

C. Natural Monopoly in Gas Transportation

- [Background](#)
- [Comment](#)
 - [Vertical Separation](#)
 - ["Control" of Gas Pipeline Services](#)
 - [Price Control Inquiry by the Commerce Commission](#)
 - [Improving Existing Information Disclosure Regulations](#)
 - [Multi-Utility Natural Monopolies](#)

Background

35. Gas transmission and distribution pipelines have strong natural monopoly characteristics, with pipeline owners able to earn economic rents (that is, take excess profits or recover excess costs) as competitive entry that would erode such rents is uneconomic.

36. Where a pipeline owner also operates in a contestable segment of the gas supply chain (production and/or retailing), they may also have the ability and incentive to deter competition in the contestable market by restricting competitors' access to pipelines. In the New Zealand gas sector there are several vertically integrated companies that own both pipelines and competitive parts of the gas supply chain. Shell and Todd own a number of existing and future gas fields, and also own the Maui pipeline through their joint ownership of Maui Development Ltd. NGC is a gas wholesaler, owns all transmission pipelines apart from Maui, owns distribution pipelines in a number of areas and is also a gas retailer (in a number of areas it is both the gas distributor and a gas retailer).⁷ Wanganui Gas owns distribution pipelines and is a gas retailer.

37. There has been significant public debate over the extent of rent seeking behaviour by gas pipeline owners. The Todd Energy subsidiary, Nova, points out that they have been able to construct by-pass pipelines in some locations because incumbent pipeline owners have charged excessive prices. Simon Terry Associates (STA) argues that pipeline owners have earned significant excess profits over a number of years⁸ as a result of the adoption of optimised deprival value (ODV).⁹ STA conclude that the light-handed regulatory regime has not been effective.

38. In contrast, the New Zealand Institute for the Study of Competition and Regulation (ISCR), on behalf of NGC, argue that STA's analysis suggesting excess profits cannot be substantiated.

STA calculate ex-post real rates of return for NGC of 16.6% for combined NGC activities between 1992 and 2000 and 17.8% for NGC's pipeline activities between 1997

and 2000. These estimates use depreciated historic cost (DHC) for initial and optimised deprival value (ODV) for closing asset values.

Asset revaluation gains are treated as revenue (STA takes the view that revaluation gains represent an economic return to investors).

STA concludes that these rates of return are well in excess of established benchmarks, claiming that NGC has earned monopoly profits that are pure welfare transfers from customers and serve no economic purpose.

ISCR (for NGC) calculate a rate of return for NGC of 17.8% for combined NGC activities between 1992 and 2000 but suggest that surpluses for the entire company may be poor proxies for the returns attributable to the natural monopoly network assets. ISCR's estimate of the rate of return for pipeline activities between 1997 and 2000 is around 10% (i.e. at an acceptable level).

This estimate excludes revaluation gains arising from the shift to ODV as ISCR's view is that inclusion is justified only if prices increase as a result of the revaluation.

ISCR conclude that STA's conclusion of a wealth transfer from customers is not borne out.

Comment

39. Where natural monopolies exist, the regulatory goal is to improve the incentives on owners so that their behaviour is more closely aligned with that which would occur in a competitive market.

40. The current regulatory regime (as outlined in paragraph [17](#)) centres around information disclosure and the application of the Commerce and Fair Trading Acts. If significant monopoly issues exist (anti-competitive and rent seeking behaviour), more intensive forms of regulation such as vertical separation or "control" of gas pipeline services could be introduced. These, and the related option of an inquiry by the Commerce Commission, are discussed below.

Vertical Separation

41. Vertical separation to stem any anti-competitive behaviour by a vertically integrated natural monopoly would involve legislation mandating some form of vertical separation such as corporate or ownership separation of natural monopoly and contestable components of the supply chain to reduce or remove the ability and, in the case of ownership separation, the incentive to act anti-competitively. Corporate separation involves legislation to require monopoly and competitive activities to be set up as separate companies. Ownership separation goes further, requiring the companies to have separate ownership, as in electricity.

42. Mandating vertical separation is very intrusive. Ownership separation involves significant restructuring costs, loss of economies of scope, increased transaction costs and may be viewed adversely by investors. Corporate separation involves one-off restructuring costs and complex and on-going behavioural regulation (because the owners retain the incentive to act as an integrated company). Note that the recent strengthening of section 36 of the Commerce Act that prohibits a person from taking advantage of market power to prevent competition may reduce the need to consider more intensive regulatory responses.

43. Officials consider that there is insufficient evidence that gas wholesalers and retailers are having severe enough difficulties accessing pipelines to justify vertical separation at this time. The industry has signalled (as outlined in paragraph [32](#)) the development of pro-competitive and consistent access arrangements as part of its work programme. The Government Policy Statement, discussed further in the section on [Industry-Led Solutions and Government Policy Direction](#), emphasises the need for the industry to establish consistent standards and protocols so that gas market participants can access distribution pipelines on reasonable terms and conditions.

"Control" of Gas Pipeline Services

44. This involves declaring "control" of gas pipeline services by an Order in Council under Part IV of the Commerce Act. Pipeline owners would then require authorisation under section 70 to supply these services. An authorisation allowing supply would require pipeline owners to meet particular requirements relating to prices, revenues, or quality standards of the controlled services, using an approach to be determined by the Commerce Commission.¹⁰

45. Price control is a possible approach to control. There are a number of options for the form of price control (price cap, rate of return¹¹ or a hybrid), and for the asset valuation methodology upon which the price control is based. The Commission could use CPI-x price control which would set a price path for gas pipeline charges.

46. Price control is much more effective in limiting monopoly rents than information disclosure (the present regime). However, it has higher administrative, compliance and (possibly) economic costs, and is difficult to do well because regulators often have insufficient information to set prices accurately. Prices set above or below the competitive price may lead to monopoly rents or insufficient revenue with consequent risks to supply security and safety.

47. Neither the [ACIL Report](#) nor [submissions](#) support price control of gas pipeline services at this stage, although STA consider that the light-handed regulatory regime has enabled pipeline owners to earn excess profits.

48. The Ministry of Economic Development commissioned independent analysis from Dr Alastair Marsden, Auckland Uniservices, to determine the nature of material differences between the STA and ISCR analyses mentioned in paragraph [38](#) above. Although a

number of different accounting treatments were identified, the most significant factor that affects whether monopoly profits have been earned is the valuation of the initial asset base and the treatment of asset revaluation gains.

Without fully replicating the STA analysis, **Dr Marsden's** preliminary view is that NGC's real ex-post return is 14.1% for combined NGC activities between 1992 and 2000 (comparable analysis of the profits of other pipeline owners is not available). Dr Marsden also considers that the real return for NGC's pipeline activities between 1997 and 2000 of 17.8% calculated by STA can be validly compared to weighted average cost of capital (WACC). These figures, appropriately in Dr Marsden's view, include asset revaluations as income.¹²

The **Ministry's** view is also that revaluation gains should be included as revenue when calculating ex-post returns for regulatory purposes. This recognises that in response to an increase in asset value, a profit maximising monopoly will increase revenue (profit) to equate this to the allowable return on that asset, which is based on WACC. The revaluation gain is in principle equal to the net present value of the incremental revenue that can be expected to accrue to the asset owner.

A rough benchmark for reasonable rates of return can be taken to be a pipeline owner's WACC. The Ministry considers that for the period 1995 to 1999, a nominal post-tax WACC for electricity lines companies of between 7.5 and 10% was appropriate. The Commerce Commission gives a WACC of around 9% for airfield activities. There is no available WACC estimate for gas pipelines, but given the treatment of the assessed revaluation it would be less than the returns calculated. Note that these WACC estimates are expressed in nominal terms - they should be discounted slightly to allow for inflation before comparison with STA's and Dr Marsden's figures.

49. When pipeline companies were first established, transmission and distribution assets were valued at actual or historic cost.¹³ In the mid-1990s, electricity companies were required to use the ODV methodology for information disclosure purposes. Subsequently, the owners of transmission and distribution pipelines adopted ODV. There is no regulatory oversight of valuation of gas pipeline assets.

50. Although ACIL recommended the use of ODV, a number of submitters strongly oppose its use.

51. The Commerce Commission is currently investigating the appropriate asset valuation methodology for electricity lines, and has recently released its [price control study](#) of Auckland, Wellington and Christchurch international airports. The Commission recommended price control for Auckland Airport on the grounds that this would provide net benefits to acquirers of airport services (i.e. airlines) of some \$2 million per annum, and that (unoptimised) Depreciated Historic Cost (DHC) be used for valuing specialised assets.¹⁴

52. The Ministry of Economic Development commissioned Dr John Small, Auckland Uniservices, to apply the Commission's methodology to calculate the net benefits to acquirers of control of pipeline services provided by the two main gas pipeline owners (Natural Gas Corporation and United Networks Limited). This study found that net benefits to acquirers of around \$20 to \$30 million per annum might have arisen over the period 1997 to 2001 if price control on pipeline services had been introduced and if profits are calculated on DHC-valued assets (the range arises inter alia from different assumptions about the accounting treatment of new asset acquisitions). If profits are calculated on the basis of ODV-valued assets, net benefits to acquirers are estimated to be negligible.¹⁵ The study does not attempt to determine the appropriate approach for valuing gas pipelines. It does, however, highlight how critical the asset valuation methodology is in determining whether excessive profits are being earned.

53. The Minister of Energy can recommend to the Executive Council that control be introduced on gas transmission and distribution pipelines under section 53 of the Commerce Act if he is satisfied, inter alia, that tests in section 52 are met, i.e. that competition is limited and that price control is in the interests of acquirers of pipeline services.¹⁶ The form of control would then be for the Commerce Commission to determine.

54. Officials are not in a position to recommend that the Minister recommend control under section 53 - we are unable to demonstrate clearly that the section 52 tests (mentioned in the paragraph above) have been met. Appropriate asset valuation for gas transmission and distribution is a key unknown but there are others such as the extent of market power, the effect of any countervailing power, the extent to which the gas access arrangements may deal with the concerns and the impact of open access on the Maui pipeline (this matter is covered in [Gas Sector Review - Paper 3: Open Access to the Maui Pipeline](#)). A Ministerial recommendation at this stage, i.e. prior to a well-designed and executed process that would enable due consideration of all of the relevant issues, would therefore be open to judicial review by a party that considers that it may be disadvantaged by a decision to control.

Price Control Inquiry by the Commerce Commission

55. Officials consider that the Commerce Commission should be requested to report to the Minister, under section 56 of the Commerce Act, on whether "control" should be introduced on gas transmission and/or distribution pipelines. This recommendation recognises that there is evidence that rents have been received by at least the main pipeline owners, but the issues are not straight forward, and there is room for debate. The Commission would then conduct a full inquiry, involving submissions, hearings and robust consideration of the evidence. A formal inquiry offers the best way to get to the bottom of the matter, including the appropriate asset valuation, thus providing the firmest available basis for a Ministerial recommendation that control be imposed if that was suggested by the Commission. The Commission has recently undertaken such an inquiry into airports and is undertaking extensive work in electricity - it would draw on this experience in reaching consistent conclusions across these three sectors.

56. Officials recommend that the Commerce Commission's inquiry cover both gas transmission and distribution pipelines, including the Maui pipeline as well as bypass and bypassed pipelines:

- Inclusion of the Maui pipeline recognises its importance to New Zealand's gas and electricity future and the new pricing issues which will arise as it transits to an open access regime, as recommended in [*Gas Sector Review - Paper 3: Open Access to the Maui Pipeline*](#).
- Inclusion of bypass and bypassed pipelines will help resolve issues relating to possible exercise of monopoly power by existing pipeline owners and whether regulation on these pipelines is warranted.

57. The Commerce Commission has indicated that such an inquiry would take 18 - 24 months to complete and cost up to \$2.250 million. This cost is made up of \$1.690 million internal costs (staff and Commissioner time and routine direct costs) and \$0.560 million non-routine direct costs (external legal, economic and other expert advisors).

58. Once the Commission's report is received, officials would advise on process and other matters to minimise the risk that any decision might be successfully judicially reviewed.

59. If this recommendation is accepted, the Ministry will prepare the necessary formal request to the Commerce Commission for the Minister's signature.

Improving Existing Information Disclosure Regulations

60. A number of deficiencies with the Gas (Information Disclosure) Regulations 1997 have previously been identified. The deficiencies include inconsistency in the allocation of costs and the valuation of assets, and insufficiency of information on asset management planning. Some information is also collected that is now considered unnecessary, such as the requirement to separately disclose line charges to all customers.

61. Steps to overcome these deficiencies were agreed to by Cabinet at its meeting of 1 May 2000. The recommendations agreed by Cabinet and copies of the Cabinet paper are available from the Minister of Energy's office. The main changes agreed by Cabinet were:

- a. tightening rules for accounting and for calculating performance measures;
- b. requiring the use of ODV for valuing pipeline fixed assets;
- c. requiring pipeline owners to disclose asset management planning information;
- d. introducing new measures for reliability performance;
- e. providing for most disclosed information to be made available on the Internet;
- f. extending the range of new contracts relating to the Maui pipeline that must be disclosed (at present, disclosure applies just to those contracts in which transmission charges are separately identified); and
- g. exempting Nova gas pipelines from information disclosure, as its pipelines were almost entirely by-pass pipelines.

62. Subsequently, at its meeting of 28 February 2001, when the need for a wider review of the gas sector was considered, FIN agreed that work on drafting the amendments be stopped, pending the outcome of the wider review.

63. Officials are of the view that the enhancements to the information disclosure regulations should proceed as they will improve the ability of interested parties and the Government to monitor industry performance. This type of information will be necessary even if price control is ultimately recommended by the Commerce Commission inquiry.¹⁷

64. Although the appropriate asset valuation methodology will be determined through the section 56 inquiry, officials recommend that ODV be formalised in the information disclosure regime in the interim because:

- ODV is currently used by gas pipeline companies, but there is presently no way to ensure that ODV rules are applied rigorously;
- regulated ODVs ensure that any alternative methodology taken up for commercial gain will be transparent;¹⁸ and
- regulated ODVs will provide a consistent set of disclosures (including those on profits) until such time that recommendations on asset valuation arising from the section 56 inquiry are implemented (at least 2 years away).

65. It will need to be made quite clear that the introduction of ODV in the information disclosure regime should not be seen as the Government pre-empting the outcome of the section 56 inquiry with respect to an appropriate asset valuation methodology.

66. It is proposed that the regulations be applied to the financial year in which they are promulgated. Given that pipeline companies have different end of year reporting dates, and the recent sale of United Networks gas assets to Powerco and Vector, officials will need to consult further with industry participants on implementation issues including timing. Further recommendations on implementation details may be made when the regulations are promulgated.

67. While in some cases the new requirements will result in increased compliance costs, in others it will reduce them through removing unnecessary regulations. It is estimated that upper bound for industry one-off and transitional compliance costs is in the order of \$306,000. For annual compliance costs, there is an expected decrease in the order of \$79,500. Industry-wide revenues earned from pipeline operations were approximately \$200 million during 2001/2002. An updated [Regulatory Impact Statement](#) is available.

Multi-Utility Natural Monopolies

68. At least two multi-utility businesses, Powerco and Vector, own both gas pipelines and electricity lines. This enables them to take advantage of economies of scope arising, for example, from the sharing of head office costs (including management costs, billing systems and inquiry/complaints handling) between the two businesses.

69. Under the current information disclosure regimes for gas and electricity, multi-utilities are able to include in their cost disclosures for each sector the full cost of supplying each service independently. This includes, in each case, the full amount of any common costs - i.e. common costs can be recovered twice. Unlike in a competitive market, there is no mechanism for ensuring that the benefits of natural monopoly multi-utilities are shared with consumers.

70. Under the Gas (Information Disclosure) Regulations 1997, it is possible to require gas pipeline owners who also own other assets for which accounting information must be made available to regulators (e.g. electricity) to report the common costs of both activities. It is proposed that amendments to these regulations be made to ensure that these common costs are identified. Specific consultation on this issue has not occurred, but the issue will be included in forthcoming consultation as outlined in paragraph [66](#).

⁷ NGC has recently announced sale of its retail interests in relation to small customers (up to 10TJ) but is retaining retail business to larger customers.

⁸ Specifically, STA argues that excess profits arise from the adoption of ODV to value assets after privatisation has occurred.

⁹ ODV is the lower of optimised-depreciated replacement cost (ODRC) and economic value. ODRC is the depreciated cost of replacing the network. Optimisation ensures that unnecessary or "gold plated" assets do not contribute to network value. Economic value is the maximum amount that consumers connected to that network would be willing to pay for connection.

¹⁰ The appropriate approach would be guided substantially by s70A(c) of the Commerce Act which requires the Commission to have regard to "the promotion of efficiency in the production and supply or acquisition of the controlled goods or services".

¹¹ It is unlikely the Commission would use rate of return regulation due to its serious disadvantage of encouraging inefficient behaviour by the regulated entity.

¹² Dr Marsden's and STA's analyses are based on initial asset values established at initial flotation in 1992, which were subsequently increased to ODV. Dr Marsden notes that the appropriateness of treatment of revaluation gains as income is conditional on adoption (by the companies) of ODVs for price setting as opposed to continued use of historic cost for pricing.

¹³ NGC and Enerco (Enerco's assets are now owned by Vector and PowerCo) were both restructured in 1992, with new asset values established on their flotations.

¹⁴ There is a dissenting report from two Commissioners to the effect that ODRC rather than DHC should be used to value specialised assets.

¹⁵The study drew on historical data (in contrast with the Commerce Commission's study of airports in which future data were estimated). The implicit assumption is that past monopoly rents are the best estimate of future monopoly rents.

¹⁶Under section 13 of the Ministry of Energy Abolition Act 1989, the relevant Minister for price control matters in the Commerce Act insofar as they relate to the energy sector, is the Minister of Energy rather than the Minister of Commerce.

¹⁷Enhanced information disclosure by itself is considered insufficient as a policy response - given the debate on pipeline profits, the credibility of Government economic regulation generally would be undermined if an approach was adopted that simply offered improved data on pipeline activity.

¹⁸Vector has recently paid twice ODV for UNL's electricity and gas line assets. While there may be sound and acceptable reasons for payments above ODV (e.g. where synergies may be captured) it is important that the gas regulatory regime is able to address any excess profits arising (electricity is subject to a price control regime).