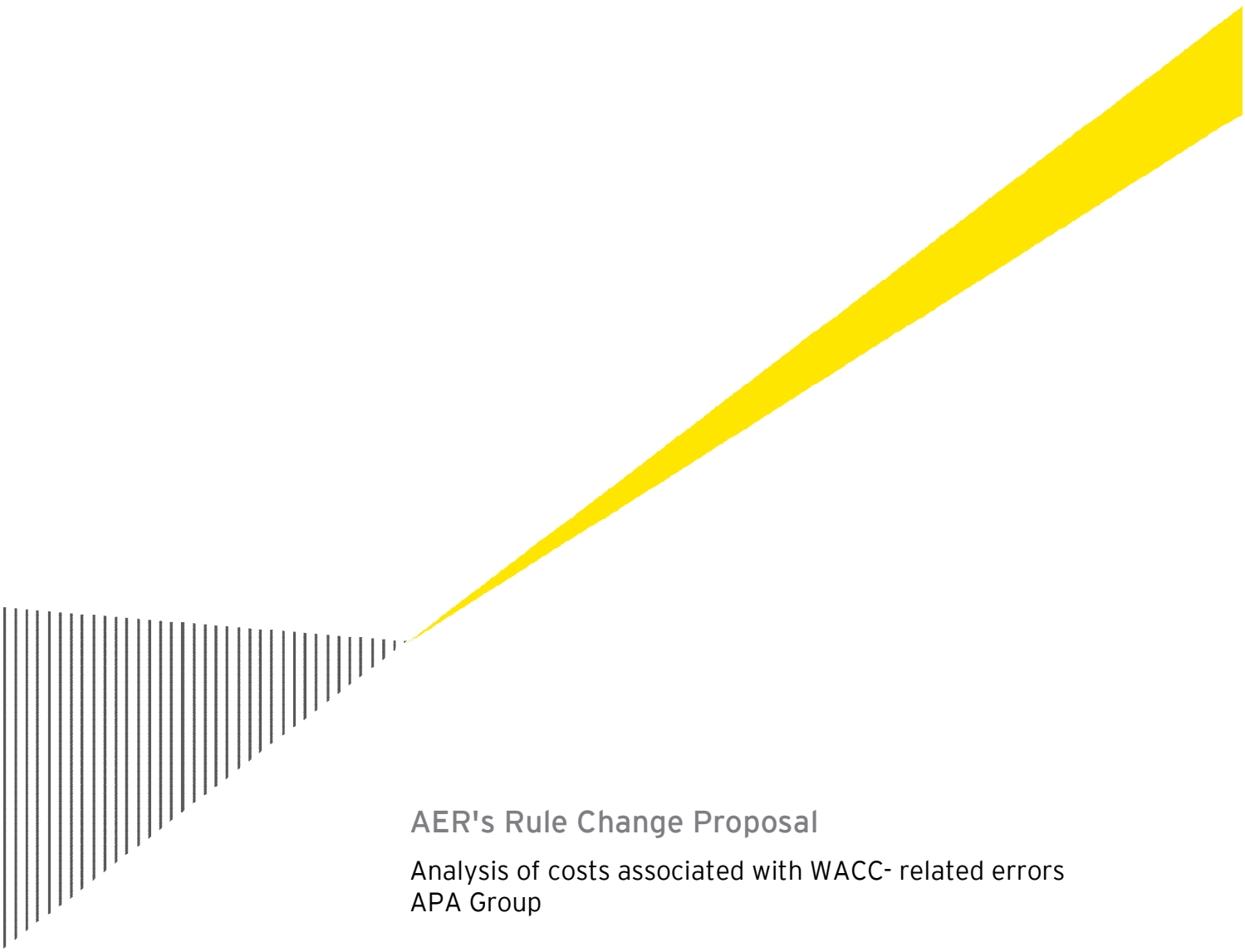

AER's Rule Change Proposal

Analysis of costs associated with WACC- related errors
APA Group

8 December 2011

Ernst & Young

Contents

1. Executive summary

1.1 Background

On 29 September 2011, the Australian Energy Regulator ("AER") submitted rule change proposals in relation to the economic regulation of electricity and gas network business.

On 20 October 2011, the AEMC gave notices under the relevant provisions of the National Electricity Law ("NEL") and National Gas Law ("NGL") to assess the rule change proposals received from the AER.

One aspect of the rule change proposal relates to the process the regulator is required to engage in for the purpose of estimating the Weighted Average Cost of Capital ("WACC") for electricity network service providers ("NSPs") and the Rate of Return for gas NSPs.[1]

The AER has argued that the different requirements in relation to WACC in the electricity and gas rules create significant administrative costs as in practice, it results in the AER having to undertake a separate WACC decision at each regulatory determination and access arrangement review (i.e. the AER is effectively in "continual WACC review mode"). As a result, it has proposed rule changes which would allow the AER to make one WACC review decision every five years, which would apply to both gas and electricity NSPs. There would be no opportunity for NSPs to depart from the methodologies and values established through that review.[2]

In addition, an important consequence of the AER's rule change proposal is the indirect removal of the ability of gas and electricity distribution NSPs to contest the WACC aspects of the AER's determinations via merits review. To date, the ability of regulated businesses to challenge the AER on the WACC aspects of its determinations via merits review has led to significant avoided costs (i.e. revenues that would otherwise be lost) from the perspective of regulated businesses. This is because the AER has lost the majority of the appeals relating to WACC that have been brought against it and the net impact has been a higher WACC.

1.2 Purpose of report

The Australian Energy Market Commission ("the AEMC") has identified the costs and benefits of making the rule changes proposed by the AER as a key consideration in assessing the proposal.

APA considers that consideration of the avoided costs resulting from successful merits appeals in favour of the network service providers would give the AEMC a more complete view of the implications of the AER's rule change proposals on WACC.

As a result, it engaged Ernst & Young to estimate the cost of the errors made by the AER in terms of the revenue that the NSPs would otherwise have forgone had the errors not been corrected. This report provides the outcome of Ernst & Young's work.

[1] The provisions relating to WACC for electricity distribution NSPs are contained in Chapter 6 of the National Electricity Rules, specifically clauses 6.5.2 and 6.5.4. Chapter 6A contains similar provisions for electricity transmission at clauses 6A.6.2 and 6A.6.2. The provisions relating to the Rate of Return in relation to gas pipelines is contained in Division 5, Rule 87 of the National Gas Rules ("NGR").

[2] The values of some market-based parameters (e.g. the risk free rate) are determined at the time of individual regulatory determinations.

This report sets out a high level methodology and assessment of the impact on industry of successful appeals against AER determinations specifically in relation to WACC. We set out an approach to estimating the dollar value of the WACC-related errors that have been made by the AER by applying the WACC error to industry RAB values. This analysis demonstrates the revenue impact on the industry of errors in the WACC aspects of the AER's determinations and decisions.

In addition we discuss the potential economic consequences resulting from such errors. That is, the cost of uncertainty which may deter investment in both gas and electricity networks.

1.3 Summary of key findings

The key findings of our report are set out below:

- The AER's assessment of the costs and benefits of its rule change proposals does not appear to recognise the impact on industry as a result of the correction of the WACC related errors made by the AER in the current regulatory determination process.

- Our analysis shows that the availability of merits review appeals has resulted in additional annual revenue to gas and electricity network service providers of approximately $725 million. This equates to $3.6 billion in aggregate across the electricity and gas and networks over a five year regulatory period. This amount therefore reflects the amount that has been "saved" by the regulated energy industry as a whole as a result of correcting the AER's errors in WACC.

- In relation to the regulated gas networks, the additional revenue saved as a result of correcting the AER's errors in WACC amounts to approximately $443m over a five year regulatory period, of which $53.1m relates to regulated gas transmission networks.

- Based on our analysis, we consider it unlikely that the potential savings in administrative costs which the AER has identified as significant, would exceed the costs that would be imposed as a result of these WACC-related errors. In other words, the costs associated with effectively removing the rights of regulated businesses to contest the WACC aspects of the AER's determinations via merits review (as the AER has proposed) would likely significantly outweigh the benefits.

- It could be argued that as a result of the reinstatement of the revenue which would otherwise be lost to the regulated energy industry, consumers would be charged higher gas and electricity prices. However:

    - The indicative price change faced by consumers, assuming that the additional revenue of approximately $89 million per annum in gas network revenues is fully recovered, is equivalent to approximately $0.13 per gigajoule (GJ) on consumer prices, on average across the gas network industry. Of this indicative increase in gas consumer prices, approximately $0.02 is attributable to the gas transmission network.

    - In the context of the wholesale domestic gas price in Eastern Australia of between $2.44 and $3.90 per GJ, the price increase that may be borne by consumers to recover the additional total gas network revenues is equivalent to approximately 4.1% of the average wholesale domestic price ($3.25/GJ) and 0.51% to recover gas transmission revenues.

- In any event, since the lower price was a result of errors made by the AER, the pre-existing prices were at artificially low levels.

- A key economic consequence of under-estimating regulated returns is likely to be the reduction in confidence in the regulator's processes by investors and the associated uncertainty that it creates. It is difficult to quantify the impact of this uncertainty (and hence demonstrate the amount that would be saved if the ability to appeal is effectively constrained) however, it would almost certainly have the effect of deterring investment at the margin.

- In summary, correcting the errors in the AER's regulatory decisions is worth billions of dollars to regulated NSPs over a single regulatory period. Limiting or removing the industries' ability to correct these errors, is likely to have consequences for the investment decisions of network companies. By comparison, the impact on a customer's bill is modest. The costs are therefore concentrated to the network industry, whilst the financial impact on customers is widely dispersed.

2. Introduction

2.1 The AER's rule change proposals

On 29 September 2011, the Australian Energy Regulator ('the AER') submitted rule change proposals in relation to the economic regulation of electricity and gas network business.

The AER's rule change proposals relate to aspects of:

- The economic regulation of electricity networks (ERC0134) under the National Electricity Rules ("NER"). and
- The rate of return for gas networks (GRC0011) under the National Gas Rules ("NGR").[3]

On 20 October 2011, the AEMC gave notices under the relevant provisions of the National Electricity Law ("NEL") and National Gas Law ("NGL") to assess the rule change proposals received from the AER.

One aspect of the rule change proposals relate to the process the regulator is required to engage in for the purpose of estimating the Weighted Average Cost of Capital ("WACC") for electricity network service providers ("NSPs") and the Rate of Return for gas NSPs [4] (hereinafter referred to as the "WACC for regulated NSPs").

Due to differences in the requirements on WACC in the NER and the NGR electricity distribution NSPs can, in their regulatory proposals, propose WACC parameter values which differ from those set out in the AER's Statement of Regulatory Intent ("SORI"). The SORI[5] contains the WACC parameter values established by the AER from its review of the rate of return as required under the NER. The ability for electricity distribution NSPs to depart from the SORI is based on the 'persuasive evidence' test as set out in cl 6.5.4(g) of the NER. Electricity transmission NSPs do not have this ability.

The NGR does not impose a similar requirement for the AER to undertake a WACC review in respect of gas NSPs and hence gas NSPs are not bound by the parameter values in the SORI when submitting their access arrangement proposals. Under the gas rules, gas NSPs must propose a WACC in accordance with rule 72(1)(g) and the AER must approve a WACC which is consistent with the requirements of Rule 87 which are that:

- The rate of return on capital be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.
- In determining a rate of return on capital:
  - The AER must assume that the service provider
    - i) Meets benchmark levels of efficiency

[3] AEMC, Consultation Paper: National Electricity Amendment (Economic regulation of network service providers) Rule 2011; National Gas Amendment (Price and revenue regulation of gas services) Rule 2011, 20 October 2011
[4] The provisions relating to WACC for electricity distribution NSPs are contained in Chapter 6 of the National Electricity Rules, specifically clauses 6.5.2 and 6.5.4. Chapter 6A contains similar provisions at clauses 6A.6.2 and 6A.6.2. The provisions relating to the Rate of Return in relation to gas pipelines is contained in Division 5, Rule 87 of the National Gas Rules ("NGR").
[5] The requirement to produce the SORI is set out in Cl 6.5.4(f) of the NER.

ii) Uses a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern and reflects in other respects best practice

- The AER must use a well accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital and a well accepted financial model, such as the Capital Asset Pricing Model.

The AER has argued that the different requirements in relation to WACC in the gas rules and electricity rules create significant administrative costs as in practice, it equates to the AER having to undertake a separate WACC decision at each access arrangement review and regulatory determination (i.e. the AER is effectively in "continual WACC review mode"). As a result, it has proposed rule changes which would allow the AER to make one WACC review and decision every five years, which would apply to both gas and electricity NSPs, and there will be no opportunity for NSPs to depart from the methodologies and values established through that review.[6]

2.2 Costs and benefits identified by the AER

In justifying its rule change proposals, the AER has identified a range of costs and benefits associated with its proposals on this issue. These benefits are :

- More certainty and stability in how WACC will be determined during the life of the WACC review decision, which would in turn encourage an environment in which service providers are able to attract more investment.

- Stronger ability for the AER to approve an overall WACC commensurate with the regulatory and commercial risks faced by NSPs, rather than a rate of return that is subject to 'cherry picking' of individual parameters and is higher than an efficient level.

- Reduced administrative costs for regulated businesses, consumers and the regulator associated with regulatory decision-making by focussing a single periodic review of WACC, as opposed to the current continual review of arguments in price determination processes.

- With respect to electricity determinations, reduced administrative costs by removing the potential for having WACC reviews under Chapter 6 and 6A, which currently have different timing requirements for reviews.

- A greater balance between the need for flexibility in the cost of capital framework over the longer term with greater certainty and consistency in the short to medium term.

The AER does not quantify these benefits.

The costs identified by the AER are:

- Loss of flexibility in dealing with changes in market conditions and theoretical developments in the short term when setting rates of return for distribution NSPs and gas service providers.

- For gas NSPs, loss of flexibility in considering alternative WACC frameworks and methods in setting the cost of equity.

[6] The values of some market-based parameters (e.g. the risk free rate) could be determined at the time of individual regulatory determinations.

- For gas NSPs, a potential increase in administrative costs, as they may need to invest more effort in the AER's WACC reviews.

- Greater uncertainty at the time of each WACC review, in terms of potential changes in how the DRP is to be estimated.

The AER has also acknowledged that increased codification and consistency in how the rate of return is determined for energy service providers may also influence the approaches adopted by other regulators and the ACCC.

2.3 Implications of the rule change proposals

Access arrangement decisions and distribution determinations made by the AER under the current NGR and NER respectively are reviewable regulatory decisions under the National Gas Law ("NGL")[7] and the National Electricity Law ("NEL").[8] That is, regulated businesses are able to contest the AER's decisions – including the WACC aspects of those determinations – via a merits review process.

One of the important consequences of the AER's rule change proposals is the indirect removal of the ability of gas and electricity distribution NSPs to contest the WACC aspects of the AER's determinations via merits review. This would occur because:

- The AER is proposing to establish the WACC for gas and electricity NSPs via its periodic WACC review and decision.

- The methodology and values established in the WACC review decision would apply to all gas and electricity NSPs.

- The WACC review decision is not a reviewable decision under the NEL and NGL

- In access arrangement proposals and regulatory proposals, departure from the methodology and parameter values set in the WACC review decision would no longer be permitted.

To date, the ability of regulated businesses to challenge the AER on the WACC aspects of its determinations via merits review has led to significant avoided costs from the perspective of regulated businesses. This is because the AER has lost a number of the appeals relating to WACC that have been brought against it.

The APA Group is also a member of the Financial Investors Group (FIG). As part of the FIG submission, a comprehensive assessment of all merit review appeals has been submitted[9]. In summary, of the 41 appeals referred to the ACT, 16 have been in relation to the cost of capital. Of these, 11 have been found in favour of the proponent or have been conceded by the AER.

The AER's assessment of the costs and benefits of its rule change proposals however, does not appear to recognise the impact on industry as a result of the correction of errors made by the AER in the current regulatory determination process.

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[7] NGL cl. 244

[8] NEL cl. 71A

9 Financial Investor Group, Submission to the AEMC's AEMC Consultation Papers: rule change proposals relating to the economic regulation of electricity (ERC0134) and gas (GRC0011) networks, 8 December 2011. See Section 4.

The AEMC has identified the costs and benefits of making the rule changes proposed by the AER as a key consideration in assessing the AER's rule change proposal. APA considers that consideration of such avoided costs would provide the AEMC with a more complete view of the implications of the AER's rule change proposals on WACC.

This paper sets out a high level methodology and assessment of the direct financial costs on the industry as a result of successful appeals against AER determinations specifically in relation to WACC. In addition we discuss another significant economic consequence resulting from the numerous errors in recent AER determinations. That is, the cost of uncertainty which may increasingly lead to a deterring of investment in both the gas and electricity networks.

3. Approach, data and methodology

3.1 Approach

In estimating the dollar value of the WACC-related errors that have been made by the AER, we have undertaken the following tasks:

1. Identified the gas and electricity regulatory determinations made by the AER which have applied the outcomes of the first WACC review which was completed in May 2009.
2. Identified which of the above determinations have resulted in merits review appeals in relation to WACC issues.
3. Reviewed the nature of the WACC issues subject to appeal and the outcomes of the merits review appeals identified in (2).
4. Estimate the size of the error in the WACC that has been identified in the appeals in (3).
5. Estimated the regulatory asset base ("RAB") value of gas and electricity service provider whose WACC would have been determined by the AER based on the outcomes of the first WACC review. The information on the RAB values that we have used on our analysis is set out in Appendix C.
6. Multiplied the error estimated in (4) by the RAB value estimated in (5).

Further information on the data and methodology undertaken in applying this approach is set out below.

3.2 Data

Based on the approach above, we have undertaken a number of data collection tasks in order to estimate the cost to regulated NSPs of the errors in the AER's determination of WACC.

The following data has been collected:

- Estimates of NSPs RAB. We have compiled a database of all regulated NSPs regulated by the AER under the NER and NGR. For consistency we have chosen to reference the opening nominal RAB value for the year 2010 – 11, for each of the NSPs. We have used the AER's final determinations to obtain this information, where the determination goes into a sufficient level of granularity. Where this is not the case, we have used data from each NSPs regulatory proposal.[10]

- Where NSPs have made appeals to the Tribunal in relation to WACC, we have reviewed the relevant Tribunal decisions and based on that identified the changes to the WACC parameters between the AER's final decision and the "corrected" adjustments based on the Tribunal decisions.

- Data on the WACC parameter values set out in the Statement of Regulatory Intent ("SORI") and data on the WACC allowed by the AER in electricity network determinations and access arrangement decisions.

[10] Whilst we accept the scope for variances between the regulatory final decision and NSP proposal, further detailed analysis to re-profile the final decision was not possible in the consultation timeframe.

Other sources of information relied upon for this analysis include the AER's annual State of the Energy Market reports and supplementary documents provided to the AER by the NSPs as part of their regulatory submissions.

3.2.1 Types of WACC-related errors

The merits appeals framework has provided NSPs with a right of appeal in the event that an NSP does not agree with the AER's final regulatory determination. Evidence from the results of Tribunal decisions show that:

- There have been a large number of appeals of AER's decisions
- Most of the AER's decisions have been subject to appeal
- A significant number of the appeals have related to matters regarding the cost of capital.

In relation to appeals on WACC, of the 41 appeals referred to the ACT, 16 have been in relation to the cost of capital. Of these, 11 have been found in favour of the proponent or have been conceded by the AER.

Aspects of the cost of capital which have been subject to appeal since the current WACC review period began, relate to:

- The debt risk premium ("DRP").
- The value of imputation credits.

These are discussed in further detail below.

3.3 Methodology

3.3.1 Identifying relevant AER determinations and appeals

We have limited our analysis to:

- AER-regulated gas and electricity NSPs.
- Final determinations where the AER has applied the methodologies and parameter values established in the first periodic WACC review for electricity distribution and transmission businesses.[11]

Based on these criteria, Table 3 below sets out the successful appeals in relation to the cost of capital, the applicant, outcome and the resultant impact on the WACC parameters.

Table 1 Australian Competition Tribunal (ACT) WACC decisions

Decision/Date	Appellants	Decision[12]	WACC calculation Error
Application by ActewAGL Distribution [2010] ACompT 4 (Sep 2010)	ActewAGL	AER not at fault in its decision to exclude certain data from some data sources from consideration – It was unreasonable for the AER not to consider whether useful information could be obtained from	Debt risk premium increased to 3.89 per cent from 3.35 per cent, resulting in the allowed cost of capital increasing

[11] Under this criteria, the Tribunal decisions in relation to the NSW distribution businesses and Transgrid are not eligible for analysis as the WACC aspects of these determinations did not reflect SORI WACC parameter values and methodologies

Decision/Date	Appellants	Decision[12]	WACC calculation Error
		consideration – AER made an error in not properly considering whether a specific data observation was anomalous and should have been excluded	to 10.04 per cent from 9.72 per cent[13].
Application by Energex Limited (No. 5) [2011] ACompT 9 (May 2011)	Energex Ergon Energy ETSA Utilities	Allowed the three network operators to recover additional revenues of about $850 million. This is about a 5 per cent increase to total revenues over the five year regulatory period. Specifically, ETSA Utilities, Energex and Ergon Energy have been permitted to recover an additional $301 million, $298 million, and $243 million respectively.	Combined effect of the Tribunal's October and December 2010 decisions is to set the value of gamma set at 0.25. This compares with a value of 0.65 in the SORI.
Application by Jemena Gas Networks (NSW) Ltd (No. 5) [2011] ACompT 10	Jemena Gas Networks	Error found in relation to the AER's decision on the debt risk premium and gamma. Debt risk premium for JGN should be calculated using the Bloomberg fair value curve (as per JGN's basis of appeal).	Tribunal's decision supported the DRP proposed by Jemena Gas Networks of 4.48% (as opposed to the AER's DRP of 2.93%).

Notes: For the purposes of our analysis, disputes relating to the value of imputation credits ("gamma") are classified as a cost of capital matter, even though in the building block model, the value of gamma impacts on the cost of tax.

For the purposes of our analysis, we have regarded each matter as a separate ground. Therefore within the three decisions set out above, these related to 6 separate matters in dispute.

3.3.2 Defining the error in WACC

We have defined the error in the WACC as the difference between:

- The "base WACC" – this is the WACC as determined by the AER in its first periodic WACC review. It is assumed that regulated businesses would have been allowed a WACC set on the basis of the SORI in the absence of the ability to appeal.
- The "corrected WACC" – that is, the WACC which reflects the amount allowed on appeal by the ACT. Appendix E sets out the corrected WACC reflected in our analysis.

The methodology that we have adopted requires the calculation of a "representative" base WACC to apply to the total RAB of all AER-regulated NSPs. In calculating a representative base WACC, we have assumed that those WACC parameter values which are market-based and hence vary depending upon the time of measurement– namely, the nominal risk free rate and the debt risk premium ("DRP")[14] – reflect the average value as allowed by the AER in the regulatory determinations which are impacted by the SORI. This data is set out in Appendix B. All remaining parameter values are assumed to be set based on the SORI resulting from the first periodic WACC review, as set out in Appendix D.

Based on this approach we estimate the representative base WACC as follows:

[13] Source: AER news release 28 September 2010, accessed 1 December 2011, http://www.aer.gov.au/content/index.phtml/itemId/740122/fromItemId/746345

[14] For such parameters, the NER and SORI prescribe the methodology upon which the relevant parameter is to be estimated, rather than prescribed a fixed value.

Table 2: Representative base WACC

Cost of equity	
Nominal risk free rate	5.49%
Equity beta	0.80
Market risk premium	6.0%
Nominal CAPM cost of equity	10.29%
Corporate tax rate	30%
Value of gamma	0.65
Imputation adjustment	0.78
Imputation adjusted cost of equity	8.05%
Cost of debt	
Nominal risk free rate	5.5%
Debt risk premium	3.49%
Pre-tax cost of debt	9.0%
Corporate tax rate	30%
Post-tax cost of debt	6.29%
Nominal vanilla WACC (AER defn)	
CAPM cost of equity	10.29%
Equity % capital	40%
Cost of debt	9.0%
Debt % capital	60%
Nominal vanilla WACC (AER defn)	9.50%
Pre-tax nominal WACC	
Imputation adjusted cost of equity	8.05%
Divided by: 1 - corporate tax rate	70%
Pre-tax nominal cost of equity	11.50%
Multiplied by: Equity % capital	40%
Sub-total	4.60%
Pre-tax cost of debt	9.0%
Debt % capital	60%
Sub-total	5.39%
Pre-tax nominal WACC	9.99%

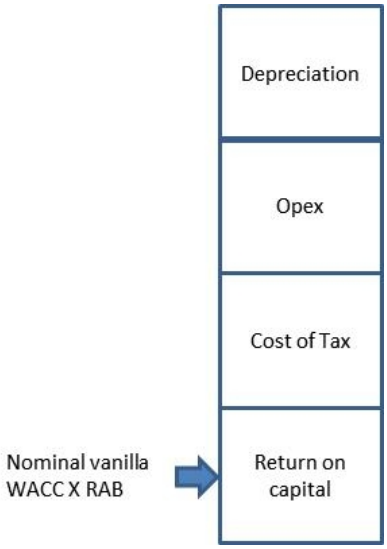
3.3.3 Defining WACC

In determining the revenue requirements of the energy service providers that it regulates, the AER applies a post-tax "building block" approach to determining revenue. Under this approach, the revenue requirement of a business is determined as the amount required to recover the following costs:

- Efficient operating expenses (Opex).
- Return of capital (economic depreciation).
- Return on capital, which equates to WACC (defined as a nominal vanilla WACC) multiplied by the value of the service provider's RAB.
- Cost of tax, which takes into the market value of imputation credits generated and passed on to investors. In the AER's WACC Decisions, the market value of imputation credits is referred to as the value of "gamma".

This approach is illustrated below.

Figure 1: Revenue building blocks under AER's conventional approach

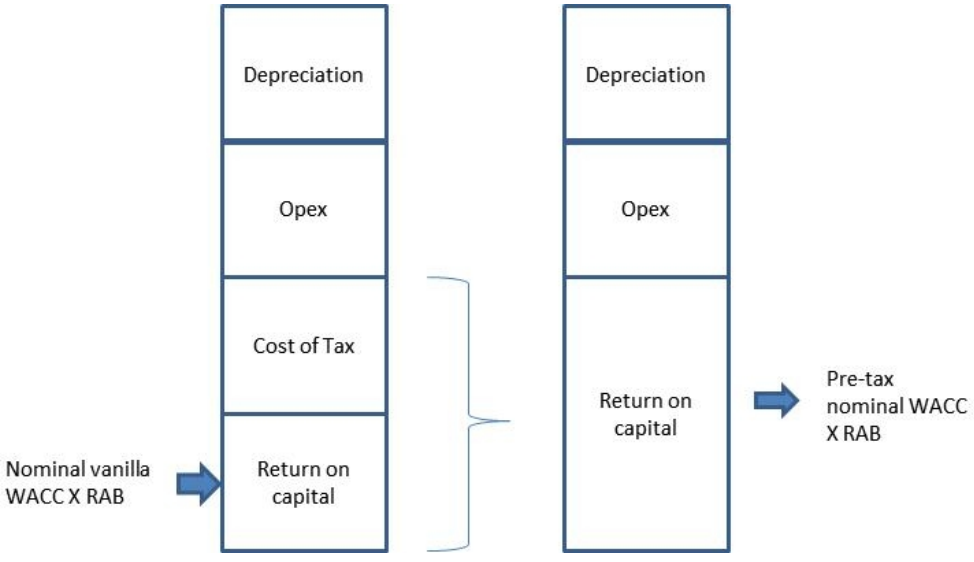


WACC as defined by the AER therefore excludes the impact of gamma, which under the building block model, sits within the cost of tax building block.

Given that gamma is one of the key matters which have been subject to appeal, it is necessary to adopt a definition of WACC which allows gamma to be taken into account in the context of the building block model, for the purposes of quantifying the size of the error. We have therefore adopted a pre-tax nominal WACC formulation to facilitate this analysis.

The diagram below illustrates how the pre-tax nominal WACC formulation fits into the building block model and reconciles with the AER's conventional approach.

Figure 2: Revenue building blocks under pre-tax nominal WACC approach



3.3.4 Key assumptions

In order to undertake this analysis we have made a number of assumptions in relation to the selection and application of the WACC correction as a result of successful appeals. Specifically these are:

- The AER systematically applies the same approach and values to each of the NSPs it regulates. Therefore, where an error has been found by the Tribunal, it is assumed that it would have affected all NSPs if it was not appealed.
- No account has been taken of the timing of each decision, nor each NSPs capital expenditure profile, tax situation, depreciation profiles and operating expenditure.
- As discussed above, we have adopted a pre tax nominal WACC formulation to facilitate this analysis.
- We have based the underestimation of DRP on the lower of the outcomes of the appeals by Actew AGL and Jemena Gas Networks. Both of these decisions disputed a similar matter and hence, aggregating the outcomes would have resulted in double counting. Adopting the lower of the two outcomes means that our estimates lie on the conservative side.
- Our analysis assumes an effective tax rate of 30%.[15]

The approach used provides a gross estimate of the cost of errors if those errors were not corrected and applied to all regulated businesses for a year. It reflects an estimate of the annual costs that would likely be imposed on regulated businesses under the AER's rule change proposals.

[15] Under the AER's post-tax approach, the effective tax rate is calculated from cash flow analysis. It is reported in some determinations / decisions and not in others. Some businesses will have effective tax rates above the statutory corporate tax rate of 30%, and others below it. For simplicity, we have assumed that the effective tax rate is on average equivalent to the statutory corporate tax rate.

4. Results and implications

4.1 Estimates of WACC error

Based on the methodology outlined in Section 3, we set out in Table 3 below the results of our analysis.

Table 3: Annual revenue impact of corrections in AER allowed WACC

Error corrected	Corrected WACC	Impact per annum ($m) Total network RAB	Impact per annum ($m) Gas networks RAB	Impact per annum ($m) Gas transmission only RAB
Understatement in DRP[16]	Base WACC +0.32%	$227 m	$27.7 m	$3.5m
Overstatement of value of gamma	Base WACC +0.71%	$498 m	$60.9m	$7.7m
Total error	**Base WACC +1.04%**	**$725 m**	**$88.6m**	**$10.6m**

Based on the assumptions and methodology above, the "corrected" WACC calculated for the analysis is set out in Appendix E:

Our analysis shows that the availability of merits review appeals has resulted in additional annual revenue to gas and electricity network service providers of approximately $725 million. This equates to $3.6 billion in aggregate across the electricity and gas and networks over the current five year regulatory period. This amount therefore reflects the amount that has been "saved" by the regulated energy industry as a whole as a result of correcting the AER's errors in WACC.

In relation to the regulated gas networks, the additional annual revenue saved as a result of correcting the AER's errors in WACC amounts to approximately $89.1m, of which $11.2m relates to regulated gas transmission networks.

The AER has claimed that there are significant administrative costs resulting from having to be in continual WACC review mode, however, it has not provided any indication of the quantum of such costs. Notwithstanding this, we consider that the probability of such costs exceeding the savings made by the regulated energy industry would be negligible. In other words, our analysis suggests that the costs associated with effectively removing the rights of regulated businesses to contest the WACC aspects of the AER's determinations via merits review (as the AER has proposed) would significantly outweigh the benefits.

It could be argued that as a result of the reinstatement of the revenue which would otherwise be lost to the regulated energy industry, consumers would be charged higher gas and electricity prices. In our opinion, since the lower price was a result of errors made by the AER, prices were at artificially low levels and were unlikely to have been sustained.

- It could be argued that as a result of the reinstatement of the revenue which would otherwise be lost to the regulated energy industry, consumers would be charged higher gas and electricity prices. However:

[16] We have based the underestimation of DRP on the lower of the outcomes of the appeals by Actew AGL and Jemena Gas Networks. Both of these decisions disputed a similar matter and hence, aggregating the outcomes would have resulted in double counting. Adopting the lower of the two outcomes means that our estimates lie on the conservative side.

- The indicative price change faced by consumers, assuming that the additional revenue of approximately $89 million per annum in gas network revenues is fully recovered, is equivalent to approximately $0.13 per gigajoule (GJ) on consumer prices, on average across the gas network industry. Of this indicative increase in gas consumer prices, approximately $0.02 is attributable to the gas transmission network.

- In the context of the wholesale domestic gas price in Eastern Australia of between $2.44 and $3.90 per GJ, the price increase that may be borne by consumers to recover the additional total gas network revenues is equivalent to approximately 4.1% of the average wholesale domestic price ($3.25/GJ) and 0.51% to recover gas transmission revenues.

In summary, correcting the errors in the AER's regulatory decisions is worth billions of dollars to regulated NSPs over a single regulatory period. Limiting or removing the industries' ability to correct these errors, is likely to have consequences for the investment decisions of network companies. By comparison, the customer impact is modest. The costs are therefore concentrated to the network industry, whilst the financial impact on customers is widely dispersed.

4.2 Potential economic consequences

A key economic consequence of under-estimating regulated returns is the reduction in confidence in the regulator's processes by investors and the associated uncertainty that it creates. It is difficult to quantify the impact of uncertainty however, it would almost certainly have the effect of deterring investment that would otherwise have occurred.

The dangers associated with removal of perceived monopoly rents by regulators is an issue which has previously been examined by the Productivity Commission (PC) in its review of the National Access Regime and the Gas Access Regime. In its 2001 inquiry into the National Access Regime, the PC noted the asymmetric impacts on investment that could potentially occur as a result of regulatory errors:

"the Commission accepts that there is a potential asymmetry in effects:

- *Over-compensation may sometimes result in inefficiencies in the timing of new investment in essential infrastructure (with flow-ons to investment in related markets), and occasionally lead to inefficient investment to by-pass parts of a network. However, it will never preclude socially worthwhile investments from proceeding.*

- *On the other hand, if the truncation of balancing upside profits is expected to be substantial, major investments of considerable benefit to the community could be forgone, again with flow-on effects for investment in related markets.*

In the Commission's view, the latter is likely to be a worse outcome. Accordingly, it concurs with the argument that access regulators should be circumspect in their attempts to remove monopoly rents perceived to attach to successful infrastructure projects."[17]

In the PC's 2004 review of the gas access regime, the PC also noted that one of the ways that regulatory risks manifests itself is in a re-prioritisation of potential investments:

If regulatory risk, asymmetric truncation or regulatory error reduce expected profits and/or increase risk, then some riskier projects might no longer have an expected profit that

[17] Productivity Commission inquiry into the National Access Regime, 2001. Page 81

investors consider is sufficient to compensate for the associated risk. Investors could respond by abandoning such projects"[18].

[18] Productivity Commission inquiry into the National Third Party Access Regime for Natural Gas Pipelines, 2004. Page 107
http://www.pc.gov.au/__data/assets/pdf_file/0007/51586/gas2.pdf

Appendix A : Merits review appeals relating to WACC matters since 2008

Table 4: Merits review appeals

Decision/Date	Appellants	Number of Matters in Dispute			
		Cost of capital[19]	RAB	Capex/ Opex	Other
Re: Application by ElectraNet Pty Limited No. 3 [2008] ACompT 3 (Sep 2008)	ElectraNet		1		
Application by EnergyAustralia [2009] ACompT 7 (Oct 2009)	EnergyAustralia				11
Application by EnergyAustralia [2009] ACompT 8, Corrigendum (Nov 2009)	EnergyAustralia TransGrid Integral Energy Country Energy Transend	2 2 2 2 2		1 1	
Application by ActewAGL Distribution [2010] ACompT 4 (Sep 2010)	ActewAGL	1			
Application by Ergon Energy Corporation Limited [2010] ACompT 6 (Oct 2010)	Ergon Energy				1
Application by ETSA Utilities [2010] ACompT 5 (Oct 2010)	ETSA Utilities		1		
Application by Ergon Energy Corporation Limited (Customer Service Costs) (No. 2) [2010] ACompT 10 (Dec 2010)	Ergon Energy				1
Application by Ergon Energy Corporation Limited (Labour Cost Escalators) (No. 3) [2010] ACompT 11 (Dec 2010)	Ergon Energy			2	
Application by Ergon Energy Corporation Limited (Non-system property capex) (No. 4) [2010] ACompT 12 (Dec 2010)	Ergon Energy			1	
Application by Ergon Energy Corporation Limited (Service Target Performance Incentive Scheme) (No. 5) [2010] ACompT 7 (Mar 2011)	Ergon Energy				1
Application by Ergon Energy Corporation Limited (Street Lighting Services) (No. 6) [2010] ACompT 14 (Dec 2010)	Ergon Energy				1
Application by Jemena Gas Networks (NSW) Ltd (No. 3) [2011] ACompT 6 (Feb 2011)	Jemena Gas Networks		1	1	1
Application by Energex Limited (No. 5) [2011] ACompT 9 (May 2011)	Energex Ergon Energy ETSA Utilities	1 1 1			
Application by Jemena Gas Networks (NSW) Ltd (No. 5) [2011] ACompT 10	Jemena Gas Networks	2			
Total		**16**	**3**	**6**	**16**

Note: Only appeals which have been decided by the ACT are reported in this table. As such it excludes applications which have been granted leave but remain undecided.

For the purpose of our analysis, appeals relating to the following AER determinations have been analysed:

- Application by ActewAGL Distribution [2010] ACompT 4 (Sep 2010)
- Application by Energex Limited (No. 5) [2011] ACompT 9 (May 2011)

[19] For the purposes of our analysis, disputes relating to the value of imputation credits ("gamma") are classified as a cost of capital matter, even though in the building block model, the value of gamma impacts on the cost of tax.

- Application by Jemena Gas Networks (NSW) Ltd (No. 5) [2011] ACompT 10

Appendix B : AER decisions applying the first WACC review decision

Table 5: AER decisions since the first WACC review

		Values applied in AER's determination		
AER Decisions applying the outcomes of the first periodic WACC review	Date	Risk free rate	Debt risk premium	"Gamma" value
Country Energy Gas	March 2010	5.62%	3.36%	0.65
ActewAGL	April 2010	5.63%	3.35%	0.65
Queensland electricity distributors	May 2010	5.64%	3.33%	0.65
ETSA Utilities	May 2010	5.89%	2.98%	0.65
Jemena Gas Networks	June 2010	5.85%	2.93%	0.65
Victorian electricity distributors	October 2010	5.08% - 5.65%	3.70% - 4.05%	0.65
Envestra SA Gas Distribution	June 2011	5.56%	3.81%	0.25
Envestra Qld Gas Distribution	June 2011	5.56%	3.81%	0.25
APT Allgas	June 2011	5.40%	3.64%	0.25
NT Gas	June 2011	5.53%	3.80%	0.25

Appendix C : RAB values

We have compiled a database of all regulated NSPs regulated by the AER under the NER and NGR[20]. For consistency we have chosen to reference the opening nominal RAB value for the year 2010 – 11, for each of the NSPs. We have used the AER's final determinations to obtain this information, where the determination goes into a sufficient level of granularity. Where this is not the case, we have used data from each NSP's regulatory proposal[21].

Table 6 Gas network companies RAB $m nominal forecast for 2010 - 11

Transmission Network Operator (TNO)/Distribution (DNO)	Company	$m nominal RAB values as at 2010-11
DNO	Envestra Ltd	299
DNO	APT Allgas	399
DNO	Envestra Wagga Wagga	60
DNO	Jemena Gas Network	2,307
DNO	Envestra SA	975.1
DNO	Envestra VIC	1015.4
DNO	Envestra Albury	33.0
DNO	Multinet	1022.7
DNO	SP Ausnet	1134.1
DNO	ActewAGL	278
Total RAB DNOs	-	**7,524**
TNO	Roma to Brisbane	360
TNO	Dawson Valley	8
TNO	Victorian Transmission System (GasNet)	557
TNO	Central Ranges Pty Limited	101
Total RAB TNOs		**1,025**
TOTAL RAB Gas	-	**8,549**

[21] Whilst we accept the scope for variances between the regulatory final decision and NSP proposal, further detailed analysis to re-profile the final decision was not possible in the consultation timeframe.

Table 7 Electricity network companies RAB $m nominal forecast for 2010 - 11

TNO/DNO	Company	$m nominal RAB values as at 2010-11
DNO	ENERGEX (Qld)	7,867
DNO	Ergon Energy (Qld)	7,149
DNO	Ausgrid (formerly EnergyAustralia)	8,433
DNO	Integral Energy (NSW)	4,149
DNO	Country Energy (NSW)	4,930
DNO	Powercor (Vic)	2,215
DNO	SP AusNet (Vic)	2,080
DNO	United Energy (Vic)	1,381
DNO	CitiPower (Vic)	1,288
DNO	Jemena (Vic)	766
DNO	ETSA (SA)	2,772
TNO/DNO	Aurora Energy (Tas)	1,267
DNO	ActewAGL (ACT)	650
Total RAB DNOs	-	**44,946**
TNO	Powerlink (Qld)	5,430
TNO	TransGrid (NSW)	4,706
TNO	SP AusNet (Vic)	2,390
TNO	ElectraNet (SA)	1,536
TNO	Transend (Tas)	1,067
TNO	Ausgrid (formerly EnergyAustralia)	1,309
Total RAB TNOs	--	**16,437**
TOTAL RAB Electricity	-	**61,383**

Appendix D : Statement of Regulatory Intent (SORI)

The table below is a copy of the AER's 2009 SORI values, for distribution and transmission companies which set out the revised WACC values, methods and credit rating levels to be applied by the AER in making a transmission network service provider's (TNSP) revenue determination under chapter 6A of the National Electricity Rules (NER) and a distribution network service provider's (DNSP) building block determination under chapter 6 of the NER. These figures have been used for our base case WACC calculations.

Table 8: SORI base values

Cost of equity	SORI value
Nominal risk free rate	Calculated on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years
Equity beta	0.8
Market risk premium	6.5%
The market value of debt as a proportion of the market value of equity and debt (D/V)	0.6
Credit rating level	BBB+
The assumed utilisation of imputation credits (γ) is 0.65.	The assumed utilisation of imputation credits (γ) is 0.65

Source: AER Statement of regulatory intent on the revised WACC parameters (distribution) May 2009

Appendix E : Calculation of corrected WACC

Table 9: Corrected WACC for Gamma error

Cost of equity	
Nominal risk free rate	5.49%
Equity beta	0.80
Market risk premium	6.0%
Nominal CAPM cost of equity	10.29%
Corporate tax rate	30%
Value of gamma	0.25
Imputation adjustment	0.90
Imputation adjusted cost of equity	9.29%
Cost of debt	
Nominal risk free rate	5.5%
Debt risk premium	3.49%
Pre-tax cost of debt	9.0%
Corporate tax rate	30%
Post-tax cost of debt	6.29%
Nominal vanilla WACC (AER defn)	
CAPM cost of equity	10.29%
Equity % capital	40%
Cost of debt	9.0%
Debt % capital	60%
Nominal vanilla WACC (AER defn)	9.50%
Pre-tax nominal WACC	
Imputation adjusted cost of equity	9.29%
Divided by: 1 - corporate tax rate	70%
Pre-tax nominal cost of equity	13.28%
Multiplied by: Equity % capital	40%
Sub-total	5.31%
Pre-tax cost of debt	9.0%
Debt % capital	60%
Sub-total	5.39%
Pre-tax nominal WACC	10.70%

Table 10: Corrected WACC for Debt Risk Premium error

Cost of equity	
Nominal risk free rate	5.49%
Equity beta	0.80
Market risk premium	6.0%
Nominal CAPM cost of equity	10.29%
Corporate tax rate	30%
Value of gamma	0.65
Imputation adjustment	0.78
Imputation adjusted cost of equity	8.05%
Cost of debt	
Nominal risk free rate	5.5%
Debt risk premium	4.03%
Pre-tax cost of debt	9.5%
Corporate tax rate	30%
Post-tax cost of debt	6.66%
Nominal vanilla WACC (AER defn)	
CAPM cost of equity	10.29%
Equity % capital	40%
Cost of debt	9.5%
Debt % capital	60%
Nominal vanilla WACC (AER defn)	9.83%
Pre-tax nominal WACC	
Imputation adjusted cost of equity	8.05%
Divided by: 1 - corporate tax rate	70%
Pre-tax nominal cost of equity	11.50%
Multiplied by: Equity % capital	40%
Sub-total	4.60%
Pre-tax cost of debt	9.5%
Debt % capital	60%
Sub-total	5.71%
Pre-tax nominal WACC	10.31%

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