



NGC HOLDINGS LIMITED

**COMMERCE COMMISSION
GAS CONTROL INQUIRY**

**SUBMISSION IN RESPECT OF THE
DRAFT REPORT**

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1. EXECUTIVE SUMMARY

- 1 NGC recognises that the Draft Report does not represent the final view of the Commission. It does however indicate to industry participants the preliminary views of the Commission after its initial inquires.
- 2 From the Commission's point of view, the Draft Report is an opportunity to extract further information and submissions from industry participants. These can then be tested at conference. Crucially, as with all matters under the Commerce Act, the Commission can only make a positive recommendation where it is satisfied the tests in the Act are met and the purpose of the Act is promoted.
- 3 NGC submits a positive recommendation would require both robust evidence of excess returns and a high level of certainty in realising any net public benefits the Commission proposes from price control. A key difficulty with the Commission's Draft Report is that the Commission's framework does not identify excess returns, nor does it demonstrate net public benefits from imposing price control.
- 4 Consequently, NGC has a significant submission to make on those issues. It does so with the objective of informing the Commission on the nature of gas markets and the implications of recent changes in the gas markets, and informing the Commission on the uncertain and volatile market in which any price control would be implemented. Both are matters not fully represented in the Commission's model.
- 5 NGC demonstrates the Commission's framework is not capable of identifying excess returns. Putting this to one side, NGC also identifies a number of significant corrections to be made to the Commission's model. A number of the corrections are of a magnitude that they individually alter the Commission's recommendation.
- 6 This highlights the need for the Commission to take care before concluding it is satisfied NGC is earning excess returns and that price control would provide net public benefits relative to the light handed regulatory regime.

Gas markets

- 7 While the Commission accepts demand for gas pipeline services is derived from the demand for gas, the Commission fundamentally misconceives the nature of gas markets. The Commission states in its Draft Report that gas is an essential service. Gas is not an essential service. Gas is a marginal fuel.

- 8 The report by CRA *The implications for governance of the distinctions between gas and electricity* compares the domestic gas industry with both the domestic electricity and overseas gas industries. This report explains the fundamental market and commercial differences between the New Zealand gas industry and the domestic electricity and overseas gas industries.
- 9 Gas markets have undergone significant changes during the period of the Commission's study. Prior to 2001 the market was characterised by the relatively low prices, delivery flexibility, security of supply and low exploration activity that came from the Maui arrangements. Wholesale gas commodity prices were typically in the range [] per GJ.
- 10 The application for redetermination of the Maui field in 2001 signalled a period of significant supply uncertainty, exacerbated by the potential delay linked to the marketing of Pohokura gas. Awareness grew of the need for security of supply and greater exploration activity. Delivery flexibility was reduced. The wholesale gas commodity price rose accordingly in the period to 2004 resulting in a typical range of [] per GJ.
- 11 In 2004 we have seen the conclusion of the Maui redetermination, separate marketing of the Pohokura gas, and other significant agreements (eg NGC/Shell indemnity gas) which have resulted in much greater certainty in relation to security of supply. This has been accompanied by another step change in the commodity price of wholesale gas. The typical range is now [] per GJ, which is double what it was in 2001. Delivery flexibility remains limited and users are concerned with long term security of supply. Although exploration activity has increased, many users are considering alternative fuels on the grounds of supply security as well as price.
- 12 In this environment, gas is subject to significant competitive constraints. Purchasers have options. It is not the case, as the Commission suggests, that gas pipeline businesses remain unconstrained because pipeline charges are a small proportion of the price of delivered gas. In current market circumstances, including a lack of flexibility in the wholesale gas price, pipeline service prices are subject to real and increasing customer scrutiny and pressure.
- Future market conditions**
- 13 It is important that this new market environment be reflected in the Commission's analysis, both when estimating likely performance under light handed regulation and when considering the likely outcome of price regulation.
- 14 The Commission has opted not to assess the benefit of price control using NGC's commercial forecasts for the period 2005 to 2008, and instead

constructed an estimate by averaging past performance and future expectations. The Commission's preliminary view is that it will give past and future information "equal weight" when estimating the counterfactual.

- 15 Given the fundamental changes in market circumstances discussed above, it is clear that this approach will not result in the best estimate of performance in the future. The underlying conditions that are reflected in the NGC business forecasts for the period 2005 to 2008 are significantly different from the earlier two periods 1997-2001 (Maui supply) and 2001-2004 (Maui uncertainty). Even in recent years, market circumstances have been significantly different from the current environment.
- 16 The forecasts supplied to the Commission by NGC, which were originally prepared for the board of NGC, reflect this market reality. Put shortly, market conditions will continue to get tougher for pipeline providers. Higher gas prices will increase the volatility of an already volatile demand, and pipeline providers will continue to make increasingly risky investments to meet and develop new demand as other demand drops off.
- 17 The Commission's averaging of information from past years will not capture this market reality, and NGC submits the Commission should use the commercial forecasts supplied to the Commission.
- 18 The CRA report *Review of the Commerce Commission's Gas Control Inquiry Draft Report* describes a related and more fundamental difficulty with the Commission's model. The Commission's model does not adequately incorporate the volatility in the market expected in the future, on the demand side in particular. This is relevant to both estimating and assessing likely performance under light handed regulation, and in modelling the possible outcomes under price regulation.
- 19 As the Commission's model currently stands, the Commission cannot tell whether any "above normal returns" identified by its model are the result of a firm aiming to earn normal returns in a volatile market, the exercise of market power, the result of productivity improvements, or some other cause. The Commission's model has also not captured the difficulties a regulator would face setting five year price paths in this market.

Alternative model

- 20 NGC does not accept that the Commission's NPV=0 model identifies excess profits when applied to part of an asset's life. This view is discussed in detail in this submission.
- 21 CRA presents an alternative model that captures this volatility in the market. To properly assess whether excess returns are being made, the model assesses the impact of volatility in demand and costs on revenues

and consequently economic income, to determine whether observed returns are consistent with NGC targeting only a reasonable rate of return ex ante.

The Commission's model

- 22 Notwithstanding NGC's concerns with the Commission's model, NGC has identified a number of significant corrections which need to be made. These are highlighted here, and discussed in detail later in this submission, and the attached reports. NGC believes these corrections are necessary for the Commission's model to even approximate an assessment of excess returns.
- 23 The following corrections would, individually, alter the Commission's preliminary view in its Draft Report:

Estimating the likely counterfactual

- 23.1 correcting the estimation of the likely performance under light handed regulation (the counterfactual). As discussed above, the Commission's averaging of past and future information leads to a lower quality estimate than NGC's commercial forecasts. NGC submits the Commission should use the commercial forecasts supplied by NGC. If the Commission continues to average in past information despite these significant difficulties, CRA explains a correction to the Commission's approach to compounding;

Approach to stranding costs

- 23.2 the Commission has assumed that NGC recovers stranding costs from remaining customers ex post, when in fact NGC's shareholders bear these costs. NGC agrees with Dr Lally that because the Commission's analysis covers only part of an asset's life, the Commission's analysis will be biased in favour of identifying excess returns. To correct for this, the Commission must recognise an ex ante risk premium in its assessment of cost of capital;

Treatment of de-optimisation of Kapuni North line

- 23.3 correcting the treatment of the de-optimisation of the Kapuni to Rotowaro pipeline (Kapuni North line) (NGCT only). The Commission has treated the change in the value of the Kapuni North line as economic income, ie as a revaluation. This is incorrect. In a large part this treatment is driven by the Commission's ex post assumption which, as noted above, is incorrect and introduces a bias. This pipeline was stranded when the much larger parallel Maui pipeline was commissioned. From its first ODV valuation in 1991, NGC has written this pipeline out of its asset base and has not been recovering the asset write-down from its customers. Recently new shippers have emerged, who have required the transport of non-Maui gas north. Once the pipeline was back in full use NGC returned the

pipeline to its asset base. The Commission's approach would remove the incentive for businesses to seek innovative uses for stranded assets in the future. NGC submits de-optimisations should not be treated as income;

Estimation of dynamic efficiency impacts

23.4 correctly estimating the dynamic inefficiency impacts of price control. The Commission's view that little investment will occur in the counterfactual is wrong. The CRA report demonstrates the demand volatility faced by pipeline providers. Even where aggregate demand is expected to be constant, significant investment is needed to service new demand as other demand drops off. This investment is very sensitive to regulatory risk. The Commission assumes the imposition of price control would impact on NGCD only, only in the first year (thereafter NGCD is assumed to resume investing), and only to the extent of 0.5% of total counterfactual demand. CRA makes a conservative correction by assuming a cumulative 0.5% of the counterfactual market is not served per annum, and models the impact of this missing distribution market on NGCT.

Required rate of return

23.5 the correct required rate of return should be used. LECG identifies a number of improvements to the Commission's calculation of WACC. Also, to reflect the ex ante pricing of stranding risk that occurs in practice, and to avoid the bias in the Commission's Draft Report identified by Dr Lally, CRA recommends the Commission should use the hurdle rates NGC has published to investors of 8.5 to 10%, with a mid-point of 9.25%. This is consistent with allowing an ex ante premium for stranding and optimisation risks, and the WACC range identified by LECG;

24 The following are significant corrections that should be made to the Commission's model:

Treatment of gain on sale of NGCD assets

24.1 correcting the treatment of a gain made on the sale of NGCD assets in 1999. The Commission has treated this gain as income that should be passed through to consumers. This treatment is inappropriate as shareholders have taken the risk of carrying the asset, and the Commission's approach would create perverse incentives to not make such sales (and incentivise the sale of low value assets). Such one-off asset sales do not affect pricing in a competitive market, and the Commission should not treat this gain as income.

Estimation of productivity impacts

24.2 the Commission should not assume there will be any productivity benefits from control. Gas pipeline businesses are subject to significant competitive pressure and face real incentives to improve productivity. The comparative benchmarking study prepared for the Commission is acknowledged by the Commission to be of limited value, and it has significant methodological and data limitations. The Commission has no basis upon which to conclude gas pipeline businesses are productively inefficient, and has evidence NGCD has a greater productivity than the benchmark set for electricity lines businesses. In these circumstances, the Commission should not assume productivity would be different between the factual and counterfactual;

Easement valuation

24.3 NGC disagrees with the Commission's decision to value easements at historic cost. However, if a historic cost calculation is to be included, then significant corrections need to be made to the Commission's estimate of asset lives.

Treatment of metering activities

24.4 the Commission should not assume there will be any benefits from imposing price control on NGC's metering business. The Commission has only included meters owned by a gas pipeline business, and of these only the meters attached to the distribution network owned by the gas pipeline business. The Commission takes this approach only because of the way it interprets the terms of reference in the inquiry. Regulating meters on the basis of ownership would create incentives to sell metering activities, or even for gas pipeline businesses to swap meters. In these circumstances, NGC submits the most sensible approach is to assume there will be no benefits from imposing price control on metering activities;

Direct costs of price control

24.5 the estimate of the direct cost of control should be corrected. The Commission significantly underestimates the direct cost of control. Based on the experience of AGL in Australia, and NGC's experience in this process, NGC estimates the direct cost of control to be \$1 million per annum per business unit. NGC also submits its costs incurred in this inquiry should not be deducted from operating costs, as these are legitimate costs of light handed regulation.

Treatment of foreign ownership

24.6 correcting the Commission's treatment of foreign ownership. The measurement of excess profits is fraught, and its classification of "functionless" when going to foreign firms is even more so. Even

where the Commission identifies excess profits earned by NGC (which is mistaken), the Commission has not been consistent and complete in the application of its framework. There is substantial foreign ownership of gas acquirers, and substantial detriments can be expected to flow from any decision by the Commission that is perceived to discriminate against foreign investment. In these circumstances, the appropriate approach is to assume the fall out detriments at least equal any "benefit" of transferring wealth from foreign owned firms to consumers.

Implications for the Commission's recommendation

- 25 The effect of making these adjustments to the Commission's model is summarised in the following tables. The calculations are made using the Commission's 75th WACC percentile.

NGC DISTRIBUTION

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1,077		-780		435
Excluding gain on sale of Taranaki	-456		1		-296	
More realistic cumulative dynamic efficiency loss	-1,346		-1,346		-1,346	
Forward looking Characterisation	-1,050		153		-636	
More realistic direct costs of control	-88		-88		-88	
More realistic producer surplus assumption	0		608		608	
More realistic productive efficiency approach	-210		-210		-210	
Combined Effect (without WACC adjustment)	-2,100	-1,023	-1,192	-1,973	-1,489	-1,054
More realistic WACC estimate	-986		-22		-656	

Combined Effect	-3168^{1, 2}	-2091	-1,547	-2,327	-2,526	-2,091
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NGC TRANSMISSION

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3,322		-342		2,117
Excluding Revaluations from Kapuni	-3,947		-54		-2,623	
More realistic cumulative dynamic efficiency loss	0		-2,390		-2,390	
Forward looking Characterisation	-1,444		149		-920	
More realistic direct costs of control	-88		-88		-88	
More realistic producer surplus assumption	0		176		176	
More realistic productive efficiency approach	-566		-566		-566	
More realistic historic cost valuation of easements	-237		10		-149	
Combined Effect Excluding the WACC Adjustment	-4,870	-1,548	-3,113	-3,455	-5,850	-3,733

1 Note the combined effect excludes the variation that would result from adopting a forward looking approach. It is excluded, however, only because the Commission's model is incapable of dealing with this issue on any meaningful basis, unless past history is completely ignored.

2 Note the individual effects do not sum to the combined effect because of the interdependencies of the various variations.

More realistic WACC estimate	<u>-3,311</u>		<u>-16</u>		<u>-2,176</u>	
Combined Effect³	-8,342	-5,019	-3,362	-3,704	-8,365	-6,248

- 26 The Commission proposes to recommend that the Minister make his decision based on the net acquirers benefit test, rather than the net public benefit test. The Commission states this is because of the treatment of NGC's foreign shareholding under the net public benefit test.
- 27 NGC submits the Commission, and the Minister, should make recommendations based on the net public benefit test. A net public welfare test is clearly the appropriate basis upon which to assess such a significant regulatory intervention. NGC is not making excess returns, and the issue of foreign ownership should not distort the Minister's decision-making framework. As noted above, if the Commission includes foreign ownership as a relevant consideration, there are robust arguments for concluding it has no net effect.

Conclusion

- 28 The Commission's model framework does not measure excess returns when applied to part of an asset's life. Even putting this aside, when the necessary corrections are made, the Commission's model shows there are significant net detriments to price control applying any of the tests discussed by the Commission. If a more realistic level of WACC is used the net detriments are even greater. The model developed by CRA, which captures future demand and income volatility and so allows for an assessment of excess returns, also demonstrates excess returns are unlikely and the outcome of price control would be significantly detrimental.

³ Note the combined effect excludes the impact of recasting the Commission's model on a forward-looking basis. Within the Commission's modelling framework, there is no robust method of using historic data in a forward-looking evaluation of costs and benefits of control.

2. BUSINESS PERSPECTIVE ON COMMISSION'S APPROACH

2.1 Background

29 During NGC's discussion of the Commission's Draft Report, the managers not usually involved in regulatory affairs found the discussion of an example useful to reconcile their everyday commercial environment with the regulatory approach adopted by the Commission. NGC found that the use of an example was also helpful in discussing the economic issues of concern to managers. While NGC's advisors have provided comprehensive expert advice to the Commission, this example has been included to assist discussion.

2.2 NGC's example

30 The Commission's approach is based on the premise that for any investment the net present value (NPV) of the cashflows should equal zero over the life of the asset, or any sub-period of the life of an asset (NPV=0). In NGC's view, this construct reflects a rate-of-return regulatory approach to investment that ignores the volatility and uncertainty associated with real world investments. Notwithstanding this concern, the example presented here is similar to those often used by economists to discuss excess returns, for example Lally *The Weighted Average Cost of Capital for Electricity Lines Businesses (4 August 2003)*.

31 The example consists of 11 tables analysing a 20 year investment initially costing 100 units which is then assessed over eight years of its life (the tables are attached as Attachment 1). The net earnings are calculated as net revenue minus economic depreciation minus tax plus asset revaluations. The excess returns are then the net earnings minus the asset base times the cost of capital (WACC). The excess returns are discounted by the WACC to provide returns on an NPV basis. If this NPV value is greater than zero the investment is deemed to be making excess returns.

32 NGC's example illustrates the effect of calculating NPV on an asset for a sub-period of the asset's life. In this case, a tax rate of 50% and a WACC of 10% are used to generalise the example, but other tax and WACC figures would not have any impact on the conclusions drawn. The example stages are:

- Table A, the base case of a 20 year asset recovering net revenues so that its excess returns were zero every year and NPV=0 over the asset life;
- Table B, the asset is subject to a devaluation event (eg asset stranding) in year 2 which is treated as negative income, net

revenues remain the same, excess returns in year three onwards are positive, however NPV=0 over the asset life. The inverse of this example holds for a revaluation event and NGC notes that similar examples are often used to demonstrate that revaluations should be included as income in excess returns assessments;

- Table C, the asset is subject to a devaluation event in year 2 which is treated as negative income and a revaluation event in year 8 which is treated as positive income. Net revenues remain the same, excess returns are positive for years 3 to 8, negative for year 9 onwards, and again NPV=0 over the asset life;
- Table D, the asset is subject to a devaluation event (eg asset stranding) in year 2, net revenues remain the same, and excess returns in year three onwards are positive. This situation is the same as Table B, however the analysis of NPV=0 is applied to the period year 3 to year 8 rather than over the asset life. In this case the NPV calculated at year 3 is positive so the analysis is indicating excess returns. **Only the sample period has changed from Table B.** The approach of applying the NPV=0 approach to a slice of an asset's life introduces a mathematical bias which is analysed in detail in Section 4 of the CRA report. In NGC's view, this approach demonstrates a sampling bias not excess returns;
- Table E, the asset is subject to a devaluation event (eg asset stranding) in year 2 as for Table D, however the net revenues are reduced so that the analysis of NPV=0 over the period year 3 to year 8 shows no excess returns. This case is analogous to the existing light-handed regulatory regime where users are only expected to pay for using an efficiently configured asset so the ODV valuation methodology excludes under-utilised assets (either through optimisation or economic value write-downs). The returns are assessed on the ODV valuation basis, no ex post recovery of the stranding cost is realised. In this example, ex post recovery would allow the original net revenues and accept that the "excess returns" in Table D are allowable (since they indicate sampling bias not inappropriate pricing);
- Table F, the asset is subject to a devaluation event (eg asset stranding) in year 2 and the net revenues have been reduced as for Table E over the period year 3 to year 8 to target no excess returns under the regulatory regime. The asset has a revaluation event in year 8 (eg asset unstranding) which is included as income. This event resets the example's asset base to that considered in Table C but net revenues are lower. Nevertheless, the NPV=0 analysis at year 3 indicates excess returns;

- Table G, the Table F scenario is modified by the net revenues for years 9 to 11 being restored to the original levels of Tables A to D. In comparison to Table C, the asset values are the same, net revenues are lower for years 3 to 8, and result in negative excess returns for years 9 to 11, but the NPV=0 analysis at year 3 indicates excess returns;
- Table H, the Table F scenario is modified by the net revenues for years 9 to 11 being increased above the original levels of Tables A to D so that excess returns for those years are zero rather than negative. The NPV=0 analysis at year 3 indicates excess returns equal to the revaluation;
- Table I, the modified net revenues from Table H are substituted into Table C so they are lower in years 3 to 8 and higher in years 9 to 11. While the Table H NPV=0 analysis at year 3 indicates excess returns over the period year 3 to year 8, the analysis over the total asset life indicates a negative returns NPV;
- Table J, the Table I scenario is modified by increasing the net revenues in years 12 to 20 so that the excess returns are zero in those years rather than negative (as they are in Table C). The NPV=0 analysis over the total asset life still indicates a negative returns NPV;
- Table K, the Table I scenario is modified by the revaluation value at year 8 being the WACC indexed devaluation amount and the net revenues for years 9 to 20 being increased so excess returns are zero for each year. The NPV=0 analysis over the total asset life now indicates zero returns.

2.3 Implications for the Inquiry

33 This example raises a number of concerns from a business perspective, which NGC believes have significant implications for the Inquiry, in particular:

- The Commission's assumption of ex post recovery of stranding costs requires the Table B net revenue stream so that there is NPV=0 over the total asset life. Table D illustrates that a NPV=0 analysis over a subsequent part of an asset's life will indicate excess returns even though they do not exist. Consequently, the analysis needs to be corrected either for the sampling bias or the year 2 devaluation. If the devaluation is due to asset stranding the correction could be made by calculating excess returns using the original asset valuation excluding stranding impacts (in ODV terms, on a Depreciated Replacement Cost or DRC basis);

- The general expectation under the existing light handed regulatory regime is that asset owners can achieve a fair return on an ODV valuation, ie stranded assets are not reflected in the regulatory asset base. Table E indicates that for there to be an assessment of no excess returns when analysing part of an asset's life, the net revenues need to be consistent with the ODV valuation. Hence the ex post assumption is not satisfied; and
- If the asset is unstranded in the assessment period, the net revenues will adjust to the new ODV valuation and the NPV=0 analysis over the part of the asset's life will indicate excess returns equal to the value of the unstranding (Table H). Table I, however, shows that over the asset's life the owner will under recover costs. Consequently, the value of unstranding should not be included as revaluation income.

34 In NGC's view the Commission's model is internally inconsistent in that:

- The ex post recovery of stranding through the cash flows requires a DRC valuation to be used in the excess returns calculation; or
- The use of an ODV valuation in the excess returns calculation requires the stranding to not be treated as income (ie the revaluation gain is on a DRC basis).

These options are mutually exclusive. The Commission cannot "cherry pick" its approach.

35 This example is analogous to NGC's experience with the Kapuni North pipeline which was stranded before the Inquiry study period. NGC's revenues have been assessed in relation the ODV valuation. The Inquiry period covers the deoptimisation of this pipeline in 2003 resulting in the scenario represented in Table H. The Commission's excess returns calculation includes stranding changes as income. This is represents an internally inconsistent model. In NGC's view the deoptimisation should be excluded from the excess returns calculation.

36 The consequence of this inconsistency is that asset owners are incentivised to either leave assets stranded or set prices on a DRC basis to cover stranding costs ex post.

3. COMPETITION ANALYSIS

3.1 Recent changes in gas markets and gas pipeline services

- 37 The gas industry has undergone significant change in the last 3-5 years, compared to a long period of relative stability through the 1980's and 1990's.
- 38 NGC disagrees with the narrow view the Commission takes to the gas market. NGC believes that there is significantly more inter-fuel competition and, as a consequence, constraint on gas transport prices than the Commission has been prepared to recognise. The following section outlines how the gas market has changed between three distinct periods in recent times, namely:
- 38.1 Maui supply up to 2001;
 - 38.2 Maui uncertainty from 2001 and 2004; and
 - 38.3 Post-Maui evolution from 2004.

3.2 The (Maui) period prior to 2001

- 39 The industry structure prior to 2001 was largely determined by the Maui contractual terms. The Maui field and associated contracts resulted in abundant supply of Maui gas at relatively low prices, with free delivery of Maui gas to anywhere on the Maui line. Kapuni gas formed the key alternative supply while other fields made minor contributions to the supply position.
- 40 The industry was characterised by:
- 40.1 The domination of demand by very large industrial and petrochemical customers (eg: Methanex);
 - 40.2 Two main gas aggregators (NGC and Contact);
 - 40.3 The growth of commercial and residential connections and gas volumes;
 - 40.4 Long term contracts reflecting the relative flexibility and low prices arising from Maui;
 - 40.5 Wholesale commodity gas prices in the range of [] per GJ;
 - 40.6 The availability of low cost flexibility (ie swing) in gas supply;
 - 40.7 Low exploration activity;

40.8 Development of gas fired generation to soak up Maui gas.

3.3 2001 to 2004: a period of significant uncertainty

41 Since 2001, the gas industry has changed significantly, affected by perceptions of gas supply security, ownership changes, price increases, electricity market upheaval, and potential delays in the marketing of Pohokura Gas. Each of these matters are discussed in more detail below.

Security of Gas Supply

42 The key event affecting the security of gas supply was the initiation of a redetermination of the reserves in the Maui field on 3 December 2001. The redetermination process was characterised by a number of disputes between the key parties, which resulted in the process becoming protracted, thereby increasing uncertainty as to the outcome. The result of the redetermination process was announced on 6 February 2003 and effectively brought forward the end of the Maui contract by 2-3 years. The result was challenged by one of the parties and a settlement of all the issues was only reached in May 2004.

43 At the same time, there was much speculation about delays in bringing the Pohokura field into production, and ongoing uncertainty about Kupe, both from a reserves and cost perspective. These conditions were exacerbated by the lack of significant exploration activity in the region. The prolonged negotiation of the Maui settlement and regulatory issues over the joint marketing of the Pohokura field put significant stress on supply perceptions.

Pohokura Gas

44 There were significant threats to bringing the Pohokura field on-stream both from a technical and regulatory perspective. In particular, the joint venture partners required Commerce Commission clearance to jointly market the gas, claiming this decision would influence their ability to develop the field and potentially delay its gas supply. Subsequently, the joint venture parties decided to separately market the gas, with the gas tenders recently being concluded. Most of the initial tranche of gas available has been committed to the generator/retailers.

Price Increases 2001 to 2004

45 With Maui volumes reducing, other fields beginning to have an impact on pricing, and perceived shortages putting pressure on customers, gas prices have risen significantly. Awareness grew of the need for security of supply and greater exploration activity. Deliver flexibility was reduced. The wholesale price rose to a typical range of [] per GJ in the period 2001 to 2004.

Ownership Changes

- 46 There have been ownership changes through all levels of the value chain which began to have an effect in the market during this period. Significant changes include the:
- 46.1 sale of the Fletcher Energy business to Shell;
 - 46.2 entrance of Preussag then OMV to the Maui and Pohokura joint ventures (including increased ownership of Pohokura by Todd);
 - 46.3 changes in Kupe field ownership relating to Genesis and Origin;
 - 46.4 entrance of Genesis to the gas wholesale and retail businesses; and
 - 46.5 sale of gas pipelines to Vector and Powerco.
- 47 The principal impact of the ownership changes was to increase the influence of Shell and Todd at the production level, and to increase the influence of the generator/retailers such as Genesis and Contact in downstream activities.

Electricity Market

- 48 Two dry winters in 2001 and 2003 put extra demand on thermal generation capacity and therefore gas supply. These forces led to increased use of large quantities of gas, but also put significant pressure on the market and around future electricity generation options. The generators have since secured a large percentage of new gas supply coming to market.

3.4 June 2004 forward

- 49 The conclusion of the Maui redetermination, separate marketing of Pohokura gas, and other significant agreements have resulted in much greater certainty of supply for at least for the next five years.
- 50 The producers have succeeded in securing contracts for all probable reserves through to at least 2011 (with the exception of the new Maui gas, which has not yet been brought to market). The new environment has resulted in the producers achieving a significant, step change in prices above recent, already higher, prices. Prices are significantly higher than have previously been experienced in the New Zealand market.
- 51 In 2004, the commodity price of wholesale price is now in a typical range of [] per GJ, which is double what it was in 2001. Delivery flexibility remains limited and users are concerned with long term security of supply. Although exploration activity has increased, many users are considering alternative fuels on the grounds of supply security as well as price. The value of short term flexible gas is now a significant factor in the supply

- arrangements including balancing of transmission systems. NGC's posted mismatch prices for gas imbalances on the transmission system will be \$8.00 per GJ for October 2004 and NGC believes this price may well increase once the newly agreed balancing arrangements for the NGC and Maui pipelines are in place.
- 52 Forecast security of supply to 2011 has largely been addressed, dependent on future generation demands, and only with the demise of a large percentage of Methanex production.
- 53 Genesis has joined NGC, Contact, Nova Gas and Multigas in the wholesale gas market. Genesis and Contact have between them acquired a significant portion of future gas entitlements.
- 54 Transmission volumes are unlikely to grow due to continuing perceptions of supply shortages. NGC forecasts low or no growth, with increasing pressure to switch larger volume customers from standard to special (lower price) contracts.
- 55 Distribution volumes are expected to be flat if marketing initiatives are successful.
- 56 Prices for delivered gas, especially at the extremities of the transmission system, are reaching a point where customers are seriously considering alternative fuel options such as coal, diesel, biomass and geothermal. NGC expects to see a significant rise in incidence of fuel switching. Examples of switching are being seen where suitable alternatives are readily available. NGC also expects higher gas prices to have a significant impact on future investment decisions, thus affecting growth prospects in the gas market.
- 57 Competition for processing of gas in Taranaki has increased significantly at processing plants owned by NGC, Swift and Todd. This is expected to increase as new fields come on stream, and should see the expansion of some facilities.
- 58 New contracts to end users are likely to reflect more risk transfers from upstream parties, and as a result to require more arduous nomination processes for end users. These add to the overall cost and uncertainties faced by end users.
- 59 Contact and Genesis have announced an investigation into the feasibility of importing LNG to New Zealand. Importing LNG would largely destroy the exploration industry in New Zealand. It would also potentially lead to another step increase in the price of gas, with resultant fuel switching and volume declines. It could also strand (or significantly impair the value of)

significant parts of the gas transmission system (both the Maui and NGC lines).

3.5 Competitive constraints on gas pipeline providers

- 60 The Commission misunderstands the nature of gas markets and gas pipeline services. In particular, the Commission is wrong to characterise gas as a commodity. Gas is a marginal fuel, and NGC faces significant demand and supply-side volatility. NGC must keep investing in this environment, contrary to the Commission's view, to meet changing demand.
- 61 The marketing of gas as alternative fuel at the domestic and small industrial level is generally done by the appliance retailers, builders, developers and specifiers. NGC's experience is that domestic and small industrial customers do not consider gas as an alternative unless they are presented with it as a viable option.
- 62 It must be remembered that, unlike electricity, gas is always a discretionary fuel. Schools are a good example. Most schools use a mix of coal, diesel or electricity for heating. Many will not consider gas unless it is presented to them as a viable alternative. Gas connections are growing (2700 new domestic and 190 new non-domestic connections for NGC in the year to 30 June 2003), however the volumes transported are relatively flat.
- 63 The Commission's framework does not properly capture the competitive constraints faced by NGC. In particular, the Commission's approach to market definition and interfuel competition underestimates the competitive constraints existing in the market.
- Switching**
- 64 There seems little dispute that demand for gas pipeline services is derivative from the demand for gas.
- 65 Gas competes with electricity for heating, water heating, air conditioning and cooking in domestic and industrial sectors such as hospitals and schools. New applications such as heat pumps, which have a three to one efficiency advantage over direct heating are competing directly with gas in the domestic and small commercial market sector (such as hotels, motels and office buildings). In summary, gas customers always have other options – gas is not an essential source of energy.
- 66 In addition to electricity, the other most significant switching threats comes from coal, biomass and geothermal, particularly where such alternatives are readily available. These threats are therefore particularly significant in the wood processing industry, and for applications that require heat for drying or steam raising, such as the dairy industry. For instance, the

forestry and dairy industries contribute around [] of transmission revenues respectively.

67 The increases in the wholesale price of gas referred to creates a significant incentive for industrials to switch to lower cost coal. Most large industrials' gas contracts are due to expire before 2006. For many industrials, the one off switching cost will be easily recovered when the price differential between gas and coal is taken into account. Further, many of the large industrials currently using gas are accustomed to the use of a coal as an energy source. This is particularly the case in the meat and dairy industries where coal has long been used to fire boilers. Those who do have gas plants are now incentivised to consider replacing it as long term gas contracts end. In addition, large industrials which have more than one plant in close proximity are able to consider combining resources to run their own energy plants.

68 Biomass such as wood waste is another form of fuel which is a current and growing competitor to gas. There are many examples of plants moving from gas to wood waste where the industrial has ready access to it. Using wood waste as a fuel has significant advantages for some industrials in the forestry industry. It is renewable. Further, it poses less of a risk to the environment when burnt than if it is left to rot. Such is the interest in wood waste that Carter Holt Harvey has recently set up a separate company to market it as a fuel.

Examples of lost load due to switching or relocation

69 [

]

70 [

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71 [

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72 [

]

73 A good example of load lost due to relocation is Gisborne. The Gisborne pipeline was built on the basis of four big loads – the local hospital, the Watties factory, Gisborne Refrigerating and Advanced Meats. In recent years the load on this pipeline has dropped below half of what it was built for due to the relocation of the Heinz/Wattie factory to Hastings and the other two industries closing.

74 As further significant evidence of this competitive pressure, there is increasing demand from large industrial customers to enter into special transmission agreements with NGC. NGC expects this to continue as gas prices rise, as discussed above, and more customers come off long term gas contracts.

75 The Commission acknowledged at paragraph 3.89 of the Draft Report that, for as long as there continues to be a reasonable proportion of energy users in a position to switch at any time, and it is not possible for a gas supplier to distinguish between them and other users, competitive benefits will flow to all users. The Commission accepted that there was a real competitive constraint imposed on pipeline owners from the threat of switching.

76 However, the Commission went on to state that this constraint falls short of that found in a market which has workable or effective competition. The Commission provided no analysis to support this conclusion.

3.6 Relevant markets

Consumer gas metering

77 In its Draft Report, the Commission states that in light of the terms of reference, the Inquiry's purpose and generally regional nature of the relevant markets, where gas metering on a distribution or transmission system is:

- 77.1 owned by the same person who owns the relevant gas distribution or transmission system, those meters are included within the scope of the Inquiry;
 - 77.2 not owned by the same person who owns the relevant gas distribution or transmission system, those meters are outside the scope of the Inquiry (refer para 2.16).
- 78 NGC disagrees with the Commission, both on:
- 78.1 its interpretation of the terms of reference as requiring the inclusion of meters in these circumstances; and
 - 78.2 its view that consumer gas metering is not contestable.
- 79 NGC's submissions on the terms of reference are set out in detail in section 13 of this submission.
- 80 NGC addresses here the competitive nature of the metering market and the distortions the Commission's approach risks creating. NGC notes that:
- 80.1 Contact owns 51% of consumer meters, but does not own or operate a distribution network.
 - 80.2 NGC owns meters which are installed on a third party's distribution network.
 - 80.3 If meters are only considered by the Commission when they are owned or operated by the owner of the network on which they are installed (which is NGC's understanding of the Commission's proposal) then if such a gas distributor was to be subject to control the Commission would have to choose between two perverse outcomes:
 - (a) subject one participant in the metering market to price control, without having even considered the largest competitor (Contact); or
 - (b) impose control on that distributor only in respect of pipeline services, having scrutinised its performance on the basis of information that included metering.
 - 80.4 In response to a control recommendation which covered meters, an economically rational gas distributor would simply choose between two actions:

- (c) sell the meters to another participant who is not a distributor;
or
- (d) swap meters with another distributor so that both parties owned off-network meters that were not subject to price control.

Competition in metering markets

- 81 There is no need for a distributor to own consumer meters attached to its network. Approximately 51% of meters are owned by Contact Energy Ltd. Those meters are primarily installed on Vector's and Powerco's networks. Contact is a gas wholesaler and retailer which does not own any gas distribution assets.
- 82 The key to understanding the competitive constraints in the gas metering market is the role of the retailer. The metering provider contracts with the retailer, not the consumer. The retailer imposes significant competitive constraint, through their countervailing power as purchaser of gas metering services.
- 83 NGC owns approximately 23% of the meters in use for small commercial and domestic consumers, most of which are installed on its own networks. However, NGC also installs and owns new meters on other network companies' distribution networks. For example, it has installed [] meters on Vector's networks and [] on Powerco's.
- 84 In the case of small commercial and domestic consumers, NGC leases the meters to the retailer. The retailer reads the meters, but NGC retains ownership of them (for which it also has responsibility for maintenance). Where NGC owns the meter of, and supplies gas to a large industrial consumer, NGC will read the meter.
- 85 As noted, Contact owns 51% of gas meters which it acquired when it bought Enerco's gas retailing business.
- 86 The other 24% (approximately) of meters are owned by Powerco and Wanganui Gas. NGC understands that Wanganui Gas is also a signatory to the Gas Access Code and, as a result, provides open access to its consumer gas meters.
- 87 The Commission has concluded that, because Contact is not a gas distributor, its consumer meters are not captured by the terms of reference. This then creates the perverse result that the major competitor in the consumer gas metering market is not subject to control simply because it is not a pipeline owner.

3.7 Limited Competition

- 88 The Commission states that the “limited competition” test requires more than a nominal impairment to competition. Apart from making this de minimus point, the Commission does not interpret this key statutory test. The Commission is in error in doing so. The Commission has an obligation to articulate the threshold it is applying in a meaningful way, to enable parties to present relevant information and argument.
- 89 The limited competition threshold must be read consistently with its purpose as a filter for the most intrusive of regulation, and denotes a situation where a market participant has a significant degree of market power, or price setting is otherwise subject to only limited competitive constraint.
- 90 NGC discusses the limited competition test in more detail in section 13 of this submission.

4. THE LIKELY "COUNTERFACTUAL"

The Commission's approach to estimating the counterfactual

- 91 The Commission's "building blocks" approach involves comparing estimates of future revenues and profits under light-handed regulation with those produced in accordance with the Commission's modelling. If they are higher, a cost benefit analysis is carried out to determine whether price control should be imposed. Crucially, and logically, when considering the costs and benefits of control only the future is relevant.
- 92 The Commission's period of analysis for NGC is 1997-2008. There is some ambiguity as to the Commission's objective in using a period that covers both past and expected future performance. At paragraph 5.124 the Commission states:
- The period of analysis typically ranged from 1997 – 2008, with the exception being for Vector whose analysis covered the period 2000 – 2008. In all cases the analysis period includes both actual and forecast outcomes. The Commission considers that equal weighting should be given to the past and forecast information. While as a general proposition it may be true that past information is not a good guide to the future, it is also true that forecast information by its very nature is uncertain. For example, it is difficult to know how expenses or prices may change in the future despite the businesses providing their best estimates at this time. Accordingly, treating both past and forecast outcomes equally is considered to be a reasonable approach to take. Including both past and forecast outcomes in the assessment also has the benefit of extending the period of analysis, so that short-term events do not have undue influence on the overall results.*
- 93 In its model, the Commission produces an "average" year by compounding up revenues and costs from 1997 to 2003 and discounting revenues and costs from 2005 to 2008.
- 94 Some of the Commission's statements in paragraph 5.124 suggest the Commission's objective is to calculate the cost benefit analysis for the period 1997 to 2008. This would obviously be incorrect – any cost benefit study must be forward looking only.
- 95 NGC takes the Commission to be "factoring in" past information when estimating the future counterfactual (essentially re-estimating, based on past data, an average year for the 2005 to 2008 period). There are a number of difficulties with what the Commission has done.

NGC forecasts

- 96 The forecasts supplied by NGC to the Commission were developed for the NGC Board for commercial purposes. The forecasts were developed by the NGC management team using the best information available to NGC, including past performance, future expectations, and specialist expertise.
- 97 The Commission has not provided a good reason for not using the commercial forecasts supplied by NGC. The Commission does state (in paragraph 5.124, quoted above) that all forecasts are inherently uncertain, and it is obviously difficult to disagree with that statement. However, it does not follow that “averaging in” past information improves the quality of the forecast. NGC submits the Commission must be satisfied that any forecast used in substitution for the commercial forecasts supplied by NGC is more accurate.
- 98 In fact, there are good reasons to believe the Commission’s inclusion of past information will distort the accuracy of the forecasts used for the cost benefit analysis. As discussed above in section 3, the gas markets have gone through some fundamental changes during the period covered by the Commission’s study. The application for redetermination of the Maui field in 2001 heralded in a significant period of uncertainty. The recent round of agreements has brought greater security and clarity to gas arrangements. Both were associated with a step-change in gas prices, such that the gas price is now double what it was when the application for Maui redetermination was made.
- 99 This sharp increase in the price of delivered gas has very significant consequences for gas pipeline businesses going forward. Demand-side pressure and volatility will increase, as will the risk of stranding.
- 100 In this context, for the Commission to say that “equal weighting should be given to the past and forecast information” (paragraph 5.124) is simply a mistake. Even the relatively recent past is strikingly different from the environment gas pipeline businesses will face in the 2005-2008 period. It is this commercial reality that underpins the commercial forecasts supplied to the Commission.
- 101 NGC submits the Commission should use the forecasts supplied by NGC. These forecasts were prepared for commercial purposes, and reflect the very different market environment associated with high gas prices expected in the 2005-2008 period. This context is described in board papers also supplied to the Commission. The Commission has not given any reason for not using NGC’s forecasts, and is mistaken in giving past information “equal weighting”. The result is an inferior forecast.

102 The Commission’s approach in its draft report disadvantages NGC, essentially by not forecasting a realistic performance by NGC in changed market circumstances.

103 This would be consistent with the Commission’s approach in the Airport’s inquiry, where the Commission reviewed past performance but conducted its cost benefit analysis on forward looking information only.

The Commission’s calculation

104 If the Commission continues to refer to past information in its cost benefit analysis, despite the points made above about past information having little to offer on NGC’s expected performance in changed market circumstances, then CRA has recommended changes to the Commission’s calculation to partially deal with the distortion caused by the Commission’s approach to compounding (although CRA notes there is really no adequate method of correcting the compounding distortion, within the Commission’s model framework).

105 By compounding up revenue and profit information from the years 1997-2003, the Commission magnifies the weight given to these years. As pointed out by CRA (section 5.2), \$1 of excess profits in 1997 is compounded up to \$1.70 in 2004. The Commission’s model then treats the elimination of \$1.70 as a future benefit of control, which exaggerates the benefit of control and gives greater weight to past information. Because the Commission compounds these values at the WACC calculated for NGC, this does more than adjust for inflation and, in effect, imposes an interest charge.

106 As explained in the CRA report, if the Commission wishes to include 1997-2003 information in the cost benefit analysis then an adjustment that would partially remove the compounding distortion would be to treat 1997 as the start date of the analysis, and discount all “future” periods back to 1997.

107 Assuming a start date of 1997, and discounting all “future” periods back to 1997, results in the following changes:

NGC DISTRIBUTION

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1,077		-780		435
Forward looking Characterisation	--468		339		--189	

NGC TRANSMISSION

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
Forward looking Characterisation	-1,444		149		-920	

108 Finally, NGC notes the Commission’s statement at paragraph 5.125 that its model “cannot test outlying scenarios, for example, the effect of a doubling or halving of current prices”. As discussed above in section 3, this is exactly the experience in the current gas market, where wholesale prices are transitioning to a level that is at least double the Maui prices, which underpinned most of the period studied by the Commission.

109 For these reasons it is important that any model directly address growth assumptions for the market and likely level of future volatility in throughput and potential for asset stranding. The model suggested in section 7 of the CRA report takes a forward looking approach, that takes account of past behaviour but incorporates the substantial uncertainty moving forwards.

5. ASSESSMENT PRINCIPLES

110 In this section NGC addresses the "Assessment Principles" section of the Draft Report.

5.1 Common costs

111 The Commission is concerned that in allocating common costs between gas and other activities, gas businesses have loaded a disproportionate share to their gas activities (paragraph 4.20). The Commission does note that gas businesses are unlikely to have incentives to cross-subsidise customers within the distribution or transmission business. Gas businesses are unlikely to set prices below incremental costs for some customers, and recover these costs by over-charging other customers (paragraph 4.18). The Commission's preliminary view is that adjustments will be made to allocation of common costs. (paragraph 4.21). This includes a proposed decrease in the operating expenses of NGCT (paragraph 9.44) and NGCD (paragraph 10.40).

112 NGC has taken a consciously reasonable view to the allocation of common costs in the information supplied by NGC to the Commission. NGC refers to the report on the ACAM approach prepared by CRA which was previously supplied to the Commission.

113 This can be illustrated by reference to alternative approaches. At one extreme, a strict top down approach would only exclude wholesale gas, LPG and metering activities, and allocate 100% of the common costs. In this case all economies of scope would go to investors.

114 A more defensible approach could be to allocate common costs in proportion to non-current assets or net funds employed. This would result in approximately 62% of actual common costs being allocated to the pipeline businesses.

115 NGC, however, modelled common costs by asking what would be reasonably required for separate transmission and distribution businesses. The result was equivalent to 54% of actual common costs.

116 This is a reasonable approach. The Commission has not given any reason specific to NGC's calculation as to why NGC's estimates are unacceptable. The Commission has only pointed to theoretical and general concerns that may apply to the information provided by parties, and even then only to the allocation of common costs between gas and other activities.

117 NGC submits the Commission cannot simply replace NGC's estimate with its own, or chisel away at NGC's estimate, without identifying specific aspects of NGC's estimate that need correcting or specific concerns with the way in

which NGC arrived at its estimate. Further, the Commission should only rely on a different estimate if it is a better estimate.

- 118 NGC's estimate is reasonable and robust. NGC would be happy to demonstrate to the Commission how it arrived at its estimates. The Commission has not identified any errors in NGC's estimate. In these circumstances, any deduction by the Commission will be arbitrary. NGC submits none should be made.

5.2 Normal returns

- 119 The Commission assumes that on average (over time) only normal returns will be earned by businesses that operate efficiently. The Commission expressly does not consider whether any above normal returns are a result of superior performance, or any other factor. The Commission considers this to be a "reasonable compromise", on the basis of:

119.1 the potential for unders and overs, and

119.2 the results of the comparative benchmarking (paragraph 4.28)

- 120 The justifications given for the "reasonable compromise" are weak. There is no reason to believe that above or below normal returns due to non-performance related factors will even out over any particular period selected by the Commission. And the Commission's benchmarking contains so many assumptions and flaws that it does not give any information on productivity (discussed below in section 9).

- 121 Returns may exceed costs for a number of reasons. These include:

121.1 efficiency gains;

121.2 demand being different to that expected;

121.3 monopoly pricing;

121.4 compensation for risks taken that are not necessarily taken account of in beta estimates;

121.5 the pattern of revenue recovery and the depreciation approach taken by the firm.

- 122 Importantly, the Commission should check whether observed returns are consistent with a firm aiming to achieve a normal return. This is particularly important in the present inquiry, as gas pipeline service providers face significant demand volatility.

123 The implications for the Commission's modelling are identified in CRA's report. The Commission must address the difficulty of interpreting above cost returns. This should be done by determining a confidence interval around ex ante target rates of return, based on statistical analysis of the impact of volatility in demand and costs on revenues and consequently economic income, to determine whether observed returns are statistically consistent with NGC targeting a reasonable rate of return ex ante. For the avoidance of doubt, estimating a WACC range does not address these issues.

5.3 Assessing returns over time: The NPV = 0 test

124 Assessing returns over time can be a difficult issue. The Commission acknowledges returns do need to be assessed over a period of time, so that singular events do not bias results and unduly influence the Commission's recommendation (paragraph 4.29).

125 The Commission has adopted the NPV = 0 principle, which it considers holds over the total life of an asset.

126 The Commission identifies a number of potential difficulties with applying a NPV = 0 test over only a part of an assets life. These are:

126.1 the treatment of revaluation gains and losses (paragraph 4.30);

126.2 business may adopt a variety of different time profiles for the recovery of capital costs. These will give different results if only part of an asset's life is considered, even if the depreciation method is aimed at NPV = 0 over the life of the asset (paragraph 4.31).

Revaluation gains

127 The Commission treats revaluation gains as income, and spreads any recorded revaluation gains over the years preceding the revaluation (paragraph 4.33). In NGC's case this results in any revaluation being spread over 3 years. The Commission also forecasts revaluations when forecasting future performance (paragraph 4.34).

Treatment of Kapuni North line de-optimisation

128 It is not appropriate to treat de-optimisation and unstranding the same way as revaluation (this is discussed in the CRA report, section 3).

129 The key issue in this context is the Commission's treatment of the de-optimisation of the Kapuni North line. The Kapuni North line was optimised out of NGC's asset base prior to the period studied by the Commission. The stranding cost was \$50m. It is not NGC's pricing approach to recover stranding costs ex post, and this \$50m stranding cost was not recovered from consumers via a price increase in subsequent years.

- 130 As a consequence, the Commission's treatment of the de-optimisation of the Kapuni North line in 2003 as \$50m of economic income is inappropriate. NGC has not earned any income on this asset over the last 12 years. It has been returned to the asset base as a result of changed market circumstances and NGC developing a new use for the pipeline. It is unworkable, and creates perverse incentives, to treat the de-optimisation as economic income.
- 131 CRA reports that, as the Commission has observed, if the ODV process is to have any effect in incentivising efficient capital investment decisions, optimisation is a risk that should be borne by shareholders. It is inconsistent and unwarranted to treat the unstranding of an asset brought back into service by new demand as economic income.
- 132 NGC also notes that the Commission spreads the de-optimisation gain in 2003 over the three years between 2001 and 2003, and then compounds up the resulting "excess profits" to 2004. This artificially magnifies the importance of the revaluation gain and biases the Commission's calculation.
- 133 More generally, this is an aspect of the mistake the Commission has made with its approach to stranding risk. As discussed in section 6.3 below, gas pipeline businesses price an ex ante risk premium to allow for the risks of stranding and unexpected costs – NGC does not recover these costs ex-post.
- 134 The Commission's Draft Report treats optimisation and de-optimisation differently from the Commission's previous position on these issues in the electricity lines thresholds process. This change in position seems to be on the strength of the Commission's assumption that firms can recover these costs ex post (as noted above, this is incorrect), and an assumption the practical significance of these issues is slight. This may be so in an electricity line context, but in gas transmission NGC's ODRC/DRC ratio is 80%. The Kapuni North line de-optimisation is valued at \$50m, and the expected [] pipeline optimisation is valued at []. This is a very significant issue for the Commission's analysis and NGC – correcting for this treatment of the Kapuni North line removes any benefits from control (acquirers or net public benefits) of NGC Transmission at any reasonable level of WACC.

Treatment of gains or losses on asset sales

- 135 A related issue is the Commission's treatment of the gain made by NGC on the disposal of pipeline assets sold in 1999 as income that should be passed through to consumers.
- 136 CRA (section 3) submits this treatment is inappropriate, as shareholders have taken the risk of carrying the asset, and the Commission's approach

would prevent such sales from occurring. Such one-off asset sales would not affect pricing in a competitive market. CRA recommends the gain on sale of assets be removed from the benefits of price control.

Effect of depreciation profiles

- 137 The second difficulty the Commission identifies with applying the NPV = 0 test over a segment of an asset's life is that results will vary depending on the cost recovery approach used by the firm and the Commission. The Commission proposes, in response to this difficulty, to examine as long a period as possible, but even the period 1997 to 2008 is a fraction of asset lifetimes of 60+ years.
- 138 CRA reports that when an NPV evaluation is performed over a portion of an assets life NPV will only equal zero where a very specific pricing policy has been employed by the firm, such that revenue is exactly equal to operating expenses plus depreciation plus a capital charge on the book value of assets at the start of the year. No real world business can achieve such an outcome. If businesses are exposed to volatility, uncertainty and bear stranding risks, the NPV methodology will not tell us anything useful about excess profits (CRA report, section 3).
- 139 This is obviously a significant flaw in the Commission's approach. The CRA report discusses how real world volatility, significant in gas markets, can be incorporated in a model.

Critique of the NPV = 0 approach

- 140 The Commission makes three key assumptions when applying the NPV = 0 test (and interpreting any positive result as excess returns) (CRA report, section 3):
- 140.1 pipeline businesses are assumed to have adopted an ex post approach to recovering stranding or unexpected costs;
- 140.2 the Commission has selected a sufficiently representative period of the pipeline's economic performance;
- 140.3 NZ pipeline businesses are not operating at superior levels of efficiency.
- 141 All three of these assumptions are invalid.
- 142 As discussed in section 6.3 below, NGC does not and cannot recover stranding and economic risks ex post. An ex ante premium is charged for bearing these risks. Even putting aside other concerns with the Commission's test, where firms use an ex ante rather than ex post approach, the NPV = 0 test is only valid where, by chance, the ex ante

premium charged for bearing these risks is equal to the actual experience of unexpected costs and stranding during the period in question.

- 143 It is not obvious that the Commission has chosen a representative period. The first part of the 1997 to 2008 period was characterised by low gas prices, driven by the Maui gas contracts. As a result demand for gas was strong. The industry is now transitioning to a significantly higher level of gas prices, as more costly sources of supply are brought to market and supply and Kyoto uncertainty is priced in. As a result future demand is highly uncertain, and there is an increased risk of future asset stranding and reduced demand.
- 144 The third key assumption underpinning the Commission's application of the NPV = 0 test is the assumption that "on average" pipeline business in New Zealand are not as productive as the average Australian pipeline business. Accordingly, no superior returns are expected.
- 145 The difficulties with the Commission's benchmarking are discussed in section 8, below. NGC notes the Meyrick distribution productivity study does, however, show that NGCD has been improving productivity at 2.5% per annum. In these circumstances the Commission does not have any basis for interpreting all returns above WACC as excess returns.
- 146 This is one aspect of a key difficulty with the Commission's application of the NPV = 0 test. The Commission does not recognise the demand and cost volatility faced by gas pipeline businesses makes it difficult to target NPV = 0, even over a significant period of time. CRA notes Transpower has not achieved (by a significant margin) NPV = 0 even though it has been required to use this as its pricing method since 1998 (essentially the period studied by the Commission).
- 147 The implications for the Commission's modelling are identified in the CRA report. For the reasons given below, the Commission must assess a reasonable premium on WACC to compensate NGC's shareholders for bearing the risks of asset stranding, optimisation and other unexpected costs. It will then be possible to determine the ex ante expected return on investment.
- 148 The Commission must then address the difficulty of interpreting above cost returns. This should be done by determining a confidence interval around ex ante target rates of return, based on statistical analysis of the impact of volatility in demand and costs on revenues and consequently economic income, to determine whether observed returns are statistically consistent with NGC targeting a reasonable rate of return ex ante. For the avoidance of doubt, estimating a WACC range does not address these issues.

5.4 Dynamic efficiency

- 149 The Commission's preliminary view is that innovations are unlikely to be a significant issue for gas conveyance activities, although incremental improvements, such as new product offerings, may be made over time (paragraph 4.50).
- 150 The key dynamic efficiency issue the Commission identifies in the gas pipeline markets is investment planning, including investment choices and the timing of new investment (paragraphs 4.49 and 4.50). The Commission identifies investment behaviour as critical to the industry (paragraph 4.50).
- 151 The Commission, however, is of the view that given rising gas prices and the potential for supply and demand of gas to decline, there is "significant uncertainty over the general level of future investment needs" (paragraph 4.51).
- 152 This does not capture the likely future activity in the market. As described in the CRA report, demand for gas is volatile, and the volatility is expected to increase. Pipeline service providers such as NGC anticipate making significant new investment to meet new demand, even if in aggregate this is netted off by other demand dropping off. Investment decision making in this environment is difficult and essential. As discussed below in section 6.7, price control in this environment creates significant dynamic efficiency risks.
- 153 Constraints on a pipeline business' ability to price flexibility is likely to significantly affect dynamic outcomes. Gas use for most customers is discretionary. Pipeline businesses incur large up-front costs in connecting residential and small business customers to the mains. For the customer there are also higher up-front appliance costs compared to electricity compliances.
- 154 This means network investment, marketing and customer education campaigns are required to convince customers of the benefits of gas over electricity. This is investment the company is under no obligation to make.
- 155 For example, increasing penetration requires a concerted marketing effort. If pipeline businesses are to undertake risky marketing activities to increase the connected customer base, then there must be the possibility of upside returns to compensate for undertaking the marketing risk. Such returns would likely be truncated under a price cap based on a simple cost of capital methodology, that does not recognise asymmetric risk bearing, and would therefore have significant potential to deter investment.

- 156 Further, NGC offers residential customers a free connection and incur significant up-front costs. Investment decisions are based on a payback period that materially exceeds the five year period of the typical regulatory price path. If the reset of a price path re-establishes prices at a level designed to equate returns to a simple cost of capital estimate, then there is effectively no benefit to the distributor from increasing the penetration rate through marketing activities, since upside returns from risky marketing will be truncated, but the pipeline owner bears all the risks of marketing and customer education campaigns.
- 157 Network growth strategies to larger customers involve significant risks due to uncertain long-term demands from such customers. For example, sales to firms in the forestry, horticultural, and dairy industries, etc, depend critically on competitive conditions, relative opportunities for each sector and interfuel substitution possibilities. A price path that truncates the level of returns available from such investments will almost certainly likely lead to under-investment in entrepreneurial expansions to such customers.

6. ASSESSMENT APPROACH

Overview

158 In this section NGC addresses the "Assessment Approach" section of the Draft Report.

6.1 Gas pipeline services

159 The Commission estimates a low elasticity of -0.3 for gas distribution services and -0.1 for transmission. The Commission reasons that elasticity is expected to be small due to pipelines services (or gas) being an essential service, and because pipeline services are an immediate input and comprise only a fraction of the delivered price of gas (paragraphs 5.22 and 5.23).

160 Gas is not an essential service. This is a fundamental misconception by the Commission. As discussed in section 3 above, gas is a discretionary marginal fuel.

161 The Commission is also wrong to focus on the proportion that transmission and distribution forms of the total delivered cost of gas. The fact is that in the current environment where purchasers of gas are responding to a step-change in the price of gas, significant pressure comes on transmission and distribution pricing, and incremental charges in the delivered cost of gas are significant in purchasing decisions.

6.2 Estimating quantity effects

162 The Commission's modelling assumes that the supply of gas pipeline services, and therefore gas, will increase if regulation lowers price.

163 In current circumstances this assumption does not hold. Supply of gas is currently fully allocated (including the first five years of production from the Pohukura field), and production is now set up to result in an inflexible supply of gas. The flexibility that existed in the system when it was nominated by Maui has gone. There is now very little chance of quantity increasing if price control is imposed.

164 The implication for the Commission's model is that it must change its allocative efficiency calculations to allow for only very limited increases in quantity.

6.3 Commission's approach to stranded assets

165 The Commission assumes that pipeline providers recover retrospectively any unexpected costs such as stranding (paragraph 5.33). The Commission includes changes in optimisation and economic value as income, which means consumers are assumed to bear all risks of stranding or unexpected costs.

166 The Commission states this position clearly at paragraph 7.83:

"Thus, if businesses raised prices ex post when assets were stranded, optimised or an adverse event occurred, the increased revenues would offset the increased costs and there would be no net effect on profits. Thus, the Commission would not be required to make any adjustments to its assessments. The Commission's view is that assuming businesses act in this way provides the most straightforward way of handling the risks of asset stranding and optimisation in the assessment of excess profits. In relation to stranded assets, this approach assumes that the businesses are able to increase their prices to remaining customers, if a stranding occurs."

167 The Commission adopts this position for simplicity.

168 However, NGC does not adopt this approach in practice. It is inconceivable that a gas pipeline business could adopt a pricing methodology that resulted in charges to end users fluctuating annually depending on the level of revaluations, stranding or de-optimisation experienced in the previous year. The expected future market environment, with higher possibilities of stranding, will make it even less likely this approach to pricing could be maintained.

169 Instead, NGC prices in these risks ex ante.

170 The distinction is important. As Dr Lally has advised the Commission, if NGC does in fact take an ex ante approach to these risks then the use of an ex post approach by the Commission will bias the outcome of the inquiry in favour of finding excess profits. The only time, according to Dr Lally, that the Commission's approach would be acceptable would be if the stranding risk, and so biases in the methodology, is "slight". This is manifestly not the case, considering both the stranding of NGC's Kapuni North line (on which it earned no income) and the future risks of stranding (for example, the Taupo pipeline which is referred to above).

171 The treatment of the Kapuni North line illustrates these points. When the Kapuni North line assets were stranded in 1991, NGC did not increase its prices and revenues post-1991 to cover the stranding costs of \$50 million. Manifestly, the stranding risks faced by NGC are not "slight". If the Commission were to use an ex post assumption then, as advised by Dr Lally, the Commission's findings would be biased toward finding excess returns.

172 The implications for the Commission's modelling are identified in the CRA report. The Commission must assess a reasonable premium on WACC to

compensate NGC's shareholders for bearing the risks of asset stranding, optimisation and other unexpected costs. It will then be possible to determine the ex ante expected return on investment.

- 173 The Commission must then address the difficulty of interpreting above cost returns. This should be done by determining a confidence interval around ex ante target rates of return, based on statistical analysis of the impact of volatility in demand and costs on revenues and consequently economic income, to determine whether observed returns are statistically consistent with NGC targeting a reasonable rate of return ex ante. For the avoidance of doubt, estimating a WACC range does not address these issues.

6.4 Productive efficiency

- 174 The Commission acknowledges the comparative benchmarking study undertaken by Meyrick and Associates is of limited value, but nevertheless goes on to conclude it is "indicative of the potential for productivity improvements" (paragraph 5.38) and "there could be scope for greater improvements in productivity" (paragraph 5.39).
- 175 NGC submits the Commission should not expect to identify productive inefficiency in gas pipeline services. The competitive constraints and pressures in gas markets are described in section 3 above, and Appendix A of the CRA report. Gas pipeline businesses are under significant pressure to constantly improve productivity. Further, NGC is a listed entity, and so is subject to the scrutiny of the capital markets, analysts, and its board and shareholders.

Benchmarking study

- 176 The Meyrick benchmarking reports are discussed in section 9 below. NGC commissioned PEG to do a peer review of the Meyrick reports, and to conduct a more comprehensive econometric study using the extensive PEG database of gas utilities. PEG reports that the information and methodological limitations of the Meyrick reports mean they cannot be relied upon, even to draw the "indications" the Commission is looking for. PEG reports instead that NGCD is more efficient than the average US gas utility, by some margin.

Productive efficiency of NGC

- 177 The productive efficiency achieved by NGC is highlighted by the Commission's comparison with the electricity thresholds regime.
- 178 The Commission suggests it is reasonable to assume that under price control regulation the pipeline business could achieve productive efficiency improvements in line with those set for the lower productivity group in the electricity lines thresholds regime (paragraph 5.41). That is, an additional 1% of total costs above the trend rate.

- 179 However, NGC estimates the productivity it has achieved (as recorded by the Commission) would place NGC on the margin between the “average” and “high” categories in the electricity lines thresholds regime. This is not surprising given the private sector profit maximising incentives on NGC.
- 180 Given the Commission’s assessment that price regulation would be aimed at moving low productivity firms to an average productivity level, NGC submits that, on the Commission’s own terms, the proposed regulation will not result in any productive efficiency increases in NGC
- 181 The Meyrick benchmarking study contains no reliable information, and the Commission has not identified any productive inefficiencies in gas pipeline businesses. The Commission has in fact identified NGCD as performing above the level at which the Commission was assuming price control would have any effect. In these circumstances, NGC submits the Commission should set the productive inefficiency in its model to zero.
- 182 CRA recommends the Commission assume no difference in productivity between the factual and counterfactual (section 5.3.3). However, CRA identifies the likelihood that under price control, management would “save up” productivity improvements in years 4 and 5 of a 5 year price path regime.

6.5 Direct costs of control

- 183 NGC notes the Commission has excluded from NGC’s operating expenses the costs actually incurred by NGC in participating in this inquiry (paragraph 4.45 and 10.39), but included a lesser figure when estimating the direct costs of control.
- 184 NGC submits the Commission is wrong to deduct the inquiry costs from NGC’s operating costs. These costs are causally related to being under a light-handed regulatory regime. These costs would not be incurred if price control were to be implemented, but may be incurred in future if there are future price control inquiries under continued light-handed regulation.
- 185 NGC also submits that inquiry costs are significantly less than costs that would be incurred under a price control regime. The building blocks process is manifestly more complex, with substantially greater information required. NGC’s major shareholder AGL spends approximately [] per price control determination, including expenditure on engineering reports to justify capital expenditure plans, additional economic and accounting resources to determine robust forecasts, additional legal representation etc. To suggest that NGC could procure all these additional resources for a mere \$400,000 is manifestly too conservative. NGC submits that a reasonable estimate of direct costs of control would be \$NZ1 million for each of NGC distribution and transmission.

6.6 The effectiveness of regulation

186 The Commission reduces the transfer benefits of control and allocative efficiency benefits by 20% and 36% respectively (the latter conditional on the first assumption). The 20% figure is used to account for the fact that control may not perfectly be able to move prices all the way to the efficient level. It is justified by reference to the 25% figure used in the Airports Inquiry, and, because more of the benefits and costs of control are calculated independently in the gas inquiry, this figure is reduced. This is despite the figure used in the Airports Inquiry itself being “ball park” in nature.

187 The Commission’s approach does not consider the conditions in which price control can be implemented satisfactorily. Price control, where prices are required to change by a certain CPI-X amount for five years, relies critically on the ability to forecast the future. In a period of rapid structural change, such as the New Zealand gas industry is currently going through, forecasting is extremely difficult and subject to significant error. There are any number of scenarios that have a realistic chance of occurring over the next five years all of which would have substantially different outcomes on NGC’s financial performance, but a price control regulatory must come up with a single view of what the future would look like and set prices according to that view.

188 NGC submits that the 20% figure adopted by the Commission is manifestly incapable of accounting for the potential for regulatory error in setting prices. The only way of examining the potential for error is to construct models, such as the CRA Monte Carlo analysis (section 7), that specifically address uncertainty and volatility. CRA’s analysis suggests that if past volatility in customer growth and demand variability are experienced in future then price cap regulation has the potential to create substantial deviations from the efficient level of prices. Under such circumstances NGC would require a substantial risk premium in the cost of capital in compensation for bearing risk of a fixed price path in the fact of substantial volatility and downside risk in the gas market.

189 NGC submits that the Commission dispense with the deterministic modelling approach adopted to date, and adopt the Monte Carlo simulation approach to examining the risks of price control. This would enable the Commission to dispense with the arbitrary assumption that 20% of the transfer benefits would not be realised, and allow for direct examination of the potential for regulatory error under price cap.

6.7 Dynamic inefficiency

190 The Commission acknowledges price control regulation may discourage future investment. Investment could be made by gas pipeline businesses

to increase capacity, extend the pipeline network, or to improve current services and develop new ones (paragraph 5.95).

- 191 The Commission considers under-investment might result in increased congestion on the existing network, or consumers not being served as pipeline businesses reduce investment in expansion of the network (paragraph 3.96).

Congestion effects

- 192 The Commission estimates the congestion effects of reduced investment by assuming that 5% of sales shift to an interruptible contract, and receive a 10% discount for accepting the interruption risk (the current discount set in the market for interruptible contracts). The discount is assumed to be equal to the value the customers lose from bearing the interruption risk.

- 193 The Commission suggests this may overstate the congestion effect because regulation can be structured to provide incentives not to reduce quality. However CRA notes (in section 5.3.4) this fails to recognise that:

193.1 Regulation of quality is highly imperfect. It inevitably focuses on averages (as does the Commission's regulation of SAIDI and SAIFI for electricity lines) and there are a myriad of quality aspects that cannot be readily measured;

193.2 Demand for quality may be increasing. It is extremely difficult for a regulator to forecast demand for 'quality of supply' and set appropriate prices;

193.3 The discount that customers receive from moving to an interruptible tariff is established in the context of a voluntary transaction. Interruptions imposed on gas customers are likely to impose significantly greater welfare losses. The Commission observes that "the costs of unplanned interruptions imposed on infra-marginal customers are likely to be higher, but are not considered."

- 194 Investment in quality is continuous. NGC is currently making the following investments for quality:

194.1 Increasing pipeline pressures in distribution networks to accommodate appliances such as instant/continuous hot-water heaters. The alternative is to issue a notice prohibiting installation of such appliances. The Household Energy End-use Project (HEEP) studies show that consumers with instant hot water heating use more hot water, and the higher cost of the instant heater compared with electricity or gas hot water heating systems indicates that consumers derive greater value from such appliances.

194.2 Network redundancy investments that improve security of supply to customers in the event of an outage.

- 195 If NGC were to scale back the level of investment in its networks such that customers were exposed to greater risks of involuntary outages, and restrictions on the appliances that could be installed, this would have considerably more severe effects than the welfare losses from 'voluntary' reductions in reliability accepted by customers who shift to interruptible contracts.
- 196 CRA notes that measuring quality effects is obviously an area where it is difficult to acquire data on consumer willingness to pay. The Commission observes that it has been unable to acquire information on value of lost load (VOLL) for gas. CRA suggests that VOLL for electricity may provide a reasonable benchmark for the potential loss of welfare during an outage. Scale factors to represent the potentially less time-critical use of gas can be used to test sensitivity of results to different reasonable estimates of VOLL.
- 197 Omission of a broader estimate of quality effects of control potentially biases the outcome of the inquiry. The Commission's model of welfare reductions from voluntary switching to interruptible tariffs provides a lower limit estimate of the potential impact of control on quality.

Extensions to the network

- 198 In relation to extensions of the network, the Commission suggests that any dynamic inefficiency effects are likely to be "modest" given the likely limited growth in demand (paragraph 5.108).
- 199 As discussed above in section 3 and 4, the Commission's view that little investment will occur in the counterfactual is wrong. The CRA report demonstrates the demand volatility faced by pipeline providers. Even where aggregate demand is expected to be constant, significant investment is needed to service new demand (and compensate for demand lost elsewhere). Given changing market conditions, it is more reasonable to assume that there will be greater pressure on NGC to market gas to potential new sources of demand to replace loads that drop off the network in response to rising gas prices.
- 200 The Commission also suggests that expansions of the network, such as rollout in new subdivisions, are undertaken by developers and may not be significantly affected by regulatory risk. Alternatively, customers could make contributions or even own the assets (paragraph 5.110).
- 201 This is not the way the market works in practice. Capital contributions are a significant deterrent to connecting to gas, since gas is not a necessity. Based on a sample of instances where a capital contribution has been

required by NGC, in 50% of cases the developer decided not to proceed with gas reticulation. The connection strike rate falls to zero when capital contributions exceed a threshold of \$320 - \$365 per project – a relatively trivial sum in the overall cost of a residential subdivision.

Dynamic efficiency impacts

- 202 The Commission’s misunderstanding of the market dynamics in the likely counterfactual, and likely investment requirements, results in it under-estimating the dynamic efficiency costs of price control.
- 203 The Commission assumes a constant 0.5% of the counterfactual demand is not serviced under price control leading to a loss of consumer surplus. This is unreasonable in two respects (CRA report section 6.7):

203.1 Failure to connect a load leads to an effectively permanent loss of that customer, ie a residential subdivision not connected to gas will be forced to use alternatives, eg electricity or LPG. The assumption of a 0.5% constant reduction in demand, is therefore consistent with the Commission making an assumption that NGC stops investing in year 1, but thereafter resumes investing.

203.2 The variability in underlying gas demand means that even if aggregated demand is constant, NGC will still need to invest in new connection and network expansions to maintain current volumes, as a proportion of existing customers disconnect with the increase in wholesale gas prices.

- 204 Accordingly, a more reasonable assumption to make is that the size of the missing market would grow over time as NGC reduces investment. To illustrate the sensitivity of the Commission’s model to a more reasonable assumption of cumulative lost markets, CRA models a scenario where a cumulative 0.5% of the market is not serviced per annum. At the end of the 12 year period of analysis this leads to 6% of the counterfactual market not being served, which remains a conservative assumption.

Transmission

- 205 The Commission’s model of transmission shows no change in welfare arising from missing markets. However, this is not consistent with the analysis of missing distribution markets, since the gas must be delivered via the transmission system. Accordingly, there is a producer surplus impact on NGC Transmission because the loss of revenue exceeds savings in short-run marginal costs, which is \$0.05/GJ on the transmission system.

Overall assessment

- 206 The CRA report demonstrates (section 6.7) the emergence of a modest missing market of 6% of counterfactual demand at the end of 12 years has

a material impact on the benefits and costs of control. All tests in the distribution model show negative welfare, and in the transmission model, although some tests remain positive, in general, the loss of welfare from missing markets leads to substantial reductions in the benefits of control.

7. ASSET VALUATION

7.1 Use of ODV for fixed system assets

- 207 NGC supports the use of ODV as the valuation methodology for fixed system assets. However, NGC considers that ODV should be used as a matter of principle and not just for the pragmatic reasons that the Commission identifies in its Draft Report.
- 208 The report prepared by n/e/r/a for NGC Asset valuation for the Gas Control Inquiry – A report for NGC Holdings, submitted to the Commission in response to the Draft Framework Paper, addresses in detail the principles supporting the use of ODV in this context.
- 209 NGC notes that at paragraph 6.44 of the Draft Report, the Commission acknowledges that it was not unreasonable for gas pipeline businesses to have adopted ODV as the basis for valuing their assets. This is in response to NGC’s submissions in response to the Commission’s Draft Framework Paper in which NGC submitted that there was, in effect, a regulatory contract entered into between gas pipeline businesses and the government in the early 1990s to adopt ODV in order to allow for the removal of gas franchises and allow for implementation of retail and distribution competition.
- 210 The switch to ODV provided a system which allowed users to only pay for the portion of the system they used. Shippers and pipeline companies agreed the approach between them at the time the reform was implemented in the early 1990s. As noted above, once implemented, the system allowed for the removal of gas franchises. It has also allowed for implementation of retail and distribution competition to the point where the Commission has indicated that there is workable competition in the Nova Gas transportation markets.
- 211 The evolution of these transportation arrangements has provided generation and co-generation tariffs which have flow on benefits to gas and electricity users. Such developments have significant dynamic efficiency benefits which have not been quantified by the Commission. In NGC’s submission, adoption of ODV was the most practical and non-discriminatory way to achieve this.

7.2 ODV data

- 212 NGC notes that there were errors in its s70E return for NGC Distribution, which resulted in some anomalous forecast values. Corrected figures have now been provided to the Commission. In response to these anomalous values the Commission estimated, for the purposes of the Draft Report, its own forecast of NGCD’s assets. NGC submits the corrected NGCD figures should now be used.

7.3 Smoothing of revaluations

213 The Commission smoothes revaluation gains and losses by allocating equal amounts to the year of the revaluation and the prior two years. This introduces a bias, as the Commission's model compounds the gains forwards as excess returns.

7.4 Easements

214 NGC supports the inclusion of easements in the asset base. However the Commission has only included easements at historic cost. The reason given by the Commission for not using replacement cost is that it would involve a number of subjective judgements which may result in a value being attributed to assets that would in some cases greatly exceed the cost of acquisition – particularly for easements obtained using statutory powers formerly available to pipeline owners. The Commission further states that, if it were to accept the valuation of easements at replacement cost, then any associated revaluations should be included in the assessment of excess returns (paragraph 6.66).

215 Where historic cost information is unavailable, and the Commission is satisfied that some compensation has been paid for the easement, the Commission proposes to discount a replacement cost of easements to a particular date in the past and use this value as a proxy historic cost.

216 In response to the Commission's caveat, NGC would like to be clear that compensation has been paid for easements. Although there were statutory rights of acquisition prior to 1982 for distribution pipelines and 1991 for transmission pipelines, compensation was always payable to landowners.

217 NGC does not agree that there would be particular difficulty in arriving at replacement cost valuations for easements, or that they will necessarily be any more subjective than valuations for other types of system fixed assets.

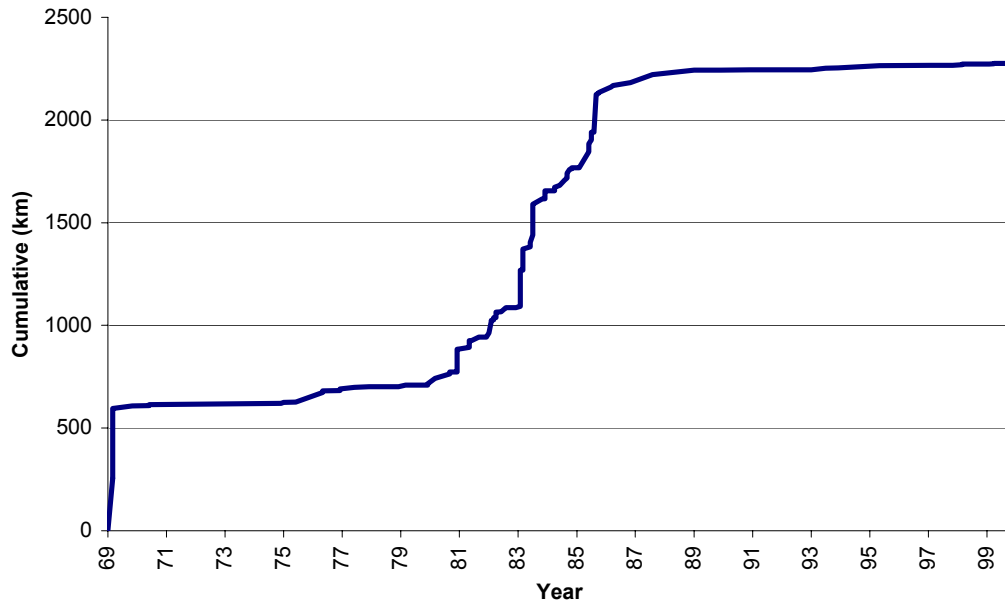
The Commission's estimate of easement age

218 If the Commission continues to use a proxy historic cost, it needs to correct its estimate of the age of NGC's easements. The Commission has estimated the value of NGC's easements "by deflating the 1997 easement valuation provided to 1974 (approximate date at which NGCT acquired the majority of its easements) using the CPI". The current length of the NGCT system is 2,280 km. In 1974 the NGCT system was 615 km long.

219 The figure below shows the cumulative growth of the NGCT system. In 1983 the length increased from 1,086 km to 1,616 km, passing the halfway mark of the current length. If the Commission is to apply its approach the 1997 easement valuation should be deflated to 1983 rather than 1974. Using the information in the Commission's model, the indexed historic value for NGCT's easements should be \$14.77 million. CRA estimates the

indexed historic value for NGCT's easements at around \$11 million, by deflating one third of the replacement cost to 1974 and two thirds to 1983.

Figure XX: NGC Transmission System Installed - Cumulative by Year



8. WEIGHTED AVERAGE COST OF CAPITAL

220 In this section NGC addresses the “Weighted Average Cost of Capital” section of the Draft Report.

221 LECG has prepared a report in response to the Commission’s Draft Report, and the paper by Dr Lally, Response to the Commerce Commission’s Gas Control Ingoing Draft Report: Estimation of the Weighted Average cost of Capital.

222 NGC highlights some of the findings of LECG in this section. The full discussion by LECG forms part of this submission.

8.1 Forecasting the risk free rate

223 LECG disagrees with Dr Lally’s approach to the term of the risk free rate, and this is addressed in the LECG report. Even on its own terms, however, the Commission’s calculation contains the following errors:

223.1 the estimate of the risk free rate for the forecast period is based on July 2003. In fact, the July 2003 rate was the low point in the the study period, introducing a bias to the forward looking part of the analysis. This needs updating – as discussed by LECG (section 2.2) the use of out-dated data cannot be defended. A better approach to estimating the risk free rate is needed;

223.2 Dr Lally argues the term of the risk free rate should match the regulatory period, but then uses a term of three years, in contrast to the Commission assuming a five year regulatory reset. Dr Lally’s approach requires the Commission to use a five year term.

8.2 Asset beta

224 LECG points out Dr Lally has not updated his asset beta data. Dr Lally used the Damodaran website to estimate an asset beta of 0.3 for electricity utilities, and in reference to this Dr Lally estimates an asset beta range for gas utilities of 0.4 to 0.6, with a point estimate of 0.5. However, Damodaran’s latest average for electricity utilities, taking into account a five year period, is 0.37. For Dr Lally to be consistent, this implies an asset beta range for gas utilities of 0.45 to 0.65, with a point estimate of 0.55.

8.3 Debt margin

225 LECG reports that the debt margin is an empirical matter.

226 Dr Lally has questioned the evidence supporting LECG’s view. Attached as Attachment 2 is a report by NGC on NGC’s debt margin.

8.4 LECG's WACC estimate

227 A comparison of the WACC parameters estimated by Dr Lally and LECG is presented at section 2.3 of the LECG report, and reproduced below:

	Lally proposal		LECG proposal	
	Range	Midpoint	Range	Midpoint
Asset Beta	0.4 to 0.6	0.5	0.45 to 0.65	0.55
Risk Free Rate		5.00%		6.37%
Market Risk Premium	0.06 to 0.08	0.007	0.075 to 0.095	0.85
Debt Margin		1.20%		1.70%
Leverage Ratio		40%	55 to 65%	60%
Equity Ratio		60%	45 to 35%	40%
Effective Tax Rate		33%		33%
Equity Beta	0.67 to 1.0	0.83	1.0 to 1.86	1.38
Cost of Debt		6.20%		8.07%
Cost of Equity	7.4 to 11.4%	9.20%	11.8 to 21.9%	16.0%
WACC	6.1 to 8.5%	7.20%	8.3 to 11.2%	9.60%

8.5 Interpreting the WACC range

228 LECG reports that given the huge uncertainty implicit in the WACC calculations, the likelihood of errors in its estimation and the asymmetric impact that setting the WACC too low would have, in deciding on a point value for the WACC it is important to select this from the high end of the range. The Commission recognises this, and proposes adopting the 75th percentile. LECG notes that given the inherent inaccuracies and scope for error, this could still be below the actual cost of capital. Given this, and the significance of the regulatory intervention being tested, NGC submits the Commission should use the top of the WACC range.

8.6 Margin over WACC

229 LECG addresses the additional risk factors for which utility firms legitimately expect compensation in addition to the WACC figure (section 3 of the LECG report).

230 The overall point with regard to these additional risk factors is that while the WACC can give some guidance for investment decision-making in a static environment where no market imperfections exist, in reality businesses find themselves in a dynamic environment, where market imperfections are common. The result is that investors require a premium over the WACC before investments are made – in fact it would be rare for a project with a zero NPV to be accepted. The true hurdle rate for investment decisions is therefore higher than that indicated by the WACC on its own.

231 Dr Lally recognises that these market imperfection or dynamic market conditions exist, and would influence investor decision-making. However, his only concession, which he repeats for a number of different risk factors, is that adequate provision has been made by virtue of:

231.1 the fact that the use of a domestic version of the CAPM with international parameters is advantageous to local firms, as Dr Lally claims that it would tend to overstate the WACC, and

231.2 his recommendation that a WACC estimate from the upper end of the suggest band should be used.

232 In this manner, Dr Lally suggests that these factors will provide sufficient compensation for:

- the possibility that the WACC estimate is too low (p43),
- the fact that the consequences of judging excess profits to exist when they do not are more severe than the contrary error (p43),
- asymmetric risks such as the risk of assets being stranded, assets being optimised out or of miscellaneous exposure to events such as natural disasters, (p58), and
- the cost of financial distress (p62).

233 LECG reports it is by no means conclusive that the use of a domestic version of the WACC with international parameters would in fact overstate the WACC. Even if accepting this, in LECG's view it is highly unlikely that this 'concession' and using a value for WACC from the higher end of the range, would provide sufficient compensation for the additional risk factors considered by investors.

234 As noted above, using a WACC value from the higher end of the range is not a "concession" – the range merely reflects the uncertainty in the underlying parameters and the fact that the WACC cannot be accurately determined. The true WACC could lie anywhere within the band, with equal probability. In the case that it already lies towards the higher end of the suggested band, allowing for various additional risk factors by setting the WACC at the higher end of the band would provide no additional compensation.

Quantification of the margin

235 One of the arguments raised against allowing for a margin over the WACC to compensate firms for asymmetric effects, market imperfections or the

loss of real options, is that the extent of the margin has not been conclusively demonstrated.

- 236 LECG notes that while there is legitimate debate about the size of these indirect costs for any given firm, setting them equal to zero simply ignores both state-of-the-art academic research and business reality.
- 237 LECG recommends that, until a firm theoretical basis is established for demonstrating the margin that should apply over the WACC, the indirect risks should be compensated for by accepting the point value of WACC at the top end of the suggested range of figures.

8.7 Interpreting ex-post profits

- 238 The Commission's task is to differentiate between a realised rate that differs from an acceptable target rate due to random factors, and a realised rate that differs because the firm is operating with the objective of exceeding that target rate. LECG notes that ex-post profits are a very noisy indicator of ex-ante monopoly profits. To be reasonably confident that monopoly profits are being earned, and that the firm should therefore be subject to control, the realised ex-post profits have to be very high. In other words, there would have to be evidence not simply of excess profits, but of 'super'-excess profits. LECG considers that it is very difficult on the basis of 5 or less years of evidence on realised rates to reject the assumption that a firm is aiming to earn an acceptable target rate of return.

9. COMPARATIVE BENCHMARKING

9.1 Background

- 239 The Commission engaged Meyrick and Associates (Meyrick) to assess NGC and others on its productivity performance. Meyrick produced two reports. The first report assessed a group of New Zealand pipeline businesses against a group of Australian pipeline businesses. The second report assessed NGC individually on its productivity growth since 1997. NGC has received advice from Pacific Economics Group (PEG), and Charles River Associates (CRA), whose respective reports are provided with this submission.
- 240 The Commission relies on benchmarking to justify productivity differences between the factual and the counterfactual. In order to better understand the Meyrick report on comparative benchmarking, NGC joined with Vector to commission independent analysis of these productivity differences. PEG was engaged to carry out this analysis in their report; *New Zealand Gas Distribution Cost Performance: Results from International Benchmarking*.
- 241 PEG also separately peer reviewed the two Meyrick reports in their Comments on Meyrick and Associates Reports Prepared for the Commerce Commission's Inquiry into New Zealand Gas Transmission and Distribution Sectors.
- 242 It is worth noting here that Meyrick accepts that its approach, using Total Factor Productivity (TFP) analysis, is driven by the availability of both Australian and New Zealand data, and that a TFP approach is not as comprehensive as an econometric approach, which requires a larger database. In recognition of this, PEG has used its extensive database of US gas utilities under a wide range of operating environments to carry out an econometric analysis.

9.2 Approach to benchmarking

- 243 As the evidence provided in the PEG and CRA reports and below shows, the Meyrick reports are not realistic, nor are they a statistically valid comparison of the New Zealand and Australian pipeline networks and hence not a true reflection of NGC's productivity performance.
- 244 NGC appreciates that the Meyrick reports raise the issue of data limitations, and the impact of this on the robustness of the results. However, NGC submits that the extent of the data limitations and the failure to effectively resolve for a number of key variables renders the Meyrick reports invalid.
- 245 In short, the Commission can place no confidence in the assessment that productivity differences between Australian and NZ pipelines are as the Meyrick reports indicate. NGC submits that the Commission should not use

the Meyrick reports at all in making its assessment on NGC's performance, and in particular the Commission should not consider the result to be even "indicative" of productivity improvements within the industry.

- 246 By comparison, the comprehensive econometric analysis provided by PEG's robust. This analysis shows NGC Distribution is 30.3% more efficient than the average US gas utility on an ACAM basis, as predicted by an econometric cost model containing data from 40 US gas utilities.

9.3 Comparison with Australian pipeline businesses

- 247 The PEG report highlights a number of specific concerns with the Meyrick report "Comparative Benchmarking of Gas Networks in Australia and New Zealand".
- 248 Meyrick's analysis does not control adequately for economies of scale in its use of a TFP index, despite comment recognising the shortcomings of this approach in its report. This is essential given the different scales of the Aus and NZ systems, and the fact that these factors are widely accepted as outside an organisations control.
- 249 Further, while noting the issue, Meyrick's analysis does not adequately control for differences in customer density, or customers per km of gas main - significant factors influencing the respective operating environments or economies of scale.
- 250 The omission of a system capacity variable in any of the models is a major shortcoming, commented on to a degree in Meyrick's report, but unfortunately the implications of this shortcoming are, like the issues above, not quantified by Meyrick and therefore unable to be assessed as to their significance.
- 251 Meyrick has attempted to use several models to account for each of these issues, but provides no clear rationale for ascribing appropriate weighting to each model to come up with a definitive, or even indicative answer.
- 252 As stated in more detail in the PEG peer review of Meyrick's report, all three models developed by Meyrick to assess the performance of pipeline companies contain significant shortcomings. For the Commission to conclude that a combination of these three models is sufficient to arrive at an "indicative" answer is not robust.
- 253 In short, while Meyrick acknowledges the shortcomings of its reports findings, the shortcomings are not quantified, and the reader is forced to guess at the implications of the data limitations and absence of controls and variables that are so essential for a report of this nature. It is simply not

credible for the Meyrick report to be used as evidence of a firms productivity performance.

9.3.1 Specific points on NGC Distribution

- 254 As a point of correction, on page 17 the Meyrick benchmarking report refers to Powerco and Wanganui Gas being disadvantaged due to the fact that metering activities have been included in their information provided to the Commission. The information NGC provided to the Commission also contains metering activities and hence NGCD is also disadvantaged. It is also not clear if or how Meyrick has quantified this issue in its analysis and hence the significance of this disadvantage is not clear.
- 255 The Commission uses Meyrick's analysis to assert that NZ gas distribution networks are approximately comparable in performance to the worst performers in the electricity sector. It uses the C1 factor from the Meyrick report to compare the results of the gas sector with those of the NZ electricity sector.
- 256 NGC has concerns with the Commission's comments about the similar characteristics between the NZ gas and electricity sectors. This is addressed in detail in the CRA report The implications for governance of the distinctions between gas and electricity. NGC is also concerned that despite the cautionary nature of the Meyrick report the Commission feels it can make this comparison with some degree of confidence.
- 257 Given that the Commission has no robust comparison between electricity and NGCD, it cannot assume that NGCD is in the low productivity group.

9.3.2 Specific points on NGC Transmission

- 258 The PEG report also highlights the method employed by Meyrick to compare NGC Transmission with transmission pipelines in Australia. Meyrick broadly assesses New Zealand and Australia as having similar operating environments. Even to the untrained eye natural features such as geographical spread and terrain are quite different, and to those in the gas industry, important factors such as the scale of gas fields, markets and customers that drive factors such as pipeline diameter, throughput and pressure are again quite different. To compare NGC's transmission system with the Moomba to Sydney pipeline for example, is to draw a very long bow. The pipelines that NGC Transmission is compared with are nearly all point-to-point pipelines, whereas NGC Transmission would be more aptly described in this context as a large radial system, with far more connections, off takes and branches and hence cost drivers.
- 259 Meyrick recorded that "the configurations of the Australian pipelines differ from NGC Transmission in most cases" and that data for system capacity, one of two data sets required to measure productivity performance, was

not available, and that proxy data was not sufficiently consistent. As both PEG and CRA highlight, to construct a robust TFP estimate for transmission without capacity numbers is not credible.

- 260 NGC submits that without sufficient consideration of the operating environments and pipeline capacity, (which Meyrick has not) it is not possible to compare Australia and New Zealand's transmission pipeline systems in a valid way.
- 261 For these reasons, NGC submits that the Meyrick analysis of its transmission business is not sufficient for the Commission to conclude that additional productivity gains can be made above those already achieved by NGC Transmission.

9.4 Meyrick Report on Productivity Growth of NZ Gas Networks

- 262 The Meyrick productivity growth study also suffers from data limitations. By only using NGC data, about 25% of customers served, it is very difficult to claim this represents a reliable estimate of the industry TFP trend, since a single company's TFP growth can be highly volatile from year to year.
- 263 NGC is likely to have quite different throughput characteristics from other gas distribution companies, and also quite different geographic and demographic representation, making it very difficult to assert that this is a representative sample of New Zealand gas distribution companies.
- 264 The Commission has chosen to compare the productivity growth rate of NGC distribution with an earlier study carried out by Meyrick on New Zealand's electricity lines businesses. NGC notes that over the assessed time period, NGC improved its productivity on an average annual rate of 2.5%, whereas the average for the electricity sector was 2% (or 2.1% if 2003 data is excluded). NGC has therefore outstripped electricity lines businesses performance and has done so under a light handed regulatory regime.

9.5 Pacific Economics Group International Benchmarking Study

- 265 NGC provided PEG with the same data that it provided to the Commission. PEG were asked to assess NGC Distribution's costs against the PEG US gas utilities database, and to determine whether NGC's costs showed it to be more or less productive than what was to be expected from the US data.
- 266 In summary, the PEG independent benchmarking analysis shows NGC to be "a superior cost performer". From 1997 to 2002 NGC Distribution's total actual cost was 30% below its predicted value using the ACAM cost measure.

- 267 PEG used econometric techniques and extensive consideration of cross border issues, such as relative labour costs, exchange rates and construction costs. Furthermore, using its econometric model, PEG were able to test the sensitivities of these results to assumptions regarding the opportunity cost of capital, construction cost differentials and exchange rates. It was found that NGC's actual costs remained significantly less in all scenarios than predicted cost.
- 268 NGC submits that NGC distribution has a good productivity performance, and the Commission cannot reasonably form a view that a higher rate of productivity growth would be achieved under a more stringent regulatory regime.

10. NGC HOLDINGS LTD – TRANSMISSION (NGCT)

Overview

269 In this section NGC addresses the “NGC Transmission” section of the Draft Report.

10.1 The correct counterfactual

270 As discussed above in section 4, and in section 5.2 of the CRA report, the Commission has erred in its estimate of the revenues for NGCT in the counterfactual.

271 NGC submits the Commission has two options.

272 The most correct option is to use the forecasts supplied by NGC. As discussed above, these were developed by expert market participants for business purposes, and the Commission has not identified any aspect of NGC’s forecasts that are unsatisfactory. Using the revenues forecasted by NGC would result in a reduction of the Commission’s calculation of net benefits to acquirers by \$2.83 million, and increase net public benefits by \$0.053 million.

273 Correct a compounding error in the Commission’s averaging of past and future information by recasting the model on a forward-looking basis. Making this correction would result in the following adjustment:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
Forward looking Characterisation	-1,444		149		-920	

10.2 The de-optimisation of the Kapuni North line

274 NGC submits the Commission should correct its treatment of the de-optimisation of the Kapuni North pipeline. The proper approach to this significant de-optimisation is discussed above in section 5, and in section 3 of the CRA report.

275 If the Commission corrects its treatment of the de-optimisation of the Kapuni North line, this would result in the following adjustment:

	Net Acquirers Benefits	Net Public Benefits	Net Benefits to New Zealanders

	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
Excluding Revaluations from Kapuni	-3947		-54		-2623	

10.3 Common costs

- 276 As discussed above in section 5, no adjustment should be made to NGCT's common costs.

10.4 Easements

- 277 As discussed above in section 7, the Commission should value easements at replacement cost and not historic cost. If the Commission corrects the method of valuation of easements in its model, this would result in a reduction of the Commission's calculation of net benefits to acquirers by \$2.2 million and increase net public benefits by \$0.7 million.
- 278 If the Commission continues to use a historic cost valuation to value easements, NGC has identified in section 7 improvements to the calculation of historic cost. If the Commission makes these improvements, this would result in a reduction of the Commission's calculation of net benefits to acquirers by \$237,000, and increase net public benefits by \$10,000.

10.5 Application of the NPV=0 test

- 279 As discussed in section 5, and section 3 of the CRA report, the Commission's current application of the NPV=0 test tells us nothing about whether "excess returns" are being earned. To correct this, the Commission must determine an ex-ante risk premium for bearing stranding and other unexpected cost risks, and then determine statistically whether returns are consistent with targeting this level of return, given volatility in the variables that underpin actual financial performance.
- 280 It is not possible within the Commission's modelling framework to test the hypothesis that NGC has earned excess profits. Within the Commission's framework adopting a more realistic cost of capital goes some way to correcting this mistake, but it does not address the more fundamental failings of the model. The appropriate rate of return is discussed below.

10.6 Direct costs and operating costs

- 281 As discussed above in section 6 and section 5.4 of the CRA report, the Commission significantly underestimates the direct cost of control. Based on the experience of AGL in Australia, and NGC's experience in this process, NGC estimates the direct cost of control to be \$1 million per annum per business unit.

282 NGC also submits its costs incurred in this inquiry should not be deducted from operating costs, as these are legitimate costs of light handed regulation.

283 Making these adjustments results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
More realistic direct costs of control	-88		-88		-88	

10.7 Producer surplus

284 CRA reports (section 6.4) that the Commission should use a short run model for the producer surplus component of the allocative efficiency calculation. Making this adjustment results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
More realistic producer surplus assumption	0		176		176	

10.8 WACC

285 A number of improvements to the calculation of WACC are identified in section 8 above, and the attached report from LECG. LECG recommends a WACC range of 8.3% to 11.2% NGC submits the Commission should use the top of the range, for the reasons discussed in section 8.

286 To reflect the ex ante pricing of stranding risk that occurs in practice, and to avoid the bias identified by Dr Lally and discussed in section 6 above, CRA recommends the Commission should use the hurdle rates NGC has published to investors of 8.5 – 10%, with a midpoint of 9.25%. This is consistent with allowing an ex ante premium for stranding and optimisation risks, and the WACC range identified by LECG.

- 287 If the Commission uses this required rate of return, this would result in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
More realistic WACC estimate	-3311		-16		-2176	

10.9 Productive efficiency

- 288 As discussed above in sections 3, 6 and 9, the Commission has no grounds to expect or conclude gas pipeline businesses are productively inefficient. In fact, gas pipeline businesses are subject to significant competitive pressure and face real incentives to improve productivity. Further, the Commission has identified NGC is currently performing above the average level of the Commission would target with regulation.
- 289 NGC submits the Commission's model should not include any difference in productive efficiency between the factual and counterfactual. CRA makes an adjustment to the Commission's model to assume no difference in productive efficiency between the factual and counterfactual, except that in years 4 and 5 of a 5 year regulatory price path management could be expected to "save up" productivity gains. Making this adjustment results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
More realistic productive efficiency approach	-566		-566		-566	

10.10 Dynamic efficiency effects

- 290 As discussed above in section 6, and section 6.7 of the CRA report, the Commission underestimates the impact of regulation on likely investment. In fact, the Commission assumes that the imposition of price control would

impact on investment by NGCD only, only in the first year (thereafter NGCD is assumed to resume investing) and only to the extent of 0.5% of total assets counterfactual demand.

- 291 CRA models the conservative scenario where a cumulative 0.5% of the potential market is not serviced per annum. At the end of a 12 year period this leads to 6% of the counterfactual market not being served, which remains a conservative assumption.
- 292 The Commission's model shows no dynamic efficiency impacts on transmission at all, despite assuming missing distribution markets. However, the gas must be delivered via the distribution system, meaning there will be a producer surplus impact on NGCT. Making this adjustment results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3322		-342		2117
More realistic cumulative dynamic efficiency loss	0		-2390		-2390	

Implications for the Commission's recommendation

- 293 The effect of making these adjustments to the Commission's model is summarised in the following table. The calculations are made using the Commission's 75th WACC percentile.

NGC TRANSMISSION

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		3,322		-342		2,117
Excluding Revaluations from Kapuni	-3,947		-54		-2,623	
More realistic cumulative dynamic efficiency loss	0		-2,390		-2,390	
Forward looking Characterisation	-1,444		149		-920	

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More realistic direct costs of control	-88		-88		-88	
More realistic producer surplus assumption	0		176		176	
More realistic productive efficiency approach	-566		-566		-566	
More realistic historic cost valuation of easements	-237		10		-149	
Combined Effect Excluding the WACC Adjustment	-4,870	-1,548	-3,113	-3,455	-5,850	-3,733
More realistic WACC estimate	<u>-3,311</u>		<u>-16</u>		<u>-2,176</u>	
Combined Effect	-8,342⁴	-5,019	-3,362	-3,704	-8,365	-6,248

⁴ Note the combined effect excludes the effect of recasting the model on a forward-looking basis. There is no robust method of doing this within the Commission's model.

11. NGC HOLDINGS LTD – DISTRIBUTION (NGCD)

294 In this section NGC addresses the “NGC Distribution” section of the Draft Report.

11.1 The correct counterfactual

295 As discussed above in section 4, and in section 5.2 of the CRA report, the Commission has erred in its estimate of the revenues for NGCD in the counterfactual.

296 NGC submits the Commission has two options.

297 The most correct option is to use the forecasts supplied by NGC. As discussed above, these were developed by expert market participants for business purposes, and the Commission has not identified any aspect of NGC’s forecasts that are unsatisfactory. Using the revenues forecasted by NGC would result in a reduction of the Commission’s calculation of net benefits to acquirers by \$1.05 million, and increase net public benefits by \$0.153 million.

298 Correct a compounding error in the Commission’s averaging of past and future information by recasting the model on a forward-looking basis. Making this correction would result in the following adjustment:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1077		-780		435
Forward looking Characterisation	-468		339		-189	

11.2 The treatment of gain on sale

299 As discussed in section 5, and in section 3.5 of the CRA report, the Commission’s treatment of the gain on sale of NGCD assets in 1999 is not appropriate. NGC shareholders have taken the risk of carrying these assets, and the Commission’s approach would create perverse incentives to only sell low value assets. Such one-off asset sales do not affect pricing in a competitive market, and this gain on sale should not be included in income. Making this adjustment would result in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit

		Benefit		Benefit		Benefit
Baseline		1077		-780		435
Excluding gain on sale of Taranaki	-456		1		-296	

11.3 Common costs

- 300 As discussed above in section 5, no adjustment should be made to NGCD's common costs.

11.4 Application of the NPV=0 test

- 301 As discussed in section 5, and section 3 of the CRA report, the Commission's current application of the NPV=0 test tells us nothing about whether "excess returns" are being earned. To correct this, the Commission must determine an ex-ante risk premium for bearing stranding and other unexpected cost risks, and then determine statistically whether returns are consistent with targeting this level of return, given volatility in the variables that underpin actual financial performance.
- 302 It is not possible within the Commission's modelling framework to test the hypothesis that NGC has earned excess profits. Within the Commission's framework adopting a more realistic cost of capital goes some way to correcting this mistake, but it does not address the more fundamental failings of the model. The appropriate rate of return is discussed below.

11.5 Direct costs and operating costs

- 303 As discussed above in section 6 and section 5.4 of the CRA report, the Commission significantly underestimates the direct cost of control. Based on the experience of AGL in Australia, and NGC's experience in this process, NGC estimates the direct cost of control to be \$1 million per annum per business unit.
- 304 NGC also submits its costs incurred in this inquiry should not be deducted from operating costs, as these are legitimate costs of light handed regulation.
- 305 Making these adjustments results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1077		-780		435
More realistic direct costs of control	-88		-88		-88	

costs of control						
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11.6 Producer surplus

- 306 CRA reports (section 6.4) that the Commission should use a short run model for the producer surplus component of the allocative efficiency calculation. Making this adjustment results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1077		-780		435
More realistic producer surplus assumption	0		608		608	

11.7 WACC

- 307 A number of improvements to the calculation of WACC are identified in section 8 above, and the attached report from LECG. LECG recommends a WACC range of 8.3% to 11.2%. NGC submits the Commission should use the top of the range, for the reasons discussed in section 8.
- 308 To reflect the ex ante pricing of stranding risk that occurs in practice, and to avoid the bias identified by Dr Lally and discussed in section 6 above, CRA recommends the Commission should use the hurdle rates NGC has published to investors of 8.5 – 10%, with a mid-point of 9.25%. This is consistent with allowing an ex ante premium for stranding and optimisation risks, and the WACC range identified by LECG.
- 309 If the Commission uses this required rate of return, this would result in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1077		-780		435
More realistic WACC estimate	-968		-22		-656	

11.8 Productive efficiency

- 310 As discussed above in sections 3, 6 and 9, the Commission has no grounds to expect or conclude gas pipeline businesses are productively inefficient. In fact, gas pipeline businesses are subject to significant competitive pressure and face real incentives to improve productivity. Further, the Commission has identified NGC is currently performing above the average level of productivity the Commission would target with regulation.
- 311 NGC submits the Commission's model should not include any difference in productive efficiency between the factual and counterfactual. CRA makes an adjustment to the Commission's model to assume no difference in productive efficiency between the factual and counterfactual, except that in years 4 and 5 of a 5 year regulatory price path management could be expected to "save up" productivity gains. Making this adjustment results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1077		-780		435
More realistic productive efficiency approach	-210		-210		-210	

11.9 Dynamic efficiency effects

- 312 As discussed above in section 6, and section 6.7 of the CRA report, the Commission underestimates the impact of regulation on likely investment. In fact, the Commission assumes that the imposition of price control would impact on investment by NGCD only, only in the first year (thereafter NGCD is assumed to resume investing) and only to the extent of 0.5% of total counterfactual demand.
- 313 CRA models the conservative scenario where a cumulative 0.5% of the potential market is not serviced per annum. At the end of a 12 year period this leads to 6% of the counterfactual market not being served, which remains a conservative assumption. Making this adjustment results in the following changes:

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1077		-780		435

More realistic cumulative dynamic efficiency loss	-1346		-1346		-1346	
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Implications for the Commission's recommendation

- 314 The effect of making these adjustments to the Commission's model is summarised in the following table. The calculations are made using the Commission's 75th WACC percentile.

NGC DISTRIBUTION

	Net Acquirers Benefits		Net Public Benefits		Net Benefits to New Zealanders	
	Change	Net Benefit	Change	Net Benefit	Change	Net Benefit
Baseline		1,077		-780		435
Excluding gain on sale of Taranaki	-456		1		-296	
More realistic cumulative dynamic efficiency loss	-1,346		-1,346		-1,346	
Forward looking Characterisation	-468		339		-189	
More realistic direct costs of control	-88		-88		-88	
More realistic producer surplus assumption	0		608		608	
More realistic productive efficiency approach	-210		-210		-210	
Combined Effect (without WACC adjustment)	-2,100	-1,023	-1,192	-1,973	-1,489	-1,054
More realistic WACC estimate	-986		-22		-656	

Combined Effect	- 3168^{5,} 6	-2091	-1,547	-2,327	-2,526	-2,091
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5 Note the combined effect excludes the variation that would result from adopting a forward looking approach. It is excluded, however, only because the Commission's model is incapable of dealing with this issue on any meaningful basis, unless past history is completely ignored.

6 Note the individual effects do not sum to the combined effect because of the interdependencies of the various variations.

12. TARANAKI PIPELINES

- 315 The Commission considers some of the smaller pipelines within the Taranaki region separately in chapter 16 of the Draft Report. The pipelines considered are only some of the large network of pipelines in the Taranaki region. Schematics of the pipelines in the Taranaki region are attached to this submission as Attachments 3 and 4. The Commission considers that pipelines which are used for “gas gathering” and which carry liquids are not included in the scope of the Inquiry. This is consistent with the terms of reference for the Inquiry, which define transmission pipelines as extending from the outlet of a production facility to the connection to a distribution network or customer site.
- 316 The pipelines considered in chapter 16 are primarily used to transport gas from production facilities directly to large customers, from fields to production facilities or to feed into another transmission pipeline. In all cases except Frankly Road, the Commission concludes that the pipelines are not included in the Inquiry. This is primarily on the basis that the pipelines carry non-specification gas, there is no open access to them and in some cases there is bundled pricing. Frankly Road is excepted because it carries specification gas and connects to the Maui pipeline.
- 317 It is NGC’s submission that there a further, and more cogent reason why the Taranaki pipelines should not be included in the Inquiry. In NGC’s submission, the Taranaki pipelines should be defined as being in a separate market in which there is workable competition for the following reasons:
- 317.1 there are 6 production stations with different owners in the Taranaki region;
- 317.2 all of the pipelines cover short distances and the sunk costs are therefore relatively low;
- 317.3 most of the pipelines are substitutable, for example, NGC’s LTS pipeline currently transports gas from the Kahili field to NGC’s production station but it can also send gas the other way depending on demand;
- 317.4 there is only a relatively minor cost involved to a producer in switching pipelines;
- 317.5 pipelines are owned by numerous different parties, some of which are producers and some of which are wholesalers of gas.
- 318 In particular, competition between the pipelines is now being driven by the demand to get gas to market. This requires gas to be processed at any one

of the production stations within the Taranaki region. There is significant competition for that gas, and to process it.

- 319 A further result of this analysis is that the Frankly Road pipeline should not be included in the Inquiry.
- 320 NGC also does not accept the Commission's arguments relating to the bundling of prices for transmission (paragraphs 16.16, 16.23) as being sufficient basis for deciding that a pipeline is excluded from the Inquiry. In NGC's submission such an argument sends an inappropriate signal to pipeline owners that bundling of prices is an acceptable means of avoiding regulatory control.

13. LEGAL FRAMEWORK

13.1 Goods and services covered by the Terms of Reference

321 The Minister's original letter to the Commission requested advice on:

321.1 whether an order should be made in relation to goods or services connected with either gas transmission or gas distribution or both.

321.2 whether gas pipeline services may be controlled.

322 The Minister's subsequent letter clarified the term in bold. "Connected with means:

*"...supplied by person in markets directly related to". Goods or services physically connected with gas transmission and distribution pipelines that **may** include goods and services not owned or operated by owners of gas pipelines were not intended to be covered by the inquiry". Minister of Energy, 9 July 2003*

323 Although this clarification is helpful, it does not relieve the Commission of the difficulty of identifying precisely the services it is dealing with. It is necessary to define those services with care for three reasons:

323.1 First, it is necessary to be precise about what is and is not within the terms of reference.

323.2 Second, it is necessary to be precise about what is and is not to be controlled, in the event that the Commission recommends control.

323.3 Third, it is important to ensure that a Commission recommendation does not capture services in respect of which there is contestability and no need for control.

324 In its response to the Draft Framework Paper, NGC identified two services which it considered do not fall within the definition of "gas services" as defined by the Commission and the Minister, and therefore should not be included in the Inquiry. Further, and in any event, NGC does not consider that there are any competition concerns in respect of these services.

325 Those services are asset management services and consumer gas metering.

Asset management services

326 In its submissions on the Draft Framework Paper, NGC submitted that asset management services are not included in the terms of reference and that therefore the Commission does not have jurisdiction to consider them. In

any event, such services need not be considered by the Inquiry because they are manifestly contestable.

- 327 On this basis, the revenues and costs associated with asset management services provided by NGC have not been included in the information provided to the Commission for the Inquiry. Although the Commission notes that NGC provides management services for the Maui pipeline, the Commission does not expressly deal with asset management services in the Draft Report.
- 328 NGC therefore assumes that the Commission accepts that asset management services fall outside the terms of reference for the Inquiry.

Consumer gas metering

- 329 The Minister explicitly stated in his clarification letter of 9 July 2003 that, where a good or service **may** be supplied by a non-gas pipeline owner, such as meters, these were not intended to be covered by the Inquiry.
- 330 This operates as a specific “carve out” from the scope of the Inquiry. In NGC’s submission, therefore, it has never been the intention of the Minister to include consumer gas metering in the Inquiry.
- 331 NGC anticipates that the Commission’s uncertainty about including consumer gas metering may derive from the Minister’s reference to the Gas Act definition of “gas distribution system” to clarify the term “gas distribution”.
- 332 The reference to meters in this definition does not support the Commission’s approach for the following reasons:
- 332.1 The definition of gas distribution does not take precedence over other aspects of the terms of reference, but instead must be read with the other points made by the Minister. The explicit exclusion by the Minister of goods or services that could be supplied by a non-gas pipeline owner continues to operate.
- 332.2 Read as a whole, the terms of reference of the Inquiry are “goods and services connected with either gas transmission or gas distribution or both”, with an exception, by way of clarification of “connected with”, that “goods or services physically connected with gas transmission and distribution pipelines that may include goods and services not owned or operated by owners of gas pipelines were not intended to be covered by the inquiry”.
- 332.3 In other words, meters are not “connected with” gas distribution for the purpose of defining the scope of the Inquiry.

332.4 The reference to the Gas Act definition was made only at the request of the Commission. The Commission told the Minister this was needed to exclude small scale pipelines in commercial buildings. The Minister did not intend this cross-reference to expand the scope of the Inquiry beyond pipelines.

333 On this basis, NGC submits that consumer gas metering, both for small commercial and domestic and large consumers, should not be included in the Inquiry. NGC's submissions on the competitive aspects of consumer gas metering are covered in section 3 of this submission.

13.2 Section 52 –limited competition threshold

334 In the Draft Report (paragraphs 2.45 to 2.50), the Commission interprets "limited" as used in s52(a) to mean "restricted". Thus, limited competition denotes a restriction or impairment to workable competition. The Commission notes that a *de minimis* requirement would apply. There needs to be *more than* a nominal or *de minimis* restriction or impairment of competition.

Obligation to properly articulate the test

335 NGC submits the Commission has not articulated what is meant by the competition threshold, other than by referring to a *de minimis* requirement. To say the statutory threshold requires more than a *de minimis* impairment of competition is to state the obvious, and leaves market participants guessing as to the nature of the threshold applied by the Commission. In the context of an inquiry, it leaves industry participants unsure of the information and arguments to be put forward.

Meaning of "limited"

336 NGC submits the limited competition test must be read consistent with its purpose, as required by the Interpretation Act 1999. The limited competition test is intended as a filter for the application of the most intrusive form of market regulation. To be interpreted consistent with this purpose, the test must denote a market where price setting is subject to only limited competitive constraint. That would require that a market participant possesses a substantial degree of market power. NGC makes several points.

337 First, a substantial degree of market power threshold is consistent with the competition thresholds used in Parts II and III of the Act. The premise of the Act undeniably is that competition, and not regulation, is the preferred mechanism for achieving efficient allocation of resources in the long term interests of consumers. Only where it is lessened in some substantial way does the Act intervene. A regulatory response is provided for in Part IV only because the behavioural provisions of Part II do not capture monopoly

- pricing, as was pointed out by the Privy Council in *Telecom v Clear* [1995] 1 NZLR 385.
- 338 Second, it is necessary to consider also whether the firm concerned has in fact been exploiting its market power. It is difficult to see how the Commission could make behavioural assessments otherwise than against a substantial market power threshold. More refined assessments are simply not possible. For example, there may be many reasons why a firm's earnings may be strong in a particular period. Where prices are variable, as NGC's are, revenues may be high during a cold dry winter in which gas demand was high.
- 339 Third, regulation has substantial costs, including error costs. It is inconceivable that a trivial lessening of competition, relative to a workable competition benchmark, would suffice.
- 340 Fourth, the concept of "limited competition" has been referred to in several Australian cases. Those cases show that "limited competition" normally denotes an absence or near absence of competition, with one dominant participant: see *ACCC v Rural Press Limited* (2001) ATPR 42714; [2001] FCA 116, at para 114 (newspaper with effective monopoly within a region, and "limited competition" from a new entrant in one part of region only); *North West Shelf Project* (1998) ATPR (Com) 50-629 (limited competition in the supply of large volume gas supply contracts in WA, where effectively only one group of companies, seeking a joint marketing authorisation, had the capacity to supply large contracts); *Australian Cargo Terminal Operations Pty Ltd* (1997) ATPR (NCC) 70-000, at 3.2, and Treasurer's Statement of Reasons (lack of competition with Sydney and Melbourne airports, described variously as "very limited competition", "limited competition" and showing "monopoly characteristics"); see also *CCH Australian Trade Practices* at 10-730, where, with respect to rail services, provided by vertically integrated state monopolies, "competition was limited or nonexistent".
- 341 The decided cases in New Zealand show that expressions such as "limited competition" or "competition is limited" have been applied where there is an absence of workable or effective competition, whether because of an effective monopoly, or because on some other basis one or a group of market participants are dominant in a market or have market power: *Vector Ltd v Transpower NZ Ltd* [1999] 3 NZLR 646 (CA) at 650; *Telecom Corporation of NZ Ltd v Clear Communications Ltd* [1995] 1 NZLR 385 (PC) at 404; *Commerce Commission Decision no 460: NZ Bus Ltd and Wellington Regional Rail Ltd/Tranz Metro (Wellington)* 10 April 2002; *Commerce Commission Decision no 347: Fulford Radiology Services Ltd and Taranaki Healthcare Limited* 19 March 1999; *Commerce Commission Decision no 207: Application by Natural Gas Corporation of NZ Ltd* 31 July 1987.

342 NGC understands that the Commission wishes to retain discretion in the application of thresholds. Nonetheless the Commission does have an obligation to articulate the threshold it is applying in a meaningful way, to enable parties to present relevant information and argument. The limited competition threshold must be read consistently with its purpose as a filter for the most intrusive form of regulation, and denotes a situation where a market participant has a significant degree of market power, or price setting is otherwise subject to only limited competitive constraint.

ATTACHMENTS

1. NGC example of NPV = 0 shortcomings
2. NGC memorandum — NGC's cost of debt
3. Pipeline schematic
4. Pipe and field map

ACCOMPANYING REPORTS

- 1 CRA — The implications for governance of the distinctions between gas and electricity (30 January 2004)
- 2 CRA — Economic costs, ACAM and the Gas Price Control Inquiry (February 2004)
- 3 PEG — New Zealand Gas Distribution Cost Performance: Results from International Benchmarking (June 2004)
- 4 PEG — Comments on Meyrick and Associates Reports prepared for the Commerce Commission's Inquiry into New Zealand Gas Transmission and Distribution Sectors (June 2004)
- 5 CRA — Review of the Commerce Commission's Gas Control Inquiry Draft Report (2 July 2004)
- 6 LECG — Response to the Commerce Commission's Gas Control Inquiry Draft Report: Estimation of the Weighted Average Cost of Capital (1 July 2004)