

COMMERCE COMMISSION

Regulation of Electricity Lines Businesses

Targeted Control Regime

Assessment and Inquiry Guidelines

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PREFACE

Under subpart 1 of Part 4A of the Commerce Act (the Act), the Commerce Commission (the Commission) is required to implement a targeted control regime for large electricity lines businesses (lines businesses)—namely distribution businesses and Transpower.

As part of the targeted control regime, the Commission must set thresholds for the possible declaration of control in relation to lines businesses, assess those businesses against the thresholds it has set, identify any business that breaches the thresholds, and determine whether or not to make a declaration of control in relation to goods or services supplied by a lines business identified as having breached a threshold.

The purpose of this document, the *Assessment and Inquiry Guidelines* (the Guidelines), is to inform interested parties of the Commission's broad process and analytical framework for assessing threshold compliance and for undertaking post-breach inquiries under the targeted control regime. The objective of doing so is to increase certainty and transparency in respect of the Commission's approach to these tasks.

The Guidelines were first issued by the Commission on 7 August 2003, in draft form, and written submissions on the draft were invited from interested parties. Ten written submissions were received, and the Commission has taken these submissions into account in revising the draft and issuing this first edition of the document.

The Commission intends re-issuing the Guidelines from time to time as experience with implementing the targeted control regime is gained, and as other investigative and developmental work is completed.

EXECUTIVE SUMMARY

Introduction and Purpose

Part 4A of the Commerce Act 1986 (the Act) came into effect on 8 August 2001 and, among other things, requires the Commission to implement a targeted control regime for the regulation of large electricity lines businesses (lines businesses)—namely distribution businesses and Transpower New Zealand Limited (Transpower).

The purpose of the targeted control regime is to promote the efficient operation of markets directly related to electricity distribution and transmission services through targeted control for the long-term benefit of consumers, by ensuring that suppliers—

- are limited in their ability to extract excessive profits;
- face strong incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
- share the benefits of efficiency gains with consumers, including through lower prices.

The Commission is required to set thresholds for the declaration of control in relation to lines businesses, assess lines businesses against those thresholds, identify any lines business that breaches the thresholds, and determine whether or not to make a declaration of control in relation to goods or services supplied by a lines business that has been identified as breaching a threshold.

The thresholds are effectively a screening mechanism for the Commission to identify lines businesses whose performance *may* warrant further examination, and if necessary, control. The principal feature of the targeted control regime, which distinguishes it from regulatory regimes in other countries, is that the prices, revenues and service quality of any of the 29 lines businesses in New Zealand are only to be controlled if control would demonstrably be for the long-term benefit of consumers.

On 6 June 2003, after consulting with interested parties as to possible thresholds, the Commission set two thresholds—a CPI-X price path threshold and a quality threshold—applicable until 31 March 2004 for distribution businesses and 30 June 2004 for Transpower. The Commission reset the thresholds for distribution businesses for a five-year regulatory period from 1 April 2004, and Transpower's thresholds were reset for a one year period from 1 July 2004.

The incentives to achieve compliance with the thresholds set by the Commission will, to some extent, depend on the consequences that lines businesses perceive will result from a breach of the thresholds. The Commission therefore considers that some guidance in relation to post-breach consequences is necessary and desirable if the purpose of the targeted control regime is to be met.

Accordingly, the purpose of these Assessment and Inquiry Guidelines (the Guidelines) is to inform interested parties of the Commission's broad process and analytical framework for assessing threshold compliance and for undertaking post-breach inquiries under the targeted control regime. Other than outlining the relevant parts of the statutory framework, the Guidelines are not intended to cover the Commission's

approach to making authorisations or accepting undertakings following a declaration of control.

The Commission considers that the Guidelines should not be overly prescriptive, as the Commission is not able to foresee all circumstances that may be relevant to a threshold breach, and it needs to be able to respond to issues as they arise. Moreover, a prescriptive set of guidelines could result in the guidance provisions becoming *de facto* thresholds. Finally, these Guidelines are not intended to form legal advice and, to the extent that these Guidelines conflict in any respect with the current or any future relevant legislation, that legislation will, of course, prevail. In the case of any doubt, the Commission urges affected parties to obtain their own independent legal advice.

Assessment and Post-Breach Inquiry Process

Threshold compliance statements

Each lines business is annually required to provide the Commission with a threshold compliance statement in accordance with the notice in the *Gazette* which specifies the threshold assessment criteria. Each compliance statement should provide a self-assessment, with sufficient supporting evidence, of whether or not the lines business complies with the thresholds that the Commission has set.

The Commission will undertake an initial review of the compliance statements to check the statements for completeness and whether they meet the Commission's requirements for information disclosure. The Commission does not intend entering into discussions with lines businesses about specific matters to be contained in their compliance statements prior to receiving those statements.

Assessment and identification

Although lines business self-assessments are publicly disclosed, the Commission will generally seek to minimise any additional (and potentially adverse) publicity for those businesses that have indicated that they have breached a threshold, before the Commission has identified the cause of the breach, as well as any mitigating factors pertaining to the breach. As a result, at the same time as publicly identifying the breach the Commission may, in appropriate circumstances, be able to indicate that taking no further action would be consistent with long-term benefits to consumers.

Post-breach inquiries

The Commission may initiate a post-breach inquiry where:

- the Commission is unable to quickly determine that the breach does not warrant further investigation; or
- a significant amount of analysis is likely to be required before the Commission can determine whether taking no further action would be consistent with the long-term benefit of consumers; or
- information that would enable a determination to be made quickly is not forthcoming.

However, the Commission would not normally take such a step without first informing the business concerned.

The Commission proposes following a two-stage approach to post-breach inquiries:

- **Stage 1** comprises inquiry and analysis prior to the Commission forming an intention to declare control; and
- **Stage 2** comprises further inquiry and analysis subsequent to the Commission publishing its intention to declare control (during which the Commission must invite and consider the views of interested persons).

Prioritisation

A declaration of control is only one possible option available to the Commission in responding to a breach of the thresholds. For instance, the targeted control regime gives the Commission wide prioritisation powers. These powers include the ability for the Commission to take no further action following a breach, based on any factors the Commission may consider relevant, such as the Commission's standard enforcement criteria of conduct, detriment and public interest.

Administrative settlements

In addition, the Commission has indicated that it may be possible for a breach to be resolved by an "administrative settlement" between the Commission and the business concerned. Because such a settlement would involve the business voluntarily reaching an agreement with the Commission on an appropriate course of action, a better outcome may be achievable than would be the case through control. An administrative settlement option is a well-established way of resolving Commission investigations in relation to Parts II and III of the Act and the Fair Trading Act 1986.

Declarations of control

Should the Commission be unable to reach an agreement with the lines business, and decide that control would be in the long-term interests of consumers, it cannot automatically impose control. The Commission must first:

- publish its intention to declare control;
- invite interested parties to give their views on the matter;
- give those parties a reasonable opportunity to give those views; and
- have regard to those views.

A declaration of control under subpart 1 of Part 4A means (as with a declaration of control by Order in Council under Part IV of the Act) that a lines business may not supply the controlled goods or services unless an authorisation or an undertaking has come into effect in respect of those goods or services.

Analytical Framework for Post-Breach Inquiries

The decision to declare control

In determining whether to declare control, the Commission must have regard to the overall purpose of the targeted control regime—namely, to promote the efficient operation of electricity transmission and distribution markets for the long-term benefit of consumers.

The Commission considers that there are three dimensions to the economically efficient operation of the markets for electricity lines services. These are when lines businesses:

- price services to reflect the efficient costs of supplying those services, thereby earning “normal returns” (*allocative efficiency*);
- produce services at the desired quality at minimum cost (*productive efficiency*); and
- have the appropriate incentives to invest, innovate and improve the range and quality of services, increase productivity, and lower costs, over time (*dynamic efficiency*).

The Commission would form an intention to declare control if it were satisfied, on the basis of available evidence and analysis, that the long-term benefits to consumers of control exceed the costs, taking into account these dimensions of economic efficiency. The Commission would also be guided by the other specific outcomes outlined in the purpose statement, the prioritisation criteria specific to the targeted control regime, and the Commission’s standard enforcement criteria.

By its very nature, such a “net benefits” test requires that the Commission not only consider past behaviour and performance, but planned actions for some years going forward.

Efficient prices and the net benefits to consumers test

In determining the net benefits of control to consumers, the Commission considers that it should judge the behaviour of a lines business that has breached the thresholds against an “efficient prices” standard, which also involves a benchmark of the normal returns to be earned by the business. The outcomes achieved in markets where there is workable or effective competition are the general benchmark against which to compare the outcomes in markets in which competition is limited, such as the market for electricity lines services.

The Commission considers that the following principles are suitable for determining efficient prices and normal returns. Over time, prices should:

- aim for allocatively efficient levels, commensurate with the level of service quality demanded and based on productively and dynamically efficient costs;
- allow for normal returns to be earned, calculated on an appropriately determined asset base and risk-adjusted rate of return, and covering only efficient operating costs; and
- encourage dynamic efficiency, by sending the appropriate signals for investment (or divestment).

Control is generally intended to realign prices to more efficient levels, which may first require realigning quality to the levels that consumers demand. The potential net benefits to consumers of control over time (i.e. direct and indirect benefits, less direct and indirect costs) can be estimated, using supply and demand models for the relevant services, in terms of:

- allocative efficiency gains or losses;
- productive efficiency gains or losses;
- dynamic efficiency gains or losses; and
- transfers between lines businesses and consumers, such as those resulting from any excess returns being reduced by control.

The control decision would therefore involve a comparison of:

- the prices and/or quality that would result from the imposition of control (the “factual”); and
- those that would result from a continuation of the status quo, where prices and/or quality would be set in accordance with current lines business policies (the “counterfactual”).

To determine an efficient level of prices, the Commission considers it has two key options: comparative benchmarking and building blocks analysis. While either of these approaches may be used alone, it is also possible that the Commission could use both, possibly in sequence, to estimate the level of efficient prices.

Building blocks analysis

With respect to the building blocks approach (described in paragraphs 147-161 of these Guidelines), the objective is to establish: the efficient level of capital required by the lines business to supply lines services; the efficient rate of return on capital; the efficient rate of return of capital (depreciation); and the efficient level of operating costs. The valuation of the relevant assets and the calculation of the weighted average cost of capital (WACC) are intrinsic to the building block approach.

This analytical framework for assessing the net benefits to consumers of control—including the use of building blocks analysis—is similar, in principle, to that used by the Commission in its report to the Minister of Commerce in relation to the control of certain airfield activities (the Airports Inquiry), and that the Commission has been using to date in preparing its recommendations to the Minister of Energy as to whether gas pipeline services should be controlled (the Gas Control Inquiry), both under Part IV of the Act.

Post-Breach Inquiry Scenarios

The Guidelines include a number of hypothetical scenarios in which a lines business breaches one or more of the threshold assessment criteria. The scenarios described include breaches of the price path threshold and quality threshold (reliability criteria and consumer engagement criteria), as well as situations that may arise as a result of merger or acquisition activity involving lines businesses.

INTRODUCTION

Purpose and Scope

- 1 Part 4A of the Commerce Act 1986 (the Act) came into effect on 8 August 2001. Subpart 1 of Part 4A contains provisions relating to a targeted control regime for large electricity lines businesses (lines businesses)—namely distribution businesses and Transpower New Zealand Limited (Transpower).
- 2 Under subpart 1 of Part 4A, the Commission must set thresholds for the declaration of control of goods or services provided by lines businesses. The thresholds are a screening mechanism for the Commission to identify lines businesses whose performance *may* warrant further examination, and if necessary, control.
- 3 The Commission must assess lines businesses against the thresholds set, identify any lines business that breaches the thresholds, and determine whether or not to declare control in relation to the goods or services supplied by an identified lines business, taking into account the purpose statement contained in s 57E of the Act. In determining whether or not to declare control in relation to any lines business breaching the thresholds, the Commission may conduct a “post-breach inquiry”.
- 4 The purpose of these Assessment and Inquiry Guidelines (the Guidelines) is to inform interested parties of the Commission’s broad process and analytical framework for assessing threshold compliance and for undertaking post-breach inquiries under the targeted control regime. The objective of doing so is to increase certainty and transparency in respect of the Commission’s approach to these tasks.
- 5 The Guidelines are structured as follows.

Section Heading	Content
Introduction	Purpose, scope and background
Statutory Framework	A summary of the statutory provisions relevant to targeted control
Assessment and Post-Breach Inquiry Process	A description of process steps and timeframes following receipt of threshold compliance statements
Analytical Framework for Post-Breach Inquiries	A description of the various elements of analysis the Commission proposes to use when determining whether to declare control
Post-Breach Inquiry Scenarios	A description of how the Commission might respond to different types of threshold breaches
Appendix 1: WACC Model	The model for determining weighted average cost of capital (WACC)

Background

Initial thresholds

- 6 After consulting with interested parties on possible forms of thresholds, as is required under s 57G of the Act, on 6 June 2003 the Commission set two thresholds: a price path threshold, of the form CPI-X; and a quality threshold. (CPI is the consumer price index, and the 'X' represents the expected annual reduction in lines business average prices, net of certain allowable pass-through costs). These thresholds, applying to distribution businesses until 31 March 2004 and to Transpower until 30 June 2004, were set by a notice in the *Gazette* (Initial *Gazette* Notice),¹ and explained in a decisions paper published on the same day.²
- 7 The assessment criteria set in relation to the initial price path threshold were set to be generally consistent with a CPI-X price path, in which prices at the end of each assessment period are not greater, in nominal terms, than the prices at the start of that period. All lines businesses were first assessed against the price path threshold as at 6 September 2003 (first assessment date). The second assessment dates against the price path thresholds were as at 31 March 2004 for distribution businesses, and as at 30 June 2004 for Transpower.
- 8 The initial quality threshold has two primary assessment criteria. The first requires no material deterioration in quality, and the second requires lines businesses to meaningfully engage with consumers to determine their demand for service quality. The first assessment dates for lines businesses against the quality threshold were as at the respective second assessment dates for the price path threshold.

Resetting the thresholds

- 9 After further consultation with interested parties, the Commission reset the thresholds for the regulatory period beginning in 2004 (i.e. 1 April 2004 for distribution businesses and 1 July 2004 for Transpower). The reset thresholds are of the same form as the thresholds set by the Commission on 6 June 2003. However, new criteria and X factors apply. These thresholds were set by two notices in the *Gazette* for distribution businesses (Distribution *Gazette* Notice)³ and Transpower (Transpower *Gazette* Notice) respectively,⁴ and explained in an accompanying decisions paper.⁵
- 10 Distribution businesses will be assessed against the thresholds over a regulatory period of five years, beginning on 1 April 2004. In Transpower's case, its

¹ *Commerce Act (Electricity Lines Thresholds) Notice 2003*, Supplement to *New Zealand Gazette*, Issue No. 62, 6 June 2003.

² Commerce Commission, *Regulation of Electricity Lines Businesses, Targeted Control Regime: Thresholds Decisions*, 6 June 2003.

³ *Commerce Act (Electricity Distribution Thresholds) Notice 2004*, Supplement to *New Zealand Gazette*, Issue No. 37, 31 March 2004.

⁴ *Commerce Act (Transpower Thresholds) Notice 2004*, Supplement to *New Zealand Gazette*, Issue No. 81, 30 June 2004.

⁵ Commerce Commission, *Regulation of Electricity Lines Businesses, Targeted Control Regime: Thresholds Decisions (Regulatory Period Beginning 2004)*, 1 April 2004.

thresholds apply for a one year period only, beginning on 1 July 2004. Transpower's thresholds will again be reset from 1 July 2005.

Assessments and post-breach inquiries

- 11 Lines businesses' incentives to comply with the Commission's thresholds depend, to some extent, on what they consider might happen if they were identified to have breached the thresholds. As discussed in its threshold decisions papers, the Commission considers the objectives of the Part 4A regulatory regime may not be achieved if lines businesses were inclined to be unduly cautious or averse to uncertainty about the consequences of their conduct in relation to thresholds.
- 12 Accordingly, the Commission has prepared these Guidelines to communicate its views on the process and analytical framework for assessing threshold compliance and for undertaking post-breach inquiries. However, the Commission considers that the Guidelines should not be overly prescriptive, as the Commission is not able to foresee all circumstances that may be relevant to a threshold breach, and needs to be able to respond to issues as they arise. Moreover, a prescriptive set of guidelines could result in the guidance provisions becoming *de facto* thresholds. Consequently, the Guidelines, and in particular the examples given in them, are intended to be of general guidance only.
- 13 The Guidelines are only one element of the ongoing development and implementation of the Part 4A regulatory regime. The Guidelines do not seek to provide a complete or comprehensive picture of the targeted control regime applying to lines businesses. Other than outlining the relevant parts of the statutory framework, the Guidelines are not intended to cover the Commission's approach to making authorisations or accepting undertakings following a declaration of control.
- 14 In issuing these Guidelines, the Commission notes that, as it gains experience with implementing the targeted control regime, and as other investigative and developmental work is completed, it may need to revisit some of its intended approaches to exercising its powers. Consequently, the Commission intends updating the Guidelines from time to time.

STATUTORY FRAMEWORK

- 15 This section summarises the purpose and the various statutory process steps and decision points associated with the targeted control regime.

Purpose

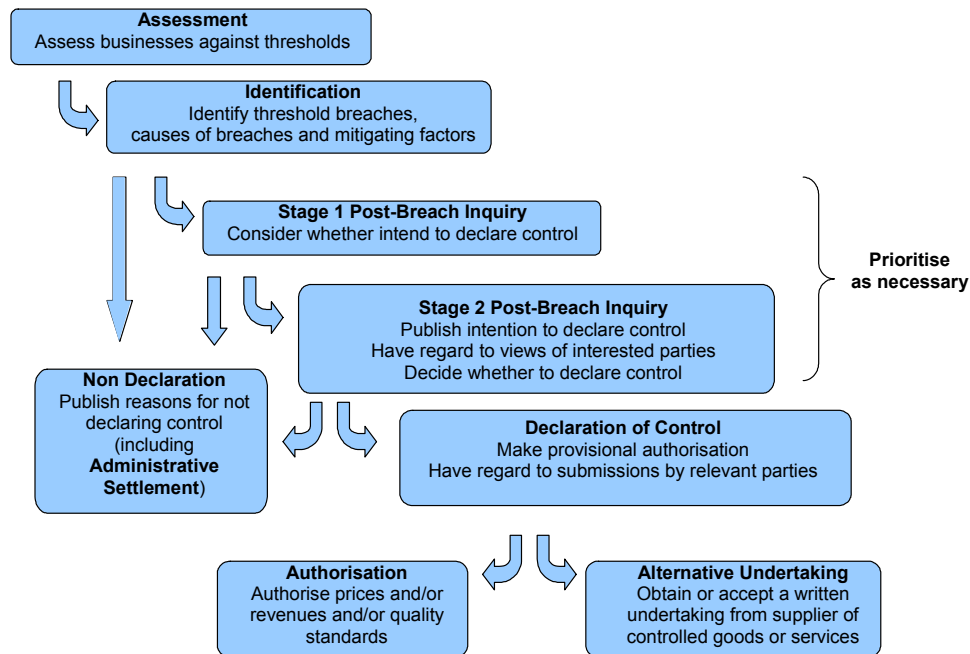
- 16 The purpose of subpart 1 of Part 4A is contained in s 57E of the Act. It reads as follows:

The purpose of this subpart is to promote the efficient operation of markets directly related to electricity distribution and transmission services through targeted control for the long-term benefit of consumers by ensuring that suppliers –

- (a) are limited in their ability to extract excessive profits; and
- (b) face strong incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
- (c) share the benefits of efficiency gains with consumers, including through lower prices.

Statutory and Discretionary Process Steps

- 17 Subpart 1 of Part 4A, together with ss 70 to 72 in Part V of the Act, sets out a number of processes the Commission must follow in relation to:
- setting thresholds;
 - assessing businesses against the thresholds it has set;
 - identifying any lines business that breaches the thresholds;
 - determining whether or not to declare control of any or all goods or services supplied by any or all lines businesses breaching the thresholds;
 - making a control declaration or publishing the reasons for not making a control declaration; and
 - authorising any or all components of prices, revenues and quality standards in respect of controlled goods or services, or accepting alternative undertakings.
- 18 Control is *targeted*, in the sense that it is not universal, by virtue of the processes set out in subpart 1 of Part 4A. None of the lines businesses—of which there were 29 as at September 2004 (including Transpower)—is to be subject to control of prices, revenues or service quality by default. A business may only be controlled by the Commission if it has crossed some “threshold” of performance, and after the Commission has followed the process outlined in s 57I of the Act.
- 19 These processes are illustrated in Figure 1, in which various statutory and discretionary process steps are grouped and labelled.

Figure 1 – Targeted Control Process Steps

Assessment and Identification

- 20 Before determining whether to declare control in relation to any lines business, s 57H of the Act requires that the Commission must:
- assess lines businesses against the thresholds set under s 57G; and
 - identify any lines business that breaches the thresholds.
- 21 Where the Commission considers it possible to do so without requiring a significant level of analysis and verification, the Commission will generally seek to identify the cause of a breach, as well as any mitigating factors pertaining to the breach, before publicly identifying that a breach has occurred.

Post-Breach Inquiries

- 22 Under s 57H(c), the Commission must determine whether or not to declare all or any of the goods or services supplied by all or any of the identified lines businesses to be controlled, taking into account the purpose of subpart 1 of Part 4A.
- 23 In addition, s 57I(1) states that, before making any declaration of control under s 57F, the Commission must:
- publish its intention to make a declaration and invite interested persons to give their views on the matter;
 - give a reasonable opportunity to interested persons to give those views; and
 - have regard to those views.

- 24 The Commission proposes following a two-stage approach to post-breach inquiries:
- **Stage 1** comprises inquiry and analysis prior to the Commission forming an intention to declare control; and
 - **Stage 2** comprises further inquiry and analysis subsequent to the Commission publishing its intention to declare control (during which stage the Commission must invite and consider the views of interested persons).
- 25 If as a result of analysis undertaken during a Stage 1 post-breach inquiry, the Commission determines that it would be in the long-term interests of consumers to declare control, the Commission would then publish its reasons for reaching that decision. At that time, a Stage 2 inquiry would begin.
- 26 If during the course of a Stage 1 or Stage 2 post-breach inquiry, or in identifying the cause of a breach, the Commission decides that it would be consistent with the purpose statement of Part 4A to not make a declaration of control, it would publish its reasons for not making such a declaration.

Authorisations and Undertakings

- 27 A declaration of control under Part 4A means (as with a declaration of control by Order in Council under Part IV of the Act) that no persons may supply the controlled goods or services unless an authorisation under ss 70 or 71 of the Act, or an undertaking under s 72, has come into effect in respect of those goods or services.⁶
- 28 Section 70 of the Act provides for the Commission to make an authorisation in respect of all or any component of the prices, revenues, or quality standards that apply in respect of the supply of controlled goods or services.⁷ The Commission may use whatever approach it considers appropriate, which may include the use of formulas or other methods from which prices or revenues, or any part of a price or revenue, may be determined.
- 29 Section 71 provides for the Commission to make a provisional authorisation in relation to controlled goods or services, pending the making of a final authorisation.
- 30 Section 72 provides that the Commission may, instead of making an authorisation in respect of controlled goods or services, obtain or accept a written undertaking from the supplier of those goods or services in relation to those goods or services.
- 31 Section 70B requires the Commission to have regard to submissions made to it by the supplier or any acquirer of the controlled goods or services.

⁶ However, the Commission must have regard only to the purpose set out in s 57E of the Act when exercising its powers under ss 70 to 72 in relation to goods and services supplied by a lines business, and not to the matters stated in s 70A, and ss 70 to 72 apply with necessary modifications (see s 57M of the Act).

⁷ Under the Electricity and Gas Industries Bill, the Commerce Act is to be amended so that the Commission may not make an authorisation, or accept an undertaking, in respect of all or any component of the quality standards of Transpower.

- 32 Under s 73, the Commission has discretion to hold a conference (according to the procedures set out in s 64 of the Act) before making an authorisation, or obtaining or accepting an undertaking, in respect of any controlled goods or services.

Prioritisation

- 33 Section 57K(1) of the Act provides for the Commission to prioritise its duties under subpart 1 of Part 4A. Specifically:
- The Commission may prioritise its duties ... by (without limitation) –
- (a) assessing 1 or any (but not necessarily all) of the [lines businesses]; or
 - (b) exercising its powers to make a declaration of control in relation to 1 or any (but not necessarily all) of the [lines businesses] that are identified as having breached any thresholds set under this subpart; or
 - (c) making provisional authorisations or accepting undertakings (rather than making final authorisations) in respect of 1 or more [lines businesses] to which a declaration of control relates.
- 34 In prioritising its duties under s 57K(1), s 57K(2) provides that the Commission *must* have regard to the purpose set out in s 57E and *may* also have regard to any other factors it considers relevant, including (without limitation) all, any, or none of the following:
- the size of the lines business;
 - the recent performance of the lines business, including prices charged and the extent of any excess profits;
 - the quality of the information provided to the Commission; and
 - the extent to which lines businesses have breached the thresholds.

Information Gathering Powers

- 35 The Commission has a range of powers under the Act to gather information from lines businesses and other interested parties in relation to carrying out its functions under Part 4A.
- 36 Under s 57T of the Act, the Commission requires lines businesses to prepare disclosures of financial and other information in accordance with its Electricity Information Disclosure Requirements (the Requirements),⁸ as well as threshold compliance statements containing self-assessments against the thresholds (paragraphs 41-42). Additional information relating to disclosures or compliance statements can be required by the Commission pursuant to s 57U(1)(b).
- 37 In addition to its powers under ss 57T and 57U, the Commission may require information or documents to be provided under s 98 and s 70E of the Act.

⁸ Commerce Commission, *Electricity Information Disclosure Requirements 2004*, 31 March 2004, which were amended on 7 May 2004 by notice in the *New Zealand Gazette*: Commerce Act (Electricity Information Disclosure Amendment Requirements) Notice 2004.

Offences

- 38 It is an offence to refuse or fail to comply with the Commission's information disclosure requirements issued pursuant to s 57T or s 57U, as provided for in s 57ZJ(1), or with notices requiring information to be provided to the Commission pursuant to s 70E or s 98, as provided for in s 103(1).
- 39 More generally, it is an offence to attempt to deceive or knowingly mislead the Commission in relation to any matter before it, as provided for under s 103(2) of the Act.

ASSESSMENT AND POST-BREACH INQUIRY PROCESS

- 40 This section discusses the threshold assessment and identification process and, should a lines business breach the thresholds, the subsequent control determination process during a post-breach inquiry.

Review of Threshold Compliance Statements

- 41 To facilitate the assessment of lines businesses, each lines business must provide the Commission with a written self-assessment—termed a threshold compliance statement (compliance statement)—confirming its compliance, or otherwise, with each of the thresholds set by the Commission. The information disclosure requirements for compliance statements are outlined in clause 7 of the relevant *Gazette* notice.⁹
- 42 Lines businesses must provide the Commission with their compliance statements within 40 working days of each assessment date, and within 5 working days of the same information being publicly disclosed. The compliance statements must include sufficient evidence, in the form of revenues, prices, quantities, pass-through costs, reliability indices as well as other data, information and calculations, to enable the Commission to properly determine whether or not the threshold concerned has been breached.
- 43 The Commission has indicated that any lines business breaching the reliability criteria of the quality threshold may provide the Commission with an explanation of the breach supported by evidence of mitigating circumstances.¹⁰ This explanatory material may be included as part of the compliance statement.
- 44 Compliance statements must be certified by a statutory declaration signed by two directors of the lines business. In addition, compliance statements should be accompanied by an auditor's report expressing an independent opinion on the statement.

Initial review of compliance statements

- 45 Before assessing lines businesses against the thresholds, the Commission will undertake an initial review of the threshold compliance statements. During this initial review process, the Commission will first seek to establish whether the compliance statement is complete, and that the business has complied with the information disclosure requirements of clause 7 of the *Gazette* notice. The Commission may also request further information from any lines business under s 57U(1)(b) of the Act in order to monitor compliance with those requirements.
- 46 In clear cases of non-compliance with clause 7, where key elements of the assessment criteria are missing from the compliance statement, the Commission is likely to require the lines business to resubmit a certified compliance statement and have this amended statement re-audited. Non-disclosure of key variables,

⁹ Supra n 1, 3 and 4.

¹⁰ Supra n 2, paragraph 86; and supra n 5, paragraph 88.

such as notional revenue and reliability indicators (i.e. SAIDI and SAIFI),¹¹ would constitute such a non-compliant situation.

- 47 Where key supporting data, calculations or other evidence is not provided, such as the prices, quantities and pass-through costs required to derive notional revenue, or supporting evidence for excluded services, the Commission may also require a re-audited compliance statement. However, the Commission may instead, at its discretion, require this information to be provided separately from the compliance statement, and for that material to be certified but not audited.
- 48 Even where the compliance statement is on the face of it complete, the Commission may require additional supporting information to be provided pursuant to s 57U(1)(b) of the Act, if it considers the information disclosure requirements of clause 7 have not been met. For example, such a situation may occur if some material provided in the compliance statement appears contradictory or counter-intuitive.
- 49 More generally, the initial review is an opportunity for lines businesses, at the Commission's request, to explain or clarify aspects of their compliance statements. Where the Commission simply requires clarification of certain points in the compliance statement, this may be able to be achieved through informal communication.

Dialogue prior to receipt of compliance statements

- 50 While the Commission is generally open to dialogue and correspondence with lines businesses and other interested parties, the Commission does not intend to discuss with lines businesses, before receiving their certified threshold compliance statements, any specific matters to be contained in those statements. The time for any such discussion is during the Commission's review of the statements.
- 51 In relation to the assessment of the price path threshold, the information disclosure requirements allow for specific services to be excluded if there is workable or effective competition for those services.¹² If a lines business proposes to exclude any services on these grounds, the Commission may review the arguments made for their exclusion.
- 52 However, the Commission does not intend to "pre-approve" the exclusion of a particular service (from the set of specified services) where the lines business considers there may be some room for reasonable doubt about the condition for its exclusion (for example, that it is provided in a workably or effectively competitive market). The Commission may challenge any such exclusion after reviewing the compliance statement, and the lines business may be required to disclose a new compliance statement in which the relevant service is included.
- 53 Similarly, the Commission does not intend to pre-approve the removal of sensitive information from public disclosures. If a lines business has removed some

¹¹ SAIDI means the system average interruption duration index, and SAIFI means the system average interruption frequency index.

¹² "Workable or effective competition" is consistent with its meaning as provided in s 3 of the Act.

information from its publicly disclosed compliance statement, on the grounds of confidentiality, and the Commission does not agree the information should be removed, the Commission may require the lines business to publicly disclose an amended compliance statement containing the relevant information.

Assessment and Identification

- 54 Once it is satisfied the necessary information has been provided, the Commission will commence its assessment of each compliance statement to identify whether a breach has occurred. Although lines business self-assessments are publicly disclosed, the Commission will generally seek to minimise any additional (and potentially adverse) publicity for those businesses that have indicated that they have breached a threshold, before the Commission has determined the nature and causes of the breach.
- 55 Where the Commission has identified a breach, the Commission may request further information from the lines business to identify the cause of the breach, as well as any mitigating factors pertaining to the breach. For example, some breaches may be in the nature of a “technicality” (arising from the specification of an assessment criterion in the relevant *Gazette* notice), or due to events that are not fully controllable by the lines business (such as severe storms contributing to an abnormally high level of supply interruptions). In such cases, the Commission may be satisfied the breach does not warrant further investigation.
- 56 This additional information may be sufficient for the Commission to determine that taking further action would not be consistent with the long-term interests of consumers. As a result, at the same time as publicly identifying the breach, the Commission may, in appropriate circumstances, be able to indicate that no further action will be taken.
- 57 The Commission may initiate a post-breach inquiry, normally after first informing the business concerned, where:
 - the Commission is unable to quickly determine that the breach does not warrant further investigation; or
 - a significant amount of analysis is likely to be required before the Commission can determine whether taking no further action would be consistent with the long-term interests of consumers; or
 - information that would enable a determination to be made quickly is not forthcoming.
- 58 The Commission may consider making orders under s 100 of the Act to ensure confidentiality of information during assessments (and during post-breach inquiries). Confidentiality orders may be appropriate, for example, in order to mitigate the potential for any reputational damage that may be caused to lines businesses as a result of the Commission identifying ‘false positive’ threshold breaches. A confidentiality order may also give the lines business an opportunity to prepare an initial public response in respect of the breach.

Prioritisation of Post-Breach Inquiries and Control Declarations

- 59 The Commission intends to assess all lines businesses against the thresholds it has set. However, depending on the number of lines businesses identified as breaching the thresholds as a result of the assessment, the Commission may prioritise its post-breach inquiries. In other words, if two lines businesses were to be identified as breaching the thresholds, the Commission may choose to complete a post-breach inquiry into one before commencing a post-breach inquiry into the other. The Commission might also consider carrying out an inquiry into both lines businesses in parallel, but with more resources assigned to one than the other.

Enforcement criteria

- 60 In relation to its other activities, the Commission typically applies three criteria when determining what action to take in response to information indicating a prima facie breach of a statute under which the Commission has an enforcement role. The three enforcement criteria may be labelled: "detriment", "conduct" and "public interest".
- 61 The Commission considers these criteria—in addition to those in s 57K(2) of the Act (paragraph 34), and with both sets of criteria subject to the purpose statement of subpart 1 of Part 4A of the Act—are relevant to the prioritisation of post-breach inquiries. In some cases, these criteria may also be relevant to the Commission's decision to announce its intention to declare control (i.e. the decision to move from a Stage 1 to a Stage 2 post-breach inquiry), or to the control decision itself.

Detriment

- 62 Under the "detriment" criterion, the Commission may consider the extent of the breach (e.g. the number of customers affected or the size of the business, the magnitude of any price increase or of any quality deterioration), which may reflect the degree of detriment to consumers. This criterion is also reflected in s 57K(2) of the Act, which includes the prospect of considering the extent of the breach and of any excess profits (paragraph 34).
- 63 While materiality margins have not been included in any of the threshold assessment criteria themselves, because this would simply shift the threshold, the Commission considers that the materiality of a breach may be an important prioritisation factor in deciding whether or not to take any action in response to a breach. Hence, where the Commission is satisfied that a particular breach is not material, it may decide that no further inquiry is warranted.
- 64 Nevertheless, the extent of a breach may only be indicative of detriment to consumers in the short term, whereas the Commission's investigations following a breach could reveal behaviour that might be detrimental to consumers in the long term. Therefore, breaching a threshold by even a small margin may still lead to a post-breach inquiry.

Conduct

- 65 Under the "conduct" criterion, the Commission may consider matters such as:
- the degree to which the breach was avoidable;
 - the degree of cooperation offered by the lines business to the Commission during its assessment and inquiry;
 - the manner in which the lines business sought to explain or justify the breach;
 - whether the breach followed a pattern of previous breaches; and
 - any remedial action that the lines business took to mitigate any detrimental impact of the breach on consumers.

Public interest

- 66 Under the "public interest" criterion, the Commission may consider whether a decision not to investigate further, or not to declare control, might adversely affect the credibility of the regulatory regime or erode public confidence in it to the detriment of consumers in the long term.

Stage 1 Post-Breach Inquiry Process

- 67 A threshold breach would set in train a process that could result, ultimately, in the lines business being subject to a declaration of control. However, not all post-breach inquiries need follow the same route. At any stage the Commission could, based on the available evidence and analysis, decide to:
- publish its intention to declare control; or
 - continue to inquire into whether control may be warranted; or
 - resolve the inquiry by entering into an administrative settlement with the lines business; or
 - cease the inquiry and take no other action.
- 68 Whenever the Commission resolves an inquiry and does not publish an intention to declare control, it must publish its reasons for doing so.

Acquisition and treatment of information

- 69 As part of its inquiry following a threshold breach the Commission may seek information from the lines business via orders made under s 98 or s 70E of the Act (paragraph 37). Where information obtained by the Commission is commercially sensitive, the Commission may make an order under s 100 of the Act to ensure its confidentiality (paragraph 58).

Timeframe for Stage 1 post-breach inquiry

- 70 The timeframe for any particular Stage 1 post-breach inquiry will be dependent on a number of factors, including:
- the number of other lines businesses subject to a post-breach inquiry;

- the nature and causes of the particular breach;
 - the complexity of the issues involved; and
 - the time it takes to source information in respect to the businesses concerned.
- 71 Experience gained with post-breach inquiries to date suggests that information requirements for a post-breach inquiry can be substantial. Consequently, it could take some months for the information to be collated and prepared, and for the Commission to undertake its analysis. In the case of multiple breaches, the Commission may need to prioritise and/or sequence inquiries.
- 72 The Commission's expectations for its assessment and post-breach inquiry timetable are set out in Table 1. This timetable assumes a small number of concurrent breaches by different businesses.

Table 1: Indicative Timetable for Assessment and Stage 1 Post-Breach Inquiry

Nature of Decision	Indicative Timeframe
Initial review of compliance statements—are the compliance statements complete, and sufficient supporting evidence provided?	Within weeks of receiving threshold compliance statements
Threshold assessment and identification—are any of the thresholds breached, what are the causes of the breach, and are there any mitigating factors suggesting that no further action is appropriate?	Within 1-3 months of receiving threshold compliance statements
Stage 1 post-breach inquiry—is there prima facie evidence that consumers would not benefit from control?	At any time following identification
Alternative responses—would an administrative settlement be appropriate at this point, or is further inquiry and analysis warranted?	At any time following identification
Intention to declare control—given the evidence and analysis to hand, would consumers benefit in the long term from a declaration of control?	Up to 6 months following identification, or longer in complex cases

Stage 2 Post-Breach Inquiry Process

- 73 Having formed an intention to declare control, the Commission would undertake further investigation and analysis with a formal consultation process to consider the views of interested parties. In principle, administrative settlements (paragraphs 76-79 below) could be achieved during this stage, but the Commission would generally do so only after formally considering the views of interested parties.

- 74 The Stage 2 post-breach inquiry process would commence with the Commission publishing (including by notice in the *Gazette*) its intention to declare control, and releasing, at the same time or soon after, a paper setting out the Commission's preliminary conclusions based on the inquiry and analysis undertaken to date (the Stage 1 post-breach inquiry).
- 75 The Commission would seek written submissions from interested parties on its draft decisions, and may hold a conference after receiving and publishing the written submissions. After considering the views of interested parties the Commission would issue its decision, being either to declare control or not, and in either case would publish a paper setting out its reasons. The Commission considers the Stage 2 inquiry process would take at least three months, following publication of its intention to declare control.

Administrative Settlements

- 76 Instead of the Commission undertaking all of the components of Stage 1 and 2 post-breach inquiries described above, it may be possible for the matter to be resolved by administrative settlement between the Commission and the lines business. This would involve the lines business and the Commission agreeing the terms and conditions of a settlement offer (not to be confused with a written undertaking pursuant to s 72 of the Act, which could follow a declaration of control). In considering any administrative settlement, the Commission would take into account the purpose of subpart 1 of Part 4A.
- 77 An administrative settlement is a well-established instrument of enforcement action employed by the Commission, as an alternative option to the Commission pursuing penalty action, in relation to investigations under the Act or the Fair Trading Act 1986. Where the Commission's investigation produces evidence that the relevant Act has been breached and it considers that a better outcome may be achievable through a settlement than some other form of enforcement action, the Commission may agree to pursue an administrative settlement.
- 78 Administrative settlements could be agreed during either a Stage 1 or Stage 2 post-breach inquiry process, but, in the case of the latter, the Commission may be inclined to do so only after formally considering the views of interested parties. It should be noted that the Commission would continue with its inquiry to determine whether or not to declare control alongside any negotiations in respect of a proposed administrative settlement.
- 79 If the Commission and lines business agree on an administrative settlement, the Commission will cease its inquiry and publish its reasons for not making a control declaration. Those reasons would likely refer to the terms and conditions of the administrative settlement.
- 80 The Commission would seek to agree on a settlement which would resolve any issues for the remainder of the regulatory period and would not need to be revisited, based on information available at the time. However, the Commission would likely monitor compliance with the terms of the settlement annually, and also could consider whether any changed circumstances might warrant a review of the agreement.

ANALYTICAL FRAMEWORK FOR POST-BREACH INQUIRIES

- 81 This section sets out the analytical framework the Commission proposes to use when determining whether to declare control of lines services, following a threshold breach by a lines business.

The Decision to Declare Control

- 82 When determining whether to declare control of goods or services provided by a lines business, the Commission must have regard to the purpose statement contained in s 57E of the Act. The overall purpose of the targeted control regime is to promote the efficient operation of electricity transmission and distribution markets for the long-term benefit of consumers (paragraph 16).
- 83 The Commission considers that there are three dimensions to the economically efficient operation of any market, including that for electricity lines services. These are:
- *allocative efficiency*: a market is allocatively efficient when firms price goods or services to reflect the efficient costs of supplying those goods or services, thereby earning “normal returns”;
 - *productive efficiency*: a market is productively efficient when firms produce services of the desired quality at minimum cost, and production activities are distributed between firms in such a way that industry-wide costs are minimised; and
 - *dynamic efficiency*: a market is dynamically efficient when firms have the appropriate incentives to invest, innovate and improve the range and quality of services, increase productivity and lower costs over time.
- 84 In practice, having regard to the purpose statement and the dimensions of economic efficiency to which it implicitly refers, the Commission would form an intention to declare control if it were satisfied, on the basis of available evidence and analysis, that the long-term benefit to consumers of control exceed the costs. The decision criterion for declaring control would be the same, except that the Commission would have regard to the views of interested parties (on its intention to declare control), and would consider any further evidence and analysis as part of that process.
- 85 By its very nature, a consideration of the long-term net benefits to consumers is a forward-looking test based on the planned actions of the lines business concerned for some years going forward (particularly with respect to prices and service quality). However, past behaviour and the circumstances that led to the breach may also be relevant to the control decision. Trends from past data are likely to be useful for considering the appropriateness of forecast information and the past may, in some circumstances, be an appropriate predictor as to the future. However, the extent to which the Commission might take past and future information into account will depend on the specific circumstances.

Efficient Prices and the Net Benefits to Consumers Test

- 86 In determining the net benefits of control to consumers, the Commission considers that it should judge the behaviour of a lines business that has breached the thresholds against an “efficient prices” standard, which also involves a benchmark of the normal returns to be earned by the business. The Commission is of the view that the outcomes achieved by competitive markets (where there is workable or effective competition) are the general benchmark against which to compare the outcomes in markets in which competition is limited, such as the market for electricity lines services.
- 87 As the Commission has outlined on other occasions, the Commission considers that the following principles are suitable for determining whether normal returns and efficient pricing outcomes are being achieved. Over time, prices should:
- aim for allocatively efficient levels, commensurate with the level of service quality demanded and based on productively and dynamically efficient costs;
 - allow for normal returns to be earned, calculated on an appropriately determined asset base and risk-adjusted rate of return, and covering only efficient operating costs; and
 - encourage dynamic efficiency, by sending the appropriate signals for investment (or divestment).
- 88 Control is generally intended to realign prices to more efficient levels, which may first require realigning quality to the levels that consumers demand. The potential net benefits to consumers of control over time (i.e. direct and indirect benefits, less direct and indirect costs) may be classified as:
- allocative efficiency gains or losses;
 - productive efficiency gains or losses;
 - dynamic efficiency gains or losses; and
 - transfers between lines businesses and consumers, resulting from any excess returns being reduced by control.
- 89 This form of consumer analysis is similar, in principle, to that used by the Commission in its report to the Minister of Commerce on the control of certain airfield activities,¹³ and that the Commission has been using to date in preparing its recommendations to the Minister of Energy as to whether gas pipeline services should be controlled, under Part IV of the Act (the Gas Control Inquiry).¹⁴
- 90 Although the analytical framework is similar, the decision criterion applicable under Part 4A of the Act is different to that applied under Part IV of the Act. Whereas Part IV refers to the “interests of acquirers” alone, Part 4A refers to “the long-term benefit of consumers” and outlines some specific outcomes that demonstrate how that objective is to be achieved (paragraph 16).

¹³ Commerce Commission, *Airports Inquiry: Final Report*, 1 August 2002.

¹⁴ Commerce Commission, *Gas Control Inquiry, Draft Report*, 21 May 2004.

- 91 Accordingly, in making judgements about the costs and benefits of control, the Commission will be guided by the specific outcomes to be achieved and the reference in the purpose statement to “the long-term benefit of consumers”. This may require consideration of other criteria not readily quantifiable in a net benefit analysis, such as the criteria outlined in paragraphs 60 to 66 above.

The Factual and Counterfactual

- 92 The control decision criterion involves comparing the prices and/or quality, for those services that would be obtained under control (the “factual”) with those that would be obtained in the absence of control (the “counterfactual”). This is a comparison between two hypothetical scenarios—one with control and one without—and the Commission must form a view based on pragmatic considerations of each scenario.
- 93 The Commission considers the “no control”, or counterfactual, scenario would be a continuation of the status quo. That is, prices and quality would be set in accordance with current policies of the lines business, taking into account relevant information from business plans and associated forecasts of demand and relevant expenditures.
- 94 Given the lines business has breached a threshold, the counterfactual would not necessarily assume future compliance with thresholds. Similarly, at this point, the Commission would not necessarily assume that efficient prices, consistent with services at a quality that reflects consumer demands, should comply with the existing price path and quality thresholds.
- 95 In the “control”, or factual, scenario prices would, in general, be at the level deemed efficient for a given level of service quality, but with some allowance for the fact that controlled prices may not perfectly reflect efficient prices. That is, controlled prices may be slightly higher than those observed in a (hypothetical) market with effective competition, reflecting slightly higher costs attributable to any adverse efficiency incentive effects of control. In other words, control may not achieve all of the theoretical benefits of efficient prices.
- 96 Having derived two sets of prices, and associated costs and revenues, for each of the two scenarios, the net benefits of control could be estimated, using models of supply and demand for the relevant services. Such models would allow the Commission to estimate net benefits to consumers in terms of allocative efficiency, productive efficiency, dynamic efficiency, and transfers to consumers.
- 97 However, the Commission notes that models are useful to the degree that they focus the parties’ attentions on key assumptions. The Commission’s view is that the value of a model is not in its ability to produce “proof” of net benefits of control, nor to supplant the Commission’s exercise of judgement, but rather in providing support to the Commission’s deliberations by:
- focusing parties’ attentions on verifiable economic arguments;
 - making transparent the values of the key parameters and assumptions in the analysis; and

- producing quantitative estimates of the results of control.

Potential Benefits of Control

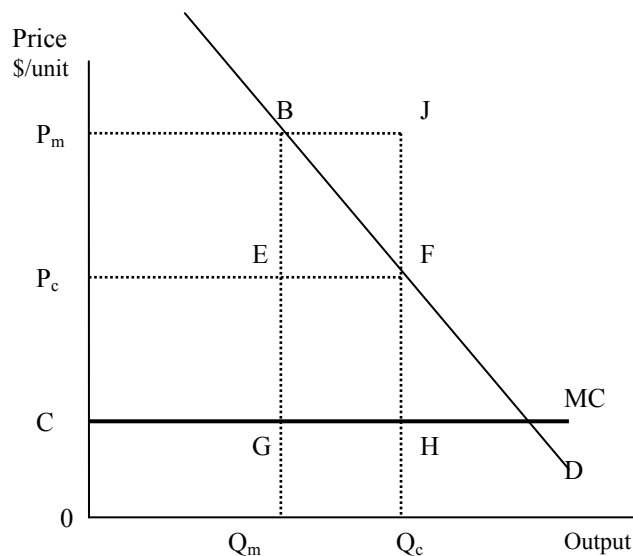
- 98 The potential direct benefits of control relate to reducing any inefficiencies (allocative, productive and dynamic) and/or excess returns in a market. An analysis of performance in the counterfactual compared to an efficiently operating market could be used to measure these benefits. However, it cannot be assumed that all of the potential benefits would actually be realised in practice through the imposition of control. Clearly, different forms of control may be more or less effective.
- 99 A useful starting point for the analysis of the direct benefits of control remains the inefficiencies that may be present in the counterfactual. The sources of potential direct benefit include:
- *Allocative inefficiency* being reduced by control. Inefficient levels of service quality for the price charged could also be addressed through control. There may also be indirect or spill-over benefits to related markets from changes in prices.
 - *Excess returns* being reduced by control, with a transfer of wealth from suppliers to consumers (being a net benefit to consumers). The increase in consumers' wealth is matched by a reduction in suppliers' wealth (resulting in zero net public benefit).
 - *Productive inefficiency* being reduced by control (with resulting cost savings likely to be passed on to consumers in lower prices).
 - *Dynamic inefficiency* being reduced by control, because of better utilisation/allocation of resources over time, resulting in lower prices and/or improved service quality for consumers.
- 100 The sources of potential benefits are now discussed below. The models to be used to quantify the potential benefits of control over time are also introduced.

Allocative efficiency and excess returns

- 101 The evaluation of allocative inefficiencies and excess returns within the lines business would require a calculation of the efficient price for line services over time. The total revenue and cost for line services could be used to do this. Cost would be measured by the sum of appropriate line services expenses and a normal return on investment, the latter being calculated by multiplying the appropriate asset base by an appropriate weighted average cost of capital (WACC). Revenue would be measured by multiplying prices by the relevant quantity of service provided.
- 102 Where revenue exceeds cost, or equivalently, where the lines business' actual returns on line services (after allowing for expenses) are greater than normal returns, prices would be above the efficient level. From this, the potential benefits to consumers can be estimated, if control were to have the effect of reducing prices for line services to a level closer to the efficient level.

- 103 Figure 2 shows a market demand curve (D), which is assumed to be linear for simplicity. Line services output (Q) could be represented by electricity conveyed in kilowatt-hours (kWh),¹⁵ in which case prices (P) would be measured on a per kWh basis. A distinction is made between the actual price (P_m) and quantities (Q_m) a business supplies, and the efficient price (P_c) and quantities (Q_c) that the Commission may determine. Inefficient or excessive average pricing would be reflected in the price charged being raised above the efficient level (i.e., $P_m > P_c$) and consumption (output) being lower than the efficient level (i.e., $Q_m < Q_c$), as represented in Figure 2.

Figure 2 – Measuring Allocative Inefficiency



The long-run perspective

- 104 The key distinction between a short-run and long-run perspective is that in the long-run all of the business's costs are variable, whereas in the short run some of its costs are fixed. This means that in the long run a business can adjust the scale of its operations to match demand by investing or disinvesting in capital.
- 105 In the short run the total costs of lines services are largely fixed in nature, resulting in marginal costs (MC) being generally very low, particularly where excess capacity exists. If allocative inefficiency were measured with regard to short-run MC at $D = MC$ (at point K in Figure 2), the business in question would not be able to earn enough to cover its fixed costs. This in turn would jeopardise capital replacement in the long-run. Hence, the efficient price might be set at the higher point P_c where the downward-sloping average cost (AC) curve (not shown) cuts the D curve at point F. While not maximising allocative efficiency in the

¹⁵ The Commission notes that this is a simplification of the outputs that are produced by the lines businesses. For instance, in the recent analysis of absolute and relative lines business performance (supra n 5, p 43) electricity conveyed, customer connections and system capacity (in MVA-km) were used as output measures. While the choice of output variable may affect the results of the benchmarking work, it will not affect the aggregate allocative inefficiencies measured in a building blocks model, as the output variable here would merely be used for scaling.

short run, this would give the lowest single price that would cover the firm's costs.

- 106 The short-run framework can be explicitly adapted to represent a long-run perspective, by assuming for simplicity that long-run MC (LRMC) is constant and lies along P_cEF .¹⁶ Allocative efficiency would be achieved at the price P_c and output Q_c as under the short-run case, but this time it would be where $P_c=LRMC=LRAC$, so that all costs (including a normal return) would be covered.

Impact of control on allocative inefficiency and excess returns

- 107 Viewed with this long-run perspective, if the business in question were actually charging a price in excess of P_c at P_m , the reduction in consumption (output) from Q_c to Q_m would represent a socially inefficient loss of consumption (output). This would result in:
- a loss of net surplus equal to the area BFHG. This loss is shared between consumers' surplus of BFE and the supplier's surplus of EFHG;
 - resources no longer required because of the reduction in output, represented by the area GHQ_cQ_m , which are assumed to be absorbed elsewhere in the economy, with no impact on welfare; and
 - a transfer of surplus from consumers to producers (excess returns), depicted by area P_cP_mBE , which is a wealth transfer from consumers. While in overall efficiency terms (i.e. net public benefits), this transfer is assumed to have no direct effect, since one party gains at the expense of the other, this transfer is particularly significant for assessing the long-term benefit to consumers of control.
- 108 Hence, the detriment arising from the loss of allocative efficiency in the line services market is represented by the area BFHG. The supplier earns excess returns equal to the value of area P_cP_mBE .¹⁷
- 109 The level of the allocative inefficiencies estimated using the model above is driven largely by the degree to which price diverges from average costs (which include a normal return), and the price elasticity of demand for line services between points B and F.
- 110 Assuming relatively inelastic demand for line services, large price increases would likely have limited adverse impact on demand by consumers. Deadweight losses associated with inefficient pricing would emerge in the line services market, but these would be likely to be small relative to the size of the distribution

¹⁶ Under certain assumptions LRMC exceeds SRMC, because in the long-run all costs are variable, including those that are fixed in the short-run and hence are not part of SRMC. The assumption that LRMC is constant ensures that $LRMC=LRAC$. This analysis assumes for simplicity that the LRAC curve is actually horizontal, rather than (perhaps more realistically) downward sloping, in the range between points E and F. In any case, assuming that the demand curve for lines services is relatively price inelastic, the output difference between the two points is unlikely to be significant, so that the average costs at those two points are likewise not expected to differ significantly.

¹⁷ This analysis assumes for simplicity that the average cost curve is actually horizontal, (see previous footnote).

effects due to excess returns (i.e. the wealth transfer from consumers to suppliers through the higher prices).

- 111 An alternative possibility is that the actual price could be below the competitive price. To generate that outcome using Figure 2, the 'm' subscript can now be treated as indicating the competitive position, and the 'c' subscript the actual position. In this case, consumers of line services benefit at the expense of the service provider, who earns less than normal returns. The total revenue produced by the service is represented by the area $0P_cFQ_c$, and the total cost is equal to $0P_mJQ_c$, leaving a loss to the lines business of P_cP_mJF .¹⁸ The deadweight loss from the over-production by Q_mQ_c is shown by the triangular area BJF . In this scenario, as in the previous one, the deadweight loss is likely to be very small relative to the wealth transfer from, in this case, suppliers to consumers.

Productive efficiency effects

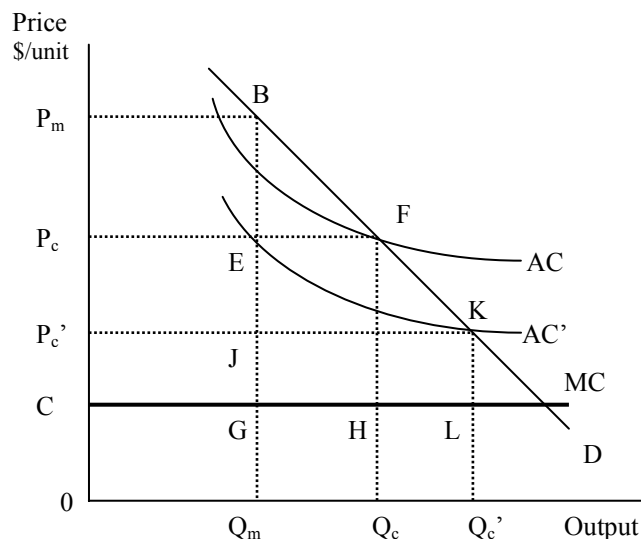
- 112 A productively efficient operation is one that meets demand at the lowest possible cost. An unregulated profit-maximising business generally has strong incentives for cost efficiency since cost reductions translate into increased profits.
- 113 Shareholders and the board have a number of options for constraining agency costs which might otherwise lead to cost inefficiencies. Options include the use of external benchmarking of the business' performance, increasing debt and dividends to reduce free cash flows, the use of outside directors, the use of incentive schemes for managers, and requiring managers to contract out certain functions. Competition in capital markets (i.e. the threat of takeover of poorly performing firms) can reinforce these incentives.
- 114 The impact of productive inefficiencies in the line services market can be modelled by further developing Figure 2, as shown in Figure 3, whereby:
- the competitive price and output is assumed to be found, as before, at the point where the existing average cost (AC) curve intersects with the demand (D) curve; and
 - all productive inefficiency is assumed to be felt in fixed costs, so that average fixed costs are inflated, and the AC curve is "too high". This assumption is made to simplify the graphical illustration of the effects of productive inefficiency.¹⁹ The level of the average cost curve when costs are minimised is at AC' .
- 115 The inefficiently high level of costs results in welfare effects that can be analysed at two levels. First, as a productive inefficiency, the wastage of resources is an outright loss, as their transfer to other productive employment would lead to no loss of output in line services. In terms of Figure 3, this loss is measured at a given output by the vertical distance between AC and AC' , multiplied by that output.

¹⁸ This statement is subject to the same qualification as given in the previous two footnotes.

¹⁹ Similar effects would be seen if it were assumed that productive inefficiency were felt in variable costs, although an additional shift of the MC curve downward would have to be shown in addition to the AC curve shift.

- 116 Second, in an efficient setting the inflated costs would not be present, so that the competitive average cost curve would be AC' , not AC as assumed so far. This, in turn, would mean that the efficient price and output would be P_c' and Q_c' , respectively, not P_c and Q_c as assumed in Figure 2. As a consequence, the allocative inefficiency loss and wealth transfer flowing from price at P_m being above the efficient level is larger than previously estimated. The allocative efficiency loss increases from BEF to BJK , and the transfer increases from P_cP_mBE to $P_c'P_mBJ$.

Figure 3 – Measuring Productive Inefficiency



- 117 In summary, the model used in Figure 3 shows that, if productive inefficiency in the counterfactual were found in the costs, and if those inefficiencies were to be reduced under control through the pressure of lower prices providing incentives for greater efficiency, this would allow a further reduction in prices beyond that described in Figure 2.
- 118 However, without a precise measure of the slope of the AC' curve, it is not possible to calculate the additional allocative efficiency effect (or those proportions that reflect consumer, and producer, surplus gains, respectively). Accordingly, a conservative approach would likely be taken, with only wasted resource measured as a potential benefit of control.

Dynamic efficiency effects

- 119 Dynamic efficiency refers to businesses having the appropriate incentives to invest, innovate, improve the quality and range of services offered, increase productivity and reduce costs over time. Unlike allocative efficiency and productive efficiency, which are concepts of static efficiency, dynamic efficiency involves an intertemporal dimension.
- 120 During consultation on the development of the thresholds, there were claims from some interested parties that some networks suffer from a lack of investment. For a post-breach inquiry the Commission may assess the planned investment

programme of a lines business in detail, and the trade-offs that the business has made in considering possible benefits to consumers in the short term versus the long term.

Potential Costs of Control

- 121 In general, the costs of control comprise direct and indirect costs. The direct costs of control include:
 - the compliance costs of the regulated entities and other market participants involved in the regulatory process (e.g. the cost of staff time, the information supply costs, the diversion of time of senior executives); and
 - the administrative costs of the regulatory body.
- 122 The indirect costs of control are related to the inefficient forms of behaviour stimulated by control, and can theoretically include:
 - the distortions to behaviour caused by the potential for poor, or uncertain, regulatory decision making (in terms of allocative, productive and dynamic inefficiencies);
 - the scope given for opportunistic behaviour on the part of the regulator and the regulated firm; and
 - the potential for regulatory capture (with the regulator coming to serve particular groups' interests), and a subsequent movement away from efficient outcomes.
- 123 The costs of control will be viewed in a dynamic setting. For example, costs may increase over time if there were a succession of poor decisions, or costs could decline over time as the entities involved become more familiar with the regime. Costs will also be dependent on how enlightened, transparent and consistent are the regime and the actions of the regulator. The effectiveness of the regime is likely to be greater the more information is available to all parties.
- 124 The Commission considers that the costs of control can only be assessed when the nature of that control is made explicit. However, the Commission does not wish to prejudge the form that control might take, in the event that it was introduced.
- 125 While not wanting to predetermine the form of control in the event that it declares control, for the purposes of evaluating the costs of control in relation to the targeted control regime under subpart 1 of Part 4A of the Act, the Commission proposes to use price cap regulation. This was the form of control used to evaluate the costs of control in the Airports Control Inquiry, has been assumed to date in the Gas Control Inquiry, and is the most frequently used form of control overseas. Overseas experience demonstrates that this form of control can be used in either a heavy-handed or light-handed way. However, price cap regulation may be implemented to encompass standards and/or incentives for lines businesses to provide services at a quality demanded by consumers.
- 126 Direct and indirect costs are further discussed below. The Commission considers that the direct costs of control can be evaluated more generically, although reference to price cap forms of control will be made as necessary. The indirect

costs of control are more dependent on the form of control used and how it is applied, and price cap forms of control are evaluated more closely in this regard.

Direct costs

- 127 The direct costs of control fall on market participants and the regulator. However, the Commission considers that it is likely that the costs of control will ultimately fall on consumers.
- 128 The direct costs of control for all parties occur largely at the time of price reviews and price-resetting. At these times, the costs may be substantial. At other times, the regulatory body largely has a monitoring role, while the regulated entity must ensure that compliance is maintained.²⁰ Users may also engage in monitoring activity. The intention of price cap regulation is that price reviews are infrequent, and at pre-set intervals, when compared to rate-of-return regulation.
- 129 Compliance costs are currently incurred as a result of the information disclosure regime applicable to lines businesses. The imposition of control would inevitably raise the level of compliance costs incurred by lines businesses. The calculation of the compliance cost increase could be based on an average employee cost multiplied by the number of employees, the likely consultant costs and any direct compliance costs.

Indirect costs

- 130 Control could potentially force price levels too low, or could allow them to remain too high, which would involve allocative inefficiencies compared with the theoretical benchmark. Similarly, control also risks damaging productive and dynamic efficiency. The incentives to innovate to reduce costs may be weakened, because the business gets to keep a smaller share of any benefits.
- 131 However, the indirect costs associated with regulation are difficult to quantify. Any approach to measuring indirect costs can be done, at best, only on an arbitrary basis. Ideally it would be desirable to estimate indirect costs independently of the theoretical benefits that control would aim to achieve. However, there is no historical data for New Zealand that would allow such an estimation to be made.
- 132 One approach therefore is to assess indirect costs by scaling down the size of the benefits that control seeks to obtain. This was the approach used by the Commission in the Airports Control Inquiry,²¹ and is a possible approach proposed for the targeted control regime in relation to lines businesses.
- 133 Another approach is to consider the incentives for efficiency under control, and to then derive quantitative assessments consistent with the strength of those incentives (relative to the counterfactual). The Commission may also consider this approach for the targeted control regime.

²⁰ Costs between reviews may be higher if the regulator has to consider application for cost pass throughs in respect of new investment.

²¹ Supra n 13.

- 134 However, these indirect costs may be offset to some extent by potential indirect benefits of control; for example, enhancing the credibility of the regulatory regime for lines businesses and modifying or tempering the behaviour of non-controlled lines businesses as well as controlled lines businesses. The Commission considers that any potential indirect benefits of control should be factored in when determining the overall net benefits of control.

Conclusion

- 135 The Commission considers that the benefits and costs of control can be determined by comparing outcomes in the counterfactual against the likely outcomes under control. The Commission considers that the counterfactual for each lines business is likely to resemble the status quo. However, there may be specific issues that have to be considered, which may modify this general view.
- 136 The costs of control are not easy to estimate. There is uncertainty surrounding the factors to be considered in measuring them, and there is a lack of data for New Zealand, which has not had any price control for almost two decades.
- 137 The costs of control are those that are additional to the counterfactual and can be seen as being both direct and indirect in nature. Any potential indirect benefits of control should however be offset against these costs.
- 138 The Commission considers that, in the absence of any superior alternatives, the indirect costs of control can largely be measured by considering how much of the benefits of control can be realised by control.

Determining Efficient Prices

- 139 There are two broad approaches the Commission could consider in determining efficient prices. The first involves benchmarking the lines business' prices against those of comparable services provided by other lines businesses. The other is to construct efficient prices using theoretical models. These approaches are not mutually exclusive, and the Commission may well use them both, possibly in sequence.

Comparative benchmarking

- 140 Comparative benchmarking would not necessarily confirm the relevant prices were, or were not, efficient, but it might help the Commission judge the level of potential detriment, or determine the level of priority to assign to the inquiry.
- 141 The Commission has used comparative benchmarking as a basis for setting thresholds for distribution businesses from 1 April 2004. The further use of benchmarking at the start of a post-breach inquiry may still be useful. For example, it may be informative to benchmark the business using simple ratio analysis, or alternatively using a range of more sophisticated analytical techniques. However, any comparative benchmarking at the post-breach inquiry stage would not be constrained to the specific methodology used to reset the thresholds.

- 142 After considering the results of a range of comparative benchmarking analyses, the Commission may conclude that no further inquiry is warranted, or it may give the inquiry a lower priority. Either way, the inquiry could potentially cease at this point, and the Commission would publish reasons for not declaring control.

Building blocks analysis

- 143 The second approach is the building blocks approach used by the Commission in its report to the Minister of Commerce on the possible control of certain airfield activities,²² and in its draft report relating to the ongoing inquiry into the control of gas pipeline services.²³
- 144 The building blocks approach involves determining:
- the efficient level of capital required by the lines business to provide lines services;
 - the efficient rate of return on capital;
 - the efficient rate of return of capital (depreciation); and
 - the efficient level of operating costs.
- 145 Should a lines business' revenues exceed its efficient costs (estimated via building blocks analysis), the business will earn excessive profits. Although this could happen in several different circumstances, a lines business that persistently earns excessive profits over time may be doing so by exploiting a position of market power to the detriment of consumers.
- 146 In the context of a post-breach inquiry, the Commission proposes to estimate efficient prices, using the building blocks approach, in order to identify evidence of persistent excess profits and/or excessive costs. Evidence of persistent and materially excessive profits and/or costs could lead the Commission towards an intention to declare control, if it were satisfied that control would result in net benefits to consumers. The key elements of the building blocks approach are described in the next section.

Key Elements of Building Blocks Analysis

Efficient revenue and costs

- 147 In general, these “efficient cost” building blocks are used to calculate the efficient revenue in a period, as follows:

$$R_t = A_{t-1} \times WACC_t + D_t + O_t$$

where: R_t is the efficient revenue in period t ,

A_t is the efficient regulatory asset value at the end of period t ,

D_t is the efficient depreciation in period t ,

²² Supra n 13.

²³ Supra n 14.

O_t is the efficient operating cost (including tax), and

$WACC$ is the weighted average cost of capital in period t .

- 148 The Commission proposes to undertake its analysis in respect of future costs and prices, based on the target business' current pricing policy and forecasts of demand, prices, costs, and revenues.
- 149 In considering lines business forecasts of efficient revenues and costs, the Commission intends paying particular attention to a number of factors, including (but not limited to) the proposed treatment of:
- income from customer contributions (including gifted assets);
 - income attributable to revaluation gains;
 - capital expenditure;
 - the allocation of costs between the lines business and other parts of the business, both in respect of other activities within the electricity sector (such as electrical contracting and appliance sales) and activities in a different sector (such as the supply of natural gas); and
 - tax.

Asset valuation

- 150 The valuation of assets employed to deliver the relevant services is central to the building blocks approach for determining efficient prices. In general, the regulatory asset value used in the building blocks approach encompasses the value of all fixed assets and net working capital. For lines businesses, this amount is generally dominated by the value of lines business system fixed assets, being only those fixed assets associated with the conveyance of electricity.
- 151 In the Commission's Companion Report²⁴ to its Handbook for Optimised Deprival Valuation (ODV) of System Fixed Assets of Electricity Lines Businesses (the ODV Handbook), the Commission outlined the role of asset valuation in the Part 4A regulatory regime. The Companion Report indicates that, during a post-breach inquiry, the Commission intends, where appropriate and relevant, to use the opening ODV valuations prepared using the Commission's ODV Handbook²⁵ as the starting point for deriving the value of the system fixed assets component of the regulatory asset value.
- 152 Nevertheless, lines businesses could provide the Commission with robust evidence to support asset replacement costs, asset lives or other factors that are materially different from the standard values or procedures prescribed in the ODV Handbook. However, the burden of proof will remain with the business concerned.

²⁴ Commerce Commission, *Regulation of Electricity Lines Businesses, A Companion Report to the Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses*, 31 August 2004.

²⁵ Commerce Commission, *Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses*, 30 August 2004.

- 153 Going forward, the Commission proposes that lines businesses will be permitted to choose between using either an ODV-based or a depreciated historic cost (DHC)-based method for valuing system fixed assets in their regulatory accounts. However, the Commission also considers that lines businesses would not be required to commit to a choice between ODV and DHC until sufficient information is available for that choice to be made. Such information would include a handbook for undertaking DHC valuations and rules for updating those valuations going forward.
- 154 Until such time as sufficient information is available for lines businesses to make such a choice between ODV and DHC, the Commission will primarily rely on valuations for system fixed assets based on the current version of the ODV Handbook and updated in accordance with the Commission's broader electricity information disclosure requirements prevailing at the time, issued pursuant to subpart 3 of Part 4A. Currently these requirements are set out in the *Electricity Information Disclosure Requirements 2004*. The Commission intends to initiate a review of the current Requirements in late 2004.

Depreciation

- 155 As noted in the Commission's October 2002 discussion paper on the review of asset valuation methodologies,²⁶ the trajectory of prices for line services over time can be very dependent on the chosen depreciation profile (using the building blocks approach). Some depreciation policies may give rise to prices that fall and rise sharply with the capital investment undertaken. The more lumpy the investment, the more dramatic would be the associated price movements under such policies.
- 156 Similarly, where the building block approach is used together with ODV (which may involve periodic asset revaluations), the derived trajectory of prices may also be volatile. This is because the term labelled "efficient depreciation" in paragraph 147 must reflect the "appreciation" associated with any asset revaluation.
- 157 The Commission notes that policies giving rise to sporadic jumps in price over time are more likely to result in breaches of the price path threshold, which is predicated on relatively smooth price trajectories. If the Commission were to carry out an inquiry into a lines business following a breach of the price path threshold, it may need to consider the extent to which past and current depreciation policies, and asset valuation methodologies, were contributory or explanatory factors.

²⁶ Commerce Commission, *Review of Asset Valuation Methodologies: Electricity Lines Businesses' System Fixed Assets, Discussion Paper*, 1 October 2002.

Cost of capital

- 158 The Commission intends to adopt the following WACC methodology.²⁷

$$WACC = k_e(1 - L) + k_d(1 - .33)L$$

where: k_e is the cost of equity capital,

k_d is the current interest rate on debt capital, and

L is the leverage ratio.

- 159 In this model, k_d is estimated as the sum of the current risk free rate (R_f) and a premium (p) to reflect marketability and exposure to the possibility of default:

$$k_d = R_f + p.$$

- 160 The cost of equity is determined by a simplified version of the Brennan-Lally model of the Capital Asset Pricing Model (see Appendix 1):

$$k_e = R_f(1 - T_l) + \phi\beta_e$$

where: T_l is the average tax rate on interest income (assumed to be 0.33),

ϕ is the market risk premium, and

β_e is the beta of equity capital.

- 161 The equity beta is related to the leverage ratio L , according to:

$$\beta_e = \beta_a \left[1 + \frac{L}{1 - L} \right]$$

where: β_a is the asset beta (equity beta in the absence of debt).

²⁷ Refer Lally, M. *The Weighted Average Cost of Capital for Electricity Lines Businesses*, 4 August 2003. This paper can be found on the Commission's website. Dr. Lally's paper was initially publicly released on 31 January 2003, and was updated in light of written submissions from interested parties, and oral submissions received during the Commission's thresholds conference held in March 2003. The Commission intends releasing an updated WACC paper reflecting prevailing industry-wide circumstances as of late 2004.

POST-BREACH INQUIRY SCENARIOS

- 162 This section describes a number of hypothetical scenarios in which a lines business breaches one or more thresholds. The purpose is to illustrate how the Commission would likely proceed to investigate or decide not to investigate further. This material is provided to reduce uncertainty about the Commission's response to certain types of breaches, but it does not limit in any way the Commission's discretion during a post-breach inquiry.

Threshold Breach Scenarios

Price path threshold

- 163 In this scenario, a lines business is found to breach the price path threshold, and the breach is not due to errors in forecasting pass-through costs, or other reasons that might qualify as “technicalities”. At this point the Commission would likely turn its attention to any reason offered by the lines business for having set prices that breached the price path threshold.
- 164 In support of such reasons, the lines business might provide evidence in the form of its business plans and financial projections, indicating some or all of the following:
- the level and timing of planned operating and capital expenditures;
 - justification for planned expenditures (whether in terms of consumers’ preferences for quality, or otherwise), as set out in asset management plans or similar;
 - the level and timing of expected interest repayments;
 - the level and timing of planned payments to providers of equity; and
 - the level or value of equity capital invested in the business.
- 165 The lines business might also offer relevant contextual information in the form of its earnings history, and price and efficiency performance compared with other businesses in New Zealand or elsewhere.
- 166 Although the Commission would consider the relevance of any contextual information, such as relative performance, it is likely the Commission’s focus will be on business-specific financial information. In this regard, the Commission is likely to form a preliminary view on what it considers to be an efficient level of operating and capital costs, using the framework set out in this paper.

Quality threshold – SAIDI and SAIFI criteria

- 167 In this scenario the lines business records a SAIDI or SAIFI result higher than the previous five-year average, thereby breaching the reliability criterion. The lines business might offer some explanation or background information, suggesting, for example, the breach was attributable to:

- normal variation in the reliability performance measure associated with events such as tree contact due to wind and rain, car accidents, wildlife, and third party human error, etc;
- one or a small number of rare but high-impact events, such as a very severe storm, or a major equipment failure; or
- increased frequency and/or duration of planned outages associated with major development or refurbishment of the network (perhaps due to significant load growth).

- 168 Regarding the "normal variation" explanation, the Commission might attempt to assess the statistical likelihood of the breach, using a classical hypothesis test, based on some assumptions about the underlying distribution of the reliability statistics. For example, the Commission may assume, for the sake of this analysis, that reliability is stationary over time, and that each year's result is independent of previous years' results. The Commission might also look at the distribution of results for other lines businesses, to estimate the underlying variance in the reliability statistics.
- 169 Regarding the extreme event explanation, the Commission would again look at the underlying distribution of reliability statistics. In this case the Commission might focus on the contribution provided by the alleged extreme event, in comparison to the contributions from other (more normal) events. The Commission would likely accept this explanation if there were evidence that the event was indeed rare and that it contributed a significant portion of the total interruption numbers or duration (e.g. more than 20% of the total SAIDI minutes recorded for that year, or more than 4% of the total SAIDI minutes recorded over the last five years).
- 170 Having concluded that the breach was not consistent with normal variation and not consistent with some rare but high-impact event, the Commission might then look to review any associated changes in operating practice or operating expenditure (e.g. variances between actual and budgeted costs or variance from historical patterns in costs relevant to reliability).
- 171 As more reliability data is received from lines businesses in compliance statements and through follow-up requests for information, the Commission will review the normal variation and indicative extreme event criteria to determine if they continue to be appropriate. Over time, familiarity with the Commission's approach to assessing reliability breaches of the quality threshold should reduce any uncertainty that businesses may have about the criteria that define such events or variations.
- 172 The Commission recognises that improving reliability to resolve the issue causing the breach could require additional costs to be incurred, and therefore could require higher prices. Should the associated price increase be such that the new price would now breach the price path threshold, then the Commission would consider whether to make a declaration of control using the framework set out earlier in these guidelines.

- 173 If the Commission were to find evidence that the breach was symptomatic of a general deterioration in reliability, which appeared to be a consequence of a deliberate cost reduction policy, such as through sustained under-investment, then the Commission would consider whether to make a declaration of control, using the same framework.

Quality threshold – consumer engagement criterion

- 174 In this scenario a lines business is deemed to have breached the consumer engagement criterion. That means the lines business has not been able to satisfy the Commission it has adequate business processes in place to consult with consumers to identify or respond to their preferences for service quality.
- 175 The Commission intends reviewing compliance with the key elements of the customer communication criterion to evaluate the ways in which businesses communicate with consumers concerning the trade-offs between price and service quality, with a view to developing possible best practice criteria. Going forward, distribution businesses which have demonstrated that they are meaningfully engaging with consumers will only need to demonstrate compliance with the consumer engagement criterion at the end of the second and fourth years of the five-year regulatory period.
- 176 On the other hand, businesses identified as breaching the customer communication criteria will be expected, over time, to develop more effective processes for understanding and responding to consumer preferences, and to demonstrate improvements on an annual basis. In future, this could be an area where an administrative settlement might effectively be able to resolve the issue in a manner consistent with the purpose of subpart 1 of Part 4A of the Act.
- 177 The Commission also recognises that improving processes, like improving reliability, may come at a higher cost. If such is the case, then the Commission would consider whether price increases could be warranted, in a similar manner to the case of improved reliability discussed above.

Merger or Acquisition Scenarios

- 178 Given the time required to complete an inquiry following a threshold breach, a number of events could occur during the inquiry that could materially affect its outcome. For example, the lines business might voluntarily change its pricing policies, or otherwise modify its conduct in a way that would materially affect the assessment of the net benefits of control. The sustainability of such a voluntary action could possibly be achieved through an administrative settlement.
- 179 Another type of event requiring attention would be a business merger or acquisition involving the lines business that is subject to an inquiry. There are several scenarios to consider here.
- 180 The first scenario is that the merger or acquisition occurs prior to the threshold assessment date. This would not affect the threshold assessment except to the extent the new merged entity does not have sufficient information with which to demonstrate compliance with the thresholds. At this stage the Commission

considers it would, if possible, use its statutory information gathering powers to require the missing information from the relevant party or parties.

- 181 A second possible scenario is that the merger or acquisition occurs after an assessment, in which one of the parties was identified to have breached a threshold. In this case the Commission may look for evidence that the merged entity would not have breached the same threshold (had the merger or acquisition occurred before the assessment date). If there were evidence that the merged entity would have complied with the threshold, the Commission may cease the inquiry.
- 182 A third possibility is that the new entity would have breached the threshold (had it applied), but the Commission considers there would be no net benefit to consumers from declaring control of the new entity (contrary perhaps to the case for the original business). In this case the Commission would not declare control in respect of services provided by the merged entity.
- 183 Finally, a lines business that is already subject to a declaration of control could be involved in a merger or acquisition. In this case the Commission might need to consider whether to revoke the control authorisation or release the business from its undertaking (whichever applies) in light of the event.

APPENDIX 1: WACC MODEL

This Appendix summarises the weighted average cost of capital (WACC) model proposed by the Commission.

Businesses are typically funded by a combination of debt and equity. WACC is the weighted average cost of each new dollar of capital raised at the margin. It is the cost of debt and the cost of equity weighed by the relative proportions of debt and equity, as expressed by the following formula:

$$WACC = W_d R_d (1 - t_c) + W_e R_e$$

where: W_d = proportion (weight) of debt funding,

R_d = cost of debt (before tax deduction),

t_c = statutory corporate tax rate,

W_e = proportion (weight) of equity funding, and

R_e = cost of equity.

Determination of the elements of WACC is subjective and involves uncertainty. Careful and detailed examination is required to ensure that assumptions made are both reasonable and defensible. If WACC were set too high, lines businesses would be able to achieve excess returns, while if it were set too low, investment could be discouraged.

Cost of debt

The relevant cost of debt is the interest rate required by investors to earn their desired return on debt. In specific instances it can be observed directly as the yield on debt issued by the company (through a bond issue with specified return), but is typically determined by way of a margin over and above the risk free rate. This rate is assumed to reflect the cost for which a firm of similar credit risk with an efficient capital structure could be expected to obtain financing. Computed in this way, the cost of debt (R_d) is expressed by the following formula:

$$R_d = R_f + \text{Debt Premium}$$

where: R_f = risk free rate.

The debt premium determines the premium over and above the risk free rate that is required by investors for holding the debt. It reflects both marketability and the possibility of default. It represents the incremental cost of raising funding through debt.

The key consideration in determining the debt margin is the cost at which a firm of similar credit risk with an efficient capital structure could be expected to obtain financing.

Cost of equity

The cost of equity is the expected rate of return just compensating for risk. While the cost of debt can often be observed directly as the yield on debt issued by the company,

the cost of equity cannot, and must be estimated. A number of methods are available to estimate the cost of equity, however, the Capital Asset Pricing Model (CAPM) is the most popular, due to both intuitive appeal and relative ease of application.

The CAPM develops a relationship between the non-diversifiable risk of an asset (measured by its beta) and the opportunity cost of investing in that asset.²⁸ The essential principle underlying CAPM is that risk-averse investors will not hold risky assets unless they are adequately compensated for the non-diversifiable risks that they bear. Therefore, the greater an asset's non-diversifiable risk, the greater the expected return. The CAPM links the risk free rate, the asset's non-diversifiable risk, and the expected return on the market portfolio. Given the non-diversifiable risk of an asset, it provides the premium that investors can expect in terms of the expected rate of return (over and above the risk-free rate)—it determines non-diversifiable risk adjusted expected return on equity.²⁹

The standard CAPM model for return on equity (R_e) was developed by Sharpe and Lintner and is expressed by the following formula:³⁰

$$R_e = R_f + \beta_e MRP$$

Where: β_e = equity beta

$$\text{Market Risk Premium (MRP)} = R_m - R_f$$

R_m = expected rate of return on the market portfolio.

Taxation

In developing costs for the different capital components, tax issues arise. The standard CAPM does not take personal taxation incurred by investors explicitly into account and, therefore, does not adjust for the effect of any imputation credits attaching to dividends. Building on the work of Brennan, Lally has developed a version of the CAPM that explicitly takes account of personal tax rates that differ across both investors and sources of income, and which is applicable to the New Zealand tax regime. However, the resulting cost of equity is still an expected rate of return before personal taxes.³¹

The Brennan–Lally model can be expressed as follows:

$$R_e = t_{div} Div + R_f(1 - t_{int}) + \beta_e TAMRP$$

where: t_{div} = excess of personal tax on dividends over capital gains tax

Div = dividend yield of the company

²⁸ Ramesh, R. *Financial Management: Concepts and Applications*, Maxwell McMillan Publishing, Second Edition, 1992, p 327.

²⁹ Ibid pp 330-331.

³⁰ Sharpe, W F. 'Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk', *Journal of Finance*, Vol. 19, 1964, pp 425-442. Lintner, J. 'The Valuation of Risky Assets and the Selection of Investments in Sock Portfolios and Capital Budgets', *Review of Economics and Statistics*, Vol. 47, 1965, pp 13-37.

³¹ Brennan, M. 'Taxes, Market Valuation and Corporate Finance Policy', *National Tax Journal* 23, 1970, pp 417-427. Lally, M. 'The CAPM under Dividend Imputation', *Pacific Accounting Review*, Vol. 4, 1992, pp 31-44.

t_{int} = excess of personal tax on interest over capital gains tax

$$\text{Tax Adjusted MRP (TAMRP)} = R_m - R_f (1 - t_{int}) - t_{divm} \text{Divm}$$

t_{divm} = weighted average of t_{div} over the individual companies in the market portfolio

Divm = dividend yield of market portfolio.

Assuming fully imputed dividends (and that investors have the ability to fully utilise them), the average investor faces a 33% marginal tax rate on interest, and capital gains are not taxed. It follows that t_{div} and t_{divm} are zero and t_{int} is 33%. These assumptions result in a simplified version of the Brennan-Lally model expressed as follows:

$$R_e = R_f (1 - 0.33) + \beta_e \text{TAMRP}$$

$$\text{where: } \text{TAMRP} = R_m - R_f (1 - 0.33).$$

While there has recently been a change to the top marginal tax rate, the assumption that the average investor faces a 33% marginal tax rate remains valid. Note that because there is an interest deduction term in the WACC, any tax expense in the building blocks analysis would be on an unlevered basis.

WACC parameters

When calculating WACC for the purposes of determining whether to declare control in relation to a particular lines business following a breach of the thresholds, the Commission intends to be guided by the WACC parameters found using the Commission's methodology, updated to reflect prevailing industry-wide and business-specific circumstances as appropriate.³²

³² Supra n 27.