Victorian Gas Distribution Access Arrangement 2003-07

Customer Energy Coalition
Comment on Essential Services Commission Draft Decision

Prepared by Pareto Associates Pty Ltd
August 2002

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Preface

- This document presents a preliminary assessment, from a consumer perspective, of the ESC Draft Decision. The assessment has been provided to, and discussed with, the CEC on the basis that it contains the best assessment possible given the limited time and resources available.
- The presentation style will assist the CEC understand some of the complexity of the Victorian regulatory regime without overwhelming individual members with details they may not need. However, the content is primarily intended to assist informing the ESC's decision-making process.
- The views expressed may be adopted by the CEC to inform an advocacy position, but the document is not intended to present such a position. Exactly the same views would have been presented by Pareto if the assignment had been undertaken for the ESC directly, or government, or utilities, or any other stakeholder.
- Issues and questions arising from the information presented in this document demonstrate there is an urgent need for close scrutiny of current regulatory practice in Victoria (and Australia); and for much better informed debate of key regulatory policy issues. If neither occur, regulators and companies will lose an opportunity to improve the efficiency of utility industries and consumers will be materially disadvantaged. Ultimately, the regulatory regime could be discredited and the international competitiveness of Australia's national economy reduced.

The ESC's Statutory Objectives

- s(8)1 of the ESC Act 2002 says the ESC's primary objective is to protect the long term interests of Victorian consumers with regard to price, quality and reliability ...
- s8(2) says the ESC must (also) have regard (when regulating monopolies) to –
    - facilitating efficiency in regulated industries …
    - facilitating the financial viability of regulated industries
    - ensuring that the misuse of monopoly power is prevented; …
    - ensuring decisions have regard to the relevant health, safety, environmental and social legislation
    - ensuring that users and consumers (including low-income or vulnerable customers) benefit from the gains from efficiency
    - promoting consistency in regulation between States and on a national basis
- s8(3) … says the ESC (must best achieve) any objectives specified in (this case) the Gas Industry Act 2000.
- s18(1) of the GIA 2000 says the Commission's objectives are … to promote a consistent regulatory approach between the gas industry and the electricity industry (and) … to promote the development of full retail competition.

- The assessment described in this document strongly suggests the ESC has failed to achieve either its primary objective, or the facilitating objectives to prevent misuse of monopoly power and ensure consumers gain from efficiency.

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Notable quotes

- In the absence of regulation, it is widely accepted that natural monopolies will invest inefficiently and restrict output by raising prices above the levels that would be permitted in competitive markets. (*ESC, p vii*)

- The widely recognised problem with 'rate of return' regulation – as these arrangements have become widely known - is the degree of inefficiency associated with the incentives for over-investment, or 'gold-plating'. (*ESC, p viii*)

- Perhaps the most important … practical challenge … facing regulators … is the risk of under-estimating the scope for strategic behaviour by regulated entities seeking to benefit from the information advantages they enjoy. (*ESC, p ix*)

- While prices need to be at least sufficient to cover the long-run costs of facility operators including an adequate return for the risk involved, prices should not be set so far above costs as to deter the efficient use of services and investment and innovation in related markets. (*ESC, p ix - quoting the Productivity Commission*)

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The focus of this assessment

- This assessment focuses on issues that directly affect small consumers for two reasons:
  - the ESC says (*p129*) that gas distribution businesses derive approximately 95% of their total revenue from small (Tariff V) consumers;
  - the terms of engagement for Pareto Associates Pty Ltd endorsed by the ESC (who provided funds for the CEC to undertake this assignment) required focus on issues that impact on small consumers.
- However, as is the case with the vast majority of utility industry policy matters in Australia, there is currently far greater common interest between all consumers, than there is divergence of interest. The same issues impact directly - and in the same way - on large and small consumers alike.
- Comparisons are made between the ESC's approach to issues, and those adopted by UK regulators administering virtually identical regimes. Some comparisons are also made with outcomes from US regulatory processes; processes that are significantly different to those in Australia and the UK.
- The primary common challenge facing consumers, utilities and regulators is to find a way to establish a sustainable basis for providing efficient utilities services to consumers that ensures all Australians gain benefits derived from continuing, and improving, the international competitiveness of Australia's economy.

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Gas distribution services – impact on consumers

- The ESC says nothing about the impact of its Draft Decision on consumers' bills.
- Comparison of published retail and distribution tariffs for 2002 shows that distribution costs comprise between 16% and 50% of a typical residential consumer's bi-monthly bill.
  - the lower rate applies during high consumption billing periods for consumers with high-use appliances (i.e. central heating during winter);
  - the higher rate applies during low-use billing periods.
  - the distribution component of a low-use consumer's bills (i.e dual-fuel households without gas heating) would be closer to 50% (or even higher) every billing period.
  - the distribution component of a typical consumer's bill (or at least a dual-fuel household with gas heating) might be expected to be around 33% over a full year.
- The ESC must ensure that its Final Decision fully describes the impact of its decision on consumers.

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Conclusions – the good news for consumers

- Trend reductions in cost in the first access arrangement period (AAP1) show that the primary efficiency incentives in the regulatory regime are working.
- The ESC proposes to reduce the revenue forecast by the three Victorian gas distribution businesses (DBs) by a total of $189.5 million (or 9.8%) over the next five years. This translates to a $74 million reduction (or 3.8%) over 5 years compared to total distribution costs for 2002.
- This reduction is significant, but would reduce a typical consumer's bills by just 1.3% compared to 2002 (which is less than the expected inflation).
- The ESC has made a significant contribution to improving regulatory practice in Australia by:
  - retaining with the use of the "Vanilla", real, post-tax Capital Asset Pricing Model (CAPM) - initially adopted in Australia by ORG in 2000 - to estimate the Weighted Average Cost of Capital;
  - providing a clear and thorough explanation of its judgements on values of key CAPM parameters; and
  - continuing explicit service standards for gas distribution.
- Each of these improve the clarity of the regulatory regime.

Conclusions – the bad news for consumers

- It appears the ESC had failed to achieve key statutory objectives that aim to ensure consumers benefit from regulation.
- The ESC should, and quite reasonably could, improve outcomes for consumers by following UK precedents more closely and setting achievable, but challenging, benchmarks for the gas distribution industry that would further reduce consumer costs over five years by:
  - between $280-$435 million by adopting an efficient value for WACC ("Vanilla" real, post-tax) of no more than 5.4% that could be judged to be consistent with reasonable expectations of financial markets.
  - between $37-$123 million by adopting a reasonable assessment of OPEX efficiency in the first access arrangement period (AAP1) and the DB forecasts for AAP2.
  - between $21-$33 million over 5 years (assuming no change in the value of WACC proposed by the ESC) by adopting a reasonable assessment of CAPEX efficiency in AAP1 and the DB forecasts for AAP2. This translates from an estimated reduction in CAPEX of $108-188 million using such an approach.
- If these outcomes were achieved:
  - typical consumers' total bills would reduce by between 6.5% and 10.9% (compared to 1.3% proposed); and
  - Victoria would be well on the way to having a World Class, efficient gas distribution industry.

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- The Guaranteed Service Level (GSL) payment scheme must be improved by:
  - requiring DBs to make automatic payment to all affected consumers; and
  - "sharpening" the incentives to deliver the minium standards of service by funding GSL payments from DB "profits" - not from consumer contributions to revenue;

  or
  - consumers could be reasonably excused for judging the GSL scheme to be no more than a consumer-funded gimmick.
- The ESC should assist improving consumer awareness about the benefit of sensible gas use by including a requirement that DBs contribute at least $5 million over the next five years (in addition to funds provided by government) to the newly established Consumer Utility Advocacy Centre; with funds collected by DBs from consumers generally.

Questions for the ESC

- What is it about the Australian gas distribution industry (and other utilities) that supports the judgement that financial markets see the industry as very much less efficient than either the UK or US industry?
- If there is a reason for this – and evidence to support that reason (e.g. the Australian economy is seen by financial markets as less efficient), why are capital-intensive Australian firms operating in internationally competitive markets so successful?

- There is nothing in the ESC Draft Determination, or any other decision by any Australian regulator, to explain why return on equity and WACC must be higher for Australian utilities.
- If the outcomes presented here are the result of over-cautious regulation, or regulatory error, there is a real risk that the competitiveness of the Australian economy is being reduced.

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Preliminary assessment of material impact on consumers

- Consumers generally are concerned about three aspects of monopoly utility services: accessibility, affordability and service standards.
- Safety and “commodity” quality are also critical for consumers - but are not regulated by the ESC; and are not addressed in this assessment.
- This assessment focuses on the three most substantial material issues that impact on consumers’ costs:
  - Value of the Weighted Average Cost of Capital (WACC).
  - Efficiency of past and forecast capital expenditure (CAPEX).
  - Efficiency of past and forecast operation & maintenance expenditure (OPEX).
- In addition, comment is made on the introduction of service standards for small (Tariff V) consumers; and proposals that DBs be funded by consumers to “market” gas distribution services.
- The assessment has been limited by both time and available resources. There are other issues that should be reviewed by the ESC that are not covered in this assessment. The most notable is accessibility to services which is especially important to financially disadvantaged consumers, and those in areas without gas infrastructure.

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- The cost issues identified above are important to consumers because:
  - WACC determines the return on assets which accounts for ~43% of the forecast revenue requirement (in the ESC Draft Decision).
  - CAPEX has a significant impact on future revenues and asset values due to the scope for exercise of “strategic” behaviour in DB forecasts.
  - OPEX determines ~33% of revenue, and is also subject to exercise of “strategic” behaviour in DB forecasts.
- Depreciation also impacts on future asset values and costs but is not addressed in this assessment (in any more detail than shown below).
  - Ideally (or at least theoretically), consumers might assume that depreciation should match the actual life of assets as this avoids:
    - paying off assets before they need to be replaced; or
    - paying for assets after they are no longer serviceable.
  - However, the optimal situation is likely to be one where depreciation minimises DB taxation costs and/or reduces volatility in CAPEX requirements and prices.
  - Depreciation can be manipulated by DBs, but the impact on consumers is (generally) less controversial and more easily assessed by regulators than is the case for WACC, CAPEX and OPEX.

Incentives

- The ESC acknowledges for the first time (*by referring to a comment from the Productivity Commission*) that the Victorian regulatory regime has undesirable incentives, the principal one being for DBs to use their information advantage to exercise “strategic” behaviour in (or “game”) forecasts.
- The DBs argue that regulators should not need to “intrude” into their business affairs if incentives are well-designed. Consumers should have sympathy for this view, but experience shows it is both naive and unrealistic.
- All UK regulators express concern about incentives for companies to exercise “strategic” behaviour; and common sense suggests DBs will always adopt conservative and cautious forecasting assumptions that may not be efficient.
- It is, therefore, of concern that the ESC relies too heavily on assumptions that positive incentives (for DBS to reduce costs to efficient levels) work equally for all DBs all the time and always to the ultimate benefit of consumers - without testing this assumption in the same way that all UK regulators do.
- A key role for regulators is to assess all DB performance and test forecasts for both prudence and efficiency. This is the only way they can convincingly argue they have considered the interests of consumers.

- *UK experience also shows that it is possible for regulated companies to exercise “strategic” behaviour by mis-reporting information used in regulators’ performance reports. The clearest example occurred in the UK in 1995 when some of Yorkshire Water plc’s customers literally ran out of water when drought (a UK-style one, not an Australian drought) reduced water stocks - after Yorkshire Water reported to Ofwat that it had undertaken work to expand supply - when it had not done so.*

- All UK regulators use analysis and benchmark comparisons of past performance to inform judgements on future efficiencies. This practice:
  - minimises the need for “intrusive” regulation, and optimises regulatory outcomes.
  - allows DBs and regulators to share useful information with consumers.
  - allows regulators to set challenging performance benchmarks for regulated industries.
  - minimises the risk that mistakes will occur that discredit the regulatory regime (and the reputation of companies), and materially disadvantage consumers.
- UK regulators recognise and apply different incentives for DBs to improve efficiency. These include:
  - adopting “conservative” or “cautious” values for key parameters that leave opportunities for efficient, well-managed firms to out-perform regulatory benchmarks.
  - adopting “challenging” benchmarks that less-efficient, or less well-managed firms may not be able to achieve unless they make a step-change in performance.
  - applying more “challenging” benchmarks to less-efficient firms as an additional incentive to improve performance.
  - relying on the force of law to ensure (some) service standards are delivered - primarily in areas affecting public health and safety.

WACC

- The Office of the Regulator-General (ORG) greatly improved the clarity of WACC decision-making by adopting (in 2000) the “Vanilla” version of the Capital Asset Pricing Model (CAPM) that produces an estimate of real, post-tax WACC. The ESC has continued this practice.
- The “Vanilla” CAPM separates the estimation of WACC from the (confusing) influences of inflation and taxation policy (although consideration of inflation is still required to convert “nominal” values of some CAPM parameters to “real” values).
- The “Vanilla” real, post-tax version of CAPM is identical to that used by the UK water & sewerage regulator Ofwat since 1994.
- Other Australian and UK regulators (except QCA, and more recently the ACCC) use more complex versions of CAPM, some incomprehensibly complex, that include the impact of tax policy on revenue forecasts within CAPM.
- The ESC has further improved clarity by providing a comprehensive explanation of its decision-making on this important issue.
- Adopting the “Vanilla” version of CAPM and clearly and comprehensively explaining how WACC is derived are major contributions to improving regulatory practice in Australia.

Benchmarking regulatory judgements on WACC

- All regulators acknowledge that judgement is required to estimate WACC.
- CAPM is universally used by regulators in Australia, the UK and the US as a primary tool for estimating WACC.
- But CAPM is no more than a useful tool. CAPM will not give "efficient" values of WACC unless appropriate judgements on individual CAPM parameter values are made because:
  - CAPM requires input of values for a range of parameters, none of which can be measured or determined by direct observation;
  - regulators must use "proxies" - parameters similar to those in CAPM theory - values of which can be measured or estimated by observing behaviour and outcomes in financial markets; and
  - even then, interpretation of proxy data requires judgements that are best made by well-informed, independent regulators.

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WACC benchmarking methodology

- Assumed regulatory judgements (on WACC issues) are focussed on the view that financial markets take; not the view of shareholders. This is what UK regulators do; and it allows regulators to balance the interests of consumers and shareholders.
- Used "Vanilla" post-tax real $WACC = R_e \frac{E}{V} + R_d \frac{D}{V}$
- Estimated values of R_d (cost of debt), R_e (return on equity) and WACC that are directly comparable on a "like-for-like" basis by excluding effects of inflation and taxation policy.
- Relied on the fact that input parameters required to estimate R_d and R_e are identical for all versions of CAPM adopted by regulators.
- Adopted or estimated values of R_d and R_e using CAPM parameter values judged by regulators to be appropriate for Australia and the UK.
- Estimated real, post-tax WACC using average R_e and implied average R_d taken from US regulatory decisions assuming gearing ratio of 60%.

- *US regulators generally administer 'rate-of-return' regimes where actual debt costs, equity returns, gearing levels and taxation costs are known - or are determined by regulatory judgement.*
- *Average gearing levels for US gas utilities have been between 46.1% and 56.5% since 1991.*
- *Information on ~400 US gas and electric regulatory judgements was obtained from a US east coast consultancy firm through a subscription service. Few details are provided here because the providers consider the material to have commercial value. However, Pareto has offered to arrange purchase of a copy of this material for the ESC and DBs.*

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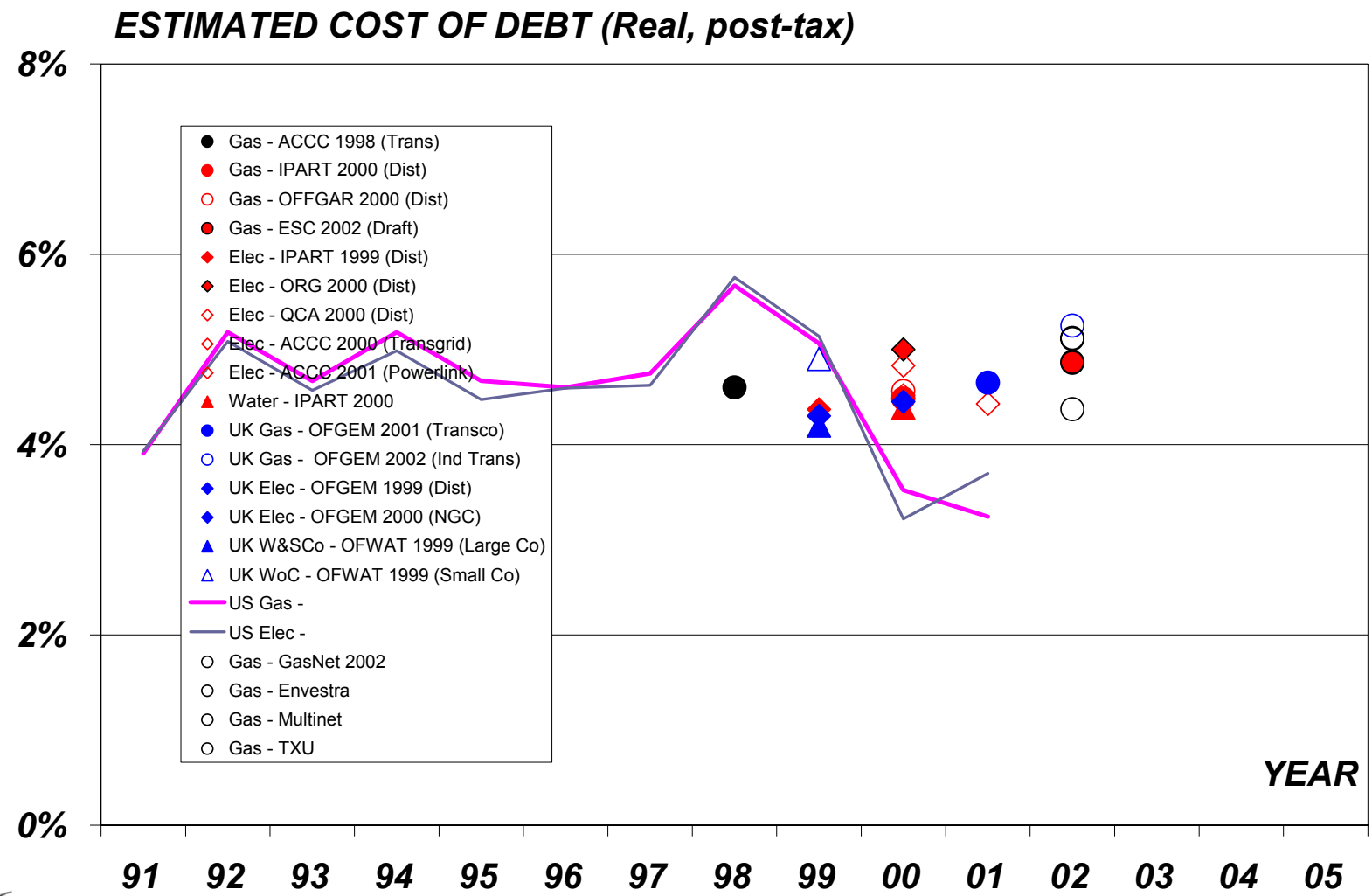
Cost of debt comparisons



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Regulatory judgements on cost of debt

- UK and Australian regulators judge that financial markets see electricity, gas and water utilities in both the UK and Australia in comparable terms (with cost of debt estimates within ± 50 basis points).
- UK regulators judge that financial markets see very large water & sewerage companies as being more efficient than smaller water companies. The very large UK water & sewerage companies have no comparators in Australia; the largest have more customers than exist in entire Australian utility industries. Other UK utilities are of comparable asset size to Australian utilities.
- US regulators judge that financial markets see electric and gas utilities in almost identical terms (on average).
- There is no evidence that regulators judge that financial markets see electricity, gas and water utilities as significantly different. This reflects the regulatory judgement that all utilities represent similar risks to financial markets; risks that are substantially lower than for non-regulated firms.

- *Australian and UK regulators allow higher debt margins than observed in financial markets, thus providing an "incentive" for companies to find lower cost debt financing.*
- *Debt financing costs being observed for very large UK water & sewerage companies responding to the incentives in Ofwat's 1999 decision are below the challenging values judged appropriate by Ofwat. Precedent suggests this will lead to Ofwat adopting even more challenging cost of debt benchmarks in 2004.*
- *US regulators observe actual debt financing costs. This helps explain the lower costs of debt recently adopted by US regulators.*

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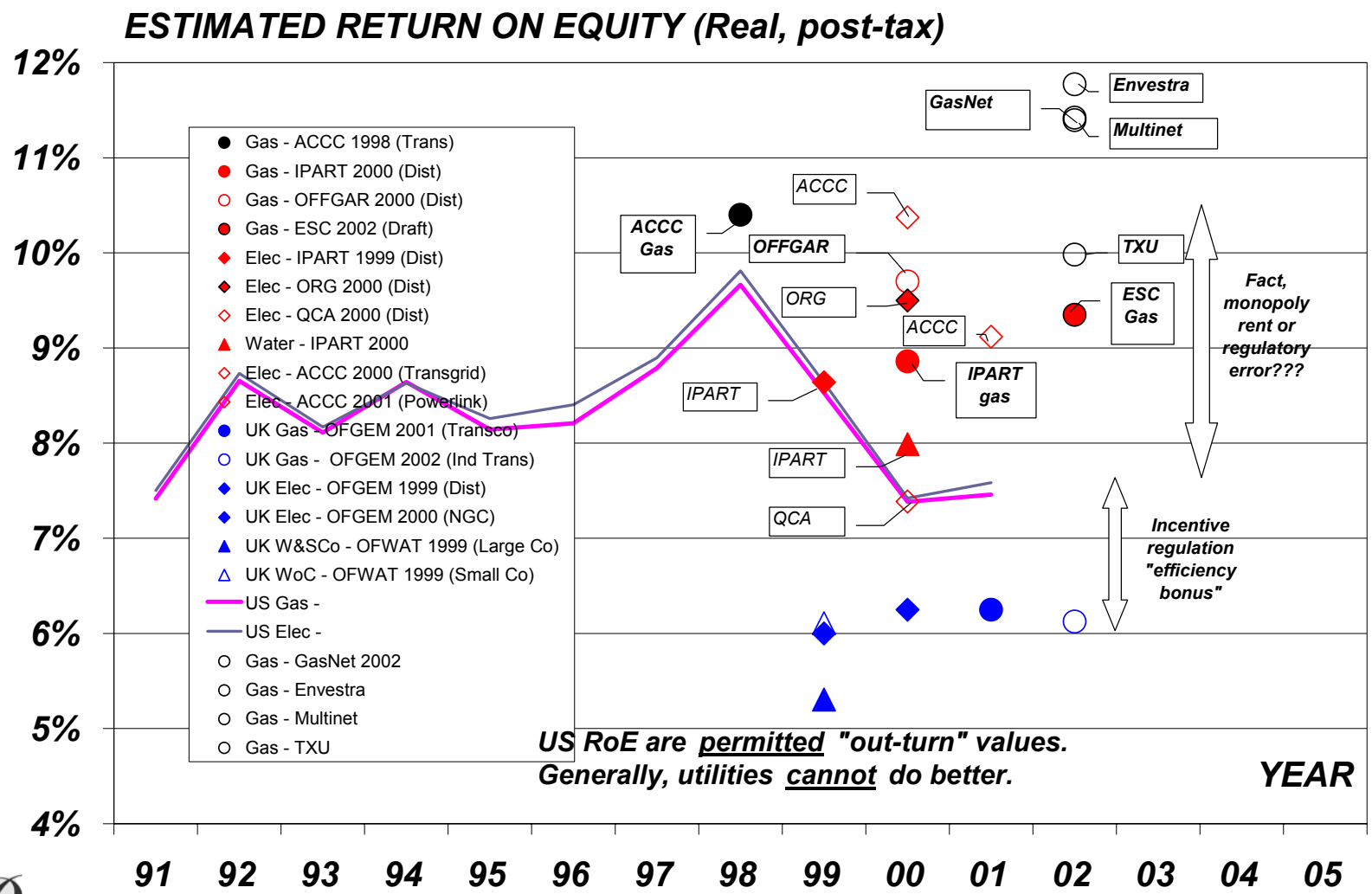
Return on equity comparisons



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Regulatory judgements on return on equity

- UK regulators judge that financial markets see electricity, gas and water utilities (of comparable size) in very similar terms.
- US regulators judge that financial markets see electric and gas utilities in very similar terms (on average).
- There is no evidence that regulators judge that financial markets see electricity, gas and water utilities as significantly different in either the UK or the US. This reflects the regulatory judgement that all utilities represent similar risks to financial markets; risks that are substantially lower than for non-regulated firms.
- Australian regulators judge that financial markets see:
  - the same types (and sizes) of utilities in substantially different terms.
  - similar utilities as being substantially different.
  - all utilities as very much less efficient (i.e. more costly to finance) than UK and US utilities.

- *Note that US R_e are (generally maximum allowed) "out-turn" values permitted by regulators. This assumes the cost of debt is known, and rate of return is capped (as is typically the case in the US 'rate-of-return' regimes). Some Performance Based Rate-making (PBR) schemes are being introduced in the US that provide a "sharing" mechanism between utilities and consumers if the regulated rate of return is exceeded.*
- *Financial performance reports (from those regulators who publish them) show that regulated industries (and most, but not all companies) in the UK and Victoria routinely out-perform regulatory WACC benchmarks.*
- *Some Victorian electricity DBs achieved "out-turn" returns substantially above values adopted by US regulators in 'rate-of-return' regimes. While such performance is commendable, it strongly suggests the original benchmarks were not efficient.*

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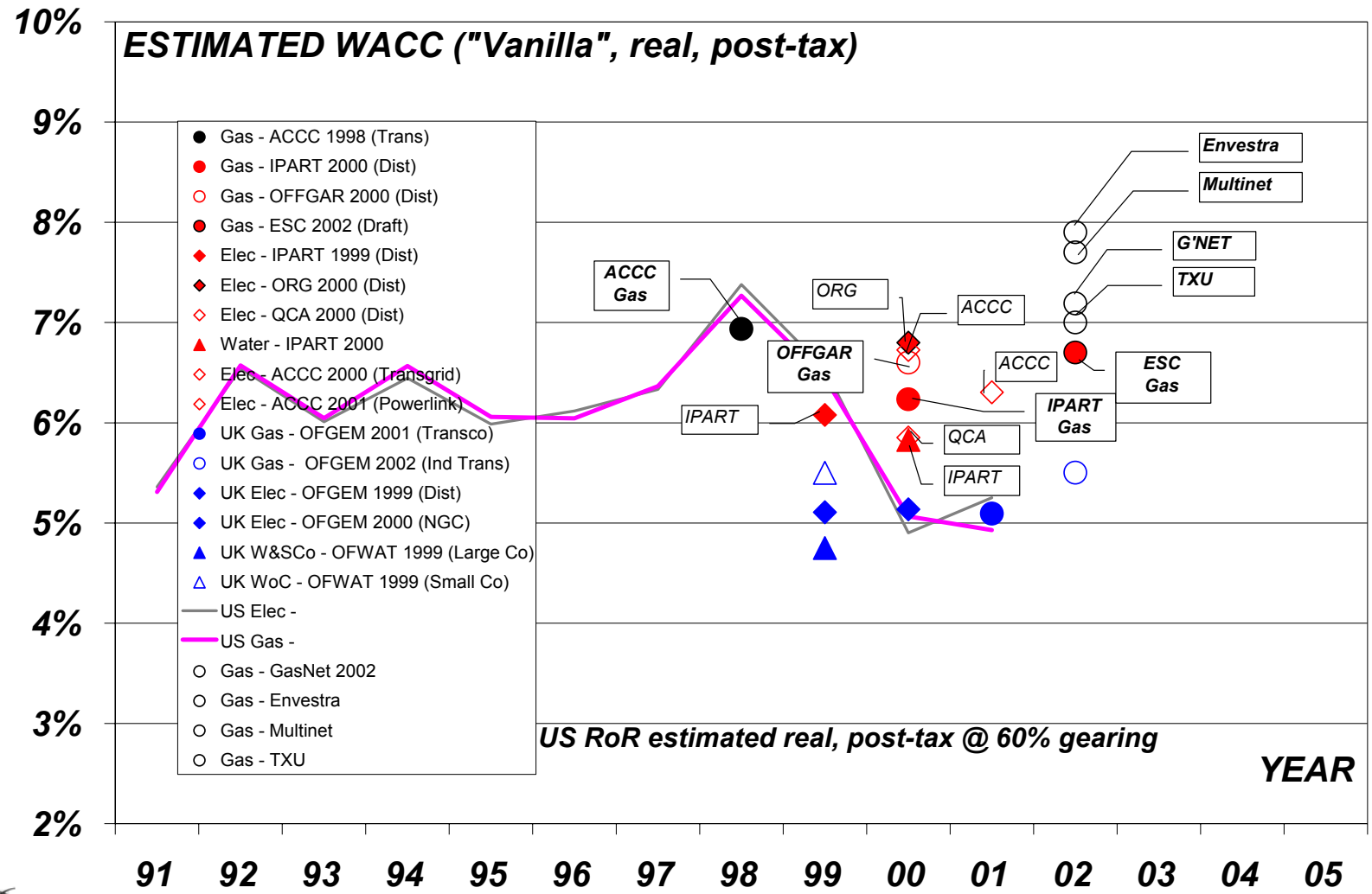
"Vanilla, real, post-tax WACC comparisons



Observations - regulatory judgements on WACC

- "Like-for-like" WACC comparisons show Australian regulators judge that financial markets see Australian utilities - including gas distribution businesses - as being very much less efficient than either UK or US utilities.
- UK and (recently) US regulators judge that financial markets see gas, electric and water utilities (in the UK) in comparable terms in both countries.
- The major differences between the UK and Australia WACC values come from judgements by regulators on the equity risk premium, and to a lesser extent the equity beta, required to estimate $\boldsymbol{R_e}$.
- The much discredited (by Australian regulators and policy makers) US 'rate-of-return' regimes are now producing very much more efficient outcomes (for consumers) than Australia's version of "incentive" regulation.

- *Note: US regulatory judgements for 2002 are delivering similar values for cost of debt, return on equity and rate of return (WACC) to those made in 2000 and 2001.*

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Why the difference in UK & Australian regulatory judgements?

- UK regulators accept that all regulated utility industries present similar risks to financial markets, risks that are substantially lower than for non-regulated firms.
- UK regulators (unequivocally) look at whole national industries when informing their judgement on values for CAPM parameters.
- UK regulators (unequivocally) seek input from a more diverse range of non-industry stakeholders than Australian regulators; and place more weight on advice and information provided by those non-industry sources.
- UK regulators (unambiguously) rely on information that is forward looking for both the cost of debt and the cost of equity.
- UK regulators (unequivocally) accept that financial market expectations have changed - and the value of the equity risk premium has fallen to levels identical to that suggested by Mercer Investment Consulting in the ESC Draft Decision.
- UK regulators deliberately set challenging benchmarks for efficient industries that only prudent, efficient, well-managed firms could achieve; and which less-efficient firms may not.
- UK regulators accept that shareholders whose expectations exceed those of financial markets (or cannot meet the benchmarks) will exit the industry (to be replaced by shareholders whose expectations match financial markets).

Estimating an "efficient" level for WACC

- Assume that financial markets see the gas distribution industry (and other Australian utility industries) as internationally competitive.
- Estimate an efficient value for return on equity (R_e) using judgements consistent with those made by UK regulators (accepting that financial markets expect equity risk premiums to be lower than (backward looking) historical data suggests).
- Adjust the value of R_e for observed differences in expected returns between efficient, internationally competitive market economies.
- Then estimate WACC using CAPM, and values for other parameters adopted by the ESC.

Note: Data in the following diagram has been taken from *Expected returns and volatility in 135 countries*, C. Erb, C. Harvey, T. Viskanta, Journal of Portfolio Management, Spring 1996, pp. 46-58 referenced by Henry Ergas (NECG Consulting) in a presentation made to the SPI PowerNet, ElectraNet SA, GasNet Australia WACC seminar in late June 2000. Ergas' use of this data appears to suggest that financial markets expect higher returns in Australia than in either the UK or the US.

The data selected by Ergas represents theoretical predictions of expected returns for non-market economies from one of three models presented by Erb et al. Erb et al make no claims that their models accurately predict expected returns in market economies like Australia's. Actual market data for Australia, the US and the UK presented by Erb et al show expected returns for Australia (between 1979-1995) slightly below those for the US and UK.

If the data presented by Erb et al is and remains valid, financial markets would expect the Australian economy to deliver the same returns as (or slightly less than) the UK and the US economies. To expect anything other than what can be observed requires more (or less) pessimism than the market generally - or access to information the market does not have.

A question remains as to whether data in the Erb et al paper (from 1979-1995) remains relevant for comparing the actual performance of financial markets in Australia, the UK and US in 2002.

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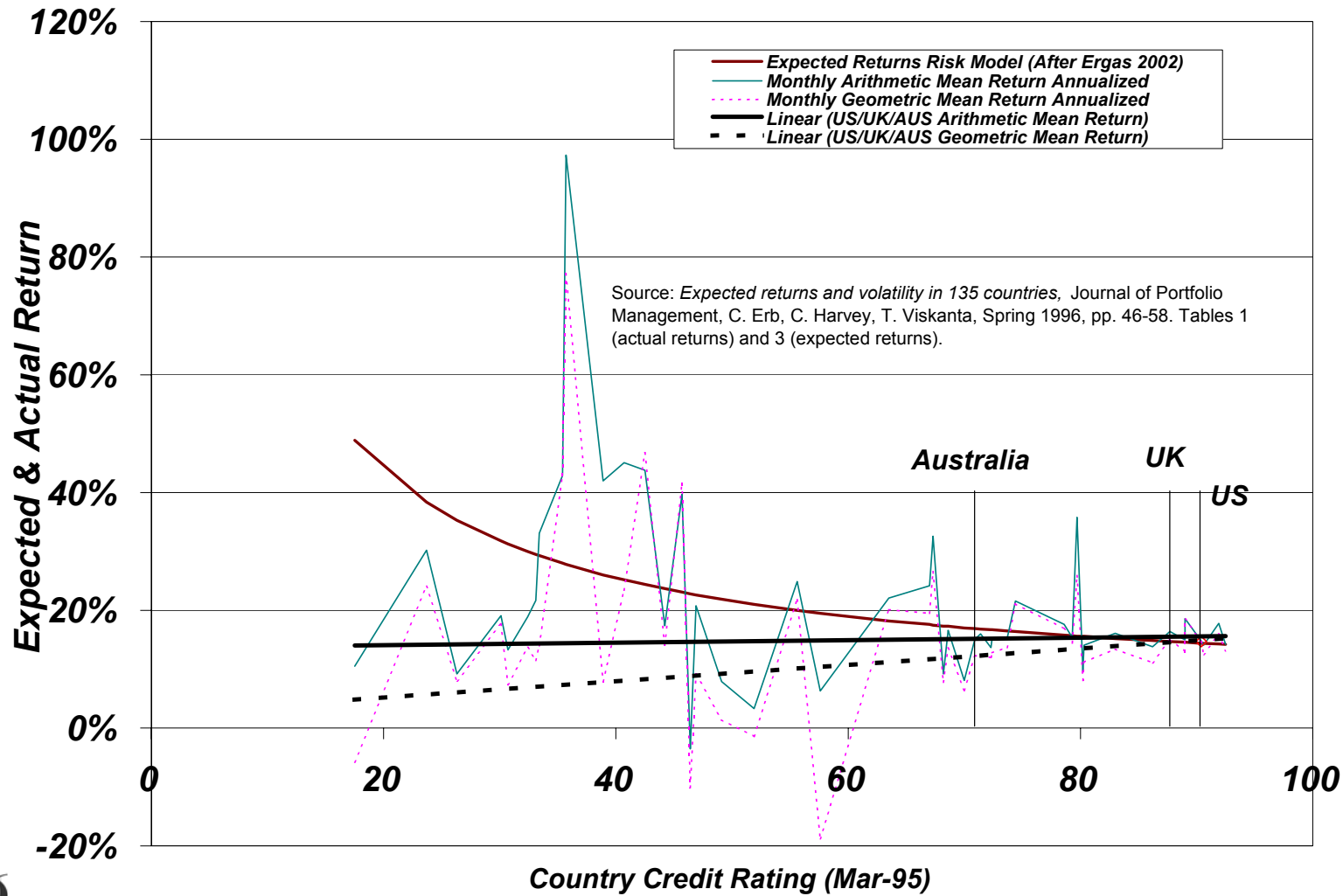
Correlation between actual and expected return for market economies (after Erb et al 1996)



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An "efficient" value for regulated WACC

- Erb et at (1996) - referred to by Ergas (2002) - suggests financial markets see the US, UK and Australia in similar terms. Therefore:
  - Assume financial markets see utilities in similar relative terms to the relevant economies. That is, assume financial markets expect the same returns from Australian utilities as they do from UK utilities.
  - Adopt the same values for CAPM parameters used to estimate R_e as do UK regulators, which gives a value of 6.1%.
  - Adopt the same values for R_d and gearing as ESC (4.9% and 60% respectively).
  - This gives a value of WACC ("Vanilla", real post-tax) of 5.4% - which is somewhat lower than 6.7%.
- Adopting a WACC of 5.4% would reduce costs to consumers by at least $283.5 million over 5 years - and provide incentives for Victoria's gas distribution industry to become internationally competitive.

An "efficiency frontier" value for regulated WACC

- Alternatively, use values expected by financial markets for equity risk premium and equity beta consistent with those quoted in the ESC Draft Decision from credible non-industry sources (which are very close to values reported by UK regulators):
  - equity risk premium of 3.5-4.0% as suggested by Mercer Investment Consulting; and
  - equity Beta $\leq$ 0.7 suggested by credible, non-industry sources.
- That would yield WACC of $\leq$ 4.7% - and still provide opportunities for efficient firms to out-perform benchmarks expected by financial markets.
- Adopting a WACC of 4.7% would reduce costs to consumers by at least $435.7 million over 5 years - and place Victoria's gas distribution industry at the efficiency frontier for regulated industries (alongside the very large UK water & sewerage companies).
- Information in the ESC Draft Decision (and from other sources) suggests that, even at this level, returns to utility shareholders exceed expectations of financial markets.

OPEX efficiency

- UK regulators are now observing the performance of regulated companies in the third 5-year regulatory period.
- Ofgem and Ofwat have included analysis and comparisons of forecast and actual OPEX in their decisions. Information from regulators' documents for the UK gas industry and the UK water & sewerage industry is presented in graphical form in the diagrams below. This shows:
  - Industries always out-performing regulatory benchmarks (proving the fundamental "efficiency" incentives in the regimes do work as intended).
  - Industries always provide excessively "conservative" forecasts (proving that regulators do need to scrutinise DB forecasts).
  - Regulators always accept that efficiency will improve (thereby ensuring that consumers (eventually) gain benefit from improving efficiency).
- The data for the UK water & sewerage industry is particularly illuminating because there has been massive investment in new assets and improved quality standards since 1989 - both of which would be expected to put upward pressure on OPEX costs. However OPEX costs have fallen since the introduction of Ofwat's first set of "challenging" performance benchmarks in 1994.
- The 3rd diagram shows information taken from ESC documents presented in the same way as for the UK examples.

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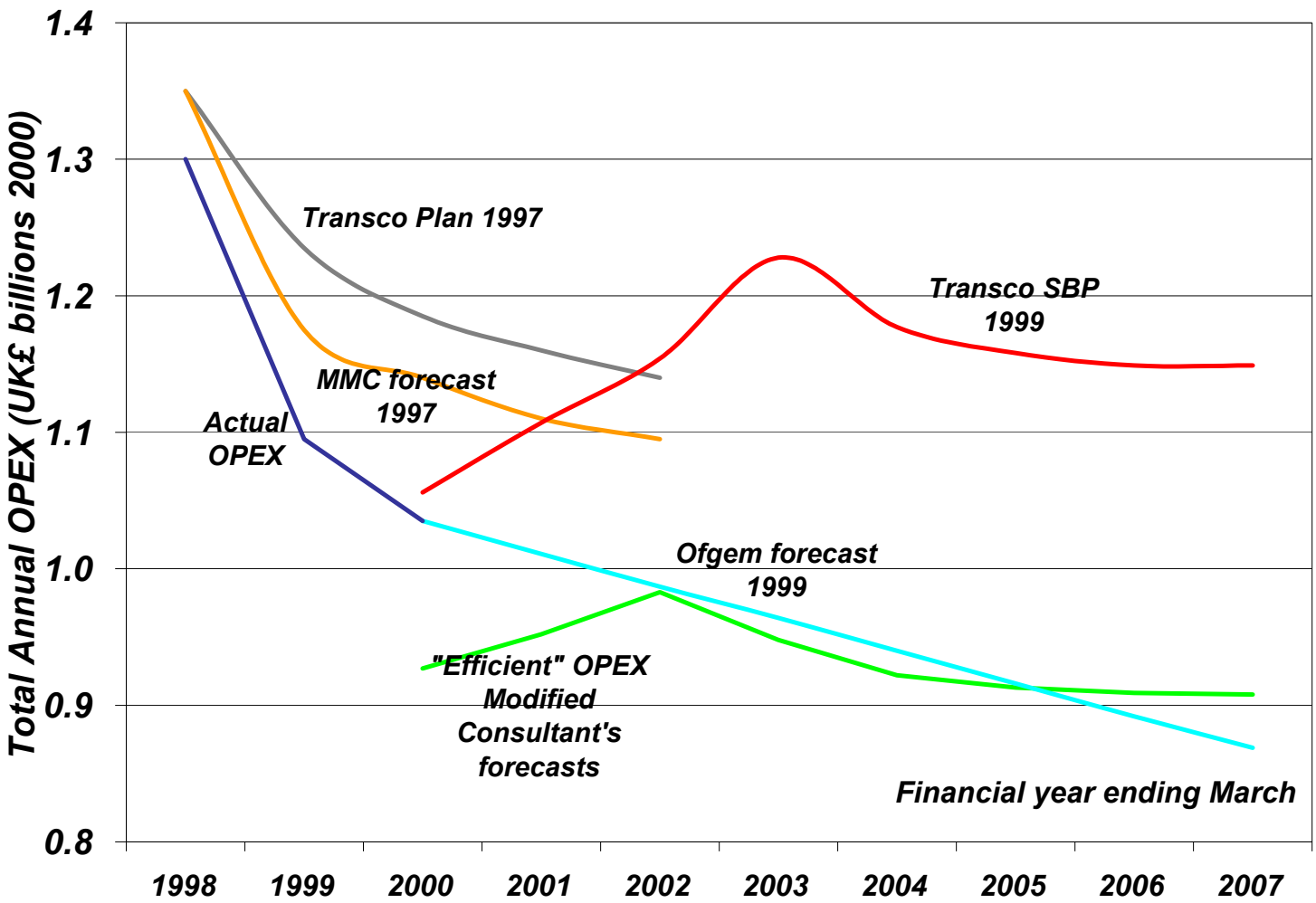
Comparison of forecast and actual OPEX
UK gas transmission and distribution



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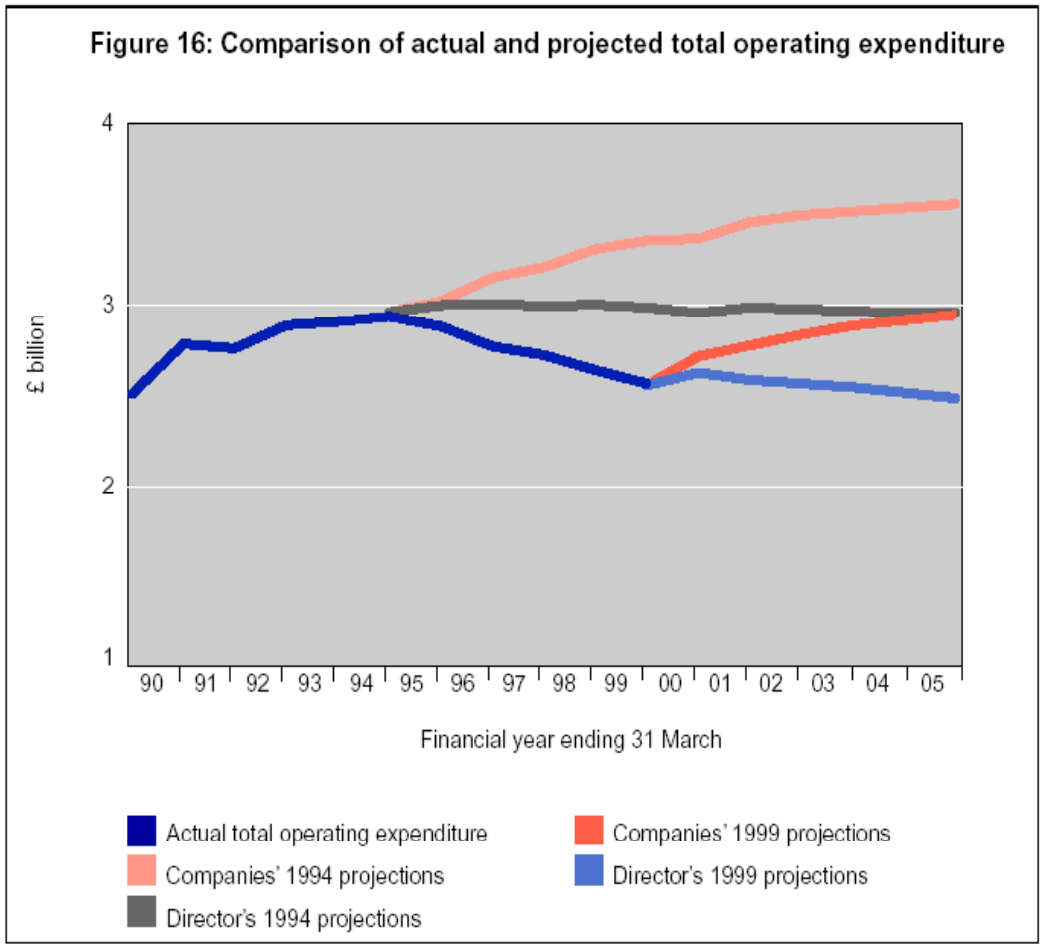
Comparison of forecast and actual OPEX
UK water & sewerage



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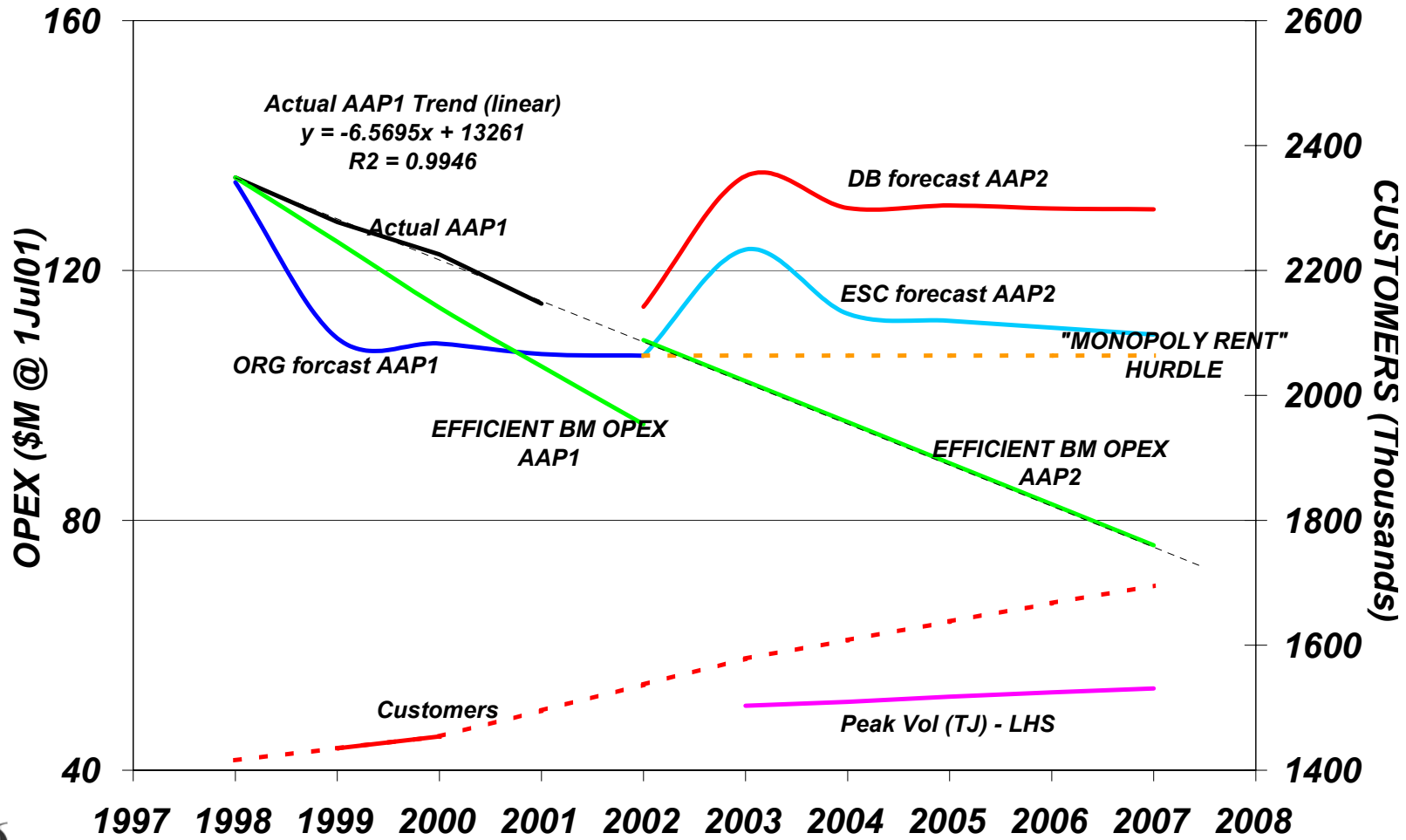
Comparison of forecast and actual OPEX
Victorian gas distribution



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What this means for the Victorian gas distribution industry

- OPEX costs decreased through 1998-2001 despite increasing customer numbers.
- There was continuing improvement in OPEX efficiency throughout 1998-2001 without any indication that the trend was reducing (Correlation Coefficient for linear trend of 0.9946). UK precedents show it is reasonable to assume that similar outcomes will occur for the Victorian industry during the 2nd access arrangement period (AAP2).
- The DB forecasts of OPEX are excessively conservative – clearly demonstrating the exercise of "strategic" behaviour.
- There is no evidence that OPEX cost need to increase in AAP2 - suggesting that any OPEX costs above the 2002 level (shown as the "Monopoly Rent Hurdle") comprise "monopoly rent". Indeed, any cost path above the indicated "Efficient BM OPEX AAP2" probably contains "monopoly rent".
- The ESC should undertake an efficiency assessment of each DB's performance in AAP1, and should insist on scrutiny of OPEX forecasts for AAP2.
- The ESC should set much lower OPEX cost benchmarks than proposed for AAP2; and these benchmarks should forecast continuing reductions in OPEX costs throughout AAP2.

- Initial analysis of data supporting the ESC's Draft Decision shows:
  - Multinet was, by far, the best performing DB - reducing OPEX by 23.5% between 1998-2001 without any indication that the rate of improvement was changing (Correlation Coefficient for linear trend of 0.9881).
  - Multinet's average OPEX was $62.6/consumer in 2001.
  - Envestra and TXU achieving far more modest improvements in OPEX efficiency of 12.5% and 7.9% between 1998-2001 - but still showing continuous improvement.
  - Average OPEX cost was $87.6/consumer and $85.1/consumer for Envestra and TXU respectively.
  - There is no explanation for the differences in performance or average cost between the DBs.
- It would be reasonable to expect that:
  - Multinet's OPEX costs are higher relative to either Envestra and TXU because it has a higher proportion of older assets.
  - Multinet's performance sets a reasonable benchmark for "efficient" OPEX in AAP1 (noting that it is not reasonable to assume the improvement in Multinet's OPEX performance could continue at the same rate through AAP2 and into AAP3; if it did, Multinet would be paying its customers for it (Multinet) to provide O&M services).
  - Envestra's and TXU's OPEX costs are at "inefficient" levels. Both should be set more challenging OPEX benchmarks than Multinet in AAP2.
  - The overall industry trend would continue through AAP2 at the same rate as in AAP1.

An "efficient" level for OPEX

- Assume that Victoria's gas industry is to become internationally competitive - and will achieve continuing efficiencies through AAP2 identical to projection of the trend achieved in AAP1.
- Use information from past performance (in AAP1) to set challenging industry benchmarks for AAP2.
- Adopt the same approach used by UK regulators - and set the challenging benchmarks at the projected AAP1 trend.
- This would reduce costs to consumers by at least:
  - $37.5 million over 5 years if the ESC set OPEX forecasts at the "Monopoly Rent Hurdle" projections.
  - $123.2 million over 5 years if the ESC set OPEX forecasts at the "Efficient BM OPEX AAP2" projection.

PARETO

CAPEX efficiency

- UK regulators are now observing the performance of regulated companies in the third 5-year regulatory period.
- Ofgem and Ofwat have included analysis and comparisons of forecast and actual CAPEX in their decisions. Information from regulators' documents for the UK gas distribution, electricity distribution and the UK water & sewerage industry is presented in graphical form in the diagrams below. This shows:
  - Industries always out-performing regulatory benchmarks in the early years of the regulatory period (proving the fundamental "efficiency" incentives in the regimes do work as intended).
  - CAPEX increasing in the latter years of each regulatory period.
    - This also shows the primary incentives working since it is to be expected that companies would seek to achieve "efficiency" (and increased profitability) by delaying CAPEX as long as possible.
    - However, this attribute justifies scrutiny by regulators. If utilities delay investment too long, OPEX costs may rise to inefficient levels, or service standards decline. If utilities are able to "shift" projected CAPEX from one regulatory period to the next, their CAPEX planning (and asset management, or their "strategic" behaviour) is - most probably - sub-optimal. In either case costs to consumers are increased significantly.
  - Industries always provide excessively "conservative" forecasts (proving that regulators do need to scrutinise DB forecasts).
  - Regulators always accept that efficiency will improve (thereby ensuring that consumers (eventually) gain benefit from improving efficiency).

PARETO

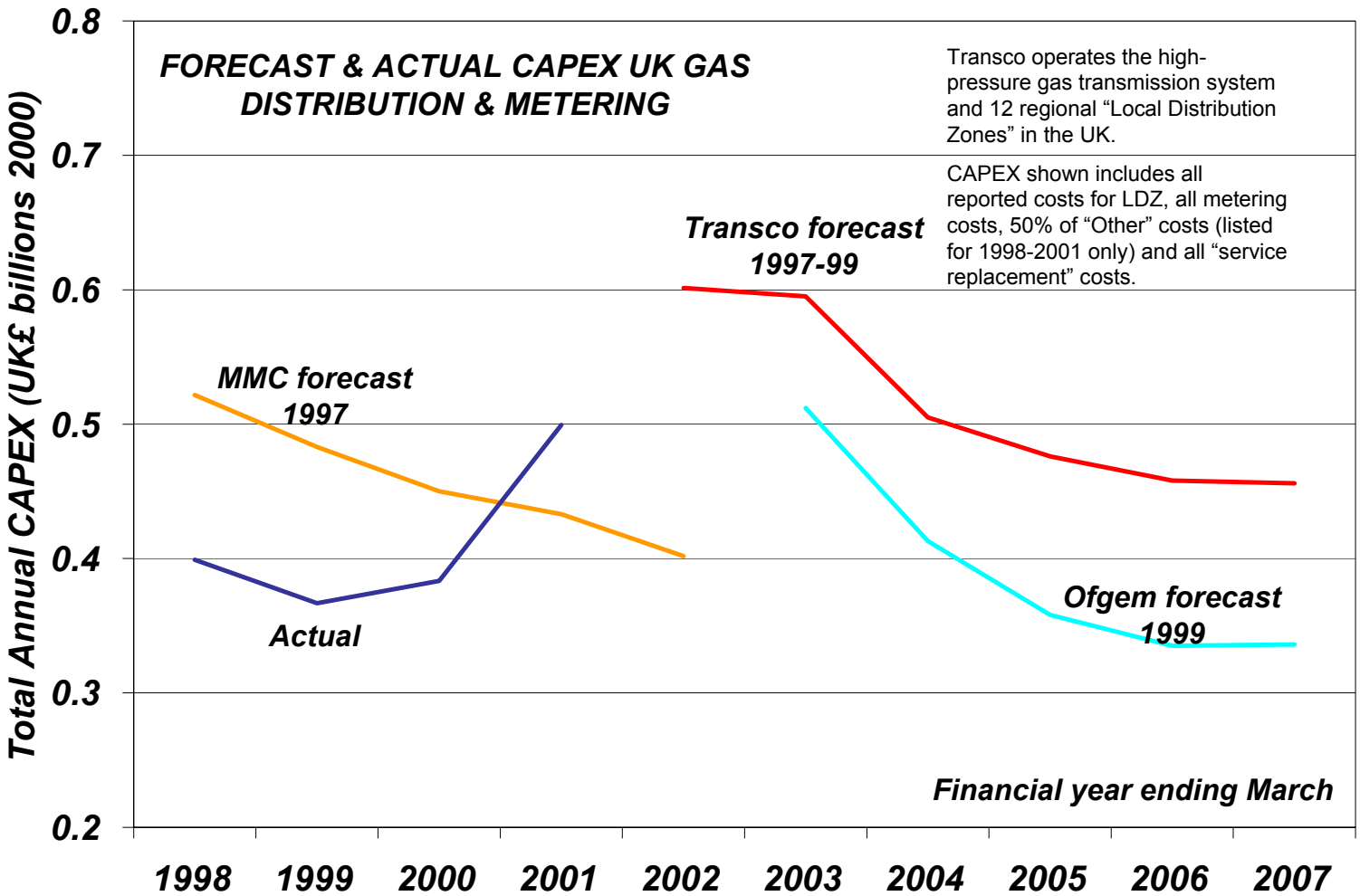
- In some cases regulators have accepted that CAPEX costs would increase in the next regulatory period (as observed for the electricity distribution industry after 1994; and the gas distribution industry after 1999). However:
  - Offer learnt some embarrassing lessons in 1994 - for which the Director-General (Stephen Littlechild) was justifiably subject to public criticism - by not accepting the advice from technical consultants about the extent of "strategic behaviour" embedded in CAPEX forecasts; and
  - Ofgem (and the UK Monopoly and Mergers Commission in 1997) required Transco to provide substantial detail (and audited performance data) in support of its proposal to increase CAPEX on (what appears to be for gas distribution) an extensive 30 year "service replacement" program.
- The UK regulators (and companies) learnt from Offer's embarrassing experience, and Ofwat's relative success (in coming down with a more credible and widely accepted decision than did Offer) in 1994.
- Each UK regulator now requires companies to undertake formal asset management planning, provide (relatively) extensive information to support their CAPEX forecasts, and each regulator subjects CAPEX forecast proposals to (relatively) detailed scrutiny.

- The terms "relative" and "relatively" above refer to the degree of scrutiny of CAPEX proposals indicated in the ESC Draft Decision. US regulators require far more extensive detail in support of CAPEX proposals than UK regulators; but no UK regulator "bothers" getting involved in 'line-by-line' assessment or endorsement of CAPEX plans. A primary objective for regulatory scrutiny of CAPEX proposals is to ensure the long-term interests of consumers are protected; a secondary objective is to protect the credibility of the regulatory regime, and even the companies (from over-zealous "strategic" behaviour).

- Again, the data for the UK water & sewerage industry is particularly illuminating because the regulated companies have been obliged to undertake massive investment in new assets and improved quality standards since 1989, all of which has been accommodated without the "Bow Wave" projected by the companies.
- The continuing investment in the UK water & sewerage industry has occurred "despite" the fact that Ofwat requires the companies to provide (relatively) extensive information to support CAPEX forecasts; and has reduced the value of WACC that would apply each regulatory period. Both these attributes of "incentive" regulation are subject to strident and public criticism by regulated companies and utility industry lobbyists in Australia. Consumers might accept such criticism as reasonable. But the fact remains that:
  - (so-called) "intervention" and "interference" by UK regulators has contributed to acceptance of "incentive" regulation;
  - regulators (and companies) risk being discredited if decisions are not seen to be "fair" to consumers; and
  - companies have learned to live with (and gain credibility from, and become much more efficient from) being subject to sensible scrutiny by regulators.
- The 4th diagram shows information taken from ESC documents presented in the same way as for the UK examples.

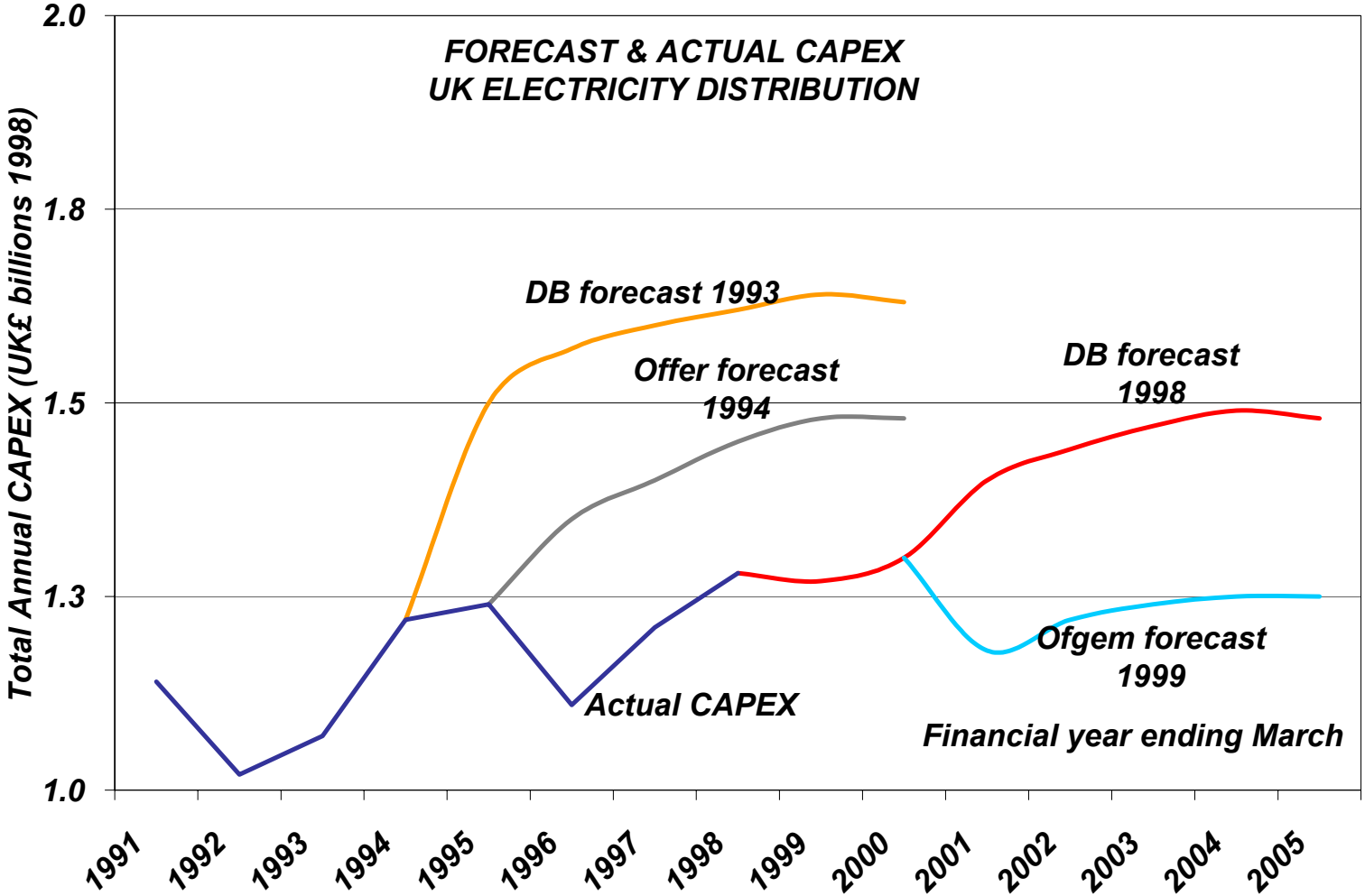
PARETO

Comparison of forecast and actual CAPEX
UK gas distribution



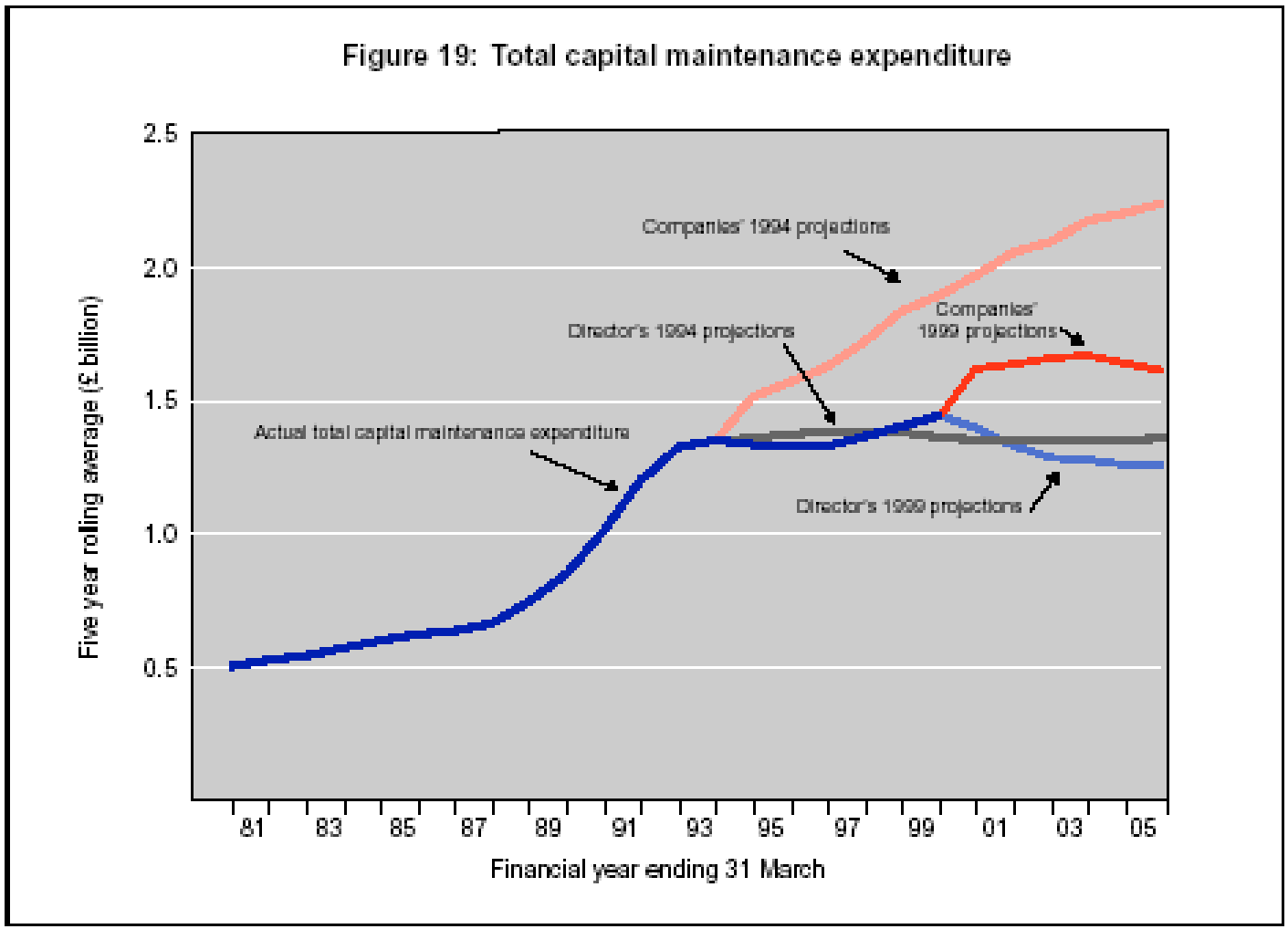
PARETO

Comparison of forecast and actual CAPEX
UK electricity distribution



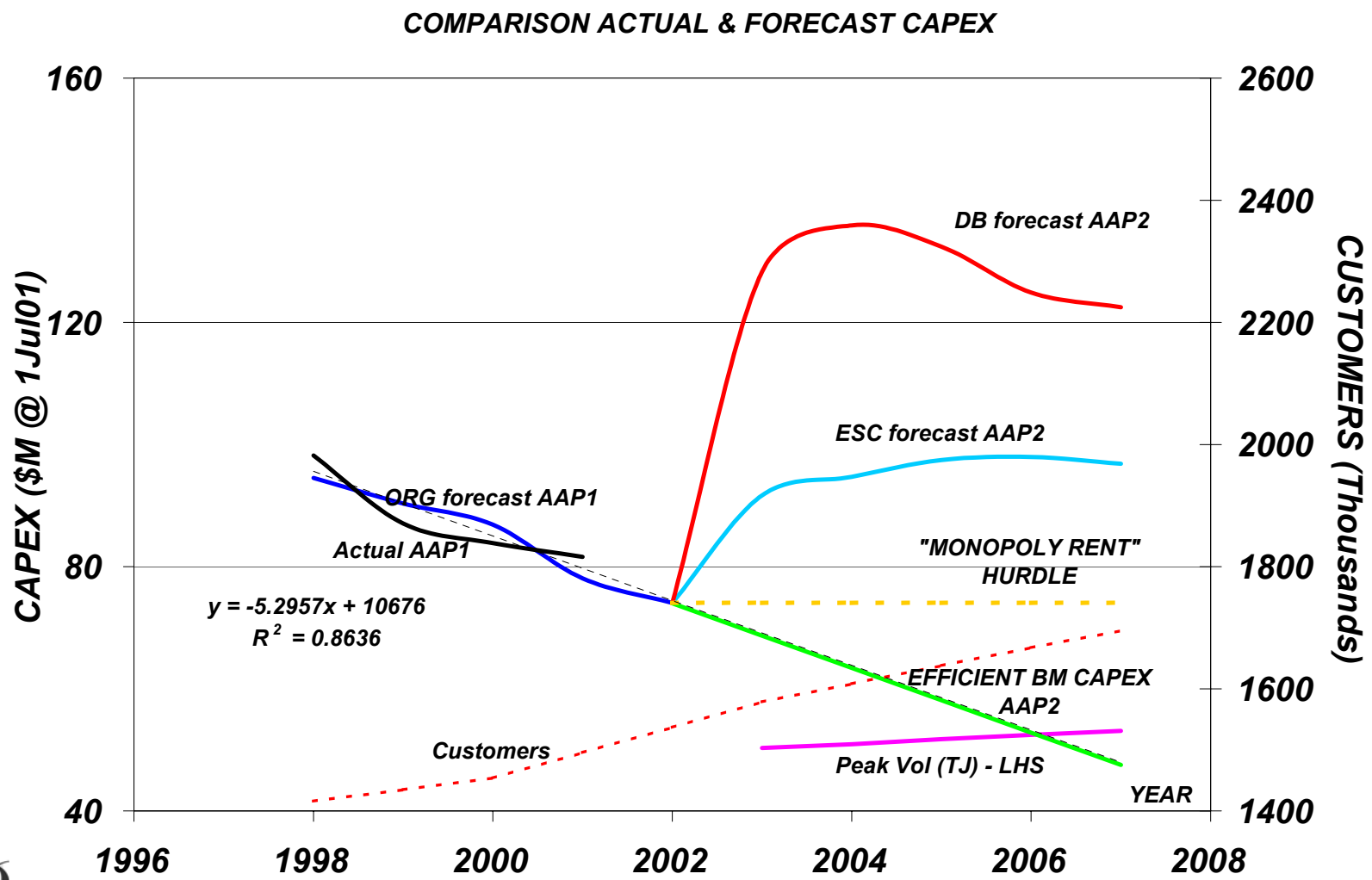
PARETO

Comparison of forecast and actual CAPEX
UK water & sewerage



PARETO

Comparison of forecast and actual CAPEX
Victorian gas distribution



PARETO

What this means for the Victorian gas distribution industry

- CAPEX costs decreased through 1998-2001 despite increasing customer numbers.
- There was continuing improvement in CAPEX efficiency throughout 1998-2001 (Correlation Coefficient for linear trend of 0.8636) - although it is to be expected that the slight upward trend between 2000 and 2001 would continue through 2002 in response to the "incentives" in the regime.
- UK trends suggest it is reasonable to assume that similar outcomes will occur for the Victorian industry during the 2nd access arrangement period (AAP2) – that is, improvements in CAPEX efficiency will continue unabated.
- The DB forecasts of CAPEX are very obviously excessively conservative. In fact the forecasts appear to be influenced by "strategic behaviour" to a point that threatens the industries' credibility.
- It is of concern that, despite expressing scepticism about the validity of the forecasts and documenting the lack of (or even total absence of) information supporting the DBs' forecasts, the ESC seems to have been overly influenced by information asymmetry and lack of reasonable scrutiny of past performance and CAPEX forecasts.

- In the absence of compelling, and independently supported, evidence that CAPEX requirements need to increase, it is reasonable to expect the industry will continue to achieve CAPEX efficiency improvements.
- The ESC acknowledges that the DBs have provided no compelling evidence that CAPEX need increase in AAP2 - suggesting that any CAPEX costs above the 2002 level (shown as the “Monopoly Rent Hurdle”) comprises “monopoly rent”. Indeed, any cost path above the indicated “Efficient BM OPEX AAP2” probably contains “monopoly rent”.
- The ESC should undertake an efficiency assessment of each DB’s performance in AAP1, and should insist on scrutiny of CAPEX forecasts for AAP2.
- The ESC should set much lower CAPEX cost benchmarks than proposed for AAP2; and these benchmarks should forecast continuing reductions in CAPEX costs throughout AAP2.

- Initial analysis of data supporting the ESC's Draft Decision shows what can only be described as alarming characteristics:
  - TXU's actual CAPEX for every year between 1998 and 2001 was $10-11 million (or ~50%) above levels proposed by Stratus, and approved by ORG in 1998. It is presumed that TXU is as alarmed as the ESC should be by this. This outcome indicates one or more of the following:
    - Information provided by the ESC and used to estimate "efficiency carry-over" for TXU is wrong.
    - The basic incentives in the regulatory regime (to reduce and delay CAPEX) are not working - for which there is no credible evidence.
    - CAPEX planning and asset management in Stratus was seriously deficient - which is an issue that TXU and the ESC must deal with - and not pass the consequences onto consumers.
    - Previous shareholders and ORG erred by allowing Stratus to commence AAP1 without fully understanding the true state of the company's requirements.
    - TXU is miss-allocating CAPEX costs (between OPEX and CAPEX; or between retail and distribution; or between electricity and gas; or between regulated and un-regulated activities).
    - The incentive to increase investment (i.e. the value of WACC) is too high leading to US 'rate-of-return' "gold-plating".
    - TXU's commitment to its customers (or its corporate pride) overwhelms the incentives in the regulatory regime - for which consumers <u>should</u> be eternally grateful.
  - Whatever the cause, it is a matter that the ESC must investigate - and explain to consumers. Consumers are entitled to know exactly how the regulatory regime works - warts and all.

  - TXU's and Multinet's CAPEX forecasts are, quite literally, absurd. Consumers would be entirely justified in being suspicious of both companies' motives.
    - TXU has forecast an increase of CAPEX of $20 million/year - or 65% - above the (much higher than forecast) actual costs incurred in AAP1.
    - Multinet has forecast an increase in CAPEX of up to ~$40 million/year - **or 300%** - above the trend of actual CAPEX costs in AAP1.
  - Both companies should carefully consider how such claims affect their credibility and their public image, and the view that consumers may take of them.
- In the absence of any reasonable explanation supporting the CAPEX programs proposed by the DBs, it is impossible to make any better estimates of "efficient" CAPEX than suggested earlier (assume the AAP1 trend continues). On that basis it appears that CAPEX could be reduce by:
  - $108.4 MILLION over 5 years if the ESC set CAPEX forecasts at the "Monopoly Rent Hurdle" projections.
  - $188.1 MILLION over 5 years if the ESC set CAPEX forecasts at the "Efficient BM OPEX AAP2" projection.
- This would reduce costs to consumers by between $20.9 and $33.3 million over five years (assuming no change in the value of WACC adopted by the ESC).

Efficiency carry-over

- Material presented above shows the ESC has not conducted an adequate assessment of either past or forecast efficiency for either OPEX or CAPEX. Despite this, the ESC estimated an efficiency carry-over using an arrangement that (the ESC suggests) allows consumers to benefit from past efficiency.
- The ESC's efficiency carry-over assessment process is both complex and mechanistic - characteristics that make it ideal for exercise of "strategic" behaviour by DBs; and the outcomes less than satisfactory for consumers because:
  - there is no allowance (in the mechanism) to carry-over negative "efficiency"; that is –
    - if DBs spend less than forecast amounts in AAP1 they retain the full benefit in AAP1 and (supposedly) "share" the benefit with consumers in AAP2.
    - if DBs spend more than forecast amounts in AAP1 they bear the "penalty" (i.e. the extra costs are not recovered from consumers in AAP1), but there is no "carry-over" of any negative amounts (which "protects" the DB from its own inefficiency through AAP2).
  - but
    - the ESC does not conduct adequate scrutiny of either OPEX or CAPEX performance or forecasts, allowing DBs to exercise "strategic" behaviour to recover any degree of over-spend they may have incurred in AAP1 and to inflate forecast values with "monopoly rent" so that any "efficiency share" allocated to consumers is appropriated by the DBs.
- These conditions render the ESC's carry-over mechanism totally ineffective for the purpose intended. The only reasonable solution to this is for the ESC to conduct reasonable but rigorous assessments of past and forecast efficiency and to use a higher degree of discretionary judgement on the allocation of efficiency benefits.

PARETO

Service standards

- The ESC has endorsed DB proposals to extend basic service standards for gas distribution in line with services currently specified in the Tariff Order; and is insisting that DBs develop similar terms and conditions for 'use-of-system' agreements with retailers (that are as close as possible to those for electricity).
- These are sensible developments. They maintain similarities between gas and electricity distribution and provide some comfort to consumers that they are getting something specific for their money.
- The proposed services for small consumers (in the 'jargon' of the Gas Code) are:
  - Reference services (provided to all (Tariff V) consumers)
    - provision of a "service pipe"
    - provision of a meter (subject to review 3 years after start of FRC)
    - gas haulage (i.e. the physical delivery of gas to consumers' premises)
  - Ancillary Services (likely to be sought by a significant part of the market)
    - meter and installation testing;
    - disconnection; and
    - reconnection.
  - Special meter reads are to be undertaken by retailers, not DBs.
  - Tariff D (large) consumers are obliged to 'negotiate' the terms and conditions for (almost) everything other than 'gas haulage'. However, the ESC is to retain powers to regulate 'connection charges' for Tariff D consumers, and will issue Guidelines compelling DBs to publish 'pricing principles' for 'non-reference' services provided to Tariff D consumers - for both of which Tariff D consumers will, no doubt, be thankful.

- In addition, the ESC is to continue improvements to monitoring and reporting of reliability performance, and will use this in future reviews to assess whether "efficiency" gains are affecting reliability (which seems unlikely given the stringent safety obligations imposed on the DBs).
- The ESC is also proposing to continue endorsement of current arrangements that provide a commercial (i.e. profit) incentive for DBs to minimise (or, more likely, optimise) gas leakage - for which consumers pay; and will update gas leakage benchmarks based on historically achieved improvements over the first three years of AAP1.
- These proposals also seem sensible, but the ESC should make it clear that it would not support any changes to future reliability or gas leakage benchmarks that reflected deterioration in performance by DBs.

GSLs

- The most controversial development affecting service standards is the ESC's endorsement of Multinet's and TXU's proposals to introduce Guaranteed Service Levels. The ESC is insisting that Envestra also introduce a GSL scheme.
- The services and standards proposed for GSLs only apply to residential consumers and are:
  - $50 if more than 15 minutes late for appointment.
  - $80/day (max $240) for failure to connect within 2 days of 'agreed' date.
  - $100/event for more than 6 interruptions in one calendar year.
  - $80/event for any interruption longer than 12 continuous hours due to fault in the distribution system
- On the whole, these are relatively modest standards, and modest levels of compensation compared to the inconvenience and out-of-pocket expense that consumers may experience if they are unlucky enough to be 'entitled' to a GSL payment.
- The total cost is estimated to be only $1.15 million over 5 years (or 0.07% of the total revenue requirement forecast by the ESC).

- The fact DBs gain financial advantage if they beat the benchmarks on which the GSL revenue requirement is assessed, and the impact of being seen to be a 'poor' performer does provide some incentive to do better.
- But, as with GSL schemes for electricity, the clearly unsatisfactory aspects of these proposals are:
  - the full costs (including computer system development costs - which would probably dwarf the compensation payment amounts) are met by consumers, not DBs;
  - the schemes rely on consumers being informed, aware, educated, fluent, and empowered; and -
    - understanding that the entitlement exists;
    - ensuring that any contractor they engage to execute their part of a GSL-subject activity understands everything there is to know about GSLs (given that the contractor frequently makes appointments and must be present when the service is provided by the DB); and
    - understanding the process needed to establish an entitlement (such as clearly recording an 'agreed' time and/or date; and/or the number of, or start to an interruption),
    - being sufficiently motivated to find their way through (sometimes inadequately informed and trained) Call Centre operators and insist the payment be made, not to mention having to put up with 'routed' calling when reporting the poor service in the first place.
  - it is the DBs (and even the ESC) who seek and gain public (relations) approval for the claimed success of these schemes.

- Despite the reservations outlined above, it does appear (from outcomes in both the UK and Australia) that DB managers do focus on activities affecting any form of structured, publicly accountable service performance obligation.
- And many consumers can recount ‘horror’ stories that show DBs need extra stimulus to do a lot better.
- However, the GSL scheme would be improved by:
  - requiring DBs to make automatic payment to all affected consumers; and
  - “sharpening” the incentives to deliver the minium standards of service by funding GSL payments from DB “profits” - not from consumer contributions to revenue.
- If these changes are not implemented, consumers could be reasonably excused for judging the GSL scheme to be a consumer-funded gimmick.

DB "marketing" proposals

- The ESC has, quite rightly, rejected a proposal that consumers fund a five-year, $36 million DB-executed "marketing" program promoting the benefits of gas distribution to consumers. If the "marketing" increases sales of gas distribution services (which is its intent) it is DBs who derive a direct benefit - and they should pay the costs.
- In AAP1, ORG endorsed the same amount (@ 2001 prices) for this activity - or ~$7 million per year - but the DBs spent less than half that amount in 2001. Even though they may have spent $15-20 million on "marketing" in AAP1, there is no evidence that it had any effect on increasing customer numbers.
- The apparent failure of the DBs "marketing" campaign in AAP1 could possibly be attributed (at least partly) to the DBs (inefficient) focus on promoting corporate image and 'brand name' recognition, rather than giving consumers information they find useful.
- However, the DBs have put forward some credible arguments that: retailers have little interest and incentive (or at least lesser interest and incentive than DBs) to promote gas over other forms of energy; and consumers could gain benefit by wider access to gas.
- For example, a retailer's primary incentive is to maximise profit, not reduce consumers' costs - or reduce CO_2 emissions; and there is very little evidence of innovation in the retail market that suggests this will change any time soon.

- On the other hand (for example):
  - Consumers with instantaneous electric hot water heaters (IEHW) would reduce their energy input cost to ~ 20% of the retail cost of electricity (currently ~18¢/kWh for a typical household) to an equivalent of ~3.2¢/kWh (assuming an 85% energy conversion efficiency) by switching to gas.
  - Over one full year a low-use IEHW household (e.g. 2 pensioners) that switched to gas would reduce energy consumption costs by at least $300, assuming no change in the consumer's use of hot water. Higher use IEHW households would save even more.
  - Similarly, consumers using reverse-cycle air-conditioners for heating could reduce their energy input cost to ~ 50% of the retail cost of electricity (currently ~6¢/kWh @ 300% conversion efficiency on the heating cycle) to an equivalent of ~3.2¢/kWh by switching to gas heating.
  - Over one full year this may reduce energy consumption costs by ~$220, assuming no change in the consumer's 'need' for heat. Consumers using radiant electric heating would reduce their energy costs by $400-600 in a full year by switching to gas.
  - Consumers switching all of their heating needs from electricity to gas would also substantially reduce CO_2 emissions.
- Retailers see "marketing" advantage in promoting "green" energy products - for which consumers are required to pay a substantial premium; but show very little interest in offering product mixes that would reduce consumers' costs and, most likely, reduce profitability for the retailer.

- This strongly suggests that consumers do, indeed, need to be better informed. But this role would be more credible, more efficient, and more focussed if provided as part of reasonably resourced, disciplined and broad-ranging consumer advocacy function - such as that intended for the new Consumer Utility Advocacy Centre (CUAC).
- The government initiative to establish CUAC is (potentially) a change for the better, but the level of funding provided by government is clearly inadequate for a broad-ranging, on-going, advocacy function that fulfils legitimate needs to:
  - inform and educate consumers and seeks to increase their involvement in the market (either directly or indirectly through more effective assertion of values when dealing with suppliers) and so maximise the economic power of consumers (as customers);
  - conduct on-going research and policy studies on issues specifically relevant to consumers that seeks to provide the "substance" supporting positions and views put by consumer advocates. This may include detailed economic, legal, financial and engineering studies covering such topics as market performance, evolving consumer needs, or any other aspect related to energy use.
  - represent consumers and seek to ensure physical participation in related decision-making processes; and
  - present the views of consumers to assist policy-makers understand consumers concerns and persuade them that a particular position should be adopted (or that a position they have adopted or other parties have put should be modified).

- The ESC clearly recognises that previous arrangements to resource consumer advocacy were hopelessly inadequate. This has been more than amply reinforced by the virtual absence of consumer input to the current decision - making process.
- The ESC is also sufficiently experienced (and independent) to recognise and acknowledge that adequate resources will be required to ensure effective participation of consumers and constructive input to future decision-making processes.
- The ESC can assist these outcomes, including improving consumer awareness about the economic and environmental benefit of sensible gas use, by:
  - accepting some aspects of the program proposed by DBs; but
  - requiring that funds collected by DBs from consumers for this purpose be transferred to CUAC to help underwrite a broad-based and ongoing program that fulfils each of the legitimate consumer advocacy functions listed above.
- Accordingly, the ESC should assist the facilitation of substantial improvement in consumer engagement with the energy industries by approving funding of at least $5 million over the next five years - in addition to the funding provided by government - with funds collected by DBs for that purpose from consumers generally.