Smelling the roses and escaping the rabbit holes: the value of looking at actual outcomes in deciding WACC

Prepared for the Board of the Australian Energy Regulator

Consumer Challenge Panel

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Contents

1 Introduction

At a meeting of the Consumer Challenge Panel (CCP) in May 2014, the CCP determined that there were a number of issues of common concern to the various CCP sub-groups. The decision was made to propose whole-of-panel advice to the AER on these issues, using funding available under the AER's CCP funding arrangements.

At that meeting, the CCP decided to prepare this advice on two priority areas:

- consumer engagement; and
- the weighted average cost of capital (WACC).

Members of the Panel were nominated to draft papers that were then submitted to the Panel for discussion and endorsement as CCP advice to the Board of the AER.

This paper responds to the WACC issue. It has been prepared for consideration by the Board of the AER in the knowledge that it will subsequently be made available publicly.

The main focus of this paper is to recommend that greater weight be placed on "real world" information in the determination of WACC. Energy consumer representatives stressed this in their advocacy during the development of the AER's Rate of Return Guideline.[1] The AER's transitional determinations[2] and the recent revenue control proposals from network service providers (NSPs) in New South Wales (NSW) and Tasmania[3] seem to have confirmed the value of the AER considering real world data in the determination of WACC.

The CCP recognises that the National Electricity Rules (NER) may restrict the AER from directly, or only, relying on real world data in setting the WACC..[4] Nonetheless real world data can be useful in influencing the many judgements that the AER needs to make in setting WACC. We conclude this paper with the suggestion that using real world data, for all its limitations, provides a way forward for all stakeholders and an alternative to the ever deepening "rabbit hole" of arcane theoretical debate on WACC parameters.

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[1] AER, *Better Regulation, Rate of Return Guideline*, December, 2013.

[2] The AER published transitional determinations for the NSW networks (Ausgrid, Endeaavour Energy, Essential Energy, Transgrid and the Tasmanian transmission company (Transend) in April 2014.

[3] Ausgrid, Endeavour Energy, Essential Energy, Transgrid and Transend published their regulatory proposals for the period 2014/15 to 2018/19 in May 2014.

[4] This depends in many cases on the way the rules are interpreted. The NER states that the AER must have regard to "relevant estimation methods, financial models, market data and other evidence" (NER 6.5.2 (e)(1)). However, the AER has some discretion in deciding what is "relevant market data" and how this data might be used in the WACC determination. The AER's preferred approach is set out in the Rate of Return Guideline (December, 2013).

However, we also stop short of suggesting precisely how real world data should be used. We submit this paper for consideration and we encourage further discussion on its analyses, and their implications.

The paper is set out as follows:

- The second section provides context to this paper and then examines whether the use of real world data is inconsistent with a "benchmark" approach to the determination of WACC.
- The third section compares the WACC determined by the AER with the WACC determined by other Australian regulators, the New Zealand Commerce Commission and Ofgem.
- The fourth section examines evidence on NSP acquisition multiples, and the views of corporate valuers.
- The fifth section examines the actual versus allowed debt costs.
- The sixth section examines actual versus allowed returns on equity.
- The final section concludes and recommends.

Accountability for the analysis and technical content of this paper rests with its authors, Bruce Mountain and Bev Hughson,[5] however the recommendations in this paper represent the consensus view of the CCP.

[5] Bruce Mountain is the Director of CME and a member of the CCP. Bev Hughson is head of Darach Energy Consulting Services and a member of the CCP.

2 Rationale for this paper

The remaining sections of this paper present our analyses. It might be suggested that the use of actual data has already been considered by the AER during the development of the Rate of Return Guideline (the Guideline) and so there is no need to do so again. We respond to this concern by explaining why, following the transitional determinations and recent regulatory proposals, we suggest it is important that the AER have regard to real world data. We also address a concern that having regard to real world data in the determination of WACC is inconsistent with the benchmark approach to the determination of WACC.[6]

2.1 Why have we written this paper now?

We acknowledge the consultation and research conducted by the AER to develop the Guideline. This process included workshops with both industry and consumer representatives to ensure a common understanding of the issues.

While consumers expressed concern with a number of aspects of the final Guideline, the CCP recognises the value of stability and consistency in the regulatory approach to WACC. However, since the completion of the Guideline, the AER's application of it in the transitional determinations and the subsequent New South Wales and Tasmania revenue control proposals have given us further concern.

The AER's transitional determinations and the application of the Rate of Return Guideline

The 2012 amendments to the National Electricity Rules (NER) and National Gas Rules (NGR) provide scope for the AER to exercise its discretion to achieve a WACC outcome that is in the long-term interests of consumers. We believe that in exercising its discretion, the AER should have regard to 'real world' data such as comparison with other regulators, examination of the financial results of the network businesses, investors' decisions and actual debt costs. Such 'real world' data provides a 'check' on the reasonableness of the conclusions drawn from the more abstract economic models.

However, in its transitional determinations we are concerned that the AER has obtained a range of possible outcomes for the various WACC components and has then used its discretion to select the highest value in the range. Benchmarking the AER's decision-making against other regulators and/or assessing the comparative profitability of networks against the market in general would, we suggest, have led to different conclusions.

While the transitional determinations will be replaced by the determinations currently under way, the transitional determinations may have set an unfortunate precedent.

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[6] The NER requires the AER to set an *allowed rate of return* (WACC) that is "commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk" to the NSP (NER, cl 6.5.2 (c)). The NGR includes a similar requirement.

The regulatory proposals

The approach to WACC set out in the regulatory proposals recently submitted by the NSW electricity transmission and distribution businesses also gives us cause for concern. While the NSW proposals are at variance with the Guideline, Transend seems to have submitted a proposal that complies with the Guideline.[7] However Transend's proposal, and even more so the NSW proposals, propose a level of WACC that seems to be substantially higher than appropriate for a regulated monopoly NSP. This has reinforced our concern that the AER should have regard to "real world" data to guide it in determining an appropriate cost of capital to be paid by users.

If examination of the decisions of other regulators and the actual returns of the network businesses suggest that the proposed WACC is too high, the AER should take this into account.

2.2 Consistency with the benchmark model?

The regulatory model for the determination of WACC relies on the concept of the efficient financing of a benchmark efficient service provider. It might be suggested that this is hostile to the use of actual data. The AER discussed this in the development of the Guideline. The AER's views seemed to evolve from the Consultation Paper[8], which seemed to dismiss the value of "real world" data, to the Explanatory Statement on the Draft Guideline[9], which seemed more receptive. In the Explanatory Statement on the Final Guideline[10] the AER said it would not examine actual debt costs although it did however suggest that equity broker reports and corporate valuations might be considered as "directional" in the estimation of the costs of equity.

The AER's determination of WACC is based on the expected efficient cost of capital of a benchmark efficient network service provider. The rationale is that this establishes appropriate incentives: WACC becomes an endogenous variable and the NSPs therefore have an incentive to seek efficient financing arrangements since shareholders retain the benefit of reductions in financing relative to the cost of capital used to determine regulated charges. Consumers are also concerned that incentives to reduce the cost of capital should also flow to consumers, not just shareholders and in this sense a completely exogenous cost of capital measure is a concern.

This "benchmark" approach is expressed in benchmarks of debt and equity costs that are in turn broken down into benchmarks of various parameters (the risk free rate, debt risk premiums, market risk premiums, equity beta and so on). It might be argued that having regard to the "actual" cost of capital is inconsistent with this "benchmark"

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[7] The Transend proposal refers to various expert reports that were also referred to by the NSW networks. However, Transend has, in practice, submitted a proposal that complies with the parameters and approach set out in the AER's Guideline,

[8] AER, *Rate of Return Guidelines – Consultation Paper*, June 2013.

[9] AER, *Explanatory Statement – Draft Rate of Return Guideline* , August 2013.

[10] AER, *Explanatory Statement – Final Rate of Return Guideline*, December 2013.

approach. Prima facie this seems plausible: the choice of an exogenous benchmark by definition seems to require abstraction from the actuals.

On closer inspection however, the lines are not so clearly drawn. For example if a benchmark is to be established in setting debt risk premia, a benchmark might be based on the actual borrowing costs of the group of regulated firms for a particular specification – say electricity network service providers. It need not be based (as it is) on the borrowing costs of the universe of bonds with a specified credit rating range. Similarly, in establishing equity costs, a benchmark approach might just as appropriately reflect the "beta" for firms of a narrowly specified type – say regulated electricity utilities – as it might for a wider cohort – say energy companies. In other words, a benchmark approach, consistent with the way the AER currently applies it, is quite compatible with an examination of "actuals", assuming these actuals relate to firms that are relevant to the benchmark entity.

There are broader and more fundamental ways in which the considerations of actuals in a "benchmark" framework need not be inconsistent. For example, it might reasonably be suggested that the benchmark should be based on broad market evidence – e.g. views of valuers, transaction multiples and so on. This is no less a "benchmark" approach than the approach that the AER follows, albeit that emphasis is placed on other measures than the ones the AER has chosen.

The supposed dichotomy between the use of a "benchmark" approach and the examination of actuals therefore seems to be a false dichotomy. If there is an argument to be had, it should not be over whether examining actual market data is inconsistent with a "benchmark" approach to the determination of WACC, but rather the argument should be over which "actuals" are relevant in the construction of the benchmark. In the rest of this paper we canvass a wide field: the WACC determined by various regulators, evidence that might be drawn from NSP transaction multiples and corporate valuers, actual versus allowed debt costs, and actual rates of return on equity versus allowed equity costs.

Thus, we suggest it is quite consistent for the AER to determine the WACC based on an efficient financing strategy for a benchmark efficient entity of similar risk (as required by the NER and NGR), and to refer to actual outcomes and the decisions of other regulators in the course of establishing that efficient financing benchmark.

It is also quite consistent with the Guideline framework, for the AER to use actual outcomes to guide it in the exercise of its discretion. For instance, actual outcomes are quite relevant when the AER is selecting a point estimate within the range of feasible outcomes derived from its preferred theoretical, modelled assessments (as defined in the Guideline).

Finally, and given the "propose-respond" regulatory model that is adopted in the NER, "real world" outcomes provide an important tool for the AER to respond to the claims by networks regarding the cost of capital allowance required by them to fund efficient investment in the network. The evidence in the rest of this paper suggests that NSPs' claims need careful examination against actual outcomes.

3 WACC: AER compared to other regulators

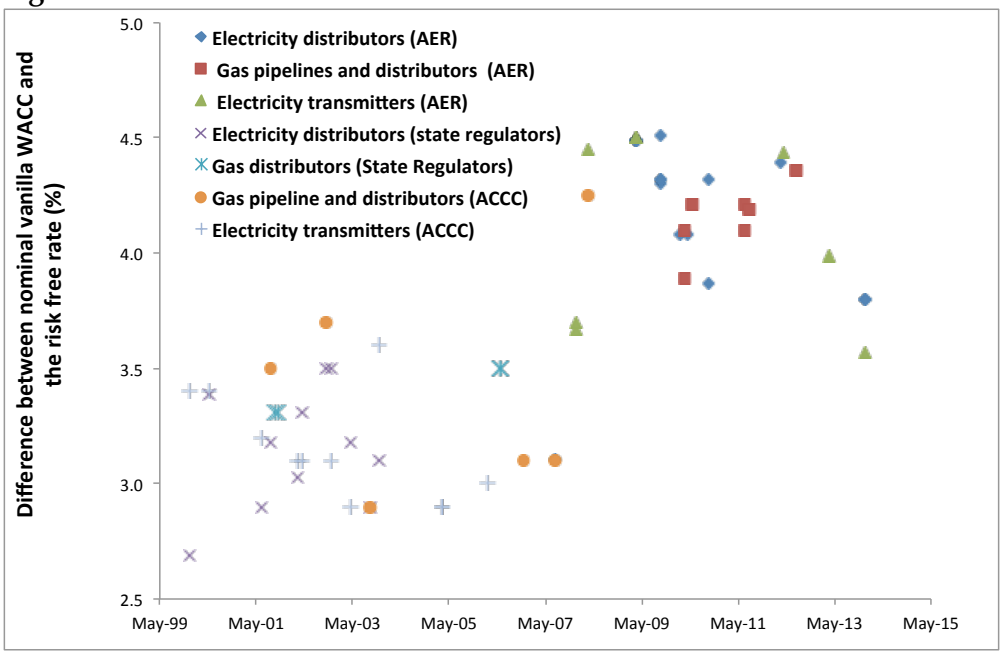
This section presents evidence of the WACC determined by the AER for energy NSPs compared to the WACC determined by other relevant Australian and overseas regulators. The first subsection compares the AER's WACC decisions to those of other Australian regulators. The second sub-section compares the AER's decisions to those of the Commerce Commission in New Zealand and Ofgem in Great Britain.

3.1 AER compared to other Australian regulators

Figure 1 shows a comparison of the difference between the nominal vanilla WACC and the risk free rate (at the time of the decision) for all regulatory decisions (64 decisions) by state regulators in the NEM, the ACCC and AER since 1999. It shows that the AER has consistently set a higher WACC than either the ACCC or state regulators did.

The "toughest" WACC decisions[11] that the AER ever made (for SP AusNet Transmission in December 2013) was still a higher WACC than any of the state regulators determined, and higher than any of the WACC decisions that the ACCC determined. The first decision that the AER made under the new Rules (the one-year decisions for transmission in Tasmania and New South Wales and for distribution in the ACT and New South Wales) was higher than a contemporary decision it made under the old Rules (for SP AusNet). Although it was lower than most other WACC decisions that the AER had made, it is still appreciably higher than the WACC decisions that any of the state regulators made, and higher than all but one of the ACCC's decisions.

Figure 1. Nominal vanilla WACC less risk free rate



[11] To be clear, we are referring here to the premium to the risk free rate, the parts of the WACC over which the AER has discretion.

Source: regulatory decision documents, CME analysis.

3.2 AER compared to Ofgem and the New Zealand Commerce Commission

Table 1 shows a comparison of the nominal vanilla WACC (and various sub-components of it) as determined by the Commerce Commission in New Zealand in 2011, and as determined by the AER for the distribution NSPs in South Australia and Queensland, also in 2011. The Commerce Commission's WACC analysis and reasoning was focussed mainly on the midpoint of their range, although in the application of their decision to Transpower they applied the 75th percentile of their range.

The gap between the AER and the Commerce Commission diminished a little by comparison to the 75th percentile, but is nonetheless significant. Differences in the nominal risk free rate only explain part of this difference.

In response to a recent New Zealand High Court decision emphatically rejecting the Commerce Commission's choice of the 75th percentile, the Commerce Commission is currently reviewing its approach, and it is reasonable to assume that this will result in a lower WACC.

Table 1. AER compared to New Zealand Commerce Commission

	WACC Vanilla nominal	Cost of equity	Cost of debt	Nominal Risk free rate	Equity Beta
NZ Commerce Commission 2011 (50th percentile)	7.22%	7.63%	6.71%	4.66%	0.61
NZ Commerce Commission 2011 (75th percentile, application to Transpower)	8.05%	?	?	4.66%	?
AER 2011 (Queensland and South Australia distributors)	9.70%	10.84%	8.97%	5.64%	0.81

Source: regulatory decisions, CME analysis

Table 2 shows a comparison of the real vanilla WACC that Ofgem decided in 2010 for the price control that currently applies to electricity distributors in Britain (DPCR5). This is compared to the WACC that applies to the South Australian and Queensland distributors. A similar WACC applies to the New South Wales and Victorian distributors and although the WACC that applies to distribution in Tasmania is lower, this is mainly a result of a much lower risk free rate at the time of that decision. The last row of the table shows the WACC that Ofgem is currently considering for the forthcoming eight-year price control decision.

Table 2. AER compared to Ofgem (real WACC)

	WACC Vanilla real	Real cost of equity	Real Debt	Real risk free rate
Ofgem 2010 (DPCR 5)	4.7%	6.7%	3.3%-3.7%	2%
AER 2011 (Queensland and South Australia distributors)	7.0%	8.2%	6.40%	3%
Ofgem (RIIO D1, underway)	3.8%	6.0%	?	1.40%

Source: regulatory decisions and consultations, CME analysis

The comparison of the WACC determined by the AER with the WACC determined by Ofgem historically shows an even larger gap than between the AER and the New Zealand Commerce Commission. Table 2 also shows that Ofgem is considering that its future WACC decisions will be even tougher than its historic decisions with a large part of the difference a result of lower estimates of real risk free rates. In Australia the real risk free rate is a largely exogenous variable – based on yields on Commonwealth 10 year securities less estimates of CPI. In Britain the estimate of real risk free rates and market premia is subject to interpretation and analysis by regulators.

The real vanilla WACC currently being contemplated by Ofgem (3.8%) compares to 5.6% (real, vanilla) that the AER recently decided for distributors in the ACT and NSW and the transmission service provider in Tasmania and NSW in the transitional determinations.

The AER has dismissed international regulatory comparisons on the basis that the regulatory regimes are not the same as in Australia. However, the CCP members consider such comparisons are valid, indeed essential, to the optimal working of the AER's regulatory model of a benchmark efficient NSP.. The New Zealand and British regimes share much in common with Australia's. If anything, the Australian regime has more generous provisions for pass-throughs and reopeners and in this sense exposes investors to even lower risks. While it is appropriate (and indeed very valuable) to understand such differences, we suggest that these differences are not significant enough to undermine the usefulness of international comparisons to the AER's decision making.

4 Acquisition and trading multiples and corporate valuer advice

As we noted earlier, AER staff produced some analysis of acquisition multiples (the valuation value of a firm divided by its regulated asset base) in its Rate of Return Guidelines Consultation Paper. The analysis showed market valuations typically at a substantial premium to the value of the regulated asset base (RAB) of the relevant NSP.

A contemporary case study – which started as the AER's guidelines were nearing finalisation – is the proposed acquisition of Envestra Ltd (Envestra), initially by the APA Group (APA) and subsequently by Cheung Kong Infrastructure (CKI). APA began its attempted acquisition of Envestra in late 2013, valuing Envestra at 1.4 times its RAB.[12] The Envestra Board rejected this bid. In March 2014, the Board then recommended a revised Scheme of Arrangement Offer, which valued Envestra at 1.45 times its RAB.[13] This was however rejected by two Board members (75% Board approval was required). In early May 2014, CKI submitted an even higher offer, valuing Envestra at 1.51 times RAB. At the time of writing the transaction has yet to be finalised but is expected to be finalised soon.

These valuations suggest that investors (in this case, highly experienced market participants APA and CKI) are valuing the regulated cash flows far more highly than the AER is in its WACC decisions. In other words, the AER's WACC is compensating investors far more generously than needed and so they are willing to pay a substantial premium to RAB to acquire those assets and the subsequent cash flows. We would emphasise here, that these investment decisions are being made in the full knowledge of the changes to the NER and NGR, the AER's Rate of Return Guideline and the AER's application of this Guideline to its transitional decisions on the NSW regulated networks (May 2014).

Corporate valuers Grant Samuel in their report "Cost of Equity Capital" provide evidence for this hypothesis in their report to the AER, which was submitted to the AER as an attachment to TransGrid's recent revenue control submission. In this report Grant Samuel state that they calculated that Envestra's WACC lies in the range 5.9-6.5% and they selected a WACC of 6.5-7.0% for the purposes of their valuation of Envestra. They also said that:

> "*the rates we selected might sometimes seem on the high side. However, if they were overstated we would expect to see evidence that the valuations generated on this basis produced systematic undervaluation of assets in the context of either corporate transactions or relative to market prices (although we recognise that this is a joint hypothesis problem in so far as it also depends on the accuracy of the cash flow forecasts). We have seen no evidence of this, suggesting the upward adjustments were not unreasonable and were consistent with market conditions at the time. As bond rates*

[12] "*Catch me if you can*" 23 August 2013. CBA Global Market Research Equities: Envestra.

[13] "*ENV Board says yes, CKI says no*" 4 March 2014. CBA Global Market Research Equities: Envestra

revert to normal levels and evidence of risk premium reductions emerge (and there has been evidence of this already) we expect that the extent of our adjustments would diminish."

On this basis a broader interpretation of Grant Samuel's WACC estimate for Envestra would be 5.9% to 7.0%, with an inclination to the bottom of this range. This compares to the first WACC decision that the AER has made under the new Rules, which has delivered a WACC of 8.1% - between 120 and 210 basis points higher than Grant Samuel's Envestra estimates.

Envestra does not appear to be an outlier. For example in May 2014, CKI acquired a 14.1% stake in the DUET Group for $400m, a RAB multiple of 1.28.[14] This "acquisition" multiple also seems to be consistent with trading multiples of other listed utility stocks.[15]

[14] "*What happened to investing at 1.0 times RAB*" 21 May 2014. CBA Global Market Research Equities: Utilities

[15] Op. *cit.*

5 Actual versus allowed borrowing costs

Actual borrowing costs can be established through estimation of the yield to maturity of bonds, the interest rate on bank debt or by analysing borrowing costs and the value of borrowings in published financial statements. The Energy Users' Rule Change Committee, in its Rule change application to the AEMC in 2011, showed that even during the peak of the Global Financial Crisis (GFC), regulated network service providers in Australia were able to borrow money at substantially cheaper rates than the AER allowed them to charge their users.

That analysis drew on data on the yield to maturity of bank debt and bonds issued in the period before, during and after the GFC, that was published in ASX announcements. Since that time, ASX announcements generally no longer provide data on the yield to maturity of newly issued bonds or the rate on new bank debt. However, we have established an estimate of actual borrowing costs by extracting data on borrowing costs in the income statements and expressing it as a ratio of the borrowings recorded on the balance sheet. The results of this analysis in all cases for the most recently published financial statements are shown in Table 3.

Table 3. Interest on borrowings

AusGrid	5.5%
Endeavour	5.0%
Essential	5.8%
Energex	5.7%
Ergon	6.4%
SP Ausnet	6.3%
SA Power Networks	6.8%

Source: Published financial statements, CME analysis

We have not included CKI's CitiPower and Powercor in light of concerns about related party borrowing arrangements, which are currently the subject of Australian Taxation Office investigations. We have also not included United Energy because it does not publish its accounts.

Excluding SA Power Networks, all the utilities have borrowing costs of between 5% and 6.4%. To be clear, the estimates for the New South Wales and Queensland distributors exclude debt guarantee / competitive neutrality fees since these are additional discretionary fees, not legitimate borrowing costs. In the case of SA Power Networks, we note that some of the loan capital is provided by related parties (CKI Finance (Australia) and Hong Kong Electric International Finance (Australia)).

By comparison, the AER's WACC determinations have determined a cost of debt of around 9% in the current regulatory control periods. On this basis, consumers are paying 250-400 basis points higher rates than the firms are currently paying for their loan capital.

6 Analysis of actual versus allowed return on equity

The "actual" cost of equity is of course impossible to observe. But by comparing the return on equity that the AER assumed in its WACC determination, with the actual return on equity that the regulated business are achieving, it is possible to obtain valuable information not just on the cost of equity that the AER has assumed but also more generally on the allowed WACC.

In Table 4 we have compared the return on equity in the AER's regulatory decision with various calculations of the actual return on equity for regulated distribution NSPs. The third column uses the Net Profit After Tax (NPAT) and the value of shareholders' equity from unadjusted published accounts. The fourth column is a broader calculation of return on equity, in that it includes a calculation of the debt fees and income taxes collected by the state governments that own distributors. We understand that the AER disputes that such additional payments should be counted in the calculation of the return on equity.

We also examined the financial data in the financial reporting RINs, but found that several gave nonsensical results and so have not reported these[16]. We have also not included any of the Victoria distributors since published accounts are not available for some and for others that publish accounts, segmental accounts and shareholder loans and other borrowing arrangements that are currently being scrutinised by the Australian Taxation Office preclude their inclusion. More work would need to be done for these distributors to establish reliable comparisons.

Table 4. Comparison of regulatory return on equity and actual return on equity

	ROE (regulatory decision)	ROE (Equity and NPAT from unadjusted published accounts)	ROE (Equity and NPAT from unadjusted published accounts, including debt fees and income tax)
Energex	11%	14%	22%
Ergon	11%	14%	22%
Ausgrid	10%	16%	26%
Essential	10%	19%	31%
Endeavour	10%	17%	37%
SA Power Networks	11%	18%	n/a

Source: Published financial statements, CME analysis.

The data in either the third or fourth column, compared to the second suggests that the distribution NSPs have been more profitable, substantially so in some cases, than the AER expected or deemed appropriate for regulated monopolies.

[16] For example, Energex's financial reporting RIN shows that for the standard control services Energex made a loss. This is obviously implausible. Other Rins have many inexplicable adjustments and the Victorian RINS do not report shareholder equity.

7 Conclusions and recommendations

This paper has surveyed some of the contemporary evidence on actual debt and equity costs, and compared the AER's WACC decisions to those of other regulators. No doubt there are other sources of actual data and regulatory decisions that could be included, and we urge the AER to investigate a wider range of market data than is available to the CCP at this time.

Nevertheless, the evidence presented herein seems to conclude that the industry is far more profitable than expected and that the AER has historically set higher WACC than other regulators. The evidence from equity markets is that investors are valuing regulated businesses significantly more highly than their regulated asset bases, and that lenders are lending to the regulated business at significantly lower rates than consumers are being charged. This also seems to be evidence in the share price performance of the listed network utilities.

It may be argued that incorporation of actual market information in the determination of WACC undermines the "benchmark" model. This need not be the case, in the same way that having regard to information on actual operating or capital expenditure in setting expenditure allowances need not undermine incentives to spend efficiently.

The AER's Guideline rejected taking account of RAB multiples or actual profits in its WACC assessments, and relegated information on comparisons with other regulators and corporate valuations to mere "directional" value. The AER's rationale for this diminution is that many factors may explain industry profitability or RAB multiples. There may indeed be various reasons why a firm may be more profitable than expected or valued more highly than its regulated asset value. But asserting that outcomes may be explained in many ways is not a reason not to look at those outcomes, when trying to critically assess the claims by networks on their cost of capital and to thereby decipher the long-term interests of consumers.

For these reasons we suggest that it is essential that the AER should have regard to actual market and comparative regulatory information in exercising its discretion when determining the regulatory WACC. This recommendation is consistent with the views expressed by the consumer representatives who participated in the extensive consultation process undertaken by the AER in the development of the Guideline. The CCP believes such examination provides the AER with an objective way of evaluating the options available to it, and to exercise its discretion in doing so.

Finally to reiterate an introductory remark, this document does not pretend to be a comprehensive examination of the relevant issues. It has been produced to short order. We envisage that much of the analysis will spark further questions and debate. We hope that it will be, at least, a starting point for further examination of how actual market information may be taken into account in the choice of WACC.