated supplier's profitability, aspects of the *Draft IMs* may usefully inform the Commission's assessment. These aspects include:

- the specification of a point estimate for the WACC, as set out in the draft cost of capital IM applicable to DPPs;
- the specification of inputs for ROI calculations, which relate to multiple IMs (including asset valuation, cost of capital, treatment of taxation and cost allocation); and
- the establishment of an IRIS, as set out in the draft rules and processes IM.

1.9 The Commission notes that the draft rules and processes IM impacts on the definitions of price and related terms (including pass-through costs and recoverable items). This *Discussion Paper* sets out how these terms might be taken into account as part of the starting price adjustment framework.

1.10 Consideration of other matters relevant to the starting price adjustment process, and which are not related to IMs, has been deferred and will be addressed as part of future consultation after the IMs are finalised. Those matters include:

- *Information requests:* to the extent practicable, the Commission intends using existing information to inform analysis of supplier-specific starting price adjustments, particularly information available through information disclosure regulation. For the initial starting price adjustments for EDBs, GTBs and GDBs, however, the Commission is likely to require suppliers to prepare and provide certain information (e.g., to take account of relevant IM decisions), for example under s 53ZD, given that relevant information is unlikely to be available through information disclosure;
- *Information normalisation:* detailed consideration of information normalisation issues relating to setting components of the starting price adjustment framework;
- *Implementing starting price adjustments:* consideration of how an adjustment is given effect (e.g., how starting price adjustments are specified, and the setting of alternative rates of change as an alternative (in whole or in part) to a starting price adjustment); and
- *Interaction of claw-back provisions:* consideration of how the potential application of claw-back provisions under s 54K(3) may fit into the starting price adjustment process for EDBs. There is a similar provision under s 55F(4), however the initial DPP for GTBs and GDBs will not be set until after IMs are published.

Next Steps

1.11 On 30 November 2009, the Commission published the s 52P determination and its decisions for the DPP applying to EDBs from 1 April 2010.[8] Starting prices were specified as the actual prices that a non-exempt EDB applied at 31 March 2010. The Commission stated its intention to adjust these starting prices during the regulatory period, following the publication of IMs.[9]

1.12 The Commission is currently in the process of setting the initial DPP for GTBs and GDBs, which includes specifying starting prices for each regulated supplier.[10] In its *Issues Paper*, the Commission stated that it intends to make a s 52P determination in respect of the initial DPP for GTBs and GDBs by 29 February 2012 to take effect from 1 July 2012.[11]

1.13 The Commission's current focus is on finalising IMs, including the IMs that apply to EDBs, GTBs and GDBs. Consequently, apart from consulting on this paper, the Commission does not intend any further formal consultation on the starting price adjustment process until after the IMs have been finalised. The Commission does, however, intend to release a consultation paper shortly on refinements to the DPP applying to EDBs from 1 April 2010 that includes a proposed modification to the price-path compliance assessment formula and potential implications of IMs for the price path.

1.14 The Commission intends to consult on and issue any necessary requests for information to be used for starting price adjustments before 31 March 2011. These information requests will be consistent with relevant IMs, which will be finalised on or before 31 December 2010.

Submissions

1.15 Submissions are invited on this *Discussion Paper* and should be submitted to the Commission no later than 11 am Friday, 10 September 2010. The Commission also invites cross-submissions on matters raised in submissions to the *Discussion Paper*. The purpose of cross-submissions is to ensure that the Commission is aware of points of agreement or disagreement on matters raised by other submitters. The Commission therefore requests that parties providing cross-submissions focus these in that way. Cross submissions should be received by the Commission no later than 11 am Monday, 27 September 2010. All submissions and cross-submissions should be supported by documentation and evidence, where appropriate.

1.16 To foster an informed and transparent process, the Commission intends to publish all submissions and cross-submissions on its website. Accordingly, the Commission requests an electronic copy of each submission and requests that hard copies of submissions not be provided (unless an electronic copy is not available). The

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8 Commerce Commission, *Commerce Act (Electricity Distribution Default Price-Quality Path) Determination 2010*, 30 November 2009; and Commerce Commission, *Initial Reset of the Default Price-Quality Path for Electricity Distribution Businesses, Decisions Paper*, 30 November 2009.

9 Commerce Commission, *Initial Reset of the Default Price-Quality Path for Electricity Distribution Businesses, Decisions Paper*, 30 November 2009, pp. 32-35.

10 As required by s 55E(2).

11 Commerce Commission, *Initial Default Price-Quality Path for Gas Pipeline Businesses, Issues Paper*, 12 April 2010, p. 4.

Commission also requires that these electronic copies be provided in an accessible form (i.e., they are 'unlocked' and text can be easily transferred). If the submission contains confidential information or if the submitter wishes that the published version be 'locked', an additional document labelled "public version" should be provided. Submissions should be sent to:

regulation.branch@comcom.govt.nz;

or

Matthew Lewer
Regulation Branch
Commerce Commission
P.O. Box 2351
Wellington

Confidentiality

1.17 The Commission discourages requests for non-disclosure of submissions, in whole or in part, as it is desirable to test all information in a fully public way. The Commission is unlikely to agree to any requests that submissions in their entirety remain confidential. However, the Commission recognises that there will be cases where interested parties making submissions may wish to provide confidential information to the Commission.

1.18 If it is necessary to include such material in a submission the information should be clearly marked and preferably included in an appendix to the submission. Interested parties should provide the Commission with both confidential and public versions of their submissions. The responsibility for ensuring that confidential information is not included in a public version of a submission rests entirely with the party making the submission.

1.19 Parties can request that the Commission makes orders under s 100 of the Act in respect of information that should not be made public. Any request for a s 100 order must be made when the relevant information is supplied to the Commission and must identify the reasons why the relevant information should not be made public. The Commission will provide further information on s 100 orders if requested by parties, including the principles that are applied when considering requests for such orders. A key benefit of such orders is to enable confidential information to be shared with specified parties on a restricted basis for the purpose of making submissions. Any s 100 order will apply for a limited time only as specified in the order. Once an order expires, the Commission will follow its usual process in response to any request for information under the Official Information Act 1982.

SECTION 2 REGULATORY FRAMEWORK

Overview

2.1 This section sets out the regulatory framework under which the Commission is to set starting prices for each supplier subject to a DPP. Part 4 of the Act provides that EDBs, GTBs and GDBs are subject to default/customised price-quality regulation. As such, the Act provides for the Commission to set a DPP for suppliers of these types of services, including specifying the starting prices for each supplier.

2.2 This section briefly discusses the purpose of Part 4 (**Part 4 Purpose**), the purpose of DPP regulation, the role of starting price adjustments, the interrelationship with IMs, and other statutory considerations that the Commission has taken into account when setting out its current views in respect of the starting price adjustment process.

Purpose of Part 4

2.3 Section 52 of the Act provides an overview of Part 4:

> *This Part provides for the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition.*

2.4 Section 52A of the Act states that the purpose of Part 4 is:

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

Commission's interpretation of the Part 4 Purpose

2.5 The Commission's interpretation of the Part 4 Purpose is that:

- The central purpose is to promote the long-term benefit of consumers in markets where there is little or no competition and little or no likelihood of a substantial increase in competition.
- This central purpose is to be achieved by promoting outcomes consistent with outcomes produced in workably competitive markets, such that the regulatory objectives set out in s 52A(1)(a)-(d) occur.

2.6 The regulatory instruments under Part 4, including the DPP, provide the mechanism through which the Commission is to promote outcomes consistent with outcomes produced in workably competitive markets. The Commission's interpretation of the Part 4 Purpose (including discussion on workable competition and workably competitive market outcomes and Part 4) is set out in further detail in the *IM Draft Reasons*.[12]

Purpose of Default/Customised Price-Quality Regulation

2.7 Section 53K provides that the purpose of default/customised price-quality regulation (**Section 53K Purpose**) is:

> *…to provide a relatively low-cost way of setting price-quality paths for suppliers of regulated goods or services, while allowing the opportunity for individual regulated suppliers to have alternative price-quality paths that better meet their particular circumstances.*

2.8 In the Commission's view a DPP should be a generic tool, as far as practicable, such that under a DPP, price-quality regulation can be cost-effectively applied across multiple suppliers. In setting out its current views on the starting price adjustment framework, the Commission has considered the Section 53K Purpose in addition to the Part 4 Purpose.

2.9 To the extent practicable, the Commission will seek to use readily available information in setting starting prices. Where the Commission has not yet set its initial s 52P determinations relating to information disclosure regulation, this will include the use of previous analytical work and data collected under existing information disclosure regimes. This approach is likely to promote the Section 53K Purpose by minimising compliance costs. The Commission will carefully review the relevance of previous analytical work in light of the Part 4 Purpose and the broader regulatory framework. The Commission will, however, need to assess previously disclosed information for consistency with IMs and, where inconsistencies may be material, request suppliers to provide further information.

2.10 The Commission's approach to DPP regulation is based on a 'CPI minus X' (**CPI-X**) approach, referred to as such due to the use of the Consumer Price Index and an 'X-factor' that reflects expected industry-wide efficiency or productivity improvements as part of the regulated price path. Under s 53P, the parameters of the CPI-X price path can be reset every regulatory period.

2.11 As set out in the *IM Draft Reasons*,[13] the use of a CPI-X approach for default/customised price-quality regulation under Part 4 is expected to promote outcomes consistent with those produced in workably competitive markets. This promotes the long-term benefit of consumers. The use of a CPI-X price path provides suppliers with the opportunity to earn greater than normal returns as a reward for improved efficiency (including in respect of efficient investment) and for innovation.

2.12 A DPP may not be able to fully reflect the particular circumstances of a supplier as its low-cost, generic nature means that it is a comparatively non-targeted regulatory instrument. Given a DPP employs an industry-wide annual rate of change, starting price adjustments are the primary regulatory mechanism for making the price-related aspects of a DPP more specific to individual suppliers. The ability of the

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12 Commerce Commission *Input Methodologies (Electricity Distribution Services) Draft Reasons Paper*, 18 June 2010, pp. 13-37.

13 ibid, pp. 35-36.

Commission to promote expected outcomes consistent with normal returns under a DPP is therefore best achieved by making appropriate periodic starting price adjustments. Nevertheless, Part 4 specifically provides for regulated suppliers to be able to apply for a customised price-quality path (**CPP**) that better meets their particular circumstances, if the starting price adjustments are not sufficiently able to do so.

Role of Starting Prices in Promoting the Part 4 Purpose

2.13 The Commission's current views on the starting price adjustment process set out in this *Discussion Paper* have been reached after taking into account the DPP regulatory framework and the Part 4 Purpose. For example, a downward adjustment to prices may be appropriate—consistent with s 52A(1)(c) and (d)—in cases where suppliers are considered to be earning, or likely to earn, excessive profits and/or to promote the sharing of efficiency gains with consumers. Similarly, upward adjustments may be justified where current prices are likely to be too low to allow a supplier to earn a normal rate of return and facilitate efficient investment—consistent with s 52A(1)(a) and (b).

2.14 The Commission invites submissions from interested parties on whether the current views set out in the *Discussion Paper* are consistent with the DPP regulatory framework and the Part 4 Purpose.

Provisions Relevant to Setting Starting Prices

2.15 Provisions for setting starting prices are set out under s 53P. Specifically s 53P(3) states that:

> *The starting prices must be either—*
>
> *(a) the prices that applied at the end of the preceding regulatory period; or*
>
> *(b) prices, determined by the Commission, that are based on the current and projected profitability of each supplier.*

2.16 Section 53P(3)(b) provides for the Commission to make starting price adjustments. There are several provisions in s 53P that impact directly on the starting price adjustment process, including:

- section 53P(4), which provides that starting prices set in accordance with s 53P(3)(b) must not seek to recover any excessive profits made during any earlier period;
- section 53P(8)(a), which highlights the relationship between starting prices and the annual rate of change in prices (X-factor). The Commission may set alternative rates of change for a particular supplier as an alternative, in whole or in part, to the starting prices set under subsection (3)(b) if, in the Commission's opinion, this is necessary or desirable to minimise any undue financial hardship to the supplier or to minimise price shock to consumers;[14] and

[14] The Commission has adopted the term X-factor to represent the "X" component of the CPI-X indexation component of the price path. While the overall rate of permitted change in weighted average prices under a DPP will, in practice, be CPI-X%, the Commission notes that s 53P(5) provides an example that refers to the "rate of change" as being solely the "X" in a "CPI-X" path.

- section 53P(10), which provides that the Commission may not use comparative benchmarking on efficiency in order to set starting prices.

2.17 These provisions establish the context in which starting price adjustments are to be made.

Interrelationship between Starting Prices and IMs

2.18 Input methodologies that apply to EDBs, GTBs and GDBs may be relevant to informing the Commission's assessments in respect of starting price adjustments. In some cases, IMs will directly impact on the starting price adjustment process.[15] More generally, information that is prepared consistent with IMs may provide useful inputs for the starting price adjustment process, particularly inputs to the Commission's assessment of regulated suppliers' profitability. The Commission considers that the starting price adjustment process is relevant to the determination of a DPP and is not required to be an IM in itself.[16]

2.19 The focus of this *Discussion Paper* is on aspects of the starting price adjustment process that may be informed by IMs, which is appropriate now that the *Draft IMs* have been published. The Commission's current views on the relevance of IMs to starting price adjustments are developed throughout this *Discussion Paper*.

2.20 In the future, the assessments of suppliers' profitability will be able to be made based on information disclosed in accordance with information disclosure regulation. The IMs will therefore only indirectly affect the starting price adjustments through the way in which they apply to the s 52P information disclosure determinations. The first starting price adjustments for EDBs, GTBs and GDBs are, however, likely to be implemented either before the s 52P information disclosure determinations are set, or before information disclosed in accordance with those determinations are available. Consequently, for the first starting price adjustments, the Commission will likely issue information requests to suppliers seeking information prepared consistently with IMs to obtain necessary information that is likely to be made available through information disclosure in the future.

2.21 Input methodologies will not inform every aspect of the starting price adjustment process. The Commission considers that there are a number of important decisions to be made in addition to those relating to the use of IMs. The Commission's current views have been informed by the broader context of the starting price adjustment process, including the Part 4 Purpose and the DPP regulatory regime as discussed above.

[15] The Commission has already noted the definitions of price and related terms in paragraph 1.2 above.

[16] The Commission views on this matter are set out in recent correspondence with the Electricity Networks Association (**ENA**). See ENA, *Starting price adjustment methodology*, Letter from Alan Jenkins to Dr Mark Berry, 23 July 2010; and Commerce Commission, *Re: Starting price adjustments*, Letter from Dr Mark Berry to Alan Jenkins, 30 July 2010, available at http://www.comcom.govt.nz/input-methodologies/.

Other Statutory Considerations

2.22 In addition to the statutory provisions discussed above, there are a number of additional considerations that the Commission is required to take into account when forming its current views. These include:

- *Energy Efficiency*: obligations relating to energy efficiency under s 54Q of the Act;
- *Electricity Act*: decisions under the Electricity Act 1992 as required under s 54V of the Act;
- *Gas Authorisations*: gas authorisations that continue in force due to s 55G of the Act;
- *Gas Act*: decisions under the Gas Act 1992 as required under s 55I of the Act; and
- *Government Policy Statements*: as required under s 26 of the Act.

2.23 These considerations are set out in more detail in Appendix A. In particular, the Commission notes the following two points.

2.24 The first point relates to the Government policy statement on incentives of regulated businesses to invest in infrastructure (**2006 GPS**). The 2006 GPS contemplates that these incentives will be achieved through regulatory stability, transparency and certainty giving businesses the confidence to make long-life investments. The Commission considers that the 2006 GPS has particular relevance to the starting price adjustment process. As discussed at paragraph 2.13, starting price adjustments can affect incentives for efficient investment.

2.25 The second point relates to the Commission's obligations under s 54Q. The Commission notes that it sought views from interested parties in its *Reset DPP Discussion Paper* on the options for the promotion of energy efficiency through the specification of starting prices. Submissions generally highlighted that there were no direct links between the specification of starting prices and the promotion of energy efficiency, and that it may be inappropriate to try and draw such links. In its submission, for example, Orion New Zealand Limited (**Orion**) stated that "We do not think it is appropriate to try and promote energy efficiency by way of starting prices."[17]

[17] Orion New Zealand Limited, *Submission on Reset of Default Price-Quality Path for Electricity Distribution Businesses*, 17 July 2009, p. 26.

SECTION 3 STARTING PRICE ADJUSTMENT FRAMEWORK

Overview

3.1 This section sets out the Commission's current views on a proposed framework for starting price adjustments and includes discussion on the Commission's views of current and projected profitability in relation to a DPP. The details of the components of this framework are discussed in Section 4.

Framework

Preliminary view

3.2 In considering whether a starting price adjustment is appropriate for a supplier, the Commission previously indicated in the *Reset DPP Discussion Paper* that it may be appropriate to use a two-step approach for assessing current and projected profitability, where:

a. the Commission would initially compare a supplier's ROI against a 'returns-band' or 'ROI band' around an industry-wide WACC point estimate, where upward/downward starting price adjustments would be considered if the supplier's ROI was below/above the band; then

b. where necessary, this assessment would be reviewed and potentially modified in light of a qualitative assessment that takes account of certain scenarios expected to impact on a supplier's projected profitability.

3.3 The Commission indicated that this approach would inform whether a starting price adjustment is appropriate, and if so, the extent of such an adjustment. It was noted in the *Reset DPP Discussion Paper* that this approach would require a degree of judgement. In addition, one of the necessary trade-offs for a cost-effective basis for setting a DPP would likely be a lack of precision within certain mechanisms.[18]

Views of interested parties

3.4 The Commission notes that submissions on its preliminary views from interested parties expressed a range of opinions. In the main, submissions supported the proposed general approach. For instance, Powerco Limited (**Powerco**) supported "the Commission's proposal to test the current and projected profitability of firms against a band of returns"—subject to the band's specifications;[19] and Eastland Network Limited (**Eastland**) agreed with the proposed comparison of a supplier's ROI against an ROI band to assess profitability, but noted that "ROI by itself is not an absolute indicator of above- or below-normal returns and both measures bear a risk of statistical volatility".[20] On the proposed use of a qualitative assessment process, PricewaterhouseCoopers (**PwC**) submitted that "a qualitative assessment of influences on future profitability can assist to determine possible starting price adjustments" and "a qualitative scenario based assessment of future cost levels using

18 supra n 7, p. 74.

19 Powerco Limited ("Powerco"), *Reset of Default Price-Quality for Electricity Distribution Businesses, Discussion Paper*, 17 July 2009, p. 9.

20 Eastland Network Limited ("Eastland"), *Submission on the Discussion Paper 'Reset of Default Price-Quality path for Electricity Distribution Businesses'*, 17 July 2009, p. 15.

AMP forecasts is an appropriate approach".[21] Commenting on the overall approach, Aurora Energy Limited (**Aurora**) stated that it "broadly supports the Commission's proposals" and indicated that the "approach is consistent with a 'low cost' DPP".[22]

3.5 Of particular note for this *Discussion Paper* are the views expressed in submissions relating to the assessment of current and projected profitability. Whilst parties were generally in support of a two-step approach in theory, submissions highlighted practical issues with this approach. These issues included:

- the appropriate methodology for assessing each supplier's current and projected profitability under a DPP—for example, whilst some submitters supported the use of a qualitative assessment of projected profitability, others were less supportive.[23] Unison Networks Limited (**Unison**) submitted that a partial building block approach could be used to project revenues and costs across the full regulatory period, where projections should use forecasts of cost growth and capital expenditure based on independently assessed forecasts of CPI, labour cost growth, and regional economic growth;[24]

- the appropriate types of information for the assessment of current and projected profitability—for example, most submitters supported the use of a supplier's historical trend data to take account of statistical volatility in current ROI calculations. For qualitative assessments of projected profitability, PwC submitted that the Commission should use suppliers' AMP forecasts to inform such assessments, but considered that it would be inappropriate to use an industry study conducted by Farrier Swier Consulting Pty Limited (**Farrier Swier**) in 2007;[25]

- the relevant weighting that should be afforded to a qualitative assessment of projected profitability—for example, Orion submitted that the qualitative assessment of projected profitability should only be used by the Commission as a means of better satisfying itself that a price reduction is warranted if the initial assessment of a supplier's ROI suggests systemic over-recovery has occurred, or vice versa.[26] On the other hand, Unison placed greater emphasis on forecasts and submitted that a supplier's ROI "should be evaluated over the forecast regulatory period rather than the most recent historical year";[27] and

- ensuring that the Commission's assessment of current and projected profitability is transparent and consistent for all suppliers—for example, PwC commented on

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21 PricewaterhouseCoopers, *Submission to the Commerce Commission on the Reset of Default Price-Quality Path for Electricity Distribution Businesses Discussion Paper*, 17 July 2009, p. 23.

22 Aurora Energy Limited, *Submission to the Commerce Commission on its Discussion Paper on the Reset of Default Price-Quality Path for Electricity Distribution Businesses*, 17 July 2009, p. 32.

23 Unison Networks Limited, *Reset of Default Price-Quality Path for Electricity Distribution Businesses Discussion Paper*, 17 July 2009, p. 14.

24 ibid, pp. 4 & 15.

25 Farrier Swier Consulting Pty Limited, *Regulation of Electricity Lines Businesses - Research Project for 2009 Threshold Reset - Distribution Networks and Asset Management*, December 2007.

26 supra n 17, p. 30.

27 supra n 23, p. 2.

possible implications of considering supplier information on a case-by-case basis, including potential for the process to become ad hoc, inconsistently applied across suppliers and inequitable.[28]

Current views

3.6 In light of these submissions and following further analysis, the Commission has revised its preliminary views. In its *Reset DPP Discussion Paper*, the Commission proposed the use of WACC, ROI statistics and an ROI band as the components of its starting price adjustment framework. The Commission considers that the use of these components remain appropriate. The following sets out the Commission's current views on the use of the components as part of its starting price adjustment framework. Detailed discussion of these components is set out in Section 4.

3.7 The Commission proposes the following steps to undertake starting price adjustments:

a. calculate the supplier's returns using ROI statistics and other information;

b. assess the supplier's profitability by comparing the supplier's returns against an industry-wide ROI band centred around the WACC point estimate provided by the cost of capital IM (the *Draft IMs* establish this to be the 75th percentile of the IM vanilla WACC range);

c. if a supplier's returns are above or below the ROI band, calculate the percentage difference with respect to the relevant limit of the ROI band (**ROI differential**);

d. translate the ROI differential into an adjustment to supplier's actual weighted average prices or revenues for a specified year,[29] where the supplier's adjusted weighted average prices or revenues become the starting prices for the next regulatory period.

3.8 Figure 3.1 sets out the circumstances under which the Commission would consider adjusting the starting price for a given supplier. An upward or downward adjustment would be considered if a supplier's returns were below or above the ROI band respectively. The Commission considers that it is appropriate for any adjustment to be limited to the relevant ROI band limit (i.e., any downward adjustment would be down to the upper limit and any upward adjustment would be up to the lower limit).

3.9 The process of estimating the supplier's returns using ROI calculations and other information necessitates a degree of approximation. By only making adjustments to suppliers that fall outside the ROI band limits, and limiting adjustments to the relevant ROI band limit, the number and size of adjustments are reduced. This is appropriate given the unavoidable uncertainty as the extent to which the observed ROIs reflect future profitability in the absence of an adjustment. The sources of uncertainties involved in measuring suppliers' returns are discussed at paragraph 4.17. In effect, the use of the ROI band in the way proposed will moderate the number and scale of any upward or downward adjustments.

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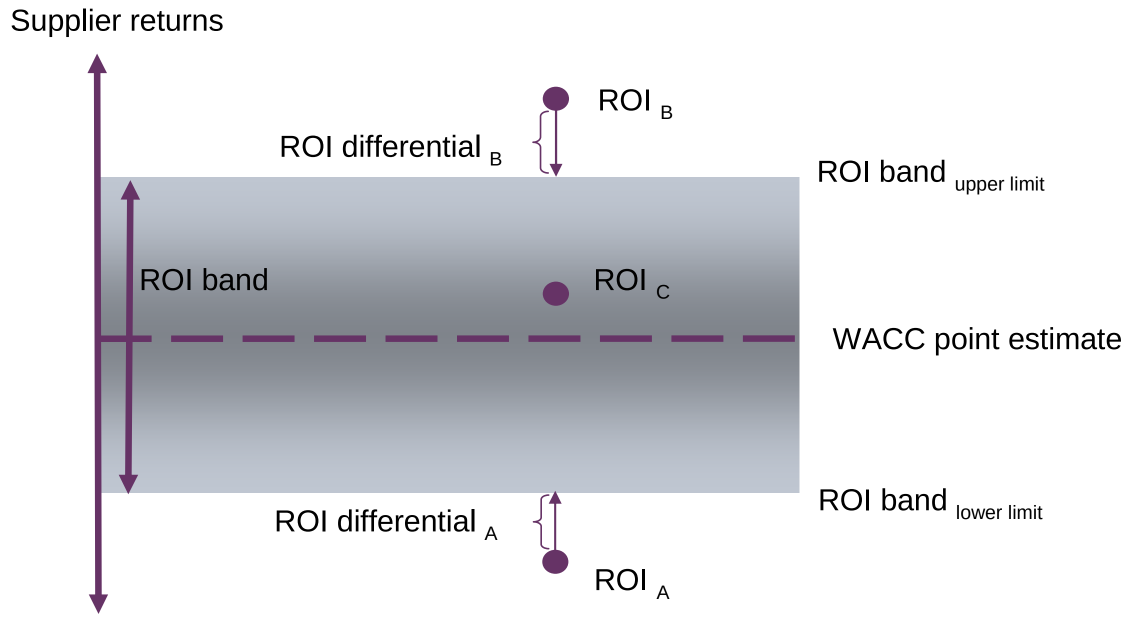
28 supra n 21, p. 25.

29 This adjustment would also take into account factors such as inflation indexation, pass-through costs, and recoverable items.

Figure 3.1 Possible outcomes of the starting price adjustment process



Note: the WACC point estimate is the 75th percentile of the vanilla WACC range as established by the cost of capital IM applicable to DPPs.

3.10 Figure 3.1 illustrates three different outcomes for suppliers A, B and C.

- Supplier A's returns are below the ROI band. ROI differential $_A$ provides the percentage difference between supplier A's ROI and the ROI band lower limit. In this circumstance the Commission would allow an upward starting price adjustment for supplier A.
- Supplier B's returns are above the ROI band. ROI differential $_B$ provides the percentage difference between supplier B's ROI and the ROI band upper limit. In this circumstance the Commission would implement a downward starting price adjustment for supplier B.
- Supplier C's returns are within the ROI band. In this circumstance supplier C would not require a starting price adjustment.

3.11 An adjustment to the ROI band limit does not necessarily mean that a supplier's assessed returns will remain inside the ROI band at the following DPP reset. However, the scale of any necessary future starting price adjustment may be smaller than the initial adjustment. Over time there may also be scope to refine the framework due to better information quality and availability to minimise the number and scale of necessary future starting price adjustments.

3.12 The Commission has considered the alternative approach where the adjustment would be the amount estimated to move the ROI to equal the WACC point estimate (rather than the edge of the ROI band) where a supplier's returns are assessed to be above or below the ROI band. A potential drawback of this approach is the discontinuities this introduces to the treatment of suppliers whose assessed returns are just within the ROI band compared with those that are just outside the ROI band. For example, the difference in ROI between suppliers X and Y may only be 0.1 of a percentage point, but supplier X—assessed to be inside the ROI band—would require no adjustment, whereas supplier Y—assessed to be outside the ROI band—would require an adjustment of half the width of the ROI band. Depending on the width of the ROI band, supplier Y's adjustment could be significantly greater than 0.1 of a percentage point. In addition, this option may result in perverse incentives for suppliers with returns assessed to be in the lower half of the ROI band, which may lead them to reduce their returns below the ROI band lower limit (to the extent that this is in the control of the supplier). This would allow the supplier to gain a potentially significant upward adjustment to the WACC point estimate.

3.13 A central aspect of both the options discussed above, however, is the symmetrical nature of the adjustments. The Commission considers that this symmetry is important so as not to unduly favour suppliers or consumers, thus balancing trade-offs inherent in s 52A(1). However, because the ROI band is centred on the 75th percentile point estimate of the vanilla WACC, the lower limit of the ROI band is unlikely to be significantly below the mid point estimate of the WACC.

3.14 There are a variety of issues that need to be considered in translating an ROI differential (i.e., the difference between the supplier's ROI and the upper/lower bound) into an adjustment of the supplier's starting revenue or price.[30] These issues are not explored in this *Discussion Paper*; but the Commission is interested in considering submissions on this process before developing its views on this matter any further. These issues include:

- the process for consulting with suppliers on the nature of any adjustments;
- consideration of whether the adjustment is likely to result in undue financial hardship to the supplier or price shocks to consumers to determine whether an alternative rate of change may be necessary, including:
  - how this might be assessed;
  - ensuring that any adjustment incorporating a glide path, which effectively would result in an alternative rate of change is equivalent in revenue terms to a one-off starting revenue or price adjustment;
- implementation of the starting price adjustments, including:
  - the specification of the starting price adjustment as part of the price path compliance assessment formula (see paragraph 3.15 below);
  - relevant considerations for making the initial adjustments (e.g., the implications for specifying adjustments for EDBs during the regulatory period);
  - industry-specific considerations (e.g., the implications for specifying an adjustment under a weighted average price-cap or total revenue-cap);

30 The Commission considers that it is appropriate for the ROI differential calculations to be expressed in terms of actual revenue (e.g., the illustrative worked example in Section 6 bases analysis on actual line charge revenue and actual distribution line charge revenue for EDBs). Expressing adjustments in terms of a supplier's actual revenues is likely to be the most relevant to both the supplier and consumers. Analysis on an actual revenue basis is also consistent with the information provided under information disclosure regulation.

- the interaction of starting price adjustments with compliance obligations (e.g., the Commission considers that, to the extent a breach of the price-path in the previous regulatory period affects the starting price adjustment process, the supplier should not benefit from this breach);[31]
- the interaction of starting price adjustments with relevant claw-back provisions.

3.15 The Commission notes that for the purposes of the price-path compliance assessment formula (which has been set for EDBs subject to any changes needed for consistency with IMs, but is yet to be determined for GTBs and GDBs), starting price adjustments expressed as actual revenue adjustments will need to be expressed in terms of an allowable notional revenue at the start of the regulatory period. This will need to be expressed on a different basis to actual revenue. For EDBs, for example, this is because:

a. allowable notional revenue reflects an EDB's allowable revenue, rather than the actual revenue it receives;

b. allowable notional revenue includes a t-2 lagged quantities term;

c. allowable notional revenue is net of pass-through costs (and potentially recoverable costs); and

d. with the exception of the initial starting price adjustment, the ROI calculation would be based on the fourth year of the previous regulatory period and therefore allowable notional revenue would need to be adjusted for the effect of CPI-X over the fifth year.

Current and projected profitability

3.16 As part of the proposed framework outlined above, the Commission has considered the extent to which the framework takes into account both current and projected profitability. In its preliminary views, the Commission considered the use of a two-step approach for assessing current and projected profitability. The Commission has revised its view because, having considered submissions on its preliminary view for EDBs, it considers that there are significant disadvantages to using such an approach. The Commission's concerns relate in particular to the second step involving a separate qualitative assessment process for taking account of a supplier's projected profitability.

- The level of information required to effectively assess a supplier's projected profitability might be akin to that required for a CPP proposal. Detailed information requirements for this purpose would appear to be inconsistent with the low cost nature of a DPP, as it is likely to impose greater costs on suppliers.
- Any forecasts (including AMP and cost forecasts) would not be subject to independent verification, unlike the process proposed for CPPs. Without such a verification process, the Commission would be exposed to greater information asymmetries. For instance, suppliers could inadvertently inflate projections and

[31] For example, this may be an issue when both actual and allowable revenues fall within the ROI band and when specifying a zero starting price adjustment (i.e., specifying in terms of the prices that the supplier was allowed or actually charged). The Commission notes that issues of breach will be considered separately from the starting price adjustment process.

avoid a level of scrutiny that would identify such issues (e.g., the level of scrutiny provided by an independent verification process), which could result in outcomes that are not consistent with the long-term benefit of consumers.

- The Commission may not use comparative benchmarking on efficiency to set starting prices for a DPP. This restricts the Commission's ability to compare suppliers' forecasts to assess their appropriateness.[32]

3.17 However, the Commission recognises the need for any starting price adjustments to be based on both current and projected profitability. To the extent that the Commission's assessment of a supplier's current returns are not necessarily a good guide for the supplier's actual returns over the next regulatory period, projected profitability is taken into account through:

- **the WACC**: the WACC is forward looking and projected profitability is implied for the regulatory period (see paragraphs 4.8-4.14 for further discussion);

- **the ROI band**: the ROI band is intended to implicitly take account of historical and future uncertainties in the profitability assessment that have a bearing on both current and projected profitability (see paragraphs 4.15-4.20 for further discussion); and

- **scope to increase efficiency**: assuming that suppliers are not fully efficient already, a DPP provides scope for the supplier to increase their profitability going forward through expenditure reductions over and above those already implicit in the CPI-X price path.[33]

3.18 The Commission recognises that there may be circumstances where future expenditure requirements differ significantly from those implied by the starting price. Therefore the starting price adjustment process might not appropriately reflect those particular circumstances of a supplier that affect its projected profitability. In such instances, there are likely to be alternatives available to the supplier for better meeting these particular circumstances as contemplated by s 53K, such as the option of making a CPP proposal.

3.19 The Commission considers that the proposed approach for assessing current and projected profitability has the following advantages:

- to the extent practicable, the proposed methodology would be informed by information that the supplier can make readily available to the Commission. For the initial starting price adjustments, if information consistent with IMs is not already readily available to the Commission, suppliers may be required to provide further information or adjust previously disclosed information. The use of available information, to the extent practicable, is consistent with the low cost nature of a DPP;

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32 supra n 3, s 53P(10). Overseas regulators consider such comparisons to be valuable, see for example the scoping study prepared for Ofgem, Cambridge Economic Policy Associates (CEPA), *Background to Work on Assessing Efficiency for the 2005 Distribution Price Control Review*, September 2003.

33 Relative cost efficiency is not assessed as part of starting price adjustments as the Commission is precluded from doing so under the Act.

- the proposed approach is consistent with the generic nature of a DPP—i.e., it is suitable for, and can be consistently applied to, all suppliers. Although it does not necessarily take into account all information that reflects the supplier's particular circumstances, this proposed methodology is likely to be more transparent than a qualitative and subjective assessment process that would be determined on a case-by-case basis; and

- the proposed approach does not rely on the use of unverified forecast information.

3.20 In reaching its current views on the assessment of each supplier's current and projected profitability, the Commission has given careful consideration to the provisions of the Act. The Commission considers there to be an inherent tension as to how the projected profitability of each supplier might be suitably assessed. In particular, full building blocks analysis is consistent with the CPP provisions of the Act and the use of comparative benchmarking on efficiency is restricted under s 53P(10). In addition, the low-cost nature of a DPP implies that verification of forecast information may not be appropriate, but the use of unverified forecast information exposes the Commission to greater information asymmetries, which may make it difficult to set price paths that promote the long-term benefit of consumers. The Commission is interested in the views of parties on the proposed starting price adjustment framework and how it proposes to account for the current and projected profitability of each supplier.

SECTION 4 COMPONENTS OF THE FRAMEWORK

Overview

4.1 This section discusses the Commission's current views on the components of the proposed starting price adjustment framework, in particular:

- the use of those components as part of the framework;
- the Commission's considerations in proposing the use of each component; and
- the approach to determining specific values for each component.

Supplier Returns

4.2 An important component of the proposed approach for the starting price adjustment process is the assessment of suppliers' returns using ROI statistics. The Act provides that, where starting prices are not rolled over from the end of the previous regulatory period, starting prices are to be based on the current and projected *profitability* of each supplier. Calculating suppliers' returns using ROI provides a measure of a supplier's profitability, before interest and after tax. The Commission proposes to assess the profitability of each supplier, before interest and after tax, by comparing their ROI with the ROI band centred on the vanilla WACC point estimate.[34]

4.3 The *Draft IMs* set out the approach for determining the building blocks allowable revenue.[35] The Commission considers it appropriate to use an ROI formula for the purpose of starting price adjustments that is consistent with this approach. Formula 1 sets out the form of the proposed ROI calculation.[36] Provided relevant information for this calculation is available, the ROI is straightforward to calculate. However, the ROI from any given year might not be reflective of a supplier's actual profitability in that year (see further discussion below). Accordingly, it may not be reflective of the actual returns for the purpose intended, which is to be used in conjunction with the ROI band to give guidance on the supplier's profitability over the DPP regulatory period.

Formula 1 – Proposed Form of the ROI Calculation

ROI = (revenue – depreciation – operating expenditure – regulatory tax allowance + revaluation) / regulatory investment value

34 The vanilla WACC point estimate, as proposed in the *Draft IMs*, assumes a notional leverage applicable to all suppliers in the same regulated industry.

35 Commerce Commission, *Draft Commerce Act (Electricity Distribution Services Input Methodologies) Determination 2010*, 2 July 2010, part 5, subpart 3.

36 The Commission notes that the ROI formula slightly differs from that set out in the *Reset DPP Discussion Paper*. Submissions to that paper also provided views on potential issues with calculating ROI statistics (e.g., the treatment of rebates and discounts) and the components of the ROI formula (e.g., valuation of the regulatory asset base). The *IM Draft Reasons* sets out the Commission consideration of these issues.

4.4 When undertaking starting price adjustments, the ROI formula and data required to compute ROI statistics for the latest year only represents a partial picture of a supplier's profitability. Annual ROI statistics can exhibit year-on-year variations that may or may not reflect actual changes in the supplier's returns. For example, one-off events might increase or decrease a single year's ROI statistics (e.g., mergers or acquisitions, or changes in accounting policies) and other variations in returns occur.

4.5 The Commission therefore considers it is necessary to undertake suitable normalisation adjustments to the data used to calculate the ROI statistics, to the extent that information is available to quantify the impact of these events and the extent that any adjustments are practicable within the scope of a high-level DPP assessment. This would ensure that any given measure of supplier's returns is not unduly influenced by one-off events.

4.6 In addition to the notes provided on disclosed financial information to identify one-off events, the Commission may look at further historical information data to inform the Commission's calculations of whether the most recent suppliers' returns are likely to be representative of current and projected returns. Most submissions to the *Reset DPP Discussion Paper* supported the use of several years of historical data in calculating returns.[37] The Commission intends to set out more detailed views on issues relating to the normalisation of data used for calculating ROI statistics as part of future consultation. The Commission is, however, interested in receiving submissions on such issues in responses to this *Discussion Paper*.

ROI band and WACC

4.7 To undertake starting price adjustments the Commission proposes comparing suppliers' returns to an ROI band centred on an industry-wide WACC. The following sets out the Commission's considerations on WACC and the ROI band.

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37 For example, Orion, supra n 17, p. 28. More generally, trying to estimate returns for EDBs, GTBs and GDBs is a challenge, because the analysis will almost always be over a time period shorter than the economic lifetimes of the assets employed to provide regulated services, and typically the analysis will rely on accounting-based data. Any accounting-based measures of returns for a single year, such as the ROI, can give results that are quite different from an economic internal rate of return (IRR) calculation undertaken over a longer analysis period (e.g., Commerce Commission, *Authorisation for the Control of Supply of Natural Gas Distribution Services by Powerco Limited and Vector Limited, Decisions Paper*, 30 October 2008, Appendix F).

WACC

4.8 Consistent with its preliminary view, the Commission proposes to use an industry-wide WACC as a reference point to which suppliers' returns are compared.[38] The WACC represents the minimum rate of return that is necessary to attract debt and equity capital to an investment.[39] It also represents the expected rate of return prevailing in capital markets on alternative investments of equivalent risk. As outlined in section 3 of the Commission's *Revised Draft Guidelines*, the cost of capital has four important characteristics:[40]

- **Forward-looking nature**: the cost of capital is an expected rate of return. Investment returns are uncertain and the ROI (i.e., the actual returns) may therefore differ from the WACC (i.e., the expected returns).[41]

- **Reflects the opportunity cost of investment**: investors have a range of investment opportunities. The expected returns on any investment must be sufficient to compensate for foregone (or the next best) investments.

- **Market-determined**: the cost of capital is determined by the balance between supply and demand for capital. As such, it is a rate of return that is affected by prevailing market circumstances.

- **Reflects the risk of the investment**: in particular, the cost of capital is the expected rate of return that applies on investments with a similar risk profile.

4.9 The WACC therefore provides a measure of the return on capital that a supplier is anticipated to require over a given future period in order for it to be appropriately compensated (i.e., achieve a normal economic profit) for the systematic risk that a supplier bears in providing regulated services.[42]

Forward-looking nature of WACC

4.10 For the purpose of the starting price adjustment the Commission proposes to compare the supplier's returns to the ROI band centred on the vanilla WACC point estimate. The WACC point estimate corresponds to the following DPP regulatory period and is assumed to provide an appropriate level of profitability for suppliers over this future five-year regulatory period. The forward looking nature of this profitability assessment is consistent with the provisions in the Act to base starting price adjustments on the current and projected profitability of each supplier.

4.11 The Commission's proposed starting price adjustment process does not involve a comparison of suppliers' historical returns with the historical WACC point estimates for the corresponding periods. With the exception of the initial starting price adjustment where the Commission may apply claw-back (under s 54K(3) for EDBs

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38 supra n 7, p. 43.

39 Kolbe, A. L., Tye, W. B., Myers, S. C., *Regulatory Risk: Economic Principles and Applications to Natural Gas Pipeline and Other Industries*, Kluwer: Massachusetts, 1993, pp. 68-69.

40 Commerce Commission*, Revised Draft Guidelines—The Commerce Commission's Approach to Estimating the Cost of Capital*, June 2009.

41 The word 'expected' is used in the statistical sense (i.e., the probability-weighted rate of return).

42 supra n 7, pp. 65-66.

and under s 55F(4) for GTBs and GDBs), the Commission is not concerned with the extent to which profitability in previous years may have been above or below normal returns.[43] If a historical comparison was incorporated within the process it may result in the Commission clawing back profits—which is prohibited under s 53P—or awarding compensation for a past shortfall of profits below normal levels. The role of the starting price adjustment process, rather, is to establish whether the cap at the end of the previous regulatory period is the appropriate starting point for the next regulatory period.

4.12 The Commission would, however, undertake an assessment of historic returns (i.e., ROI) to assess the extent to which the ROI statistic used for setting starting prices (base ROI) can be considered to be representative of longer term returns or the extent to which it may be unduly influenced by accounting or economic factors that may distort the base ROI.

Proposed WACC point estimate

4.13 The *Draft IMs* sets out the Commission's proposed approach for estimating an industry-wide range for the cost of capital to be used in setting DPPs and CPPs. The *IM Draft Reasons* sets out reasons for the Commission erring on the side of caution in situations where a point estimate for the WACC is required.[44] The Commission considers that the 75th percentile represents the appropriate point estimate for the WACC to be used in the context of setting DPPs and CPPs.[45]

4.14 In line with the reasoning set out in the *IM Draft Reasons*, the Commission therefore proposes to use the 75th percentile of the WACC range for the purpose of undertaking starting price adjustments. Further relevant considerations relating to the WACC point estimate (e.g., the relevant WACC point estimate to be used for the initial starting price adjustments for EDBs, given that the adjustments will be made part way through the regulatory period) will be consulted on as part of future consultation.

ROI band

4.15 Certain steps can be made to ensure that the profitability assessment provides a reasonable estimate of a supplier's current and projected profitability. The Commission proposes to use an ROI band to allow for the uncertainty in a point estimate of a supplier's returns. Conceptually, the more robust the supplier's returns measure, the narrower the ROI band would have to be for the Commission to conclude that a supplier's returns are above or below a level required to achieve normal returns. If the returns measure for each supplier could be estimated with full accuracy, the ROI band would collapse to a point estimate (i.e., the WACC point

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43 For example, assume that a hypothetical supplier's ROI at time *t* is equal to 7% and the WACC point estimate for the following regulatory period is 7%. Ignoring for the purposes of this example the ROI band, this would suggest that the supplier's returns are normal. However, the corresponding WACC point estimates for previous years (e.g., the previous five years) may have been higher or lower than 7%. Assuming that the average ROI over that period was 7%, if the WACC point estimate was constant at 5% this suggests that the supplier made above normal returns over that period. Similarly, if the WACC point estimates was constant at 9% over that period, the supplier made below normal returns.

44 supra n 12, paragraphs 6.13.7-6.13.8.

45 ibid, paragraphs 6.12.51-6.12.53.

estimate). Conversely, a high level of uncertainty in assessing each supplier's returns would require the specification of a very wide ROI band, potentially to the point where all suppliers' returns fall within the band and hence no starting price adjustments would be implied.

4.16 The Commission notes that uncertainty in the returns assessment is distinct from the uncertainty in determining an appropriate WACC point estimate. As provided by the draft cost of capital IM, in instances where a WACC point estimate rather than a WACC range is required, the uncertainties involved in this have been accounted for in choosing the 75th percentile of this range.

4.17 The uncertainty in the returns assessment can be broadly classified into two types:

- **Use of accounting information in ROI calculations:** the regulatory accounting practices which suppliers need to adhere to (including those set by IMs) establish the rules for how the components of the ROI are to be calculated. However, within these boundaries, suppliers have some flexibility as to how these statutory and regulatory accounting standards are interpreted and implemented in practice. For example, changes in operating costs, depreciation approaches, RAB revaluations and capitalisation policies can affect ROI statistics. This is particularly the case for GTBs and GDBs, which have to date been subject to an information disclosure regime that has allowed considerable flexibility in respect of many of the methodologies applied in disclosing information, notably cost allocation and asset valuation methodologies.

- **Economic factors**: fluctuations in economic factors occur (including demand business cycles). These can lead to a supplier's returns in any given year being higher or lower than that which can be expected to be consistent with a longer term measure of returns. For example, suppliers may be facing a step-change increase in asset replacement in the following regulatory period. The Commission, however, considers this is likely to not be the case for EDBs during the current regulatory period—consistent with the findings of the 2007 Farrier Swier study. However, fluctuations in economic conditions are likely to continue to affect suppliers' ROIs.

4.18 To overcome these issues, an approach that is often used in profitability assessments is the examination of a supplier's returns over a number of years. In these assessments, rather than allowing for uncertainty through the use of an ROI band, the returns measure may undergo extensive normalisation using time series data to take account of the inherent variability. In the context of undertaking starting price adjustments, data consistency issues are likely to arise (e.g., information on asset values that is consistent with the IMs). To the extent that consistent time series information is available, the Commission's intention is that it will be used for calculating suppliers' returns.

4.19 In addition, the Commission considers that the variation in the components of the ROI statistic provides useful information for informing the setting of the ROI band. The Commission therefore proposes to use statistical assessments, to the extent practicable, to inform the setting of the ROI band limits.[46] The Commission recognises that the quality and availability of data is likely to vary (e.g., between EDBs, GTBs and GDBs) and a highly detailed assessment is unlikely to be warranted as a part of a DPP. Historical variations in these components may also assist in informing the degree to which suppliers' actual ROI from any given year might be an appropriate returns measure for the profitability assessment.

4.20 The Commission considers that it would not be appropriate to mechanistically apply the results of such quantitative analysis. In the instance where the quantitative analysis suggests data to be highly variable and indicates that the ROI band should be set very wide, it may be more appropriate for the Commission to cap the limits of the ROI band based on other information. For instance, suppliers may consider that the most important factor in the starting price adjustment process is to enable those with returns less than the 50th percentile of the relevant cost of capital IM range to return to this level. If this was used as the lower ROI band limit, the percentage point difference between this level and the WACC point estimate would be used to set the upper ROI band limit, thus ensuring the ROI band is symmetrical. The Commission notes that under this arrangement the ROI band would not directly relate to uncertainty in the ROI which is the Commission's rationale for proposing the ROI band.

4.21 As discussed in paragraph 4.15, the uncertainties inherent in using point estimates of suppliers' returns are reflected in the width of the ROI band. The Commission considers that the ROI band is likely to be wider for the initial starting price adjustments and become narrower at future resets. One of the reasons for this is that over time the Commission's understanding of the uncertainties in the data is likely to improve, alongside the quality of the information itself.

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46 For the type of analysis the Commission may undertake, see the indicative worked example set out in Section 6.

SECTION 5 TREATMENT OF EFFICIENCIES

Overview

5.1 This section sets out the proposed treatment of certain efficiencies in the context of starting price adjustments, and in particular:

- efficiencies that may arise as a result of mergers or acquisitions; and
- efficiencies that may have been accumulated under the Incremental Rolling Incentive Scheme (**IRIS**) in moving from a CPP to a DPP.

Efficiencies from Mergers or Acquisitions under a DPP

5.2 The *IM Draft Reasons* set out the proposed treatment of mergers and acquisitions involving EDBs, GTBs, GDBs and other suppliers regulated under Part 4.[47] As indicated, the Commission considers that the appropriate regulatory mechanism through which efficiency savings associated with a transaction, including the sharing of efficiency gains with consumers consistent with s 52A(1)(c), are dealt with is through the starting price adjustment process for a DPP or the building blocks allowable revenue assessment for a CPP.

5.3 In general, the price path set by a DPP incentivises suppliers to improve their efficiency by allowing any gains from outperforming the allowed price path to be retained until the end of a regulatory period. This includes efficiency gains made through mergers or acquisitions. The following sets out the Commission's views on how it proposes to treat mergers and acquisitions under the starting price adjustment process.

Pre-existing mergers or acquisitions

5.4 Consistent with the approach set out in the *IM Draft Reasons*, where a significant period of time has passed since the completion of a transaction involving two or more regulated suppliers, suppliers are likely to have benefited from efficiency savings associated with the transaction for a considerable period. Where efficiency gains have already been captured by a supplier, the Commission proposes not altering the starting price adjustment process as set out in Sections 3 and 4. Where efficiency gains are demonstrated, the Part 4 Purpose indicates that these gains should be shared with consumers where possible. To the extent that a downward adjustment is mandated, this represents a sharing of these efficiency gains with consumers consistent with s 52A(1)(c).

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47 supra n 12, paragraphs 3.3.40-3.3.45.

Mergers or acquisitions during the previous regulatory period

Treatment of efficiencies

5.5 The Commission notes that mergers or acquisitions with other regulated suppliers may either decrease or increase profitability, both on a permanent basis (i.e., where marginal costs are increased or reduced) or on a temporary basis. The realisation of efficiencies resulting from mergers or acquisitions in the previous regulatory period may therefore depend on the timing of the transaction.[48] This gives rise to three scenarios when undertaking a starting price adjustment assessment for the following regulatory period:

- efficiencies are *all* made in the previous regulatory period;
- efficiencies are *partly* made in the previous regulatory period; or
- no efficiencies are made in the previous regulatory period.

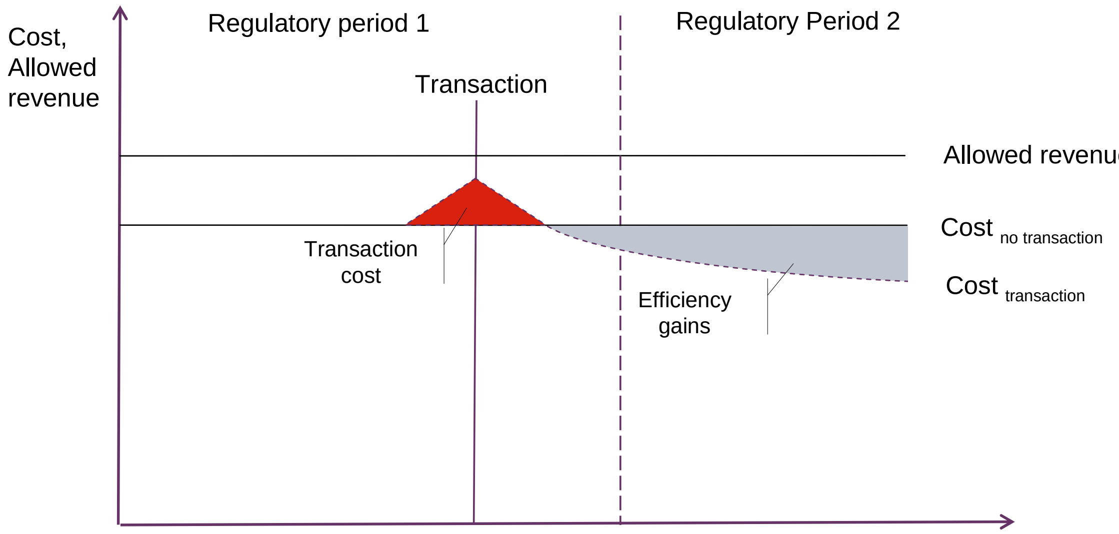
5.6 The Commission considers that efficiency gains from a transaction should be kept at least until the end of the regulatory period in which they are made. The returns will be reviewed at the beginning of the next regulatory period. If the supplier's returns are assessed to be above the ROI band upper limit at the beginning of the next regulatory period, this would result in a downward starting price adjustment in the normal way. The effect would be to share a greater amount of the efficiency gains with consumers. As the efficiency gains may take some years to be realised, the gains made in the subsequent regulatory period will generally be retained in part until supplier returns are reviewed at the beginning of the next regulatory period. This is because the proposed starting price adjustment process will use actual cost data rather than projected efficient post-transaction costs (i.e., once the full efficiency gains have been realised).

5.7 The Commission also notes that any efficiency gains (and associated increases in profitability) that may result from a merger or acquisition may be at least partly offset by the costs relating to the transaction. Figure 5.1 illustrates this by comparing the costs incurred by a hypothetical supplier with its allowed revenue. Without a merger or acquisition, the profitability of the supplier is represented by the difference between the allowed revenue and cost $_{\text{no transaction}}$. In this case the supplier's profitability is assumed to be constant.

5.8 If a supplier undertakes a transaction this may result in efficiency gains: these are depicted by the grey area between cost $_{\text{transaction}}$ and cost $_{\text{no transaction}}$. The increase in profitability resulting from the transaction is represented by the difference between allowed revenue and cost $_{\text{transaction}}$. The supplier will also incur costs from a merger or acquisition, depicted by the red area between cost $_{\text{transaction}}$ and cost $_{\text{no transaction}}$. The extent to which a transaction results in a net increase in efficiency (and hence profitability) depends on the relative size of the red and grey areas.

48 In this section 'previous regulatory period' relates to the period in which the transaction took place.

Figure 5.1 Costs and efficiencies of a transaction



Treatment of costs

5.9 The Commission considers that it is appropriate for suppliers to share with consumers both efficiencies from mergers and acquisitions and the costs incurred in achieving these efficiencies. The Commission considers that is most appropriately achieved by including the average annual merger and acquisition expenses incurred by the supplier over the previous five years as operating expenditure when calculating the supplier's returns. This has the effect of smoothing the expenses from what might be considered an unusually high or low merger or acquisition expense in any given year.

5.10 If the point estimate of the supplier's returns only used a single year's merger and acquisition expenses, these may not be reflective of the costs that the supplier should be able to share with consumers. In particular, if the expenses in the year for which supplier returns are calculated were high then the supplier would be compensated for these expenses in every year of the next regulatory period. If the expenses were zero then the supplier would not be compensated in the next regulatory period for any merger or acquisition expenses previously incurred.

5.11 The Commission notes that this proposed treatment is somewhat different from how EDBs currently disclose ROI statistics under the *Electricity Distribution (Information Disclosure) Requirements 2008 (**EDIDRs**)* (i.e., although merger and acquisition expenses are required to be disclosed, no expenses are currently included as part of the ROI statistics).[49] The inclusion of merger and acquisition expenses in supplier returns will lead to some of the expenses that arise in the previous regulatory period potentially being passed on to consumers through the starting price adjustment process. The Commission also proposes consulting on the appropriate way in which

49 For further information on the treatment of mergers and acquisitions under the *EIRS* see Commerce Commission, *Information Disclosure Regime, Companion Paper to the Revised Information Disclosure Requirements*, 31 October 2008, paragraph 124.

merger or acquisition expenses are to be reported in information disclosure requirements for EDBs, GTBs and GDBs.[50]

Implications of proposed treatment of efficiencies

5.12 The following summarises the implications of the proposed treatment of efficiency gains from transactions under the starting price adjustment process set out in Sections 3 and 4:

- **All of the potential efficiency gains are made in the previous regulatory period**. To the extent that efficiencies from mergers or acquisitions result in a level of profitability above the ROI band upper limit, the Commission would implement a downward starting price adjustment intended to shift the actual ROI toward to the ROI band upper limit at the beginning of the next regulatory period. Consistent with s 52A(1)(c), this results in the efficiency gains from the mergers or acquisitions being shared with consumers through lower prices.

- **Some of the potential efficiency gains are *partly* made in the previous regulatory period**. If the full realisation of potential efficiency gains from a merger or acquisition spans two or more regulatory periods, as the starting price adjustment process uses actual data (i.e., it does not consider projected efficient post-transaction costs), a downward starting price adjustment would only occur where the supplier's returns are greater than the ROI band upper limit.[51]

- **None of the potential efficiency gains are made in the previous regulatory period.** If there are no efficiencies made from mergers or acquisitions in the previous regulatory period or periods, the full realisation of potential efficiency gains may occur in the following regulatory period. To the extent that the supplier's returns are greater than the ROI band upper limit at the next DPP reset, a downward starting price adjustment would be undertaken at that point.

5.13 In summary, efficiency gains from the transaction are kept at least until the end of the regulatory period, but given that such gains may take some years to be realised, many of the gains could be retained until the end of the subsequent regulatory period as a result of the way the Commission proposes making starting price adjustments. Further, efficiency gains that raise returns within the ROI band can be kept by the supplier until the end of the following regulatory period. The costs from mergers or acquisitions are also to be shared with consumers.

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50 Note that the current definition of merger and acquisition expenses in the *EDIDRs* means "expenditure incurred on mergers and acquisitions and may include expenditure incurred exploring possible mergers and acquisitions". For the avoidance of doubt, for the purposes of starting price adjustments, the ROI calculation would only relate to such expenses that are associated with mergers and acquisitions involving the supply of services regulated under Part 4.

51 The extent to which this scenario is likely to apply depends on the timing of the transaction. If the transaction occurs early in the previous regulatory period it is likely that most of the efficiencies might have already been realised. In contrast, if the transaction takes place towards the end of the previous regulatory period, some of the realisation of efficiency gains might take place in the next regulatory period.

Treatment of Positive Net Gains from IRIS in Moving from CPP to DPP

5.14 The *Draft IMs* provide for the implementation of IRIS under a CPP. The *IM Draft Reasons* set out the details of the proposed approach and the associated reasons for the approach.[52] The Commission considers it appropriate for suppliers to retain the benefit of these efficiencies for five years, and for suppliers to retain these efficiencies when moving from a CPP to a DPP.[53] Any benefits that have not been fully realised under a CPP (i.e., the five-year period cuts across the CPP and DPP regulatory periods) will continue to be included as a recoverable item under a DPP. As such, the IRIS incentives for efficiencies are retained when moving from a CPP to a DPP.

52 supra n 12, chapter 8.

53 For reasons discussed in the *IM Draft Reasons*, the Commission does not consider it possible to implement a suitable rolling incentive scheme that would apply to a DPP. ibid, paragraph 8.8.17.

SECTION 6 ILLUSTRATIVE WORKED EXAMPLE

Overview

6.1 This section provides an illustrative worked example of the proposed starting price adjustment framework for EDBs, using information disclosures for 2008/09 as a starting point and assumes none of the adjustments discussed at paragraph 3.15 are required.[54] The example includes analysis for 15 of 17 EDBs (given that 17 EDBs have submitted compliance statements for 2009/10 indicating that they are non-exempt). Analysis for Vector Limited (**Vector**) and Wellington Electricity Limited (**WE**) is not included as a result of the sale and purchase of the Wellington network, as additional part-year information not already disclosed would be required to apply the proposed framework consistent with the other EDBs. Similar analysis for GTBs and GDBs has not been undertaken at this stage as the Commission considers that currently available information is insufficient for this purpose.

6.2 As described in Section 4, the actual size of any starting price adjustment will be influenced by the values of the components, namely supplier returns, the WACC point estimate, and the ROI band. The value adopted for each of these depends on IMs, information provided by suppliers and analysis of historical data.

6.3 While the worked example uses the proposed framework, information and assumptions used to inform actual starting price adjustments may differ, including:

- **IMs**: to the extent practicable, given available information and based on a number of assumptions, the worked example is consistent with the *Draft IMs*, any actual starting price adjustment would need to be consistent with final IMs;
- **ROI band:** the quantitative analysis for determining the ROI band limits are still to be further refined, including through sensitivity analysis and further validation of the data; and
- **Data:** the worked example does not use the full set of information that the Commission intends to use as part of any actual starting price adjustments. The Commission would use more up-to-date data provided through EDBs' information disclosures and/or by way of additional data requests consistent with the final IMs.

6.4 Given the preliminary nature of the starting price adjustments presented in this section, this example should be regarded as purely illustrative. It does not reflect the size of any actual starting price adjustments the Commission might undertake for EDBs. The Commission considers that, while indicative only, the worked example is useful to illustrate how the starting price adjustment process may actually be implemented. This should serve to highlight any practical implementation issues, as well as any issues of principle as set out in Sections 3 to 5 of this *Discussion Paper*.

6.5 For transparency, and to facilitate a well-informed consultation process, the Commission has also published the spreadsheet model used for the worked example (*Model for SPA Illustrative Worked Example*), which includes the relevant data, assumptions and calculations, alongside this *Discussion Paper*.

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[54] Information disclosed in accordance with the *EDIDRs*.

Data and Assumptions

6.6 The following sets out the data and assumptions used to determine the components of the starting price adjustment framework for the purposes of this worked example.

Assessment of supplier returns

6.7 To implement the ROI calculation set out in Formula 1, this worked example calculates the returns for each EDB in accordance with Formula 2 below. Terms used below that have not been defined are as defined in the *EDIDRs*.

Formula 2 Calculation of supplier ROI

ROI = *(Regulatory Revenue – Total Transmission Costs – Total Operational Expenditure – Total Regulatory Depreciation – Tax + Revaluations) / Regulatory Investment Value*

where:

Total Regulatory Depreciation =	*As defined in the EDIDRs*
Tax =	*(Regulatory Revenue – Total Expenses – Interest – Total Regulatory Depreciation + Other Permanent Differences Not Deductible – Capital Contributions and Net Value of Vested Assets – Deductible Discretionary Discounts and Customer Rebates – Other Permanent Differences Non Taxable + Amortisation of Revaluation over remaining useful life + Amortisation of opening permanent difference) × the Statutory Tax Rate*
Regulatory Revenue[55] *=*	*Gross Line Charge Income + Total Capital Contributions and Vested Assets + Other Income*
Gross Line Charge Income =	*Net Line Charge Revenue Received + Discretionary Discounts and Customer Rebates*
Total Expenses =	*Total Operating Expenditure + Total Transmission Costs*
Interest =	*Leverage × Cost of Debt*[56] *× Regulatory Investment Value*
Amortisation of Revaluation over remaining useful life =	*Revaluations / Average Remaining Asset Life*
Revaluations =	*System Fixed Assets regulatory value at end of Previous Year × Revaluation rate for 2009 + Revaluations of non-system fixed assets*

55 Regulatory Revenue is equal to the Total Regulatory Income as disclosed in the *EDIDRs* FS1 report, less the income and expenses associated with the AC loss rental rebates.

56 For further detail on the risk free rate refer to Table B1 in Appendix B.

Average Remaining Asset Life =	*Average Expected Total Life of System Fixed Assets × Depreciated Replacement Cost at end of previous year / Replacement Cost at year end of previous year*[57]
Amortisation of opening permanent difference =	*Opening Permanent Difference / Average Remaining Asset Life*
Opening Permanent Difference =	*Total Regulatory Asset Base value at beginning of Current Financial Year – Inferred Tax Book Value*
Inferred Tax Book Value =	*minimum (Tax Depreciation as disclosed / Tax depreciation rate of 9.5% diminishing value; Total Regulatory Asset Base value at beginning of Current Financial Year)*[58]
Regulatory Investment Value =	*As defined in the EDIDRs*

6.8 The ROI calculated using this formula is comparable to a vanilla WACC, whereas the ROI calculated in the MP2 report of the *EDIDRs* includes an adjustment for the interest tax shield and is therefore comparable with a post-tax WACC.

6.9 The tax calculated in Formula 2 is consistent with the *Draft IMs*. It is calculated on a deferred tax basis with adjustments to ensure that the approach is NPV neutral with a tax payable approach. Consistent with the *Draft IMs,* these adjustments are in the form of the two amortisation terms in the formula for tax. The formula assumes an opening deferred tax balance of zero and that the regulatory tax book value does not exceed the value of the regulatory asset base (**RAB**).[59]

6.10 Figure 6.1 below shows the ROI disclosed for each EDB (adjusted to be consistent with a vanilla WACC, by the removal of the interest tax shield term) and the ROI calculated using Formula 2, using data taken from 2008/09 information disclosures. Although broadly similar, the ROIs taken directly from information disclosure are somewhat higher than those calculated for this worked example. The difference in these ROIs can be attributed to the following:

- *different tax approaches:* the worked example uses a deferred tax approach consistent with the *Draft IMs* for tax treatment for EDBs, whereas disclosed ROIs use a tax payable approach;

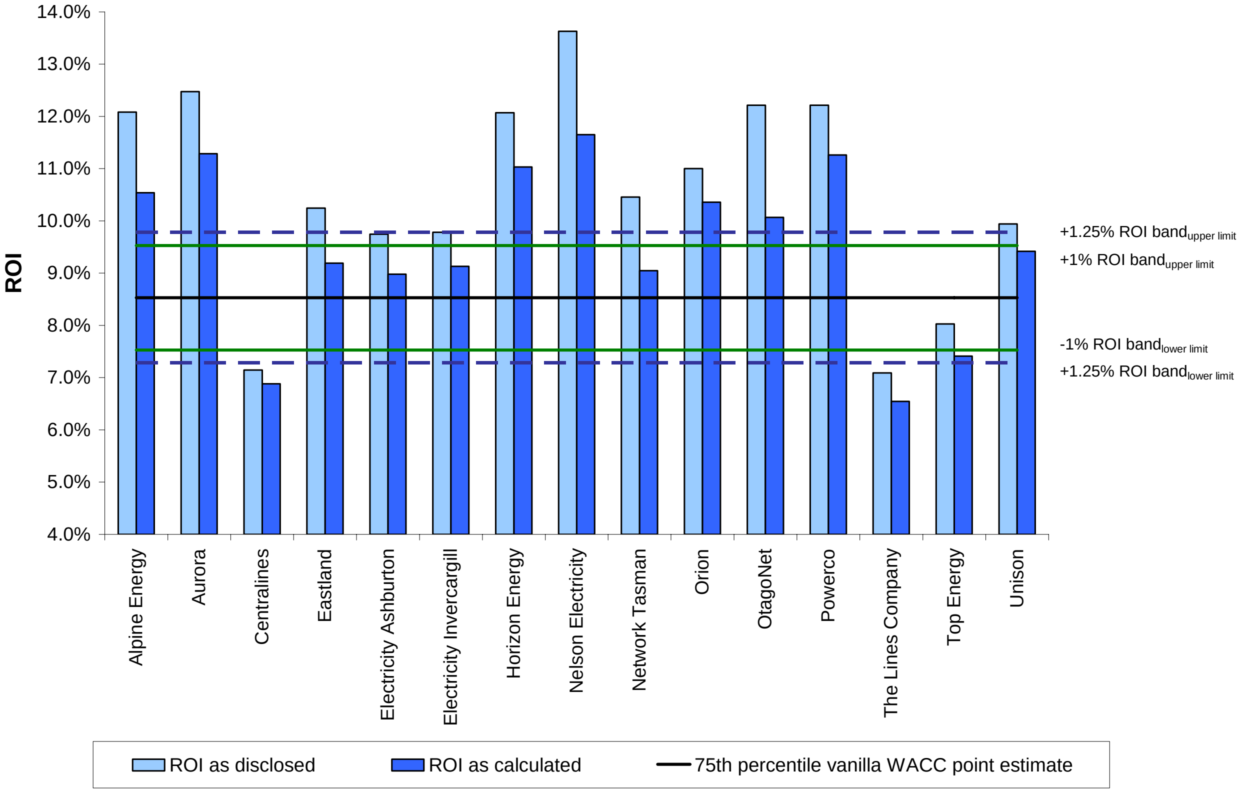
57 The Average Expected Total Life of System Fixed Assets is disclosed in the *EDIDRs* MP1 report. The Depreciated Replacement Cost and Replacement Cost are disclosed in the *EDIDRs* AV3 report.

58 The 9.5% diminishing value rate, which is one of the rates from the Inland Revenue's IRD265 and IRD267 guides, has been chosen as it is indicative of the bulk of EDBs' assets. The impact on ROI of using rates of 7.5% and 12%, which are also rates from the Inland Revenue's guides, has been tested and found to be immaterial for the purposes of this illustrative example. The Commission intends to seek actual Tax Book Values from EDBs in due course, rather than infer tax book values from Tax Depreciation.

59 Note, however, that the *Draft IMs* assume that the opening deferred tax balance is zero as at 1 April 2009, not in 1 April 2008 as assumed for the purposes of this example. As the Commission proposes using 2009/10 data for the initial starting price adjustments for EDBs, this would be consistent with a 2009 date for the zero opening deferred tax balance.

- *differences in cost of debt:* the worked example uses an assumption consistent with the draft cost of capital IMs, whereas disclosed ROIs are based on EDBs' interpretation of information disclosure requirements; and
- *AC loss rental rebates excluded*: the worked example excludes the income and expenses associated with AC loss rental rebates consistent with the existing DPP determination for EDBs.[60] Disclosed ROIs include this information and this has a material effect for a number of EDBs.

Figure 6.1 Information disclosure and worked example ROIs (2008/09)



6.11 As set out in paragraph 6.1, this worked example does not include analysis for Vector or WE. The purchase and sale of the Wellington network was completed part way through the 2008/09 year. Disclosure information for Vector and WE does not include all of the part-year information required to undertake the analysis consistently and the calculation of ROI would not have been the same as used for other EDBs (e.g., the transaction has an impact on revaluations, the inferred tax book value, and the amortisation of the opening deferred tax balance in the tax calculation). In any case, the primary purpose of the worked example is to highlight how the proposed framework might be applied, and these EDBs can determine the effects of this framework for themselves as they will have data for the 2009/10 year available to them. In addition, given that the actual adjustments will use 2009/10

60 The Commission omitted loss and constraint rentals from the definition of Transmission Charges in the *Commerce Act (Electricity Distribution Default Price-Quality Path) Determination 2010* as it considers that these charges should be passed on transparently to consumers/retailers. supra n 9, paragraph 4.37.

data and no similar transactions have occurred during this year, this is not an issue that needs to be immediately addressed. The appropriate treatment will, however, need to be addressed for future resets and information disclosure requirements.

6.12 The Commission notes that the differences between the ROI used for the purposes of this worked example and those which would be used for the actual initial starting price adjustments for EDBs include the following:

- the Commission expects to use more up-to-date information, including for the 2009/10 financial year;[61]
- the actual initial starting price adjustments would use information that is fully consistent with the final IMs; [62]
- the Commission has not examined the extent to which any one-off events in the accounting data for 2008/09 impact on the ROI statistics for this worked example. As discussed in paragraphs 4.4-4.6, for the actual starting price adjustments, the Commission expects to adjust the data for known and quantifiable one-off events prior to calculating the ROI statistics;
- the worked example does not factor in merger or acquisition expenses as described in paragraphs 5.9 to 5.11, whereas the actual starting price adjustments would include a provision for these expenses; and
- Other factors referred to in paragraph 3.15 would also need to be taken into account when making actual starting price adjustments, namely differences between actuals and allowables, lagged quantities, and pass-through costs (and potentially recoverable costs). Although any adjustment to starting prices relates to the prices applying at the beginning of the 2010-2015 regulatory period, the adjustment itself would not take effect until 1 April 2012 and would not have an impact on DPP compliance until the 2012/13 assessment period.

61 Note that on an ongoing basis the analysis underpinning starting price adjustments would not use data for the year immediately prior to a reset (i.e., the most up-to-date information that is available will be for the fourth year of a regulatory period). For the initial starting price adjustments for EDBs (as these adjustments will take effect part way through the regulatory period), however, the Commission intends to use data from the 2009/10 year, the year immediately prior to the commencement of the current regulatory period. In this instance, no adjustments to allowable notional revenue would be required to take account of the change due to CPI-X over the final year of the preceding regulatory period.

62 The Commission intends to provide an assessment of the impact of the final IMs for the components of the ROI formula as part of future consultation next year. It is expected that the proposed adjustments to the 2004 ODV asset values (as proposed by the draft asset valuation IM) would reduce EDB ROIs compared to disclosed values. In addition, EDB ROIs would be impacted by changes to the allocation of costs (as proposed by the draft cost allocation IM), and that this may increase EDB returns for those that also provide regulated gas pipeline services and/or other unregulated services.

ROI band

WACC

6.13 As described in Section 4, the ROI band is centred on the 75th percentile vanilla WACC range found by applying the *Draft IMs*. The WACC point estimate for the five years from September 2009 is estimated at 8.53% and is shown in Figure 6.1 above.

6.14 Further information on the cost of capital estimation, including the parameter estimates and their standard errors, is set out in Appendix B. The WACC point estimate used for actual starting price adjustments would be based on the final cost of capital IM.

Upper and lower ROI band limit

6.15 To determine the limits of the ROI band, the Commission has undertaken an assessment of historical variations of components of the ROI statistic. The Commission has used information from the all 17 EDBs over the time period from 2002/03 to 2008/09.

6.16 The Commission focused on assessing variations in the operating costs. These variations are likely to be dependent on an EDB's ability to efficiently manage costs and might be influenced by changes in the interpretation and implementation of accounting policies. Nonetheless, the Commission considers variations in operating costs to be the closest (albeit imperfect) proxy for sources in variations of ROI for the purposes of the setting the ROI band.

6.17 Historical variations in other components of the ROI, most notably tax, depreciation and revaluations may not be reflective of the variations going forward as these will depend on the application of IMs. The Commission's analysis also does not rely on variations in revenue as variations are driven by demand for electricity which is affected by the pricing decisions by generators, lines businesses and retailers, and the Commission does not have sufficient information to disentangle these effects.

6.18 In addition, to the extent that variations in revenue and operating costs (or other components of the ROI) reflect the same underlying sources of variations, allowing for variation from two (or more) components of the ROI might lead to double counting of historical variability. A useful indicator for the degree to which variations in revenue and operating costs are driven by similar factors is the correlation between the two data series. The correlation coefficient between revenues and operating costs is above 0.8 suggesting a high degree of correlation. The Commission therefore considers it appropriate to focus on variations in operating costs.

6.19 For the purposes of this worked example, the Commission has calculated two ROI bands using the range determined from analysing variations in historical operating expenditure. The ROI band upper and lower limits were determined using the following steps:

- **Step 1**—the standard deviation of the ratio between operating costs and the RAB was calculated for each EDB. The data used was from 2002/03 to 2006/07.[63] The data for some EDBs was not available for some years and therefore was unable to be included in the analysis.

- **Step 2**—using the standard deviation for each EDB, an industry-wide standard deviation (defined as the arithmetic mean of the standard deviations) was calculated. The standard deviation in the ROI from operating costs is calculated to be between 1.0% and 1.25%.

- **Step 3**—using the standard deviation in the ratio of operating costs to RAB of 1.0% (1.25%), the upper and lower limits of the ROI band are set at ± 1% (±1.25%) of the WACC point estimate. This results in ROI band limits of 7.53% to 9.53% and 7.28% to 9.78% respectively. These ROI band upper and lower limits are shown in Figure 6.1.

6.20 The Commission notes that for actual starting price adjustments, analysis would involve further examination of the consistency in data. In addition, the Commission would undertake further scenario sensitivity analysis to assess the impact of variations in other components of the ROI to inform the setting of the ROI band.

6.21 While this worked example was undertaken for EDBs, the Commission notes that for GDBs and GTBs the amount of consistent information available for setting the ROI band is likely to be more limited than for EDBs.

Illustrative Adjustments

6.22 Using the calculated EDB returns and the ROI bands set out above, the Commission has calculated the corresponding illustrative starting price adjustments. These illustrative adjustments have been expressed in terms of adjustments to line charge revenue and distribution line charge revenue. The Commission considers that adjustments expressed as changes to the distribution line charge revenue are likely to be of most interest to EDBs as this closely relates to the price-path set under the DPP, and adjustments expressed as changes to the line charge revenue are likely to be of most interest to consumers as this reflects the changes to the average prices for all lines services.

63 Further work is to be undertaken to ensure consistency between data prior to the commencement of the current information disclosure regime starting in 2008 and data prior to that. Data for 2007/08 and 2008/09 has therefore been excluded for the purpose of this worked example.

6.23 For each EDB the adjustments have been calculated, consistent with the process set out in paragraph 3.7, on the following basis:

- determine the Line Charge Revenue and Distribution Line Charge Revenue using information disclosure data in report FS1, where:

Line Charge Revenue =	*Gross Line Charge Income*
Distribution Line Charge Revenue =	*Gross Line Charge Income – Total Transmission Costs– Pass Through Costs*

- determine the Line Charge Revenue and Distribution Line Charge Revenue corresponding to the ROI band upper limit,[64] by:

  i. determining the Regulatory Revenue corresponding to the ROI band upper limit,[65] which is calculated by substituting the percentage return associated with the ROI band upper limit (i.e., 9.53% and 9.78% respectively) for the ROI in Formula 2 and solving for Regulatory Revenue;

  ii. calculating the change in Regulatory Revenue, which is the Regulatory Revenue corresponding to the ROI band upper limit less the Regulatory Revenue;[66] and

  iii. adding the change in Regulatory Revenue (or subtracting, where the change in Regulatory Revenue in ii is negative) to the Line Charge Revenue and Distribution Line Charge Revenue to obtain the Line Charge Revenue and the Distribution Line Charge Revenue that would correspond to the ROI upper band limit;

- determine the Line Charge Revenue and Distribution Line Charge Revenue corresponding to the ROI band lower limit, by:

  i. determining the Regulatory Revenue corresponding to the ROI band lower limit, which is calculated by substituting the percentage return associated with the ROI band lower limit (i.e., 7.53% and 7.28% respectively) for the ROI in Formula 2 and solving for Regulatory Revenue;

  ii. calculating the change in Regulatory Revenue, which is the Regulatory Revenue corresponding to the ROI band lower limit less the Regulatory Revenue; and

  iii. adding the change in Regulatory Revenue (or subtracting, where the change in Regulatory Revenue in ii is negative) to the Line Charge Revenue and Distribution Line Charge Revenue to obtain the Line Charge Revenue and the Distribution Line Charge Revenue that would correspond to the ROI lower band limit;

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64 ROI band limits are calculated on a vanilla basis.

65 As noted above, the Regulatory Revenue corresponding to a particular ROI is the building blocks revenue that would correspond to that ROI being earned.

66 The Regulatory Revenue derived from the Total Regulatory Income is the disclosed Total Regulatory Income adjusted to remove the effect of any net AC loss rental debits or credits.

- determine the starting price adjustment expressed in dollar terms (which is the same for all revenue types):

    i. in the instance where the EDB's Distribution Line Charge Revenue falls within the ROI band (i.e., the Distribution Line Charge Revenue corresponding to the ROI band upper limit and that corresponding to the ROI band lower limit), there is no adjustment;

    ii. in the instance where the EDB's Distribution Line Charge Revenue is below the Distribution Line Charge Revenue corresponding to the ROI band lower limit, the difference is the starting price adjustment increase expressed in dollar terms;

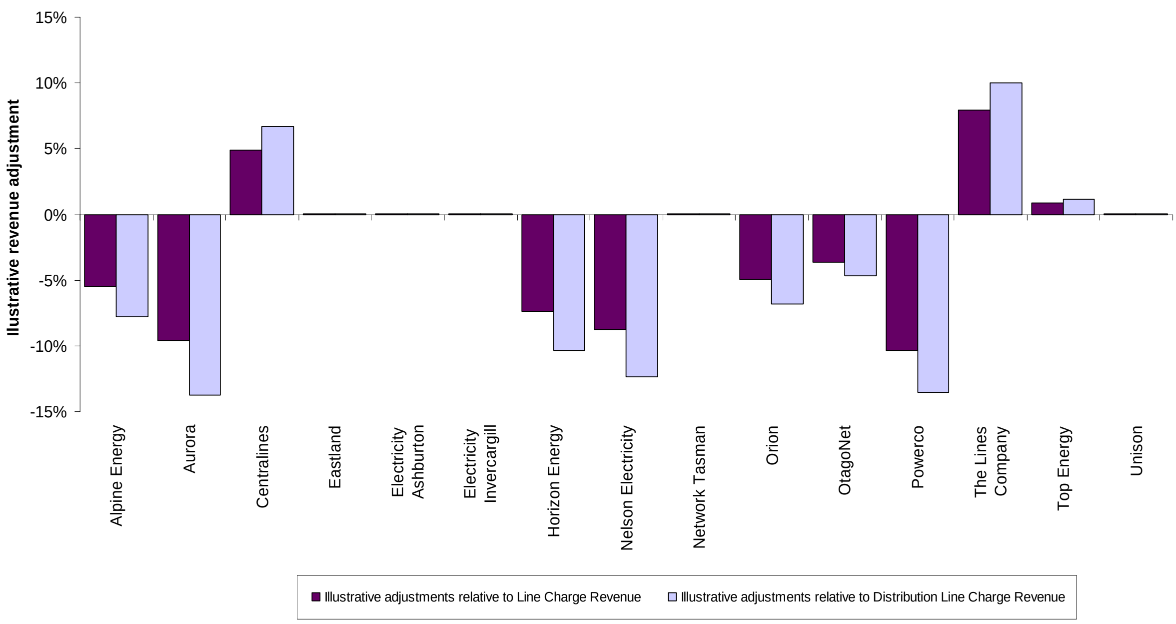
    iii. in the instance where the EDB's Distribution Line Charge Revenue is above the Distribution Line Charge Revenue corresponding to the ROI band upper limit, the difference is the starting price adjustment decrease expressed in dollar terms; and

- determine the starting price adjustment in percentage terms (for illustrative purposes), by dividing the starting price adjustment in dollar terms by the Line Charge Revenue and Distribution Line Charge Revenue respectively.

6.24 Appendix C sets out the results of the starting price adjustment calculations in more detail. For further detail refer to the *Model for SPA Illustrative Worked Example*.

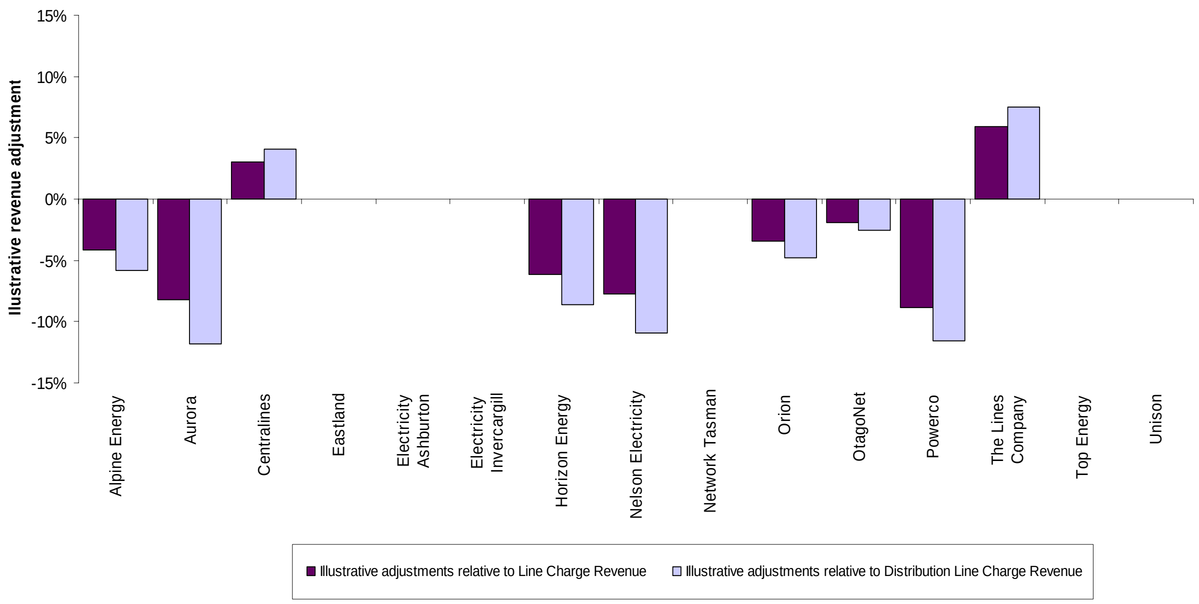
6.25 Figure 6.2 below shows the illustrative starting price adjustments for EDBs expressed in terms of the percentage revenue change from bringing a supplier's ROI to the ROI band that is the WACC point estimate ±1% (i.e., 7.53% to 9.53%).

Figure 6.2 Illustrative adjustment using ±1% ROI band



6.26 Similarly, Figure 6.3 below shows the illustrative starting price adjustments for EDBs expressed in terms of the percentage revenue change from bringing a supplier's ROI to the ROI band that is the WACC point estimate ±1.25% (i.e., 7.28% to 9.78%).

Figure 6.3 Illustrative adjustment using ±1.25% ROI band



6.27 While illustrative, the worked example above indicates the starting price adjustments would imply a step-change in the actual revenues for a number of EDBs. This would not necessarily be unexpected when transitioning between different regulatory regimes with different regulatory instruments and different regulatory rules and processes (e.g., IMs). The Act also contemplates step-changes in starting prices (and revenues) by allowing the Commission to set an alternative rate of change if a starting price adjustment by itself may lead to undue financial hardship to the supplier or price shocks to consumers.

APPENDIX A: OTHER STATUTORY CONSIDERATIONS

Government Policy Statements

A1.1 Section 26 of the Act requires the Commission to have regard, when exercising its powers under the Act, to Government policy statements (**GPSs**) transmitted to it, in writing, by the Minister of Commerce. To date, three GPSs of relevance to the starting price adjustment process have been transmitted to the Commission. These concern electricity governance, gas governance and infrastructure investment incentives, and are discussed below.

Electricity governance

A1.2 The Government issued an updated GPS in relation to electricity governance in May 2009 (**2009 GPS**). The 2009 GPS sets out statutory objectives for the Electricity Commission and the Government's expectations and intentions regarding the interrelationship between the Commission and the Electricity Commission in relation to the regulation of electricity lines businesses. Relevant to the Commission are objectives relating to energy efficiency, and the Commission's role in providing incentives for demand side management and reducing energy losses. The Commission notes that these objectives are consistent with the obligations under s 54Q. A Protocol to the *Memorandum of Understanding between the Commerce Commission and Electricity Commission* (**MoU**)[67] states that the Commission will have regard to these objectives when implementing the Part 4 regulatory regime.

Gas governance

A1.3 The government issued a GPS on gas governance in April 2008 (**2008 GPS**). This replaced the Government's previous GPS on gas governance issued in 2004. The 2008 GPS sets objectives for the Gas Industry Company, some of which are relevant to the Commission's work. The Commission considers that its current views set out in this *Discussion Paper* are consistent with those objectives.

Infrastructure investment incentives

A1.4 In August 2006, the Government issued the 2006 GPS relating to the incentives of regulated businesses to invest in infrastructure. The 2006 GPS includes that the Government considers this objective will be achieved through regulatory stability, transparency and certainty giving businesses the confidence to make long-life investments.

Consideration of Government policy statements

A1.5 The Commission has assessed and had regard to the 2009 GPS, 2008 GPS and the 2006 GPS when setting out its current views on the starting price adjustment process.

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[67] Discussed further in paragraph A1.8.

Other Statutory Considerations Relevant for EDBs

Energy efficiency

A1.6 Section 54Q requires that the Commission, when applying regulation under Part 4, must promote incentives, and avoid imposing disincentives, for EDBs (including those deemed to be consumer-owned) to invest in energy efficiency and demand-side management and to reduce energy losses.

A1.7 The Commission's interpretation of s 54Q is set out in more detail in its decisions paper for the DPP applying to EDBs from 1 April 2010.[68] The Commission has considered s 54Q in forming its current views on the starting price adjustment process. The Commission considers there are no direct linkages between energy efficiency and starting price adjustments, and therefore the proposed approach avoids disincentives to the promotion of energy efficiency.

Electricity Act

A1.8 Section 54V sets out provisions relating to the interface with the Electricity Act 1992. It specifies matters which the Commission must take into account. These matters are identified as areas of common interest in the MoU, which coordinates their respective roles under the Electricity Act and the Commerce Act. The MoU states that "the Commerce Commission will take into account, before exercising any of its powers under Part 4 of the Commerce Act, the matters specified in s 54V of the Commerce Act, including any electricity governance regulation or rule made by the Electricity Commission, or decision made under them, or any relevant guideline, that relates to or affects the quality standards or pricing methodologies applicable to …[EDBs]".[69] The Commission has considered its obligations under s 54V and any relevant implications as expressed in the MoU when setting out its current views on the starting price adjustment process.

Other Statutory Considerations Relevant for GTBs and GDBs

Gas authorisations

A1.9 Existing authorisations implemented prior to the 2008 amendments to the Act continue to have effect until 1 July 2012 pursuant to s 55G of the Act. These instruments include the *Commerce (Control of Natural Gas Services) Order 2005* (**the Order**), as amended by the *Commerce (Control of Natural Gas Services) Amendment Order 2005*, and the *Commerce Commission Authorisation (Decision Nos. 656 and 657)*, which authorises the supply of controlled services defined by the Order that are supplied by Powerco and Vector respectively.

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68 supra n 9, pp. 13-16.

69 Electricity Commission & Commerce Commission, *Memorandum of Understanding between the Electricity Commission and the Commerce Commission, 16 August 2007 (as amended on 13 November 2008)*, available at http://www.comcom.govt.nz.

A1.10 The Commission has considered the impact on these authorisations on the proposed starting price adjustment process.

Gas Act

A1.11 Section 55I of the Act sets out how the Act relates to decisions made under the Gas Act 1992. The Commission is required to take into account any gas governance regulation or rule made pursuant to Part 4A of the Gas Act, and any decision made under those regulations or rules, which relate to or affect quality standards or pricing methodologies for GTBs or GDBs. The Commission is also required to take into account any relevant guidelines or levies payable under the Gas Act. The Commission has considered its obligations under s 55I when making its decisions on the starting price adjustment process.

APPENDIX B: ASSUMPTIONS FOR WACC

B1.1 This appendix sets out the cost of capital estimate and the background to the estimate used for the starting price adjustment worked example set out in Section 6. The cost of capital is based on the draft cost of capital IM for EDBs set out in the *Draft IMs*.[70] Therefore, the estimate of the cost of capital used for this worked example might be different from the cost of capital estimate used for making the actual starting price adjustments for EDBs.

B1.2 The cost of capital has been estimated to apply to a hypothetical starting price adjustment for a five-year regulatory period beginning on the 1 April 2010. Consistent with clauses 4.1.4 and 4.1.5 of the *Draft IM*s for EDBs, the cost of capital is estimated by applying estimates of the risk-free rate and debt premium in August 2009.[71] The corporate and investor tax rates are set in line with the pre-budget tax rates. All other parameter estimates are outlined in Part 4, subpart 1 of the *Draft IM*s for EDBs. Table B1 shows the seven parameter point estimates and standard errors required to estimate the cost of capital in line with the draft cost of capital IM.

Table B1 Parameter point estimates and standard errors

Parameter	Point estimate	Standard error
Leverage	40%	0
Risk-free rate	5.36%	0
Debt premium	2.30%	0.0004
Debt issuance cost	0.3%	0
Asset beta	0.34	0.12
Tax-adjusted market risk premium	7.1%	0.015
Corporate and investor tax rate	30%	0

B1.3 Note that the cost of debt of 7.96% as used in the worked example in Section 6 is calculated as the sum of the risk-free rate (5.36%), the debt premium (2.30%), and the debt issuance cost (0.3%).

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70 supra n 35, Part 4, subpart 1.

71 The methodology in clauses 4.1.4 and 4.1.5 of the *Draft IMs* for EDBs indicates for making starting price adjustments the risk-free rate and the debt premium in the vanilla WACC are to be estimated for the beginning of September prior to the starting price adjustments taking effect. This requires the use of yields on the respective bonds for the month of August prior to the making of a starting price adjustment.

B1.4 The cost of capital used as part of the worked example, in line with the *Draft IMs*, is the 75th percentile vanilla WACC.[72] Table B2 sets out this figure alongside other percentiles of the vanilla WACC. For illustrative purposes the table also reports the corresponding post-tax cost of capital.[73]

Table B2 Cost of capital estimates (%)

Percentile	Vanilla WACC	Post-tax WACC
50th	7.85	6.89
75th	8.53	7.57
95th	9.51	8.55

72 Part 4, subpart 1 of the *Draft IMs* for EDBs outlines that when making starting price adjustments the Commission applies the 75th percentile vanilla cost of capital.

73 Part 2, subpart 5, clause 2.5.2 of the *Draft IMs* for EDBs outlines the approach to estimating the post-tax cost of capital. In Table B2 the post-tax cost of capital uses the parameters estimated in accordance with Part 4, subpart 1 of the *Draft IMs* for EDBs.

APPENDIX C: ILLUSTRATIVE WORKED EXAMPLE CALCULATIONS

Table C1 Calculations of Illustrative Adjustments with ROI band of ± 1.00%

EDB	Actual Revenue ($,000)		Revenue implied by ROI band lower limit ($,000)		Revenue implied by ROI band upper limit ($,000)		Starting Price Adjustment ($,000)	Percentage change relative to Revenue	
	Line Charge Revenue	Dist. Line Charge Revenue	Line Charge Revenue	Dist. Line Charge Revenue	Line Charge Revenue	Dist. Line Charge Revenue		Line Charge Revenue	Dist. Line Charge Revenue
Alpine Energy	30,128	21,334	25,177	16,383	28,467	19,673	-1661	-5.5%	-7.8%
Aurora	71,859	50,232	57,088	35,461	64,951	43,324	-6908	-9.6%	-13.8%
Centralines	7,754	5,690	8,134	6,070	9,305	7,241	379	4.9%	6.7%
Eastland	26,244	17,807	23,607	15,170	26,783	18,346	-	0.0%	0.0%
Electricity Ashburton	26,823	22,716	23,639	19,532	28,035	23,928	-	0.0%	0.0%
Electricity Invercargill	14,609	10,714	13,347	9,452	14,922	11,027	-	0.0%	0.0%
Horizon Energy	26,298	18,637	21,788	14,128	24,364	16,703	-1934	-7.4%	-10.4%
Nelson Electricity	8,290	5,840	6,884	4,434	7,567	5,117	-724	-8.7%	-12.4%
Network Tasman	32,917	20,907	29,782	17,772	33,915	21,906	-	0.0%	0.0%
Orion	180,415	131,293	149,837	100,715	171,462	122,340	-8953	-5.0%	-6.8%
OtagoNet	23,791	18,375	19,701	14,285	22,926	17,510	-865	-3.6%	-4.7%
Powerco	277,413	212,112	215,512	150,211	248,704	183,403	-28709	-10.3%	-13.5%
The Lines Company	24,175	19,120	26,090	21,035	29,987	24,932	1,915	7.9%	10.0%
Top Energy	25,509	19,212	25,726	19,429	29,367	23,070	217	0.9%	1.1%
Unison	90,000	66,172	79,071	55,243	90,640	66,812	-	0.0%	0.0%

Table C2 Calculations of Illustrative Adjustments with ROI band of ± 1.25%

EDB	Actual Revenue ($,000)		Revenue implied by ROI band lower limit ($,000)		Revenue implied by ROI band upper limit ($,000)		Starting Price Adjustment ($,000)	Percentage change relative to Revenue	
	Line Charge Revenue	Dist. Line Charge Revenue	Line Charge Revenue	Dist. Line Charge Revenue	Line Charge Revenue	Dist. Line Charge Revenue		Line Charge Revenue	Dist. Line Charge Revenue
Alpine Energy	30,128	21,334	24,766	15,972	28,879	20,085	-1249	-4.1%	-5.9%
Aurora	71,859	50,232	56,106	34,479	65,934	44,307	-5925	-8.2%	-11.8%
Centralines	7,754	5,690	7,987	5,923	9,451	7,387	233	3.0%	4.1%
Eastland	26,244	17,807	23,210	14,773	27,180	18,743	-	0.0%	0.0%
Electricity Ashburton	26,823	22,716	23,089	18,982	28,584	24,477	-	0.0%	0.0%
Electricity Invercargill	14,609	10,714	13,151	9,256	15,119	11,224	-	0.0%	0.0%
Horizon Energy	26,298	18,637	21,466	13,806	24,686	17,025	-1612	-6.1%	-8.6%
Nelson Electricity	8,290	5,840	6,798	4,348	7,652	5,202	-638	-7.7%	-10.9%
Network Tasman	32,917	20,907	29,265	17,256	34,432	22,422	-	0.0%	0.0%
Orion	180,415	131,293	147,133	98,011	174,165	125,043	-6250	-3.5%	-4.8%
OtagoNet	23,791	18,375	19,298	13,882	23,329	17,913	-462	-1.9%	-2.5%
Powerco	277,413	212,112	211,363	146,062	252,853	187,552	-24560	-8.9%	-11.6%
The Lines Company	24,175	19,120	25,603	20,548	30,474	25,419	1,428	5.9%	7.5%
Top Energy	25,509	19,212	25,271	18,974	29,822	23,525	-	0.0%	0.0%
Unison	90,000	66,172	77,625	53,797	92,086	68,258	-	0.0%	0.0%