Consumer
Challenge
Panel

Submission to the Australian Energy Regulator (AER)

Consumer Challenge Panel

Submission to the AER on its Profitability Measures Discussion Paper

Sub-Panel 18

Eric Groom

Peer Reviewers: Bev Hughson, Mark Grenning

December 2017

Contents

Acronyms

AER	Australian Energy Regulator
ARORO	Allowed Rate of Return Objective
Capex	Capital expenditure
CCP	Consumer Challenge Panel
EBIT	Earnings before interest and tax
NEL	National Electricity Law
NER	National Electricity Rules
NGL	National Gas Law
Opex	Operating expenditure
RAB	Regulatory Asset Base
ROE	Return on equity
ROR	Rate of return
WACC	Weighted Average Cost of Capital

1. Introduction and Summary

The AER established the Consumer Challenge Panel (CCP) in July 2013 as part of its Better Regulation reforms. These reforms aimed to deliver an improved regulatory framework focused on the long-term interests of consumers.

The CCP assists the AER in making better regulatory determinations by providing input on issues of importance to consumers. The expert members of the CCP bring consumer perspectives to the attention of the AER to better balance the range of views considered as part of the AER's decisions.[1]

The author of this submission is Eric Groom and the peer reviewers were Bev Hughson and Mark Grenning.

Consumer groups and the CCP have previously questioned the level of profitability of the regulated businesses and have sought to undertake their own comparisons of profitability. The concern was that the approach to determining the rate of return (ROR) and overall revenue may have consistently resulted in profits for the regulated networks that were higher than the profits of comparable unregulated businesses and investors' required rate of return. This can be due to many factors including lower tax payments or debt costs compared to the regulatory allowances.

While it is not unusual for a regulator to 'aim high' on the cost of capital, this may have been exacerbated in Australia by interpretations of the NEL/NGL and ARORO which emphasised the environment for investment rather than a more balanced view of the long-term interest of consumers. "Aiming high" on the WACC can create an incentive to overinvest. In other jurisdictions, the risk of exclusion of past capex considered inefficient reduces this, but the risk of exclusion of past capex has been considerably smaller in practice in Australia.

On 8 November 2017, the AER released a discussion paper on "Profitability measures for regulated gas and electricity network business" and an accompanying consultant's report by McGrathNicol.

This submission responds to the AER's Discussion Paper and is structured as follows:

1. Sections 2-3 comment on the relevance of profitability measures and the questions that profitability measures can help the regulator answer,
2. Sections 4-9 respond to the questions raised in the AER discussion paper,
3. Annex 1 sets out the supporting arguments for inclusion of RAB multiples in terms of the theoretical underpinning and precedents in regulatory and investment practice,
4. Annex 2 provides further information on the valuation of assets and comparison of the accounting frameworks for regulated energy networks and un-regulated businesses in Australia.

1.1. Conclusions and Recommendations

This submission supports the development and use of profitability measures by the AER

Consumers understand that the utilities should be able to earn a profit commensurate with the businesses' risks, but expect the regulator will ensure utilities do not earn a monopoly profit. Comparisons of profitability can help provide assurance on this, strengthening two of the

[1] Detailed information on the CCP is available on the AER website at https://www.aer.gov.au/about-us/consumer-challenge-panel

fundamental principles for sustainable regulation – legitimacy and transparency. Without this confidence, the regulatory regime will be eroded, and the pressure of change will be irresistible.

Profitability measures should be used as a cross-check on the determination of the Rate of Return[2] (ROR) and the overall revenue requirements for the energy networks.

Profitability measures can help address three questions:

1. Are actual returns higher than allowed?
2. Are actual returns higher than in comparable businesses (regulated and unregulated)?
3. Is the allowed return higher than the investors' expectations?

Comparisons of profitability will need to be considered carefully and cannot be used mechanically. All measures of profitability are likely to be imperfect in some way and better suited for some purposes than others. Consequently, it will be necessary to consider a range of measures, with some measures being given more weight for some purposes but less weight for other purposes.

The proposed profitability measures are supported but should be expanded to include RAB multiples (i.e. Market Value/RAB ratios).

EBIT/RAB is a simple, well-recognised, and widely used profitability measure that can be used to compare profitability with allowed ROR and the profitability of other businesses regulated by the AER. However, comparisons with unregulated businesses will need to consider the differences in asset valuation and reporting of income between the regulated and unregulated businesses. These comparisons need to take into account the capital gain from asset indexation that forms part of the return to the owner of the regulated businesses.

Market Value/RAB (or Book Value) is also a simple measure that is widely used by investors and regulators. For regulators, it can provide an indication of the relativity of the allowed ROR and investors required ROR. Hence, it can be used as a cross-check on the ROR proposed but it requires:

1. further analysis to 'peel away' the additional sources of value,
2. consideration of multiple observations to identify if there is a systematic pattern for RAB multiples significantly larger than 1.

The CCP looks forward to participating further in the reviews as AER develops measures of profitability and how it proposes to use these measures. This review will be particularly relevant to the concurrent review of the Rate of Return Guideline.

2. Are profitability measures relevant to regulation of monopoly prices?

To the outsider, this may appear an odd question to raise and the answer obvious.

Customers, who probably have not read the National Electricity Law and Rules and its gas equivalents, generally understand that the utilities should be able to earn a profit commensurate with the businesses' risks, yet they expect that the regulator will ensure that utilities do not earn

[2] The terms ROR and Weighted Average cost of Capital (WACC) are used interchangeably.

monopoly profits. From this perspective, it may appear obvious that the practical consideration of the level of profits and the comparison with the profitability of other businesses should be an integral part of the assessment of the level of profits that should be 'allowed'.[3] Indeed, a regulatory framework that persistently 'allowed' profits for regulated utilities to significantly exceed those of comparable businesses would lose its legitimacy and would not be sustainable. The inevitable pressures to change the regulatory rules would be irresistible.[4] Consumer groups and the CCP have previously raised concerns about the balance in the regulatory regime, arguing that the profits of the regulated businesses seem high compared to other businesses.

> The overarching principles ('meta-principles') for good regulation are:
>
> 1. Credibility – Investors must believe the regulatory system will honour its commitments and they will have an opportunity to earn a reasonable return.
> 2. Legitimacy – Consumers must believe the regulatory system will protect them from abuse of monopoly power through high prices or poor service.
> 3. Transparency – The regulatory system must be transparent, so stakeholders know the terms of the 'contract'.
>
> Source: A Brown, J Stern and B Tenenbaum with D Gencer, *Handbook for Evaluating Infrastructure Regulatory Systems*, World Bank, Washington, 2006

This is consistent with the view of regulation as a social contract where all parties have to be confident that their interests are being served for the contract to be sustainable.

However, regulation in Australia has taken a highly theoretical approach to determining a rate of return that has not considered profitability in practice. As the discussion paper states:

> This approach does not consider profitability when setting annual revenue requirements for regulated businesses and we note that the NER and NGR **do not require** profitability to be considered[5]. [Emphasis added]

While the NER and NGR do not require the consideration of profitability, nor do they prohibit the use of profitability comparisons. Furthermore, consideration of profitability measures is consistent with the rule change on "Economic Regulation of Network Service Providers" in 2012. This change emphasised consideration of a range of models and sources of information in determining the rate of return, and also emphasised that the rate of return should reflect conditions in the financial markets. This is more consistent with the practice of other regulators.

---

[3] 'Allowed' is used as a short-hand term. It is important to note that incentive based regulation, as implemented by the building block approach, does not allow a particular level of profitability. It incorporates a return on capital as part of the building blocks, and actual profitability will depend on the performance of the utility.

[4] The responses can be slow but do happen. Most recently, the removal of limited merits review was in response to concerns it had contributed to excessive price increases. Similarly, the rule change, "Economic Regulation of Network Service Providers" in 2012 was in response to concerns about excessive capex and ROR under the previous more mechanistic approach.

[5] AER Discussion Paper, *Profitability measures for regulated gas and electricity network business,* November 2017, p3

Therefore, we support the AER's exploration of profitability measures. Actual opex and capex of the network and its peers are considered in assessing efficient opex and capex. Comparing actual profits to allowances and the profits of peers would make the treatment of the return component of the building blocks more comparable to the treatment of opex and capex. This could also be extended to debt costs and tax, but this is outside the scope of the current review.

3. How can profitability measures be used in the regulation of monopoly prices?

Profitability measures could help address three questions:

a) Are actual returns higher than allowed? If so, why, and is a regulatory response required? This can help shed light on whether the utilities consistently out-perform targets. If so, should the AER tighten the targets, or take comfort that the incentives are working, and the outcomes will be in the long-term interests of consumers? Or are there other factors behind the diffence?
b) Are actual returns higher than in comparable businesses? If so, why, and is a regulatory response required? For example, does it suggest a possible tightening of the allowed WACC or other parameters such as tax, recognizing that the higher profits may be because the utility is responding to incentives (see (a))?
c) Is the allowed return higher than the investors' expectations? If so, why, and is a response required? This question queries directly how the AER sets the WACC.

The discussion paper focuses more on the questions in (a) and (b), however (c) is just as important, or even more so. The focus on the comparison of returns with allowed returns or with returns in comparable businesses affects the choice of measures. For example, the ratio of market value to RAB provides information on the relativity of the allowed WACC to the investors' required rate of return. While the latter is unobservable, an implicit range for the required rate of return can be derived by peeling away estimates of the other sources of value. In contrast, the other measures of profitability provide at most an indirect indicator of the relativity of allowed and expected returns. Consideration of (c) supports the inclusion of RAB multiples as a measure of profitability. However, because it is more sensitive to business specific factors, the Market Value/RAB may be less well-suited for comparisons of profitability with non-regulated businesses.

This also highlights that all measures of profitability are likely to be imperfect in some way and better suited for some purposes than others. Consequently, it will be necessary to consider a range of measures, with some being given more weight for some purposes but less weight for other purposes.

As suggested below, analysis of profitability may raise a fourth question: are the incentives mechanisms appropriate and symmetrical in practice? However, this question is outside the scope of the review and is not pursued in this submission.

In using profitability measures to cast light on these questions, it is important to ensure both time series and cross-sectional analysis is used, with the latter comparisons made against various peer groups: i.e.:

a) Comparison over time,
b) Comparisons with other regulated businesses (energy and other),
c) Comparisons with other businesses (defined as broadly as possible).

Comparisons with other regulated businesses need not be limited to Australia. In the same way that regulators compare their determination of ROR with the decisions of other regulators in Australia and overseas, the comparison of profitability could be extended to overseas firms. Adjustments may be required for different country circumstances which may mean less weight can be placed on the comparisons, but it does not follow that they should be given no weight. Using international comparisons as a cross-check does not imply a shift from a domestic cost of capital model to an international cost of capital.

Furthermore, the Discussion Paper does not adequately explain how the AER may use information on profitability measures in its decision-making. The primary use is expected to be as a cross-check against the rate of return allowed. From that perspective, the review of the profitability measures is particularly timely, as the AER is undertaking a review of its Rate of Return Guideline. The timing will allow the results of this review to feed into the Review of the Rate of Return Guideline, but the connections between the reviews have not been clearly drawn.

Profitability measures also provide a focus that may uncover other issues in regulation. Persistent high or low levels of profitability that cannot be aligned with the long-term interests of consumers could also be an indicator of the performance of the overall regulatory regime. Higher-than-allowed profits may not signal a problem with the regulation; instead, it may signal that regulation is working in the long-term interests of consumers by encouraging sustainable efficiency gains that reveal lower costs upon which to base future prices. Alternatively, it may encourage improvements in service levels that consumers value more than the cost of achieving them.

However, higher profits may also signal opportunities to improve regulation. For example, if across multiple decisions utilities spend significantly less on capex than expected, does it indicate a surprising scope for efficiency improvement, or a bias in the estimation of efficient capex requirements? If the latter, it may stimulate a review of the approach to estimating efficient capex. If across multiple decisions utilities earn service incentive rewards (i.e. customers pay more for better measured service standards), does it indicate consumers are getting better value for money? The regulator should first ensure that it does not reflect a bias in performance measurement or the setting of targets. Regulators should also ensure that outcomes are consistent with customer preferences, and that incentives to use efficiency gains to reduce costs or prices reflect those preferences. A consistent message from the consumer engagement undertaken by the NSW electricity networks as part of the current reset is that consumers do not want to pay more for higher service standards. If so, would customers prefer that efficiency gains be used to set a lower cost base for the next reset with the current service standards, or improve the quality of service within the current cost envelope?

A comparison of performance against different measures of profitability can also provide insights. For example, if across multiple decisions the EBIT/RAB ratio is comparable to the allowed weighted average cost of capital, but the return on equity is significantly above the ROE within the allowed WACC, does that suggest either:

a) the tax allowed is higher than the actual tax paid;
b) actual gearing levels are significantly different from the assumed level; and/or
c) actual debt costs are significantly below the benchmark debt costs assumed? Lower actual debt costs could be because the utilities have better credit ratings than assumed, or because lenders perceive that regulated utilities have lower business risks that are not fully reflected in the ratings and are willing to lend at lower rates than the benchmark for comparable businesses.

These questions are outside the scope of this review.

4. Questions asked by the AER in its Discussion Paper

The AER asks the following questions in its Discussion Paper:

1. Do you agree with the preferred profitability measures? If not, what other measures do you consider should be reported by the AER and why?
2. Do you agree the five assessment criteria used by McGrathNicol to assess the profitability measures are appropriate? If not, what alternative criteria should be used? Is it appropriate to limit the review of the valuation of imputation credits to updating the empirical analysis? Are there any particular issues we should take into account when updating empirical analysis?
3. Do you agree that the identified data is required to develop the preferred profitability measures?
4. If you suggest other profitability measures should be reported, what data is required to support those measures?
5. Do you suggest we should use the same measures and data for all regulated businesses, or should we adopt different measures for different sectors (electricity / gas) or different segments (distribution / transmission) of the energy sector?
6. In addition to profitability measures, should we report other measures of financial performance? If so, how would these other measures contribute to the achievement of the NEO or NGO?

This submission addresses each of these questions.

5. Preferred profitability measures

Question: Do you agree with the preferred profitability measures? If not, what other measures do you consider should be reported by the AER and why?

Response:

a) RAB multiples should be added to the proposed set of profitability measures.

b) Economic profit is a means of using the EBIT as a measure of profitability, not a separate measure. It can be subsumed within the EBIT measure.

c) All measures will require care in use and further adjustment/analysis to draw out the information most relevant for the regulator.

5.1. Proposed measures

McGrath Nicol examined 14 measures which can be grouped into:

1. Measures of the overall profitability or return on assets or capital employed,
2. Measures of the return on equity,
3. Measures of operating margin,
4. Measures of firm value and expected returns.

The report recommends the use of Return on Assets (EBIT) as the primary measure supplemented by:

1. Return on Equity (net profit after tax/equity),
2. Operating profit per customer,
3. Economic profit (EBIT – pre-tax WACC*RAB).

5.2. Are the proposed measures appropriate?

The proposed measures are drawn from the first three groups of measures set out above: EBIT/RAB and Economic Profit are measures of the overall return on assets, and the other two are measures of return on equity and operating margins.

EBIT/RAB is the measure most strongly recommended by McGrathNicol. This measure has many benefits as it is:

- relatively simple to calculate,
- widely used, and
- less sensitive to business-specific factors like gearing and asset intensity.

The key problem with this measure is that it does not appear to include the other source of return for the owner of the regulated networks – the capital appreciation due to the indexation of the RAB. This does not provide income now, but provides wealth and the promise of income in the future. The absence of explicit consideration of this highlights an important weakness of the McGrathNicol report that flows through to the AER discussion paper. It does not draw out the possible implications of comparing businesses that, by virtue of the regulatory framework, operate under a current cost accounting framework (with real financial capital maintenance) against un-regulated businesses that are still operating in a historic cost accounting world (with nominal financial capital maintenance). The treatment of tax is a further complication. For the regulated networks, franking credits are recognised as reduction in tax expense. For unregulated businesses, franking credits are an additional source of value to the shareholder. It should be noted, however, that these concerns apply to all the measures of return on assets or return on equity proposed.

Economic Profit compares EBIT to the pre-tax WACC*RAB. Thus, it is not a new or additional measure of profitability, but a means of benchmarking an existing measure (EBIT) against allowed WACC. It does, however, introduce a new complication: the grossing up of the vanilla WACC to a pre-tax WACC. This may result in the comparison being distorted by the difference between two entirely hypothetical numbers – the tax implied in grossing up the WACC, and the tax allowance in the revenue building blocks. This could be avoided by comparing EBIT to (Vanilla WACC*RAB + tax allowed).

The same issues, such as indexation of the RAB for regulated businesses, that were raised regarding the comparison of EBIT/RAB with unregulated businesses also arise in the comparison of Return on Equity. Additionally, the return on equity is more sensitive to actual gearing levels, debt costs and risk. However, overall return on equity is the most commonly used and most comprehensive measure of the profits available for owners in the current period (exclusive of capital appreciation).

As noted in section 3, comparisons of the relativity of return on equity and EBIT/RAB can also highlight potential issues in the allowances for interest and tax.

Comparison of profitability of regulated and unregulated gas pipelines

As a result of the Vertigan reforms of unregulated pipelines, there is a new information and disclosure framework to assist shippers in their negotiations with pipeline operators is to be published by 1 January 2018 with information disclosure from October 2018 under transitional arrangements and more detailed information from April 2019. This includes a lot of information on individual pipeline costs and profitability. See http://gmrg.coagenergycouncil.gov.au/publications/draft-financial-reporting-guidelines-non-scheme-pipelines-0

If following the parties are unable to agree on the pricing and access principles, then the shipper can take it to arbitration. In seeking an outcome that is "workably competitive," the arbitrator is required to then value the asset as set by rule 569. This is complex, but in essence the starting position is the "recovered cost" approach is defined as:

"…the value of any assets used in the provision of the pipeline service is to be calculated as: (i) the cost of construction of the pipeline and pipeline assets incurred before commissioning of the pipeline (including the cost of acquiring easements and other interests in land necessary for the establishment and operation of the pipeline); plus: (ii) the amount of capital expenditure since the commissioning of the pipeline; less: (iii) the return of capital recovered since the commissioning of the pipeline; and (iv) the value of pipeline assets disposed of since the commissioning of the pipeline."

While the pipeline operators will still be able to argue for DORC, the starting point is historic costs.

The ACCC review of the East Coast Gas Market notes (Chapter 6) that the AER's regulated gas transmission companies have been allowed WACC of 7.1% - 8%. between 2013-2015. This is lower than the reported earnings (return on assets) by unregulated pipelines, but the ACCC looked at EBIT return on assets on an historic written down asset value basis, whereas the returns for the regulated businesses are based on current cost accounting and do not include the capital appreciation from the indexation of the RAB.

Operating profit per customer is an easily understood measure of the 'profits coming out of the customer's pocket,' but is of limited value for regulatory decision-making. Comparisons would need to be limited to comparisons between energy network businesses or businesses with similar asset intensities and turnovers.

5.3. Are there additional measures that should be included?

RAB multiples (i.e. market value/RAB) should be included in the profitability measures considered by the AER.

The AER has at times given some support for the consideration of RAB multiples:

- In its Envestra 2011-2016 decision (p40-41, especially Table 5.4), the AER examined RAB multiples going back to 2000 noting that "Sales of regulated assets … have been at premiums to the value of the regulated asset base of between 20 and 119%."

- In the Explanatory Statement to the draft Rate of Return Guideline, the AER proposed to use RAB acquisition and trading multiples to provide a "reasonableness check" on the overall rate of return[6].

However, in the final version of the Rate of Return Guideline, the AER proposed a lesser role for RAB multiples: "we propose to use these multiples as part of a set of indicators that we monitor over time and across network businesses to help inform us of potential areas of inquiry and research."[7]

RAB multiples provide the most direct information available on the relativity of allowed and expected returns on capital or equity, and are easily observed at the time of transactions. They are commonly used by other regulators and investment advisors in examining transactions. Market value/RAB is the application to the regulated utilities of Tobin's q ratio, which is widely recognised in theory and investment practice. In particular, it has long been used as an indicator of market power.

The weakness of the RAB multiple measures is that further analysis is required to make the best use of the information on the relativity of expected and actual return. As such, it cannot be used in a mechanical manner. Such criticisms can also be applied to other measures of profitability when used to compare profitability across sectors and between regulated and unregulated businesses. While Tobin's q ratio is commonly used to compare profitability or investment value across businesses, it is not proposed that AER use it for this purpose. The primary use would be as a benchmark for assessing the relativity of expected and allowed returns.

The McGrathNicol report does not recommend the use of RAB multiples, but its assessment (p35) is flawed in several respects:

1. It assumes RAB multiples would be estimated continuously and for non-listed entities. This is neither practical nor the intention, nor how other regulators have uses RAB multiples. RAB multiples would be observed at the time of transactions or for listed regulated businesses where the energy networks are the dominant component of the business. This avoids many of the measurement problems highlighted by McGrathNicol.
2. It states that it is not a common measure of profitability. However, the RAB multiple is simply the application of Tobin's q ratio to regulated businesses. Tobin's q is widely used as a signal or excess profits/market power and over or under-valuation of assets.
3. Its assessment does not draw upon the relevant body of experience with the use of RAB multiples. RAB multiples are commonly used qualitatively by other regulators and as a basis for analysis and decomposition of transaction values by investment advisors, but this is not referenced or discussed in the report.

Annex 1 provides further information on the derivation of the RAB multiple as an application of Tobin's q ratio, the widespread use of Tobin's q as a practical high-level benchmark, and the use in practice of RAB multiples by other regulators. It also provides precedents for the decomposition of value sources to better highlight the information on the expected return on capital or equity that can be derived from RAB multiples.

[6] AER, Explanatory Statement, Draft Rate of Return Guideline, August 2013, p54.
[7] AER, Explanatory Statement, Rate of Return Guideline, December 2013, p48.

6. Assessment criteria

Question: Do you agree the five assessment criteria used by McGrathNicol to assess the profitability measures are appropriate? If not, what alternative criteria should be used? Is it appropriate to limit the review of the valuation of imputation credits to updating the empirical analysis? Are there any particular issues we should take into account when updating empirical analysis?

Response: The assessment criteria should be amended to:

1. ***Clarify that criterion 2 applies to the calculation of the measure.***
2. ***Include as a separate criterion, or as an addition to criterion 3, reference to regulatory practice and precedent.***
3. ***Clarify in criterion 4 the purpose/s for which it is to be suitable.***
4. ***Extend criterion 5 to cover comparisons with allowed returns and expected returns, and consider the value of the information provided relative to the adjustments/analysis required.***

6.1. Proposed assessment criteria

The assessment criteria specified in the discussion paper are:

1. The measure is based on clear concepts and able to be calculated consistently over time,
2. The measure can be calculated without the need for manipulation of data or assumptions,
3. The measure is generally accepted and easily understood by those without a financial background,
4. The measure is suited to the characteristics of the industry (e.g. capital intensive, long lived assets, regulated revenue and returns, etc.),
5. The measure can be used to compare across the sector and with other businesses in the broader economy.

The assessment criteria in the discussion paper are simplifications and, in some cases, slight modifications, of those in the McGrathNicol report. For example:

- criteria 2 in the McGrathNicol report also specifies that the measure should not be significantly impacted by accounting adjustments, tax treatments, or financing structures,
- criteria 3 in the McGrathNicol report refers to general acceptance by industry experts.

Overall the criteria can be summarised as requiring that the measures are:

- practical, easily calculated, and consistent over time,
- well-understood,
- consistent with good industry practice,
- able to be compared.

While the criteria are broadly appropriate they do not:

- include consistency with good regulatory practice and precedent,

- include the criteria of providing information on the comparison of the actual returns and expected returns,
- recognise the potential trade-off between the information content of the measure and the simplicity of its application.

Specific comments on each of the criteria are set out below.

Criteria 1

No comments

Criteria 2

It is desirable that the measure can be calculated without adjustment or assumptions. But, as set out in detail above, the practical use of the measure will require adjustments or assumption to improve comparability and better extract the relevant information. Hence, this criterion should be limited to the estimation of the measure rather than its use for comparative purposes. Adjustments and assumptions in the use of the measure are covered by criteria 5.

The simplified criteria does not include the additional requirement from the McGrathNicol report, that the "measures calculation should not be significantly impacted by accounting adjustments, taxation treatments or the entity's financing structure". By 'measures calculation' it is understood that McGrathNicol may have meant the calculated value for the measure. If so, the issue raised by McGrathNicol is important, but is more applicable to the use of the measures in comparisons and could be included in criteria 5.

Criteria 3

The criteria suggests the measures should be readily understood by people without a financial background. That is desirable, but it is also important that it be consistent with good industry practice (per the McGrathNicol Criteria 3) and good regulatory practice and precedent. An additional criteria should be included to reflect this. The absence of a specific criteria on good regulatory practice resulted in short and incomplete discussions of regulatory practice in the McGrathNicol report, and may have led to a less complete understanding in the report of the nature of the regulatory task and the role of these measures. Together, these factors may have impacted on the choice or profitability measures.

Criteria 4

No comments

Criteria 5

This is a critical criteria. As drafted, it does not recognise that the comparison is for a purpose – to provide useful information on the profitability of the network. It also limits the comparison to its peers and businesses in other sectors, it does not mention comparisons with the allowed level of profitability or the return reasonably expected by investors. Finally, it does not acknowledge that adjustments and analysis may be required to increase the value of the comparisons. Rewording the criterion along the following lines would align it better to the objectives in developing profitability measures. Together with the other criteria, it would favour simpler measures compared to more complex measures that have the same information content, but still allow for the choice of more complex measures that have greater information content.

New Criteria 5: The measure, through simple comparison or with further adjustment or analysis, provides useful information on the relative profitability of a regulated network compared to its allowed profitability, the profitability of other regulated businesses, the profitability of unregulated businesses in the broader economy, and the returns expected by investors.

7. Data Requirements

Questions: Do you agree that the identified data is required to develop the preferred profitability measures? If you consider other profitability measures should be reported, what data is required to support those measures?

Response: The McGrathNicol report and AER discussion paper identifies the data necessary to calculate the proposed profitability measures. However, the question of data requirements to ensure comparability of the measures with no-regulated firms needs further consideration. The RAB multiples proposed in this submission would require observation of sale values where a relevant transaction occurs, or periodic observation of market capitalisation where a network is a listed company, and the RAB for that entity. However, the data requirements in maximising the value of these measures would need further consideration.

7.1. Data requirements for proposed profitability measures

The data requirements need to be considered in two contexts:

1) The data requirements for the calculation of the profitability measures,
2) The data requirements for the comparative analysis of the profitability measures.

The data requirements for the calculation of the proposed measures are clearly set out in the report and appear readily obtainable. There are some differences in the data collected for different sectors (e.g. electricity distribution cf transmission, electricity cf gas). The implementation of the reporting requirements for non-scheme (unregulated) pipelines will begin in 2018 and, depending on the outcome of the current AEMC review of covered (regulated) gas pipelines, the same information will be available in the near future for these pipelines as well. Similar reviews of the reporting templates for electricity networks could be undertaken to ensure harmonisation.

Additional data requirements for comparisons over time and with other regulated energy networks appear minimal. However, the greatest value in EBIT as a measure of profitability will be from comparisons with non-regulated businesses, and such comparisons may require adjustments if they are to be on a like-for-like basis. The data requirements for such comparisons have not been specified.

The comparison between regulated and non-regulated businesses is complicated by the different bases for the valuation of the assets and reporting of profit for regulatory purposes (see Annex 2 for further details). This does not mean that different measures should be used, but that some adjustments may be required in making such comparisons. In simple terms, the owners of the regulated businesses receive their returns in two forms: the indexation of the RAB and a real return on the RAB, consistent with a current cost accounting framework. Businesses that are not regulated continue to report on a predominantly historic cost accounting basis – i.e. assets are not revalued

and depreciation reflects the historic cost of the assets, and profits are in purely nominal terms. To further complicate matters, the return to shareholders is the sum of dividends paid out of nominal profits, franking credits, and the appreciation in share values based on the expected growth in profits and the underlying asset base.

The McGrathNicol report doesn't discuss these issues or analyse the potential implications for comparisons between regulated and unregulated businesses. Hence, it is difficult to comment on the adjustments that may be required in undertaking comparisons of accounting-based returns. However, at the minimum, the return to the owner through the nominal capital gain via the indexation of the RAB does not appear to be factored into the analysis. If no adjustment is required, this should be clearly demonstrated given the differences between the basis for the valuation of assets between the two sectors and the provision of a return to owners through the indexation of the RAB for regulated businesses.

Comparisons of return on equity with non-regulated businesses will be made more difficult by the effect of differences in gearing and the greater impact of differences in risk (compared to the impact on comparisons of EBIT/RAB). As noted above, the value in the ROE measure may be in the examination of the reasons why it may differ from the EBIT/RAB measure. This may require additional data on actual interest and tax expenses.

7.2. Data requirements for additional profitability measures

It is proposed that the RAB multiple be also used as a measure of profitability. The RAB multiple is readily calculated at the time of a transaction or periodically for listed energy networks. At the time of transaction, it is simply the sale value divided by the RAB. In the case of a listed regulated business, it is the ration of market capitalisation to RAB. It is accepted that this measure will at best provide occasional benchmarks and/or partial coverage of the sector.

The McGrathNicol report assumed that an attempt would be made to calculate the RAB multiple for unlisted networks. This is not the intent or practice of other regulators.

The challenge is in increasing the information content by estimating the range for other 'value drivers'. This requires analysis that is specific to the transaction. The examples in Annex 1 below of the analysis undertaken by Credit Suisse for the TransGrid lease and CEPA for the sale of the Gas Distribution Networks in the UK demonstrate that this is practical. To a degree, the data requirements may be transaction specific, but it is recommended that the AER further investigate the analysis undertaken by Credit Suisse and CEPA, and similar analyses

8. Uniform profitability measures

Question: Do you consider we should use the same measures and data for all regulated businesses, or should we adopt different measures for different sectors (electricity / gas) or different segments (distribution / transmission) of the energy sector?

Response: The same measures and data should be used for all regulated businesses. However, in comparisons with non-regulated businesses, it may be necessary to adjust for the impact of the indexation of assets and a real rate of return for regulated businesses.

8.1. Comparisons over time and between regulated energy networks

Uniformity increases the value of the information by enhancing its comparability. To this end, uniform profitability measures should apply unless there are fundamental differences in the nature of the business, regulatory frameworks, or accounting and reporting systems that would significantly affect the measurement of profitability.

Nature of the business

The nature of the businesses in terms of asset intensity, asset lives, and systematic risks are broadly comparable. In developing the Rate of Return Guideline as part of the Better Regulation review in 2013, the AER commissioned reports from Frontier Economics[8] and Partington and McKenzie[9] (this found that there was no basis in the nature of the businesses or the risks faced to differentiate between the betas for distribution and transmission or between gas and electricity).

Even if the nature of the businesses were different, it is not clear that this would provide a reason for using different measures and data. The measures proposed are commonly used to compare the profitability of quite different businesses across the various economic sectors. However, differences in asset intensity or the businesses operating environment for example may need to be considered making comparisons.

While most of the regulated networks are now privately-owned, some are still publicly owned. A fundamental principle of the approach to regulation that has developed in Australia is that it should be blind to ownership. Hence, the same cost of capital is set irrespective of ownership. Given this, and the substantially common accounting standards, the same profitability measures are equally applicable[10].

Regulatory Frameworks

The regulatory frameworks are consistent across the energy networks. In particular, the approach to the valuation of the RAB and the WACC are common across all the network businesses. This provides consistency in intertemporal comparisons for each network, and consistency in comparisons between the regulated energy networks.

The initial asset values were mostly determined at the jurisdictional level on a DORC basis. While the implementation of the DORC valuation principles may have varied between states and territories, the effect of any changes has been diluted by,

1. The turnover in assets through asset retirements and substantial capex programs,
2. The comparable treatment of new investment.

Adjustments to the RAB can be considered where substantial differences are demonstrated.

[8] Frontier Economics, Assessing risk when determining the appropriate rate of return for regulated energy networks in Australia, July 2013

[9] M McKenzie and G Partington, Risk, Asset Pricing Models and WACC, July 2013.

[10] A point of contention has been whether loan guarantee fees paid by government-owned utilities are a distribution of profits or a payment for service (payment guarantee), comparable to the payment a privately-owned utility might pay to a bond issuer guarantor. This is an issue on which there is not an agreed view among CCP members.

Accounting and reporting systems

The reporting requirements to the AER are the same within each network group, although there are some variations between the electricity and gas networks. For example, less data is collected for the gas utilities. However, in the discussion paper, the AER has stated that it intends to adopt a uniform approach to the collection of income statement and balance sheet data and uniform reporting requirements under the RIN. Hence, uniform measures will be able to be calculated.

8.2. Comparison with non-regulated businesses

The measures proposed are in common usage in comparing profitability across a range of businesses in different sectors. Furthermore, they are drawn from accounting data prepared under the same accounting principles. In principle, the measures and the data should not need to be adjusted for comparisons with other businesses.

Simplistic comparisons of profitability between businesses can be misleading due to the impacts of risk, asset intensity, businesses operating environment, or gearing (depending on the measure). Hence, judgement and perhaps quantitative adjustments in the comparisons may be required.

However, the comparison between regulated and non-regulated businesses is further complicated by the different bases for the valuation of the assets and reporting of profit for regulatory purposes, as noted above and in Annex 2. This does not mean that different measures should be used, but that some adjustments may be required in making such comparisons. A key difference is that the owner of the regulated business is rewarded through a real rate of return and a nominal capital gain through the revaluation of the RAB. Comparisons of profitability need to consider both streams.

9. Other financial performance measures

Question: In addition to profitability measures, should we report other measures of financial performance? If so, how would these other measures contribute to the achievement of the NEO or NGO?

Response: AER should consider using other profitability measures, such as financeability analysis and sensitivity analysis for the return on equity, as is done by some other regulators (such as OfWat and Ofgem). This would benefit from a supplementary discussion paper by the AER as the issues are not addressed in the current discussion paper (or the McGrathNicol report). Such measures, if adopted, should be used as a cross-check rather than a determinant of the ROR or revenue requirement.

9.1. Regulatory objectives: NEO, NGO and ARORO

The key relevant principles or objectives are the NGO/NEO and the allowed rate of return objective. The NEO and NGO tie together the long-term interest of the consumer with the efficient operation of, and investment in, the network. Within this framework, efficient investment is a means to an end – the long-term interest of consumers – rather than an end in itself. The allowed rate of return objective is that the rate of return for a regulated network is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of regulated services.

It should be noted that this objective is not substantially different in practice from the objectives set for or adopted by other regulators, such as Ofgem and OfWat. Hence, the practice in other jurisdictions is a relevant consideration.

In the context of the assessment of profitability and the required rate of return, these objectives require that the allowed rate of return reflect the efficient cost of capital (debt and expected return on equity). This does not in any sense limit the range of tools and analysis used by the regulator so long as:

1. The information considered is relevant to the determination of the efficient cost of capital; and
2. All relevant information is considered and given appropriate weight in the decision-making.

Some information, such as the AER's foundation model, may be given considerable weight. Other information may be considered but given lesser weight. This submission supports the use of profitability measures in the latter category. Some information may be used as a reasonableness-check of the proposed decisions by the regulator, rather than as a direct input.

9.2. Regulatory practice

Other regulators have made greater use of financeability tests. It is common practice among regulators in the UK[11] and is also used by other regulators such as IPART. It should be noted that the UK regulators have a financing duty, that is not explicitly present in the NEO/NGO and ARORO, in addition to the primary objective of the long-term interest of the consumer.

Financeability tests use ratios commonly used by rating agencies (such as debt:equity and interest cover measures) to test the sustainability of the overall decision proposed to be made. Three key principles underpin the use of financeability tests:

1. It is a cross-check of the regulator's decision not a driver of the decision,
2. The primary responsibility for addressing financing issues – including through equity injections - rests with the utility as the utility is best placed to understand and manage these risks, and
3. If a financeability adjustment is made it must be transparent and revenue neutral.

These are important principles to ensure that financeability tests do not displace the current framework.

More recently, OfWat and Ofgem have adopted the approach of testing the impact of a range of scenarios on the likely outcome for the ROE. This is another potentially useful means of testing the sustainability of a regulatory decision.

In principle, there is merit in the AER considering the use of these benchmarks. But from the consumers' perspective it is essential that:

1. The three principles set out immediately above be adopted; and
2. It not be presumed that any adjustment should go in one direction – for the utility – only.

[11] Joint Regulators Group (JRG), Cost of Capital and Financeability, March 2013

Annex 1: Use of the Market Value/RAB Ratios

Background: Underpinnings in Theory and Practice

The concept of the ratio of market value to replacement or book value of assets is well-established and widely used in practice. First developed by Kaldor within post-Keynesian models of long term growth paths, the ratio found greater acceptance when proposed by Tobin ('Tobin's q ratio') as an indicator of investment incentives. He argued that if, at the margin, q exceeded unity, firms would have an incentive to invest since the value of their new capital investment would exceed its cost. Tobin expressed it as the ratio of market value to replacement cost, but it is not measurable in this form for all but a few entities. Hence, its practical application in finance is as the ratio of market value to historic cost. Tobin's q ratio is a popular method of estimating a stock's fair value and is widely used to inform investment decisions. On the assumption that the long-term equilibrium value is 1, investors may consider firms with a value greater than 1 are overvalued, and firms with a value of less than 1 are undervalued.

Lindenberg and Ross extended the Q-ratio as a measure of monopoly rents.

> The essence of the argument is that for a competitive firm, one would expect q to be close to one, and as we examine firms with increasing monopoly power (increasing ability to earn above a competitive return), q should increase. If a firm's q is greater than one, the market value of the firm is in excess of its replacement cost. If there is free entry, other firms could enter the industry by purchasing the same capital stock as the existing firm. Furthermore, they would anticipate an increase in value over their investment because its market value would exceed its cost. Thus, in the absence of barriers to entry and exit, q will be driven down to one as new firms enter (or existing firms expand if average and marginal q coincide). **Similarly, a firm which is regulated so as to earn no monopoly rents would also have a q close to one. A monopolist, however, who can successfully bar entry and is not adequately regulated will earn monopoly rents in excess of the ordinary returns on the employed capital.** The market will capitalize these rents, and the market value of the firm will exceed the replacement cost of its capital stock, that is, q will persist above one[12]. (p2, emphasis added).

The ratio of market value to RAB is a practical application of the Tobin's q ratio to the regulated businesses. The RAB values of the regulated energy networks in the NEM are the indexed value of an initial RAB that was typically based on the depreciated optimised replacement cost of the assets. This is likely to be a closer approximation to the replacement costs valuation originally proposed by Tobin. Comparison with an assumed equilibrium value of 1 would be consistent with the theoretical underpinnings of Tobin's original proposition. Comparisons with the calculated q ratio for unregulated firms would need to consider the implications of the difference in the basis of the valuation of the firm's assets – the RAB is a current cost(price) value for the assets while book values for unregulated firms are predominantly based on historic cost.

[12] Eric B. Lindenberg and Stephen A. Ross, *Tobin's q Ratio and Industrial Organization*, Journal of Business, Vol. 54, No. 1 (Jan., 1981), p2.

Applications to regulated business: Decomposition of value and implied required return on equity

In the most recent electricity network transactions (the long-term leases of the TransGrid, AusGrid, and Endeavour Energy) the winning bidders paid 1.6 to 1.4 times the RAB. In practice, it cannot be automatically assumed that a premium above or below the RAB value indicates that the allowed rate of return is above or below the investors required rate of return. There can be many other factors. In the case of TransGrid, the consortium stated that "the quality of the TransGrid network, the stable regulated operating environment and the consortium's ability to run the network more efficiently made the deal compelling. The consortium is betting TransGrid's two unregulated business units — a telecoms arm and connecting renewable energy to the grid — can provide growth opportunities to warrant the high price." It is also likely that the bidder who makes the most optimistic assessment of these opportunities will be the likely winner and this will be reflected in its bid, adding to the systematic premiums above the RAB.

Credit Suisse took into account the opportunities to improve earnings through efficiency and growth in unregulated income in developing an estimate of the value of TransGrid. It also took into account the tax benefits available. Using rate of return parameters in line with, or below[13], those used by the AER in its decisions Credit Suisse concluded that "Our DCF sum-of-the-parts valuation yields an estimated FY15 value of $9.394bn which is appreciably below the $10,392mn paid by Spark's consortium. … This is based on what we believe are quite generous assumptions including an initial 35% CAGR for un-regulated revenues to FY18"[14]

CEPA undertook a similar analysis of the sale values for the National Grid Gas Distribution in the UK[15]. As the paper states:

> If NGGD were to perform precisely according to the assumptions Ofgem uses to set its price control allowances for an efficiently financed and operated 'notional entity', the value of future cash flows by definition would be equal to the RAV. Clearly the successful consortium expects to outperform one or more of the key price control parameters. Many of these are observable, but one – the actual cost of equity – cannot be directly observed. Market transactions such as the NGGD sale provide an opportunity to assess the underlying cost of equity implied by the MAR premium, by breaking down the contribution to the premium of different sources of potential outperformance.

CEPA then quantified the potential ranges for these sources of additional value and estimated the range of the implied return on equity taking these into account – see table below.

[13] Credit Suisse used a MRP of 6.0% rather than 6.5%.
[14] Credit Suisse, Spark Infrastructure Group, Research Note, 25/11/2015, p3
[15] Downloaded from http://www.cepa.co.uk/userfiles/Key%20questions%20for%20RIIO2%20-%20Lessons%20from%20the%20sale%20of%20NGGD.pdf

Plausible ranges for winning consortium assumptions and implied cost of equity

Parameter	Current or forecast RIIO-GD1 value	Possible bid range
Long-term RAV (£ 2016/17)	9,000	6,000-10,000
Long-term annual totex (£2016/17)	900	600-1,000
Average totex outperformance (% totex)	c. 10%	5-10%
Average incentive performance (bps RoRE)[1]	c. 100 bps	75-125 bps
Target/actual gearing (% RAV)	60%	75-80%
Typical cost of debt outperformance	c. 125 bps	50-125 bps
Long-term expected cost of equity allowance	6.7%	6.0-6.5%
Implied actual bid cost of equity (real)		**3.1-6.3%**

[1] RoRE is 'return on regulatory equity'

CEPA concluded that:

> Even after accounting for the differences between the two transactions, our analysis suggests that investors may be willing and able to finance gas distribution assets at an actual cost of equity below the RIIO-ED1 allowance of 6.0%.
>
> Consumer representatives are likely to argue that the NGGD sale provides Ofgem with important information on which to base a recalibration of the financial elements of its price controls. Gas distribution investors, on the other hand, may argue that the sale price represents an expression of confidence in improving NGGD's performance – with the risk of failure to deliver improved performance sitting firmly with investors.

In summary, market-to-RAB multiples contain information on investor expectations that is relevant to the regulator's consideration of the appropriate rate of return. The CEPA note illustrates the way in which careful analysis can uncover this information. However, it also illustrates that the information needs to be considered carefully and provides directional information rather than a specific quantitative adjustment.

In contrast, in a presentation to a recent conference, Professor Stephen Gray (Frontier Economics)[16] argued that regulators should not consider the market-RAB values at all in assessing the WACC for regulated firms. It is common ground that:

1. the investors' required expected rate of return is an important factor in, if not the driver of, the determination of market values
2. but that it was not possible to derive information on this because of the impact of other factors.

The practical questions are: what is the information content of these multiples and can the information content can be made clearer in practice by peeling away estimates of other sources of value? Other regulators and advisors – such as those cited above and below – have taken the view that it does. This necessarily requires an element of judgement and estimation – and a clear approach to decision-making grounded in nuanced and transparent assessment of the information content of a range of data sources. The tests established by Professor Gray for acceptance of a data

[16] Prof Stephen Gray, Why do regulated assets sell for more than the RAB?, October 2017, https://www.ipart.nsw.gov.au/Home/About-IPART/IPART-25-Year-Conference

source being a valid consideration in the determination of the cost of capital run the risk of falling into a binary choice model – the data is either considered with full weight or not considered at all. Given the criticisms that could be made of all models and data sources this could leave the regulator with a very small set – perhaps even a null set – of information upon which to base its decision.

Use of RAB multiples by regulators

Acquisition or market values need to be treated with caution. There can be good reasons for a premium that are not inconsistent with the long-term interest of consumers or indicative of an overly generous regulatory regime. But this does not mean that such values do not have some information content. The information value of market valuations is recognised by other regulators who consider such information in undertaking a 'sense-check' of recommended rates of return. As the NZ Commerce Commission stated:

> Our focus is not on isolating the individual sources of excess returns. Rather our objective is to assess whether the existing WACC uplift is too generous. As pointed out by Covec, "irrespective of the cause of a high RAB multiple, the existence of such multiples is strong evidence that the WACC is not too low".[17]

The CAA expressed its position as follows:

> The CAA agrees that MARs should be interpreted with caution. By comparing the airport operator MARs to other sectors with higher MARs starts to make inference about whether other sectors have got it 'right' or 'wrong'. This does not take the discussion forward. By comparing the MARs to 1, ignores the idea that a small modest premia might be desirable. The CAA considers that the MARs calculated in respect of HAL disposals (1.09 to 1.14) are within a range that does not give the CAA concern that the current WACC is too high or too low.[18]

The Commerce Commission in New Zealand usefully summarised the way in which market valuations, or RAB multiples have been used in assessing the reasonableness of rates of return. This is reproduced in the box below.[19] Having considered these practices and precedents, and the limitations of these ratios, the Commerce Commission concluded that RAB multiples can provide a cross-check on the reasonableness of the allowed WACC. In its 2016 review of the cost of capital the Commerce Commission stated that:

> As part of our reasonableness checks, we have considered RAB multiples for regulated energy and airports businesses in New Zealand. RAB multiples can provide a useful indicator of whether the allowed rate of return has been set at a sufficient level to adequately compensate investors for putting their capital at risk.[20]

---

[17] Commerce Commission of NZ, *Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services Reasons paper*, 2014, p155

[18] Civil Aviation Authority, *Estimating the cost of capital: a technical appendix to the CAA's Final Proposal for economic regulation of Heathrow and Gatwick after April 2014 CAP 1115*, 2013, p78

[19] Commerce Commission of NZ, *Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services Reasons paper*, 2014, pp152-154.

[20] Commerce Commission, *Input methodologies review draft decisions Topic paper 4: Cost of capital issues,* June 2016, p161.

It concluded that the RAB multiples for the electricity networks of 1.13-1.43 supported its view that the allowed rates of return were not unreasonable and cited the RAB multiples in the Vector and Maui gas pipeline sales of 1.14-1.5 supported its decision to remove a beta uplift factor of 0.1 compared to the other regulated energy networks.

"C17.1 The Chairman of Ofwat has referred to high RAB multiples for UK water utilities as evidence that the regulator's allowed WACC is too high noting that "the continuing trend for water companies to be sold for prices around 130% of RAV (regulated asset value) only suggests that the regulator's adopted cost of capital is too high, and the premia reflect excess demand for these assets".

C17.2 In its February 2014 report on the split cost of capital, the Queensland Competition Authority referred to UK and Australian RAB multiples as evidence of above-normal returns.

C17.3 While the AER decided not to use RAB multiples to assess the reasonableness of its WACC parameters, the AER does monitor RAB multiples as part of a set of indicators to help inform it of potential areas of inquiry and research.

C17.4 In its 2013 advice to the UK Office of Water (Ofwat) on the approach to reviewing the appropriate returns for water companies, PwC noted that "the expectation for out-performance on regulatory assumptions can be gauged by looking at the market-to-asset ratio (MAR) of water industry companies…". PwC reports an average MAR in the UK water sector of 1.23 and concludes that "the relatively high MARs suggest that there have been consistent expectations of higher returns…". PwC lists three potential drivers of these expectations:

C17.4.1 outperformance that is attributable to unregulated business units which PwC comments is generally small;

C17.4.2 synergies available to the new entity that are not allowed for by the regulator; and

C17.4.3 allowed revenues being set at levels higher than finance providers require "suggesting operational targets were easy to outperform, and/or the WACC was set too high relative to the actual costs of financing".

C17.5 In 2014, Grant Samuel prepared an independent expert's report relating to APA Group's proposal to acquire the Australian gas distribution company Envestra. In this report, Grant Samuel commented that:

C17.5.1 "A common rule of thumb parameter used in the valuation of energy infrastructure assets is RAB multiples";

C17.5.2 "Theoretically, listed infrastructure entities should trade at, and assets should be acquired at, 1.0 times RAB. However, that does not occur and, in fact, most assets generally trade at a premium to RAB"; and

C17.5.3 "The precise reasons for this are uncertain but contributing factors probably include: expectations of volume growth above the levels used by regulators…; expectations of savings relative to the operating and capital costs assumed by regulators…; a cost of capital less than that assumed by the regulators…; growth options…; and profit streams from other businesses".

C17.6 In 2013, PwC published a report on regulated airports in the UK noting that "regulated airports are allowed to earn a return on their regulatory asset base (RAB). RAB is therefore a key valuation metric, and the market places significant emphasis on enterprise value to RAB multiples in assessing the value of regulated airports."

C17.7 In 2011, Deloitte published a paper in which it explored a number of valuation issues concerning regulated infrastructure assets. When describing factors that had led to Australian utilities trading at a premium to their RAB, Deloitte said: "the effective cost of capital borne by the asset owner may be lower than that assumed by the regulator due to either a cheaper cost of capital and/or greater leverage."

Annex 2: Comparison of Asset Valuation and Accounting Frameworks

Financial Reporting and Asset Valuation under Australian Accounting Standards

Australian accounting standards permit companies to revalue non-current assets to fair market value. AASB 116 *Property, Plant and Equipment,* (paragraph 29) provides that:

> An entity shall choose either the cost model in paragraph 30 or the revaluation model in paragraph 31 as its accounting policy and shall apply that policy to an entire class of property, plant and equipment. (ASB 116, para 29)

Revaluations of non-current assets are to reflect market values and can be made on the basis of valuations made by directors or by independent valuers. Not all assets need to be revalued, but where a business chooses to revalue a class of assets, all assets in that class must be revalued. The challenge is that relatively few classes of assets are actively traded with market values readily obtainable. As a result, even where a business chooses to revalue some classes of assets, it is unlikely to revalue all non-current assets, in contrast to the indexation of the RABs for the regulated energy businesses.

Where an asset is revalued that increase is recognised 'below the line' in the income statement and included in an asset revaluation reserve unless it is reversing an earlier loss recognised through the income statement.

> If an asset's carrying amount is increased as a result of a revaluation, the increase shall be recognised in other comprehensive income and accumulated in equity under the heading of revaluation surplus. However, the increase shall be recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss. (ASB 116, para 39)

A study of ASX 300 businesses found that only a small number of businesses revalued some of their assets to market values. The study examined the accounts for the businesses for the 5 years from 2003 to 2007. After excluding financial businesses and some observations where data was not available, there were 951 firm-year observations in the sample. Of these, there were 131 firm-year observations where at least some assets were revalued. The most common class of assets in which there was revaluation was Property, Plant and Equipment.

Table 2. This table describes asset revaluation across industries based on the two-digit GICS code. The assets that firm revalues include PPE, intangible assets and investment properties.

		Revaluation of assets				
2-digit GICS	Industry	N	PPE(1)	Intangible Assets(2)	Investment Property(3)	All Assets(4)
10	Energy	91	0	0	0	0
15	Materials	230	33	3	9	38
20	Industrials	201	18	3	12	27
25	Consumer Discretionary	163	22	5	10	24
30	Consumer Staples	82	26	0	5	27
35	Health Care	80	11	1	0	11
45	Information Technology	39	4	0	0	4
50	Telecommunication Services	41	0	0	0	0
55	Utilities	24	0	0	0	0
Total		951	114	12	31	131

Source: Hu, Fang, Percy, Majella, & Yao, Daifei (2015) *Asset revaluations and earnings management: Evidence from Australian companies*. Corporate Ownership and Control, 13(1), pp. 930-939. Downloaded from: https://eprints.qut.edu.au/91943/

In summary, notwithstanding the provisions for asset revaluation, asset valuation and financial reporting is based on historic cost accounting principles

Asset Valuation and Revenue Building Blocks for Regulated Energy Networks

The current regulatory framework provides a real return on a real asset base, but in a unique manner.

1) Indexation of the RAB by inflation to maintain its real value (i.e. current cost)
2) Provision of a nominal rate of return that can be decomposed into a real return (realWACC x RAB) and compensation for inflation (ΔCPI x RAB)
3) Regulatory depreciation based on current cost depreciation less the increase in RAB due to its indexation; i.e. (RAB/remaining asset lives) – (RAB x ΔCPI)

As the adjustment for depreciation exactly offsets the compensation for inflation in the nominal WACC, the outcome, as noted above, is to provide the owner of the assets with a real return on the RAB and a capital gain equivalent to the indexation of the RAB. The capital gain provides cash in future years through the return on the increased RAB rather than cash in the current year.

Comparison of Accounting Frameworks

The table below shows the difference between the revenue building block for the regulated businesses and the statutory accounting framework for other businesses. The key points are that:

1) The basis for asset valuations and depreciation are quite different

2) Notionally both have returns expressed in nominal terms, but the adjustment to depreciation for the regulated businesses converts this to a real return
3) Tax is treated differently in the revenue building blocks
4) Comparisons of profitability need to recognise and, as necessary, adjust for differences in the accounting treatments of assets and expenses.

Element	Regulated Networks Revenue Building Blocks	Regulated Networks RIN	Other Businesses
Asset Valuation	Current Cost (Indexed)	Current Cost (Indexed)	Historic Costs
Depreciation	Current cost less indexation of the RAB (i.e. RAB x ΔCPI)	Current Cost, Straight line	Historic Cost
Tax	(Estimated taxable income x Statutory tax rate) less value of franking credits	Actual Tax Expense	Actual Tax Expense
Rate of return	Nominal Rate of Return as set under ROR Guideline	Current cost (Real) rate of return as earned	Nominal return as earned
Return to shareholder	Real rate of return + capital gain (=RAB x ΔCPI). No Franking credits (tax adjusted instead)	Real rate of return + capital gain (=RAB x ΔCPI)	Dividends distributed (incl Franking credits) plus ΔShare price