

Report
to:

Commerce Commission

PUBLIC VERSION

**Gas Control Inquiry:
Consistency Review of
ODV Network Asset
Valuations**



May 2004

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This report is provided to the New Zealand Commerce Commission solely for the purposes of comparing the consistency of valuations of the subject gas networks, as described. No opinion is expressed or implied in regard to the validity of the valuations discussed in this report nor is any opinion expressed or implied in regard to these valuations to any party other than the New Zealand Commerce Commission nor for any purpose other than the described purpose.

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1 Executive Summary

1.1 Background

This report is provided to assist the Commission with its work in regard to the Gas Inquiry¹. As part of this inquiry the Commission requires valuations which it can use for regulatory analytical purposes and may possibly require valuations for regulatory control purposes. At this stage the Commission wishes to form a view as to whether ODV valuations previously undertaken by the companies owning gas networks may be of use for these purposes.

We have been asked to review the consistency of the most recently available valuations of each of the gas networks, being:

- Vector
- Natural Gas Corporation (NGC) - Distribution
- Powerco
- Wanganui Gas (GasNet)
- Natural Gas Corporation (NGC) - Transmission
- Maui Development Ltd (MDL).

We have undertaken this consistency review based on valuation reports and other written information provided to us, together with discussions with each of the network businesses (except for Powerco, where relevant staff were unavailable). As a pragmatic reference point, we have used the draft gas ODV Handbook released by the MED in assessing consistency. None of the gas network businesses has been required to follow this Handbook and some valuations reviewed preceded the Handbook. Nevertheless it is relatively prescriptive and has been discussed extensively in the industry. Where we were readily able to do so, we have estimated the adjustments that would be required to achieve consistency with this Handbook.

1.2 Results

The following table summarises the most recent valuations undertaken for each of the networks, along with the required consistency adjustments, where we have been able to estimate these.

¹ Commissioned by the Minister of Energy, 30th April 2003

2 Background

2.1 Introduction

As part of the Gas Control Inquiry, the Minister of Energy has asked the Commerce Commission for specific advice on (inter alia):

“the methodology that the Commission considers appropriate for valuation of pipeline assets for the purposes of its advice on the matters covered in this letter”.

To fulfil this aspect of the brief, the Commission has determined that it needs to assess the feasibility of using valuations conducted according to a particular methodology. The Commission is aware that all of the incumbent gas networks have at some stage been subject to valuations on an ODV basis² and the Commission wishes to form a view as to whether those valuations may be of use to it in the inquiry³.

2.2 Scope of Review

The scope of this review can be summarised as:

- A review of the inconsistencies across the ODV valuations that have been undertaken for the various networks, and the reasons for those inconsistencies;
- Advice on the adjustments that would be required to make the valuations consistent, including estimating those adjustments where possible using readily available information and, where this is not possible, advising what information or analysis would be required.

The full terms of reference are contained in Appendix 6.2

The network assets reviewed are those of:

- Vector
- Natural Gas Corporation (NGC) - Distribution
- Powerco

² Nova has not been subject to an ODV.

³ The feasibility of using ODV valuations is separate from the conceptual consideration as to whether this methodology is appropriate for a particular purpose in relation to the inquiry. We understand that the Commission is in the process of forming its view on that matter.

- Wanganui Gas (GasNet)
- Natural Gas Corporation (NGC) - Transmission
- Maui Development Ltd (MDL).

The review has focused on the most recent available valuations for each of the networks within these businesses; in some cases prior valuation reports were also provided and in some cases these provided further explanation of the valuation approach and assumptions made.

In addition, EMCa was asked to comment on the issues to be addressed, including the information that would be required, in applying an economic value assessment to the Maui Pipeline 2002 ODRC valuation.

2.3 Review Process and Approach

2.3.1 Process

The review process comprised:

1. A desktop review of information provided to EMCa by the Commerce Commission. This included ODV valuation reports provided to the Commission for the purposes of this review by each of the businesses and a number of relevant NZ Gazettes (containing disclosed information by the gas businesses) together with some Annual Reports of gas businesses.
2. Meetings with each of the gas businesses, to clarify our understanding of information provided in the reports and, in some cases, to seek further explanations in regard to the valuation methodologies used.
3. Analysis to determine our views in regard to the consistency, adjustments and information required.

2.3.2 Deconstruction – Valuation Components

In order to be able to analyse the consistency of the valuations, we have deconstructed the ODV valuations undertaken by each network business into their main components, being:

- Asset verification – the process of ensuring that the valuation is based on sufficiently accurate information on the assets actually in place in the network;
- Asset scope – i.e. the asset categories included in the valuation;

- The unit replacement costs used – e.g. pipeline costs in \$/km, and including estimation processes for non-standard assets and also any special adjustment factors;
- Depreciation – comprising the calculations based on total lives, ages and estimated remaining lives and any residual life assumptions;
- Optimisation – comprising the engineering process and approach used;
- Economic Value – the economic/engineering approach used.

2.3.3 Methodological Consistency

For each of these components, our analysis focused on consistency of the methodology employed. As a point of reference, we have used the draft gas ODV Handbook (see below). We have not sought to review the professional judgments of those who undertook the valuations or the methodology and assumptions in the draft Handbook. We have focused purely on the approach that appears to have been used (based on documentation and other information provided to us) and its methodological consistency with the draft Handbook. In some cases where the methodology in the draft Handbook does not specify the approach required, we have formed a view as to what is professionally required - for example, in most cases we believe that a simulated flow analysis is required to support the optimisation.

2.3.4 Quantifying Adjustments

In order to quantify the adjustments required for consistency, we have in most cases relied on data provided in the valuation reports. Provided sufficiently disaggregated data is provided, we can do this for example, for inconsistencies in replacement costs and asset lives and with regard to the inclusion of particular groups of assets. In some cases the effect of a discrete optimisation or economic value adjustment is transparent; however for the most part inconsistencies in regard to these aspects of the valuation cannot be estimated analytically without a complete engineering review; to assist the Commission we have where possible sought anecdotal estimates or, in some cases, we have formed our own views and presented indicative ranges. These estimates are intended to help inform the Commission's decisions regarding future analysis; they are not estimates that could be relied on for any regulatory determination.

2.3.5 Materiality

We have also applied materiality thresholds as follows:

- In regard to each component of the valuation, we have determined the effect to be material if it may exceed 1% of the total valuation of that network;
- In regard to the valuation overall, we have deemed the effect to be material if it may exceed 2% of the total valuation.

These materiality thresholds are less than the uncertainty range that may typically be placed on a valuation. However as the draft Handbook is relatively prescriptive, a lower level of materiality can be used in determining consistency than would apply for the accuracy of the valuation overall. For example, there can be considerable variation and uncertainty with regard to the validity of replacement costs – however the maximum values in the Handbook limit considerably the variation that should be found in valuations undertaken according to the Handbook.

For presentation purposes, we further highlight those adjustments likely to exceed 3% of the valuation.

2.4 MED Draft Gas Networks ODV Handbook

A draft ODV Handbook was prepared by the Ministry of Economic Development (MED)⁴ and made available to the industry in June 2000. The Commerce Commission agreed that this should be used as a point of reference for the consistency assessment and consequent adjustments. There are several points that we wish to stress in this regard and which apply to all views and conclusions regarding consistency and adjustments throughout this report.

1. By using the draft Handbook, neither EMCa nor the Commerce Commission should be construed as necessarily endorsing that Handbook; we are aware of some debates within the industry about certain aspects of the Handbook.
2. The Handbook exists only in draft form – it has never been formally published by the MED nor has its use by the gas network businesses been required.
3. The draft Handbook was made available in June 2000. For some networks, the most recent valuation was conducted before that time. We are also aware that an exercise to update the draft Handbook, reflecting comments made on this first draft, was begun but not completed.

⁴ Handbook for Optimised Deprival Valuation of System Fixed Assets of Gas Pipeline Businesses; First Edition 2000.

In short, the draft Handbook has no formal status. Nevertheless we believe it provides a useful and common reference point for assessing the relative consistencies of the various valuations as it encapsulates expert gas network valuation knowledge and is reasonably clear and complete in its scope. We are also aware that some later valuations have used this as their methodology guideline.

2.5 Changes of Ownership of Networks

Over the period for which ODV valuations have been made available there have been a number of changes of ownership of the gas networks. As a result, in some instances the most recent valuation, or the valuation on which a recent update was based, were conducted by parties other than the current owner. This applies to Vector, Powerco and NGC Distribution.

In the case of Powerco, the valuations of its component networks have been conducted at different times, by the owners of those networks at those times and utilising different consulting advisers. This adds to the likelihood of inconsistencies. Further, in some cases this means that the individuals responsible for those valuations are no longer with the current owner and the current owner may have very little information on how the valuation was undertaken. In the case of Powerco, the company could not for example provide reports on the valuation of all of its networks and our review is based instead on previous reviews of those reports. Unfortunately, whilst these provide an opinion, there is little detail in those reviews to help us in forming our opinions.

2.6 Valuations Undertaken By the Gas Network Businesses

The following table summarises the valuations made available to us, for each Network. The Networks are grouped according to their current owner and the owner at the time of each valuation is shown. For comparison, some information is also shown from valuation data disclosed by the gas business in the NZ Gazette. Apart from adjusting for ownership at the time of each Gazette disclosure, we have not investigated the (generally small) discrepancies between the disclosed values and the ODV reports. However we note that there was no statutory requirement on any of the businesses for these values to be the same.

Historical ODV by Network

Network	current owner	year	owner	value (\$000)	year	owner	value (\$000)	year	owner	value (\$000)	year	owner	value (\$000)
Vector													
Auckland	Vector												
<i>Vector Valuation per Gazette</i>													
NGC Distribution													
Northland	NGC Distribution												
Auckland (NGC)	NGC Distribution												
Waikato	NGC Distribution												
Bay of Plenty	NGC Distribution												
Gisborne	NGC Distribution												
Kapiti	NGC Distribution												
Taranaki (NGC) <i>(note 2)</i>													
Total for these Networks													
Plus Hutt Valley/Porirua for 2000													
Value for Comparison with Gazette													
<i>NGC Valuation per Gazette</i>													
Powerco													
Hutt Valley/Porirua	Powerco												
Taranaki <i>(note 2)</i>	Powerco												
Manawatu ("Central")	Powerco												
Hawke's Bay ("East")	Powerco												
Wellington	Powerco												
Total for these networks													
less Hutt Valley/Porirua for 2001													
Value for comparison with Gazette													
<i>Powerco Valuation per Gazette (note 3)</i>													
GasNet													
Wanganui Region	GasNet												
<i>GasNet Valuation per Gazette</i>													
NGC Transmission													
NGC Transmission	NGC Transmission												
<i>NGC Valuation per gazette</i>													
MDL													
Maui Pipeline	MDL												
<i>(MDL not required to disclose Valtn.)</i>													
Notes:													
note 1:													
note 2:													
note 3:													
N/A													
N/V													

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N/A - We understand that a valuation was undertaken but was not provided to EMCa as part of this review.

N/V - We understand that no valuation was undertaken for these assets in this year

= most recent valuation for this network

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3.1.9 Estimate of Adjustments for Consistency

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3.1.10 Summary for Vector

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3.2.9 Summary for NGV Distribution

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3.3 Powerco

3.3.1 Background

Powerco operates a number of gas networks in the regions of Taranaki, Manawatu, Hawke's Bay and Wellington/Hutt Valley/Porirua. The networks other than Taranaki have been acquired within the last three years. Dates of acquisition (where appropriate), the dates of the most recent ODV and the organisations involved in the ODV are shown in the table below.

Networks	Date acquired	From	Most recent ODV	ODV (\$000)	ODV prepared by
Taranaki	See Footnote ⁶		2001	[XXXXX]	Powerco
Wellington	2002	UNL	1999	[XXXXX]	Orion
Hawke's Bay	2002	UNL	1999	[XXXXX]	Orion
Manawatu	2002	UNL	1999	[XXXXX]	Orion
Hutt Valley/Porirua	2001	AGL	2001	[XXXXX]	Powerco (as review of AGL valuation)
				[XXXXX]	

Breakdowns of the ODV by gas networks are given in the tables below:

Valuation by Powerco of its Taranaki Gas Distribution System Assets as at 31 March 2001					
	RC	DRC	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV		DRC:RC	ORC:RC	ODRC:DRC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

⁶ Powerco was formed from the New Plymouth MED gas department in 1993. It purchased the Hawera Gas Company in 1996 and NGC's Taranaki network in 1999.

Valuation by Orion of Wellington Gas Distribution System Assets as at 31 March 1999					
	RC	DRC	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV		DRC:RC	ORC:RC	ODRC:DRC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

Valuation by Orion of Manawatu Gas Distribution System Assets as at 31 March 1999					
	RC	DRC	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV		DRC:RC	ORC:RC	ODRC:DRC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

Valuation by Orion of Hawke's Bay Gas Distribution System Assets as at 31 March 1999					
	RC	DRC	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV		DRC:RC	ORC:RC	ODRC:DRC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

Valuation by Powerco of Hutt Valley/Porirua Gas Distribution System Assets as at 30 June 2001⁷					
	RC	DRC	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV		DRC:RC	ORC:RC	ODRC:DRC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

⁷ Presented as an update of a previous valuation undertaken by AGL

3.4 GasNet

3.4.1 Background

GasNet operates a number of gas networks in the vicinity of Wanganui including the networks in Wanganui, Marton and Bulls. GasNet was formed in 1992 and amalgamated the Wanganui City Council network with the networks operated by WestGas which covered the small networks as noted above. The company is 75% owned by the Wanganui District Council and 25% by NGC. We understand that NGC has no involvement in GasNet operations and were not involved in the preparation of the 2003 ODV.

The most recent ODV is dated 30 June 2003. Copies of previous ODV's undertaken in 2000 and 1997 have also been provided for our review. It is not known if any other earlier ODV's have been undertaken.

The 2003 ODV was prepared by GasNet personnel with Meritec Limited as the Independent Valuer.

Valuation by GasNet of its Distribution System Assets as at 30 June 2003					
	RC	DRC ⁸	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV			ORC:RC	ODRC:ORC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

3.4.2 Asset Verification

From information provided to us we have no reason to believe that the Asset Verification process adopted by GasNet was inconsistent either with the draft Handbook or with good practice by other gas networks. We note that records are in the form of paper copies and the asset register has been prepared by measuring off these records, supplemented by actual site measurement. This also appears to have been the approach adopted for the 2000 and 1997 ODVs.

⁸ [REDACTED]

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3.5.8 Estimate of Adjustments for Consistency

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3.5.9 Summary for NGC Transmission

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3.6 Maui Development Ltd

3.6.1 Background

Maui Development Ltd (MDL) owns the major gas transportation pipeline which runs from Oaonui Production Station in Taranaki to Rotowaro Compressor Station in Waikato. The pipeline includes laterals to Huntly and New Plymouth power stations, the Mokau compressor station and 17 intake and offtake stations together with other stations, valves and metering facilities.

The latest available asset valuation of the MDL pipeline was undertaken by Meritec, for MDL and is as at October 2002. This is an ODRC valuation, rather than an ODV valuation, in that no economic value assessment has been undertaken. We understand that the 2002 valuation is an update of a 1998 valuation. The valuation can be summarised as follows:

Valuation by MDL of its Transmission System Assets as at October 2002					
	RC	DRC	ORC	ODRC	ODV
Value (\$000)	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]
Relative effect of depreciation, optimisation, EV		DRC:RC	ORC:RC	ODRC:DRC	ODV:ODRC
		[XXXXX]	[XXXXX]	[XXXXX]	[XXXXX]

MDL is not required to disclose an asset valuation under the Gas (Information Disclosure) Regulations 1997.

3.6.2 Asset Verification

From information provided to us we have no reason to believe that the Asset Verification process adopted by MDL was inconsistent with the draft Handbook.

We note that, relative to a distribution network or even to the NGC transmission network, the MDL pipeline involves only a small number of component assets.

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3.6.5 Depreciation

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3.6.6 Optimisation

Based on the information provided, we have no reason to believe that the optimisation process adopted by MDL was inconsistent with the draft Handbook.

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3.6.7 Economic Value

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We have been asked by the Commission to comment on the issues that would need to be addressed, the information requirements and analytical approach in applying an economic value assessment to the MDL pipeline valuation. As this is wider than the issue of consistency with the draft Handbook, we cover this matter in a separate report.

3.6.8 Estimate of Adjustments for Consistency

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4 Summary and Conclusion

4.1 Summary of Adjustments

The table on the next page summarises the results of our assessment. For each component of the valuation we summarise the main factors affecting consistency and the required adjustment. We have coded these according to materiality – the bottom two categories being materially consistent and the top two being inconsistent (or likely to be so) with a materiality threshold at 1% for any one component of the valuation. Of those required adjustments that are material, we have further distinguished those that are likely to be greater than 5% of the valuation.

The table shows that all valuations would require some adjustment if they were to be made consistent with the draft Handbook. For Vector, NGC Distribution and GasNet, we have been able to estimate those adjustments with what we believe is sufficient accuracy for analytical purposes for the Commission, noting that in each case our estimation is a range not a point value. For the other valuations, there are aspects for which the available information does not allow us to form a firm conclusion.

At the component level, asset verification generally appears to be satisfactory. Asset scope in some cases includes meters and easements on terms that are not consistent with the draft Handbook. For distribution networks, the replacement costs are materially within those prescribed in the Handbook; [XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX], though in this regard we recommend that the Commission may need to review the Handbook before confirming any requirement for adjustments. There are a number of depreciation, optimisation and economic value methodological inconsistencies of varying materiality. In some cases optimisation has been done to longer planning horizons than the Handbook or with less professional rigour than we believe is warranted and, for a number of networks, no economic value assessment has been carried out.

4.2 Conclusions and Next Steps

Except for Powerco, the available ODV valuations would be useable by the Commission for analytical purposes relating to the Gas Inquiry and adjustments required for consistency either have been made in this report, or could in our view be made by the business with relatively modest effort.

Consistency Summary for Most Recent Available ODV Valuations

Network Owner (current/at time of valuation)	Asset Verification	Asset Scope (i.e. inclusions/excl'ns	Replacement Costs	Depreciation	Optimisation	Economic Value	Estimated Overall Adjustment
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KEY:

- Method and outcome appear to be Consistent
- Method appears to be Inconsistent, but effect unlikely to be material (<1%)
- Method appears to be inconsistent and effect is or is likely to be material (>1%) - should be reviewed and revised if necessary
- Method appears to be inconsistent and has or is likely to be have a significant effect (>3%) - adjustment must be made to provide consistency
- Insufficient Information

straightforward and typically involves some changes in the calculations in the asset valuation database.

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None of the valuations would be suitable for regulatory control purposes without independent review by the Commission.

A Appendices

A.1 List of reports reviewed

NGC

Transmission

1. Replacement Value as at 30 September 1991 (report dated 30 December 1991)
2. ODV as at 1 July 1994 (report dated 1 November 1994)
3. ODV as at 30 June 1997
4. ODV as at 30 June 2000
5. ODV of transmission and distribution as at 30 June 2003

Distribution

1. ODV as at 1 July 1993
2. ODV as at 30 June 1997
3. ODV as at 30 June 2000
4. ODV of transmission and distribution as at 30 June 2003

Other

1. NGC Distribution Economic Value Analysis June 2000 (Final Draft)

GasNet (Wanganui Gas)

1. GasNet ODV 1997 (2 documents)
2. GasNet ODV 2000
3. GasNet ODV 2003
4. Plans of Wanganui, Marton, Bulls, Flockhouse (8 plans in total)

Powerco

1. Review of report on Gas ODV of Powerco Limited for Year Ended 31 March 2001 (By Kerlake and Partners)
2. Review on the Review of AGL Gas Network ODV for Powerco Limited (By Kerlake and Partners January 2002)
3. AGL Distribution ODV Valuation as at 30 June 2000 (by Cap Gemini Ernst & Young)
4. Engineering assessment of Transalta Network for ODV (by Independent Technology Ltd for Ernst & Young)

5. Transalta New Ltd Gas Distribution System Valuation as at 31 March 1997 (by Ernst & Young)
6. Orion New Zealand Limited ODV Valuation as at 31 March 1999

Vector

1. Enerco New Zealand Limited ODV Valuation as at 31 March 1997
2. Vector Limited ODV Valuation as at 31 March 2003

Maui Development Limited

1. Maui Development Limited - Annual Report and Financial Statement - Year Ended 31 December 2002
2. Letter on Open Access on the Maui Onshore Pipeline
3. Maui Gas Draft Transmission Explanatory Memorandum
4. The Maui Mining Companies and/or Maui Entity - Draft Transmission Services Agreement
5. The Maui Mining Companies and/or Maui Entity - Draft Gas Pipeline Interconnection Agreement
6. The Maui Development Limited – Gas Pipelines Inquiry – Request for Company Information
7. Maui Development Limited - Maui Gas Pipeline Optimised Depreciated Replacement Cost (2002)
8. Ministry of Works and Development - Budget Pipeline Project Oaonui - Auckland Pipeline - Capital Expenditure Estimates 1983 - 1985

Additional Documents

- Nova Gas Financial Statements (2000 – 2001 & some documents)
- Handbook for ODV of gas Fixed Asset - October 1998
- Wanganui Annual Report (1992 – 2003)
- New Zealand Gazette – Wanganui Gas (~ 2002)
- New Zealand Gazette – Powerco Limited (2002 ~ 2003)
- New Zealand Gazette – Natural gas Co of NZ Ltd (1997 ~ 2002)
- New Zealand Gazette – United Networks LTD (~ 2003)
- NGC, Vector, United Networks, Mercury Energy Annual Reports
- Map of Gas System

A.2 Terms of Reference

The following text is extracted from the consultant's Terms of Reference.

Issues to be Addressed

The Commission indicated in its draft framework paper that it intends to consider both historical and replacement cost approaches for the establishment of efficient asset values for gas pipeline businesses.

As part of considering both valuation approaches (historic and replacement cost) the Consultant is to provide expert advice to the Commission on the consistency of the ODV asset valuations prepared by gas pipeline businesses (ODRC asset valuation in the case of the Maui Pipeline) and the suitability of using the prepared ODV asset values to establish the efficient level of prices for gas pipeline businesses, using the methodology set out in the Commission's draft framework paper.

In advising the Commission on the use of ODV asset values within the Inquiry the Consultant's Draft Report, Final Draft Report and Final Report must:

1. review and document the inconsistencies across the ODV asset values (including the Maui Pipeline ODRC) that have been prepared by the gas pipeline businesses. This includes inconsistencies between the ODV asset valuations of different gas pipeline businesses and inconsistencies of an individual gas pipeline businesses ODV asset value over time. The review will focus on the most recent valuation of each network together with comment on clear inconsistencies with previous valuations since 1997;
2. comment on the reasons for the inconsistencies found and any shortcomings in the in the approaches used by the gas pipeline businesses;
3. review and advise on the adjustments that need to be made to the ODV asset values available (including the Maui Pipeline ODRC) in order to obtain a set of ODV asset values that could be used to establish the current efficient level of prices for the gas pipeline businesses subject to the Inquiry;
4. review and advise on the information that would be required to make the required adjustments identified in item 3 above;

5. review and advise whether the information identified in item 4 above is readily available and where this information can be found;
6. advise of any assumptions that would need to be made to make the required adjustments identified in item 3 above;
7. to the extent possible, undertake the necessary adjustments to the ODV asset values available (including the Maui Pipeline ODRC) to obtain a set of ODV asset values that could be used to establish the current efficient level of prices for the gas pipeline businesses subject to the Inquiry;
8. review and advise on the depreciation to apply to ODV asset values (including the Maui Pipeline ODRC) and provide justification for this advice; and
9. comment on the issues that would need to be addressed, including information required and methodology, in applying an economic value assessment to the Maui Pipeline 2002 ODRC asset valuation¹⁰.

¹⁰ This item is covered in a separate report

A.3 Disclosure

The authors of this report are Paul Sell and Peter Cole.

Paul Sell is a former Partner of Ernst & Young and a former Vice President of Cap Gemini Ernst & Young. Peter Cole is currently employed by Empower Consultants Ltd and is a former Director and employee of Meritec Ltd (now Maunsell Ltd). Ernst & Young, Cap Gemini Ernst & Young and Meritec were engaged at various times to provide ODV and/or ODRC regulatory valuation reports and advice to New Zealand gas companies.

A.4 Glossary

ODV	Optimised Deprival Value
ODRC	Optimised Depreciated Replacement Cost
ORC	Optimised Replacement Cost
RC	Replacement Cost
TL	Total Life
RL	Remaining Life
LP/IP/HP	Low/Intermediate/High Pressure
FDC	Finance During Construction
MDL	Maui Development Ltd
NGC	Natural Gas Corporation