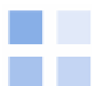

New Zealand Gas Industry Regulation
LESSONS TO LEARN FOR THE BRITISH ENERGY SECTOR

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CONTENTS

1. **Introduction** **3**

2. **Initial Approach to the Regulation of Gas Pipeline Services in New Zealand** **4**

  2.1. Light-handed approach 4

  2.2. Review of the Gas Sector 4

  2.3. Problems of the Light-Handed Approach 6

3. **The Commission's Determination on the Control of the Supply of Natural Gas Distribution by Powerco and Vector** **8**

  3.1. The Approach 8

  3.2. Problems Implementing the New Approach 10

4. **Other Issues** **11**

5. **Summary and lessons** **13**

Annex: The 2008 New Zealand Gas authorisation **14**

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1. INTRODUCTION

CEPA has been commissioned by Ofgem to consider the lessons for British energy regulation of the New Zealand regulatory experience. We have used the gas sector as an example of what has happened in New Zealand. This paper is part of the RPI-X@20 review being undertaken by Ofgem.

New Zealand poses an especially interesting case study because of the way that regulation has developed over the last couple of decades. Specifically:

- initial reform took place without the imposition of independent economic regulation but a reliance on competition;
- slowly sectoral regulation was introduced through an increasing level of intervention starting with reporting requirements and culminating in a price determination for some gas distribution businesses in 2008; and
- Government initiatives have also led to the investigation of a more explicit form of conduct regulation called "Input Methodologies" which is being developed by the Commerce Commission.

This paper reviews each of these aspects and is structured as follows:

- Section 2 provides the history of gas regulation from the early 1990s to now;
- Section 3 discusses the 2008 Gas Distribution Authorisation, the price control for two major distribution companies, and consider some of the issues that arose because of imposing a price control on previously unregulated activities; and
- Section 4 concludes by looking at other issues including the Input Methodologies.

An annex summarises the 2008 Authorisation using the template employed for the main CEPA report to Ofgem on experience of using incentive based regulation.[1]

[1] http://www.ofgem.gov.uk/Networks/rpix20/publications/CD/Documents1/CEPA%20Final%20Ofgem%20report%20270209.pdf

2. INITIAL APPROACH TO THE REGULATION OF GAS PIPELINE SERVICES IN NEW ZEALAND

2.1. Light-handed approach

Prior to 1992, the gas supply industry was subject to price control regulation determined by the Commerce Commission (the Commission). However, widespread reforms of the New Zealand economy throughout the 1980s and early 1990s, including the sale of Petrocorp (a major gas utility operation) in 1988,[2] saw the removal of direct price regulation and for almost two decades the approach to regulation of gas pipeline services in New Zealand has been very light-handed. From 1992, such businesses were no longer automatically subject to control of their prices or the quality of their offerings. This was a result of the Gas Act 1992 which deregulated the industry. Some constraint on the potential for abuse of market power was thought to be provided by the ability to impose such controls, if considered necessary, under Part 5 of the Commerce Act 1986.

In addition to the threat of re-regulation, some control over the behaviour of gas suppliers was thought to be provided by provisions relating to information disclosure. These provisions came into effect in 1997 and were intended to encourage self-regulation by the industry. The regulations require gas pipeline businesses to disclose a range of information, including financial statements, financial and efficiency performance measures, methodologies for allocating costs and revenues between gas distribution, transmission and retailing activities, line charges and pricing methodologies and details on contracts.

At that time, the Ministry of Economic Development described the economic regulatory regime for the gas sector as including the following elements:

- The potential application of Part 2 of the Commerce Act 1986 to prohibit anti-competitive behaviour;
- The threat of applying more heavy-handed regulation, such as control of prices, revenue and/or quality under Part 5 of the Commerce Act 1986; and
- An information disclosure regime introduced in 1997.[3]

2.2. Review of the Gas Sector

The Government undertook a non-statutory inquiry into the gas sector in 2001. Following the completion of the review in 2002, the Minister of Energy announced that he would request the Commission to investigate whether increased regulatory control

[2] Rose, L. "Privatisation in New Zealand and Australia: An Empirical Analysis", accessed at http://www.sirca.org.au/Papers/2003013.pdf

[3] This section draws on the information provided by the Commerce Commission. See Commerce Commission (2008) "Authorisation for the Control of Supply of Natural Gas Distribution Services by Powerco Ltd and Vector Ltd: Decisions Paper", accessed at http://www.comcom.govt.nz//IndustryRegulation/Gas/CommissionReportsandDocuments/ContentFiles/Documents/[PUBLIC]%20Gas%20Authorisation%20-%20Decisions%20Paper%20-%2031%20October%202008.pdf

should be introduced for gas pipeline services. This was based on the Minister's acknowledgement of the debate about whether gas pipeline prices were excessive and hence whether some pipeline owners were receiving monopoly rents.[4]

Under s52 of the Commerce Act 1986, the Commission is required to consider two key issues to determine whether or not control under Part 5 may be imposed. These key issues are:

- if goods or services are, or will be, supplied or acquired in a market in which competition is limited or is likely to be lessened; and
- if control is necessary or desirable in the interests of persons who acquire or supply the goods or services.

The determination is a two-step process and following a decision that control may be introduced under s52, the Commission then needs to determine whether an order imposing control *should* actually be made.

The Commission reported to the Minister on 29th November 2004 and made the following recommendations:

- the gas pipeline businesses of National Gas Corporation (NGC) Transmission, NGC Distribution, Wanganui Gas and Maui Development Limited should not be controlled, although the requirements of s52 were met; and
- the gas pipeline businesses of Powerco and Vector should be controlled.

Powerco and Vector were considered to be earning significant excess returns and this was expected to continue in the absence of control. The Commission was of the view that imposing some form of control would result in reductions in line charges to the customers of gas pipeline distribution services supplied by Powerco and Vector. Finally, the Commission considered that the net benefits to customers would be substantial. Table 1.1 sets out some more information on these two companies.

Following consultation on the Commission's findings, the Minister of Energy announced on 27th July 2005 his decision to declare control over certain gas distribution and metering services of Powerco and Vector. In August 2005, the Commission issued a provisional authorisation in relation to the controlled services and after a long consultation process, a final decision was issued in October 2008 – this is, of course, open to appeal, as occurred with the 2004 decision to apply control under s52. Before examining the Commission's approach to controlling gas distribution services provided by Powerco and Vector, the following section sets out the particular problems which necessitated such an approach being taken.

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[4] Commerce Commission (2008) "Authorisation for the Control of Supply of Natural Gas Distribution Services by Powerco Ltd and Vector Ltd: Decisions Paper", at p.10, accessed at http://www.comcom.govt.nz//IndustryRegulation/Gas/CommissionReportsandDocuments/ContentFiles/Documents/[PUBLIC]%20Gas%20Authorisation%20-%20Decisions%20Paper%20-%2031%20October%202008.pdf

Table 1.1: Nature and Scope of Powerco and Vector

Powerco	Vector
Structure and ownership	
• Powerco is NZ's second largest electricity and gas distribution company by customer connections. • Powerco was subject to a takeover by Babcock & Brown Infrastructure (BBI) in 2004. • BBI is listed on the Australian Stock Exchange.	• Vector is NZ's largest energy infrastructure company and is listed on the NZ stock exchange. • Vector acquired the Natural Gas Corporation in 2004.
Business activities	
• The principal business activities of Powerco are the ownership and operation of electricity and gas distribution networks in the North Island. • It also has a gas network and retail business in Tasmania, Australia. • Powerco provides energy services and owns, operates and maintains a portfolio of assets. • The largest part of Powerco's business is its electricity distribution business (80% of revenue ending June 2008).	• Vector provides energy services and owns, operates and maintains a portfolio of assets. • The largest part of Vector's business is its gas business (57% of revenue in 2008). • Vector's gas business comprises a number of different business units, including gas transportation (both transmission and distribution) and the wholesale gas business. Gas distribution is a small part of the overall business, under 5%.

Source: Commerce Commission (2008)

2.3. Problems of the Light-Handed Approach

The light-handed approach was seen to be problematic for a number of reasons:

- *Natural monopoly characteristics*: There are a number of firms providing gas pipeline services in New Zealand, however, these firms generally supply gas in geographically distinct areas. This means individual companies can exhibit natural monopoly characteristics in these areas. In particular, the Commission noted that distributors incur high fixed and sunk costs and relatively low variable costs, making it possible for one firm in any area to be able to undertake the distribution function at a lower average cost than two or more firms. The Commission further noted that this is likely to deter entry, except where the existing pipelines are utilised to their full capacity. The Commission understands that capacity constraints on distribution networks are relatively rare and in limited areas of the network.

- *Lack of inter-fuel competition*: The Commission examined the extent to which other fuel forms compete with gas and therefore constrain the price which can be charged for transmission and distribution services. Examples were provided of instances where users of gas had switched to electricity, coal, LPG, diesel and wood. Further, the Commission accepted that some energy users do have a

choice of fuels, however, for many this is limited to when their energy specific plant or appliance is nearing the end of its economic life. The Commission accepted that some large gas users may be able to negotiate prices down when they are entering a long-term contract and have a choice of location and fuel type. However, such protection was likely to be limited to a small number of large gas users. On balance, the Commission did not think that inter-fuel competition was sufficient in itself to place strong competitive pressure on suppliers.

- *Distribution and the final price for gas*: The Commission noted that distribution only accounts for approximately 40% of the final price of delivered gas. Therefore, any competitive constraint that might be created by the choice of other fuel types is dissipated in its impact on the distribution function.[5]

[5] Commerce Commission (2004) "The Commerce Commission's final report of 29 November 2004 on the Natural Gas Control Inquiry requested by the Minister of Energy on 30 April 2003", accessed at http://www.med.govt.nz/templates/MultipageDocumentTOC____6919.aspx

3. THE COMMISSION'S DETERMINATION ON THE CONTROL OF THE SUPPLY OF NATURAL GAS DISTRIBUTION BY POWERCO AND VECTOR

3.1. The Approach

The Commission has set controls for both the price and the quality of the gas distribution operations of Powerco and Vector. The Provisional Authorisation in August 2005 imposed average price reductions of 9% for Powerco and 9.5% for Vector. Prices were held constant in nominal terms from that time therefore, since 2005, prices have been reduced by approximately 19%. Further average price reductions of 11.1% for Powerco and 3.7% for Vector were required under the final Authorisation and took effect from 1 January 2009. In this section we consider the Commission's approach to setting the price and quality controls.

In terms of setting the price control, the Commission's approach involves three key steps, including:

- *Determining the allowable level of revenue*: The Commission has applied a building blocks methodology to determine the level of revenue required by Powerco and Vector to supply the controlled services.
- *Smoothing the revenue path*: The Commission chose to smooth the revenue over the control period to determine an authorised revenue path. This was intended to ensure that the present value of the allowable revenue and the authorised revenue are equivalent over the control period.
- *Setting the terms of the authorisation*: For the form of the control, the Commission applied a CPI-X price path combined with provisions on service quality.

The Commission's approach to particular elements of the price control are set out in more detail below.[6] Table 1.2 at the end of this note provides a summary of the regime using the template developed for the main report case studies.

3.1.1. Regulatory Asset Base (RAB)

The Commission noted that the valuation of the RAB is a key determinant of allowable revenue. The opening RAB was set from the beginning of the control period in August 2005 (in reality a valuation date of 30th June 2005 was used for convenience). The Commission established the initial valuation by taking the Optimised Deprival Valuation relating to system fixed assets (SFA) for 2002/03 and rolling those values forward to 30 June 2005. The value of non-system fixed assets (NSFA) as at 30th June 2005 was then

[6] Commerce Commission (2008) "Authorisation for the Control of Supply of Natural Gas Distribution Services by Powerco Ltd and Vector Ltd: Decisions Paper", accessed at http://www.comcom.govt.nz//IndustryRegulation/Gas/CommissionReportsandDocuments/ContentFiles/Documents/[PUBLIC]%20Gas%20Authorisation%20-%20Decisions%20Paper%20-%2031%20October%202008.pdf

established according to accounting principles and this is added in to provide the total amount.

The Commission also set out a process for rolling forward the RAB in the control period. In terms of capital expenditure, the Commission applied the financial capital maintenance (FCM) approach. Under FCM accounting the company should *ex ante* expect to be able to recover the cost of the investment over the life of the asset. This approach to accounting requires that any asset revaluation is incorporated into the profit and loss of the company, so ensuring that total returns are measurably comparable to the allowed cost of capital.[7]

Capital expenditure for both system fixed assets and non-system fixed assets have been allowed. An allowance of 1.20% of both SFA and NSFA capital expenditure for works under construction has been included in the allowance. The Commission did not include a specific capital expenditure re-opening clause in the control terms.

For depreciation, the Commission chose to calculate the regulatory allowance using the 'straight line' depreciation approach. The asset lives applied are based on the expected physical lives of the assets. The calculation for depreciation may include both the asset in the initial opening RAB and capital expenditure. In addition, the RAB will be rolled forward on an indexed basis during the control period using the CPI. Note that the control order expires in 2012 and hence there is only one control period and no need for a roll forward to the next control period.

3.1.2. Regulated rate of return

In setting the regulated rate of return the Commission was seeking to compensate the controlled businesses for their cost of capital, taking account of the systematic risks that the businesses are required to bear and should be compensated for (that is, the weighted average cost of capital). The Commission also wanted to take into account any non-systematic risks not taken into account in the Capital Asset Pricing Model (CAPM).

3.1.3. Form of control

The Commission decided to implement a weighted average price cap for the Authorisation that applies to the controlled gas distribution and (for Powerco) metering services (other than excluded services). The approach for setting prices is as follows:

- The businesses are required to develop a pricing methodology, having regard to the principles and methodological requirements of the Commission's Authorisation.
- The pricing methodology has two components – a quantitative cost of supply model and a qualitative pricing methodology report.

[7] For a discussion on FCM accounting see Current *Cost Accounting: Its role in Regulated Utilities*, Whittington, Fiscal Studies 1994, (http://www3.interscience.wiley.com/cgi-bin/fulltext/119275082/PDFSTART). This issue does not arise in UK regulation (and will not be a problem for future gas determinations) since the rolling forward of the RAB at inflation removes the revaluation gain/loss issue.

- The Commission will assess and approve, where appropriate, the pricing methodologies for implementation on 1st October 2009.
- The businesses will be required to publicly disclose a range of relevant pricing information.

The Commission also set a form of control for the regulation of quality for gas distribution and metering services. There is very little information available on the existing level of quality or the quality level that is demanded by customers so the Commission's regulation of quality for the control period is through information disclosure.

3.2. Problems Implementing the New Approach

The process of imposing price and quality controls on largely unregulated businesses posed some difficulties for the Commission. Some of the most important problems are outlined below.

- *Difficulties with data collection*: The Commission's building block analysis required careful consideration of the efficient operating and capital expenditure requirements. To complete this task, the Commission had a number of information gathering rounds with the businesses in question to establish the appropriate figures. However, despite significant volumes of additional information being provided by Powerco problems with the quality of the information regarding its planned investments and other expenditures persisted. The Commission therefore had to exercise some discretion in making its final decision.
- *Implementing an initial value of the RAB:* The Commission's choice of an initial value for the RAB was a contentious issue. Companies argued that expectations had been created through the Commission's requirement earlier in the process for the businesses to undertake a new ODV valuation as at 2005, which resulted in significant revaluation gains for both businesses. However, this posed significant problems owing to commitment problems about the treatment of previous revaluation gains (discussed below). A compromise decision had to be taken which tried to protect fair investor expectations while also protecting consumers from companies appearing to incorporate significant revaluation gains with no corresponding FCM adjustment.
- *Commitment*: The controls proposed have been established under a provision that only provides for a time limited regulatory control – in this case for just one price control period under July 2012. This created problems since incorporating revaluation gains either had to be done over a short period, causing potential financial viability problems, or over a period extending beyond the life of the authorisation and so causing concern for customers that the revaluation gains may not be correctly incorporated in the future. Under the Commerce Amendment Act, the Order in Council imposing control now expires in 2012 instead of 2016.

4. OTHER ISSUES

In parallel to the changes to the regulatory control of gas distribution in New Zealand has been a process to update the Commerce Act 1986. The Commerce Amendment Act 2008 introduced significant changes to parts 4, 4A, 5 and 6 of the Commerce Act 1986. The objective of the review was to ensure that the regulatory provisions promote the long-term benefit of New Zealand consumers and to reinforce the Government's objectives surrounding infrastructure investment.

The most relevant change resulting from the amendments is the requirement for the Commission to determine upfront input methodologies for services regulated under Part 4 of the Act (as amended). Currently these are electricity lines, gas pipelines, and specified airport services. Examples of methodologies that are required to be established by the Commission include cost of capital, valuation of assets, allocation of common costs, treatment of taxation and pricing methodologies. Input methodologies are required to be established by 30th June 2010.

Under the updated Act, the purpose of the input methodologies is described as being to promote certainty for suppliers and consumers in relation to the rules, requirements, and processes applying to a particular regulation. As an example, Box 1.1 below sets out the Commerce Commission's draft guidelines to estimating the cost of capital. However, it should be noted that these guidelines were prepared prior to the recent amendments to the Commerce Act 1986. These Guidelines (once finalised) will apply to all sectors regulated by the Commission, including telecommunications and dairy, which are regulated under separate pieces of legislation. Therefore these Guidelines will not be an "input methodology" but the input methodologies relating to the cost of capital for the services regulated under Part 4 will be consistent with these Guidelines. The Commission will be releasing revised draft Guidelines for consultation in 2009.

Box 1.1: Draft Guidelines for estimating the cost of capital

Estimating the cost of capital

- To derive the cost of capital for a firm, the Commission calculates its weighted average cost of equity and debt (the weighted average cost of capital – WACC).
- The Commission estimates the cost of equity using a simplified version of the Brennan-Lally Capital Asset Pricing Model (CAPM).
- The risk-free rate is used in the calculation of the cost of debt and the cost of equity. The Government bond rate is used as a proxy for the risk-free rate. The term of the risk-free rate is intended to match the regulatory period to ensure the NPV = 0 principle holds. Further, the Commission considers that rates should be averaged over a period in order to smooth any abnormal effects.
- The Commission relies on the direct estimation of the asset beta of the firm in question and the analysis of comparators' asset betas. To select comparators, the Commission seeks to make use of firms that face a similar level of systematic risk, and considers a number of factors, such as the characteristics of the industry and the regulatory environment.
- The cost of debt is estimated for the same period as that used to determine the risk-free rate. The cost of debt is determined as a premium over the risk-free rate.
- Applying the parameter values estimated by the Commission, it may be possible to derive a

WACC with an associated statistical distribution.

- The Commission notes that the consequences of finding excess returns when they do not exist, or setting prices too low, are more severe than the contrary error. The Commission therefore generally chooses a WACC equal to or above the mid-point to reflect this asymmetry in risk. The particular margin adopted for an industry is a matter of judgement for the Commission.
- In the past, the Commission had not adjusted its estimate of WACC to account for the potential costs arising from asymmetric risks, financial distress, extinguished timing options, or firm resource constraints. The Commission considers that firms are best placed to assess the extent of such costs and that the burden of proof lies with them.
- The Commission's preferred treatment of any relevant unsystematic risks is through adjustments to cash flows, rather than through a margin on WACC. Adjustments can be made *ex ante* or *ex post*, depending on the circumstances.

Source: Commerce Commission (2005) "Draft Guidelines: The Commerce Commission's Approach to Estimating the Cost of Capital", accessed at http://www.comcom.govt.nz//Publications/ContentFiles/Documents/Appendix%20One%20-%20List%20of%20Questions0.pdf

5. SUMMARY AND LESSONS

New Zealand provides an interesting case study in how the implementation of regulation can be affected by periods of non-regulation. This has been especially important for key financial aspects of the regulatory procedure like the RAB. Also, the reliance on proving the need for regulation through the lack of competition while appropriate in theory demonstrates the impact that this can have on the time needed to implement a regulatory control.

In the earlier CEPA report we identified a number of lessons that British energy regulation might wish to consider. These included incremental changes around:

- the role of constructive engagement and consumer involvement;
- price-caps longer than five years; and
- dealing with capex uncertainty.

Also more fundamental issues with the overarching regulatory framework were also identified which included:

- simplifying the RPI-X regime; and
- greater use of contracting out.

The New Zealand example illustrates aspects of two of the incremental changes. While a price-cap of longer than five years is not being created and capex uncertainty is not directly addressed, the move towards "Input Methodologies" is seeking to address aspects of these concerns. Greater certainty is being sought through more detailed and precise formulations of rules that allow investors to predict how a regulator will respond in the future.

Whether the "Input Methodologies" will simplify regulation is unclear. But they are clearly aimed at providing greater certainty and in as clear a way as possible. As such, they capture the spirit of what simplification was expected to achieve.

ANNEX: THE 2008 NEW ZEALAND GAS AUTHORISATION

Element	Existing approach
Context	Part 4 of the Commerce Act 1986 envisages the possibility that control may be introduced over goods and services as part of the statutory framework to promote competition in markets within New Zealand. However, starting from 1993 New Zealand's gas distributors were not subject to actual control of their prices, revenues and/or quality. This changed in 2005 when, following an Inquiry by the Commission, control was imposed by the Minister of Energy on the two largest gas distributors, as it was found that they were earning excessive revenues. A detailed study to set up specific price controls was undertaken in late 2005 and a final determination took effect on 31st October 2008, with average price reductions taking effect from 1 January 2009.
Overall regime	
Regime	CPI – X Applied to a weighted average price cap covering both standard and non-standard distribution of New Zealand's two main network operators – Powerco and Vector and existing standard and non-standard meter services of Powerco. In the current control period, profiling was implemented via a downward P_0 adjustment, with the annual revenue requirement being kept steady in real terms during the control period.
Reporting	The Gas (Information Disclosure) Regulations 1997 were initially introduced with the belief that sufficient disclosure of information would be enough to discourage anti-competitive behaviour. While that attempt was unsuccessful, the Regulations remain in place as a complement to price control. They require network operators to disclose, among other things, their financial statements, financial and efficiency performance measures, methodologies for allocating costs and revenues between gas distribution, transmission and retailing activities, line charges and pricing methodologies, and details on contracts. Under the Commerce Amendment Act, responsibility for these Regulations will transfer to the Commerce Commission from the Ministry of Economic Development. The two gas distributors subject to price control are also required to submit an Annual Compliance Statement to the Commerce Commission, which demonstrates compliance in relation to prices for the forthcoming pricing year and provides detailed information on matters relevant to the price control, such as pass-through costs, creation of new categories of controlled services and quality performance.
Appeals	Decisions, including price determinations, can be appealed by the companies to the Commerce Commission. Appeals against the process employed by the regulator are addressed through Judicial Review. Powerco and Vector submitted an appeal against the Commission's recommendation, and the Minister's decision, to impose price control in 2005 but it was dismissed. The Commission's October 2008 determination has been appealed by Powerco.
Incentives	
Degree of sharing	Symmetric. Deviations from allowance are retained/borne by the company.
Overall incentives	The current price control period covers seven years (2006-2012), but the price review itself was actually completed three years into this period in 2008, so that the price cap over 2009-2012 includes an *ex post* adjustment for any over/under

Element	Existing approach
	charging that may have occurred since control was imposed and the companies were subject to a provisional authorisation. This was specifically provided for in the legislation. It was envisaged that the next control period would be for 2012-2016 although this is no longer the case under the Commerce Amendment Act. Asymmetric. If we ignore the peculiarity of this first price control (which includes an *ex post* adjustment), opex is treated entirely on an *ex ante* basis with any unanticipated over/underspend borne to the end of the control period. Underspent capex is treated only on an *ex ante* basis, while overspent capex is reviewed at the end of the control period, with only efficient overspend rolled into the next period's opening RAB. Revenue requirements are smoothed over the control period (taking account of retrospective caps) in order to mitigate the effect of "lumpiness" in capex and opex.
Service performance	Quality control is performed through information disclosure on the part of companies (based on the legal requirements mentioned above), which is done on an annual basis. Quality control is defined according to three categories, with a set of specific indicators for each: • **Network Reliability:** covering the frequency and duration of interruptions to customers; • **Network Condition/System Integrity:** covering the ability and state of the network to deliver the appropriate quality of services; and • **Customer Service:** covering how the business deals with customers.
Capex	No specific capex incentive that are distinct from the overall CPI – X regime.
Pass-through	Pass-through items (certain taxes and levies and any material change in tax law) are forecast and included in the *ex ante* estimates for the revenue requirement. An annual *ex post* adjustment to correct for any difference between allowed and outturn costs is then made.
Re-opener (Ship-wreck)	No specific re-openers are included in the price control, .but the legal framework in which the Commerce Commission operates offers it discretion to re-open a price control if it believes such a move is warranted.
Processes for Setting Prices	
Building blocks approach	Revenue allowance = (Regulated Rate of Return × Regulatory Asset Base) + Depreciation + Operating Expenditure + Tax – Revaluation Gains – Capital Contributions. Note: capital contributions were based on forecast figures with no *ex post* true-up.
Opex	Based on direct opex at the time of the review. The two companies were considered separately since the information they provided was different and it proved impossible to get a consistent data set. Plus: Adjustment for indirect opex (calculated through the regulator's review of each company's current cost allocation methodologies and actual value of costs allocated). Less: Consultants' studies of efficiency savings in both direct and indirect opex. Efficiency estimates are based on statistical analysis of companies' data to determine relative efficiency, while frontier shifts

Element	Existing approach
	are not taken into account.
	Plus An allowance for forecast growth in demand (regulator's review of company forecasts).
	Direct opex is inflated by a specially-created 'operating expenditure price index', which is made up of the cost of labour (62%) and the Inputs All Industries component of the Producer Price Index (PPI) (38%). Indirect opex was inflated by the labour cost index (LCI).
Capex	The regulator assessed each company's capex plans individually with an allowance for assets in the course of construction being provided. The capex allowance is inflated by the Capital Goods Price Index (CGPI). The revenue allowance excludes miscellaneous capital requirement (MCR), which is measured as MCR = inventory + accounts receivable + prepayments + current income tax assets – accounts payable - current income tax liabilities And where accounts receivable includes income accruals and accounts payable includes expenditure accruals.
Depreciation	Straight line depreciation is applied to both assets that had already been in place when the price control period began (30th June 2005) and to assets that have been acquired since.
Return	Based on the RAB and a post-tax net of debt tax shield nominal WACC and an assumption of notional gearing (40% at the current price review) rather than the current or prospective gearing. For the current price control period, the Commerce Commission applied three levels of the WACC corresponding to three parts of the price control owing to an observed sharp increase in the debt premium after 30th June 2007 and a reduction in the corporate tax rate after 30th June 2008. Since a nominal WACC is used and the RAB is rolled-forward at inflation, to ensure no double counting occurs, the inflation adjustment to the RAB is then treated as a revaluation gain and subtracted from the returns for the company – hence the inclusion of revaluation gains in the building blocks.
Financeability	Financeability requirements are allocated for by setting a cost of capital allowance that is at the 75th percentile of the range of WACC estimates, as opposed to the midpoint normally selected by regulators.
Overall price limit	Companies are able to set tariffs for controlled services freely so long as they meet the regulator's pricing methodology requirements, which consist of a qualitative Pricing Methodology Report and a quantitative cost of supply model.
Source	*Authorisation for the Control of Supply of Natural Gas Distribution Services by Powerco Ltd and Vector Ltd*, Commerce Commission, 30th October 2008