Final decision

APT Allgas

Access arrangement proposal for the Qld gas network

1 July 2011 – 30 June 2016

June 2011

AUSTRALIAN ENERGY REGULATOR

Contents

Final decision

In accordance with r. 62 of the National Gas Rules (NGR), the Australian Energy Regulator (AER) refuses to approve the revised access arrangement proposal for its Queensland gas distribution network submitted by APT Allgas Energy Pty Limited (APT Allgas). The final decision sets out the AER's consideration of the revised access arrangement proposal and the revisions it proposes to the revised access arrangement proposal and revised access arrangement information. The AER has formulated the revisions with regard to the matters set out in r. 64(2) of the NGR.

AER's proposed revisions

The AER proposes revisions to the revised access arrangement proposal and revised access arrangement information as set out in the final decision. The AER has formulated its proposed revisions with regard to the criteria set out in r. 64(2) of the NGR.

The AER must make a decision giving effect to its proposed revisions within two months of making this final decision. The AER expects to publish its revised access arrangement and access arrangement information for the APT Allgas gas distribution network by 30 June 2011.

Shortened forms

Shortened form	Extended form
access arrangement information	APT Allgas, *Access arrangement information – 01 July 2011 – 30 June 2016*, 30 September 2010
access arrangement period	1 July 2011 to 30 June 2016
access arrangement proposal	APT Allgas, *Access arrangement – 01 July 2011 – 30 June 2016*, 30 September 2010
AER	Australian Energy Regulator
capex	capital expenditure
Code	National Third Party Access Code for Natural Gas Pipeline Systems
CPI	consumer price index
draft decision	AER, *Draft decision, APT Allgas Access arrangement proposal for the Qld gas network 1 July 2011 – 30 June 2016*, February 2011
earlier access arrangement	Access arrangement for 1 July 2006 to 30 June 2011 inclusive
earlier access arrangement period	1 July 2006 to 30 June 2011
NGL	National Gas Law
NGR	National Gas Rules
opex	operating expenditure
QCA	Queensland Competition Authority
revised access arrangement information	APT Allgas, *Access arrangement information – 01 July 2011 – 30 June 2016*, 23 March 2011
revised access arrangement proposal	APT Allgas, *Access arrangement – 01 July 2011 – 30 June 2016*, 23 March 2011

Overview

APT Allgas owns and operates gas distribution pipelines in Queensland and northern New South Wales that supply natural gas to customers in Brisbane (south of the river), and in other regional centres including Toowoomba and the Gold Coast. In total around 79 000 residential, 4900 small business and 100 large demand customers are serviced by the network. The network is a natural monopoly and is regulated by the AER under the National Gas Rules (NGR) and National Gas Law (NGL) to ensure APT Allgas does not charge excessive prices or impose unduly onerous terms and conditions on customers.

This is the AER's final decision on access arrangements for the APT Allgas network for the period 1 July 2011 to 30 June 2016. This final decision follows the draft decision released by the AER on 17 February 2011, and addresses the issues raised in APT Allgas's revised access arrangement proposal and in submissions from interested parties.

Overall, the AER has come to the view that APT Allgas's access arrangement proposal is not acceptable because the proposed tariffs are too high and the terms and conditions are too much in favour of APT Allgas. As a result, the AER is proposing to revise the tariffs and terms and conditions of access proposed by APT Allgas for its gas distribution network. The AER considers its revisions will better balance the interests of APT Allgas and network users.

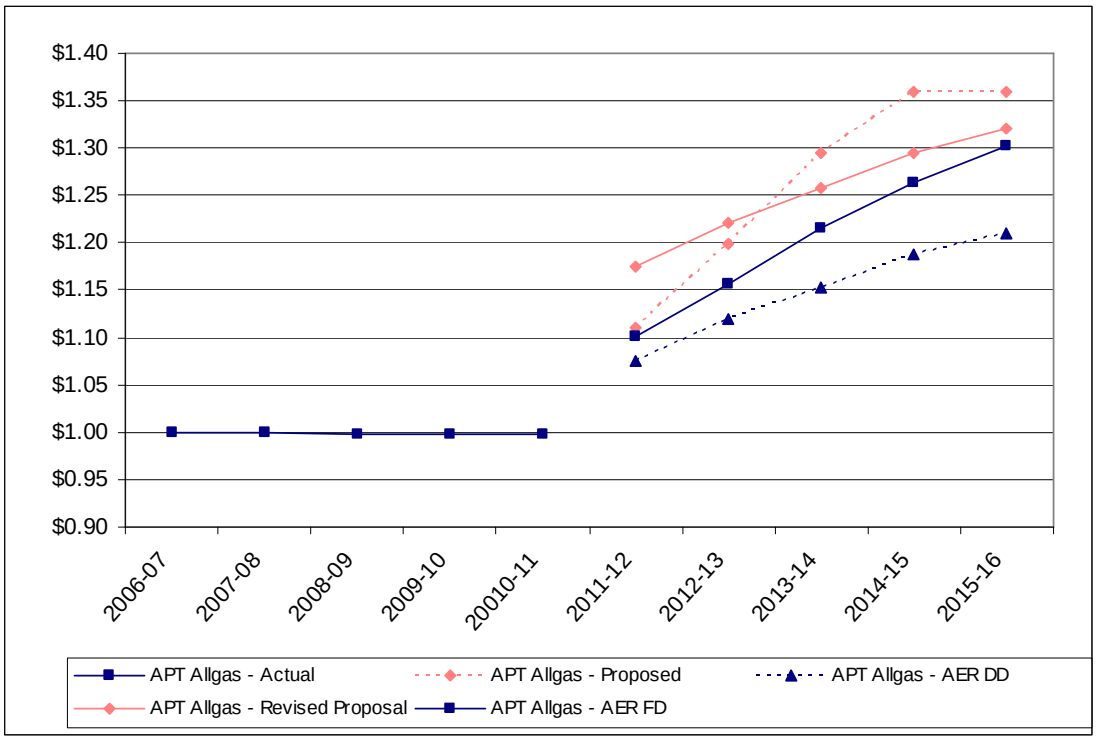
The main elements of the AER's final decision are set out below. More detail can be found in the relevant chapters. This final decision should be read in conjunction with the draft decision, APT Allgas's revised access arrangement proposal, submissions from interested stakeholders, and the AER's consultants' reports, which are available on the AER's website.

The AER will publish its access arrangement proposal and supporting access arrangement information, incorporating the revisions set out in this final decision, before 1 July 2011.

Tariffs

APT Allgas's proposed tariffs are shown as an index in figure 1 along with the tariffs that the AER has calculated in this final decision. The tariffs are calculated based on forecasts of required capital expenditure for new pipeline assets as the network grows, the replacement of existing assets as needed, the costs of capital and the cost of operating APT Allgas's business. In addition, the tariffs reflect forecasts of demand on the network over the next five years. This final decision sets out the AER's considerations and own forecast of each of these cost components.

Figure 1: Real price index – haulage tariffs (index price starts at $1 for 2005-06)



Source: AER analysis.

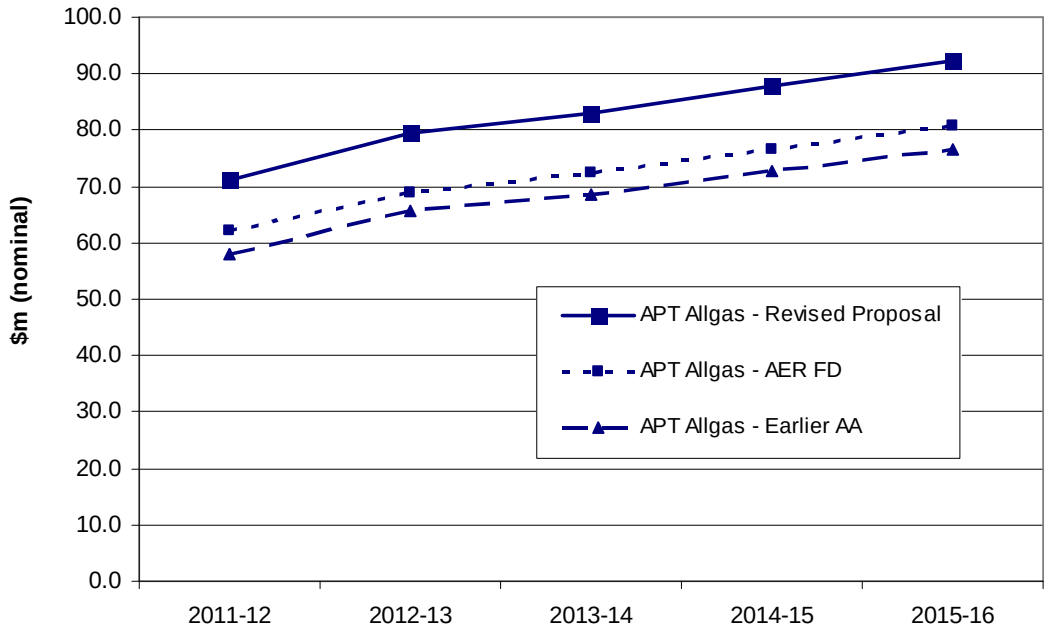
The tariff increases accepted by the AER for the access arrangement period are higher than applied over the earlier access arrangement period, but lower than those proposed by APT Allgas. The increases are driven largely by higher financing costs, although a significant increase in customer requested capital expenditure is a contributing factor. The AER has also accepted revisions to certain asset lives, resulting in a higher required allowance for depreciation. Finally, operating costs are expected to rise due to higher labour costs and other factors. These issues are discussed in more detail below and in the relevant chapters of this final decision.

Cost of capital

The AER has determined a cost of capital of 9.50 per cent, which compares with the cost of capital proposed by APT Allgas in its revised access arrangement proposal of 11.38 per cent. As the cost of capital in the earlier access arrangement period was 8.75 per cent, the AER's decision increases APT Allgas's revenue requirement by 5.8 per cent over the access arrangement period. The higher cost of capital is the major driver of real tariff increases over the access arrangement period.

Figure 2 shows APT Allgas's revenue (including ancillary services revenues) in the access arrangement period under a number of cost of capital scenarios.

Figure 2: APT Allgas's forecast revenue under different cost of capital scenarios



Source: AER analysis

The parameters used to calculate the cost of capital by APT Allgas and the AER are shown in table 1.

Table 1: APT Allgas's proposed and AER's allowed cost of capital parameters

Parameters	APT Allgas revised proposal	AER final decision
Nominal risk free rate (%)	5.71	5.40
Inflation forecast (%)	2.52	2.55
Cost of debt (%)	10.40	9.04
Debt risk premium (%)	4.69	3.64
Cost of equity (%)	12.86	10.20
Equity beta	1.10	0.8
Market risk premium (%)	6.50	6.0
Gearing (%)	60.00	60
Nominal cost of capital (%)	**11.38**	**9.50**

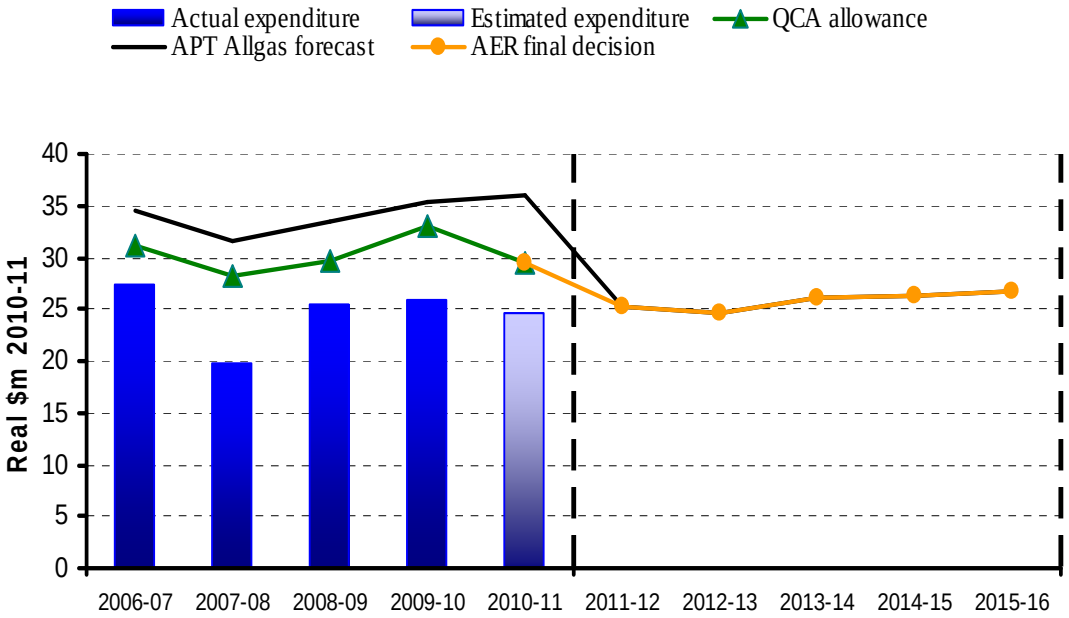
The AER considers that the parameters proposed by APT Allgas do not meet the requirements of the NGR.

Capital expenditure

In its draft decision, the AER accepted APT Allgas's forecast capital expenditure of $129 million over the access arrangement period, a real increase of 5 per cent over the earlier access arrangement period. APT Allgas accepted the AER's draft decision in its revised access arrangement proposal, and the AER therefore confirms its draft decision on forecast capital expenditure in this final decision.

Figure 3 shows APT Allgas's proposed and approved capital expenditure programs for the earlier access arrangement period and the access arrangement period.

Figure 3: Total capex – APT Allgas proposed and AER allowed



Source: AER analysis

Operating expenditure

In its draft decision, the AER did not accept APT Allgas's opex proposal as being prudent and efficient, requiring amendments to:

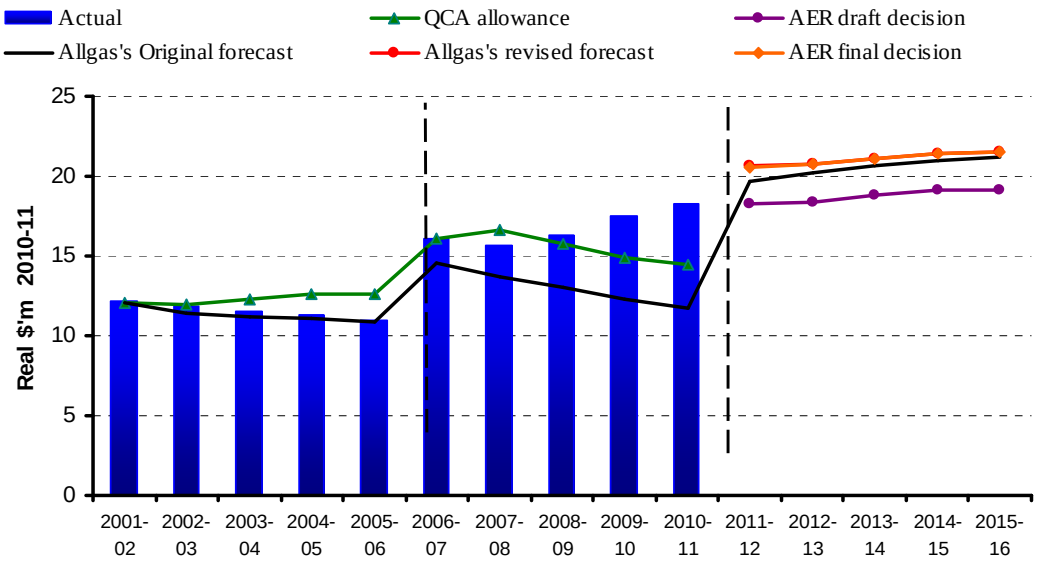
- incorporate alternative input cost escalators
- reduce the price assumption used to estimate UAG costs
- various proposed non-base year costs (step changes).

Overall, the AER accepted $94 million ($2010-11) in opex, which represented a $9 million or 9 per cent decrease from the access arrangement proposal.

APT Allgas did not accept amendments in relation to UAG costs, input cost escalators and one of the proposed non-base year costs. The revised access arrangement proposal represented an increase of $12 million on the AER's draft decision.

The AER largely accepted the additional information provided in support of APT Allgas's proposed UAG and non-base year costs, with the exception of the proposed input cost escalators. However, the AER considered that its proposed revisions ($0.16 million) were not large enough to warrant amendment to APT Allgas's access arrangement proposal. Therefore the AER accepts APT Allgas's revised opex proposal of $106 million. This represents a 26 per cent increase in real terms compared to expenditure over the earlier access arrangement period. The AER's final decision on operating expenditure is illustrated in figure 4.

Figure 4: Total opex – APT Allgas proposed and AER allowed

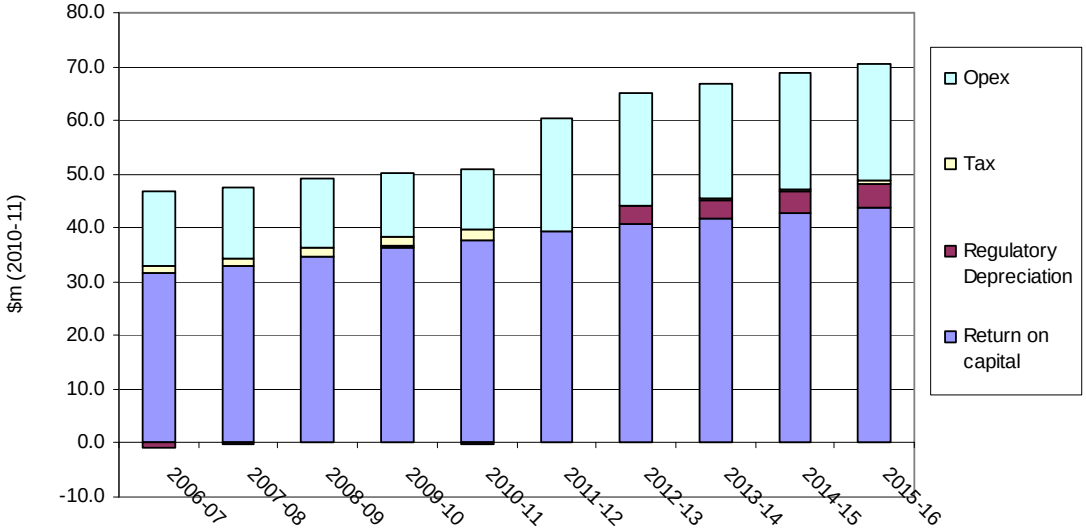


Source: AER analysis

Revenue requirement

The AER's forecast revenue requirement is based on prudent and efficient forecasts of capital and operating expenditures, forecast depreciation, forecast inflation, a provision for tax and the return on capital. The AER has calculated APT Allgas's revenue requirement (including ancillary services revenues) over the forecast period to be $361 million (nominal), a real increase of 36 per cent over the earlier access arrangement period. This compares to APT Allgas's forecast revenue requirement of $412 million (nominal), a real increase of 45 per cent. The forecast revenue requirement is shown in figure 5.

Figure 5: AER's approved revenue requirement for APT Allgas (including ancillary services)



Source: AER analysis

In determining APT Allgas's total tax allowance, the AER has incorporated the recent Australian Competition Tribunal ruling that a gamma value of 0.25 is appropriate.

The AER's proposed regulatory depreciation allowance reflects APT Allgas's amendments to remaining asset lives, but updates APT Allgas's revised access arrangement proposal to account for the latest forecast of inflation.

Other issues

APT Allgas broadly accepted the cost pass through mechanism as specified in the AER's draft decision, but proposed a number of further revisions. The AER has accepted several of these proposed revisions, and a number of applicable revisions proposed by Envestra, where they better promote the requirements of the NGR and NGL.

In its draft decision, the AER required two amendments to demand forecasts:

- an increase in forecast residential consumption in the western region to account for weather sensitive space heating demand
- a reduction in forecast volume business customer numbers to reflect lower levels of expected business connections.

APT Allgas adjusted the forecasting approach for domestic consumption in the western region to better account for weather sensitive heating demand. The AER considers that the adjustment applied by APT Allgas addresses the concerns expressed in the draft decision, and accepts the revised forecast is reasonable.

However, the APT Allgas has not justified a move away from the draft decision in relation to the volume business customer forecasts. As a result, the AER proposes to increase the revised volume business customer consumption forecast by 6 per cent.

Terms and conditions

APT Allgas's access arrangement sets out the proposed terms and conditions that are not directly related to the nature or level of tariffs paid by users. In its draft decision, the AER accepted some of the terms and conditions but required amendments in most of them. In response to the draft decision, APT Allgas accepted most of the AER's amendments, proposed modifications to the wording of some clauses and other revisions

The AER accepts most of APT Allgas's proposed modifications to the wording of clauses as they do not affect the substance of the clauses. However, the AER proposes not to approve some of APT Allgas's revised terms and conditions. The AER considers that amended provisions for these terms and conditions better promote the national gas objective of the NGL.

Background

The AER is responsible for the economic regulation of covered natural gas distribution pipelines in all states and territories (except WA). The AER's functions and powers are set out in the NGL and the NGR. The NGL and NGR came into effect

on 1 July 2008. Prior to this, the National Third Party Access Code for Natural Gas Pipeline Systems provided the relevant regulatory framework for gas distribution pipelines.

On 30 September 2010, APT Allgas submitted an access arrangement proposal for its Queensland gas distribution network for the period 1 July 2011 to 30 June 2016. In accordance with the NGR, the AER published APT Allgas's access arrangement proposal on 21 October 2010. Interested parties were invited to make submissions on the proposal and two submissions were received. APT Allgas also presented its access arrangement proposal at a public forum held in Brisbane on 28 October 2010.

The AER released its draft decision on APT Allgas's access arrangement proposal on 17 February 2011, and held a public forum to explain its decision on 1 March 2011. In response, APT Allgas submitted a revised access arrangement proposal to the AER on 23 March 2011. Interested parties were invited to make submissions on the draft decision and revised access arrangement proposal, and two submissions were received.

1 Introduction

1.1 Background

APT Allgas is wholly owned by APT Pipelines Limited, part of the publicly listed APA Group. APT Allgas is both owner and operator of the APT Allgas network.[1]

The APT Allgas network comprises 2942 km of pipeline delivering 10.5 PJ of gas annually to approximately 82 000 customers. The network is separated into three operating regions: Brisbane (covering the area south of the Brisbane River), the Western region (including Toowoomba and Oakey) and the South Coast region (covering the Gold Coast, Tweed Heads and Banora Point in north east NSW). The assets used to service Brisbane constitute the majority (58 per cent) of the network.[2]

1.2 Regulatory requirements

The AER is responsible for the economic regulation of covered natural gas distribution pipelines in all states and territories (except WA). The APT Allgas distribution network is a covered pipeline.[3] The AER's functions and powers are set out in the NGL and the NGR.

1.3 Draft decision

The AER issued its draft decision not to approve APT Allgas's access arrangement proposal for the period 1 July 2011 – 30 June 2016 on 17 February 2011 (draft decision). The AER held a public forum on the draft decision on 1 March 2011.

1.4 Revised access arrangement proposal

APT Allgas submitted a revised access arrangement proposal and revised access arrangement information for the SA gas distribution network to the AER on 23 March 2011.

1.5 Structure of final decision

The AER's consideration of APT Allgas's revised access arrangement proposal and revised access arrangement information is set out as follows:

- Introductory chapters outline the regulatory environment, network description and pipeline services.
- Part A outlines the key components of the total revenue building blocks including the capital base, depreciation, the rate of return, taxation, the incentive mechanism, operating expenditure and a summary of total revenue.
- Part B outlines the demand forecasts, reference tariffs and tariff variation mechanisms.

---

1 APT Allgas, *Access arrangement submission*, September 2010, p. 6.
2 APT Allgas, *Access arrangement submission*, September 2010, pp. 6–9.
3 AEMC, *List of natural gas pipelines*, viewed 9 December 2010, <http://www.aemc.gov.au/Gas/Scheme-Register/Pipeline-list-summary.html>.

- Part C outlines the non-tariff components of the revised access arrangement proposal.

1.6 Next steps

The NGR provides that if the AER does not approve an access arrangement proposal it must propose an access arrangement or revisions to the access arrangement for the relevant pipeline.[4]

The AER has proposed revisions as set out in its final decision. These revisions have been formulated with regard to the matters required to be included in an access arrangement by the NGL and NGR, APT Allgas's revised access arrangement proposal, and the AER's reasons for refusing to approve that proposal.[5] The AER will not be consulting on its proposed revisions.[6]

The AER must make a decision giving effect to its proposed revisions within two months of making this final decision. The AER expects to make that decision by the end of June 2011.

4 NGR, r. 64(1).
5 NGR, r. 64(2).
6 NGR, r. 64(3).

2 Pipeline services

APT Allgas's access arrangement describes the type and nature of services to be provided. This includes those services likely to be sought by a significant part of the market (reference services) and non-reference services.

The AER's draft decision required one amendment to APT Allgas's description of pipeline services relating to the inlet reconnection service. APT Allgas amended the definition of the inlet reconnection service in its revised access arrangement proposal to include the relighting of appliances, in accordance with the AER's draft decision.

The AER is now satisfied that APT Allgas has identified the pipeline to which the access arrangement relates, and described the proposed pipeline services and specified reference services in accordance with the requirements of the NGR.

2.1 Regulatory requirements

Rule 48(1) of the NGR provides that a full access arrangement must specify certain information for pipeline services, including reference services. Pipeline services include haulage services, interconnection services and ancillary services.[7] Reference services are defined as pipeline services that are likely to be sought by a significant part of the market.[8] An access arrangement must:

- identify the pipeline to which the access arrangement relates and a website at which a description of the pipeline can be inspected[9]
- describe the pipeline services the service provider proposes to offer to provide by means of the pipeline[10]
- specify the reference services, and the terms on which those services are provided.[11]

Rule 109(1) of the NGR provides that a pipeline service provider must not make it a condition of the provision of a service that the prospective user also accept another non-gratuitous service, unless the bundling of services is reasonably necessary.

2.2 Revised access arrangement proposal

APT Allgas accepted amendment 2.1 of the AER's draft decision to include the relighting of appliances as part of the inlet reconnection service, subject to safety and access limitations. APT Allgas also made a consequential amendment to the proposed inlet reconnection fee. The revised access arrangement proposal provided for an inlet reconnection fee consistent with the fee in the earlier access arrangement period, adjusted for inflation.[12]

---

7 NGL, s. 2.
8 NGR, r. 101(2).
9 NGR, r. 48(1)(a).
10 NGR, r. 48(1)(b).
11 NGR, r. 48(1)(c) and r. 48(1)(d).
12 APT Allgas, *Revised access arrangement submission*, March 2011, p. 3.

2.3 Summary of submissions

The AER received a submission from AGL Energy, acknowledging that APT Allgas's revised access arrangement proposal addressed the concerns raised by AGL Energy regarding the definition of the inlet reconnection service.[13]

2.4 AER's consideration

APT Allgas accepted the AER's draft decision on pipeline services and proposed a revised definition of the inlet reconnection service which includes the relighting of appliances. The AER considers that APT Allgas has appropriately described the inlet reconnection reference ancillary service.

The inlet reconnection service proposed by APT Allgas limits the obligation to relight appliances to circumstances where it is safe to do so and where reasonable access has been provided.[14] The AER agrees that the relighting of appliances will not necessarily be possible for all inlet reconnection services due to access limitations or safety concerns.

APT Allgas will incur additional costs as a consequence of reinstating the lighting of appliances as part of the inlet reconnection service. The AER considers it is therefore reasonable to also reinstate the existing service fee, as APT Allgas has proposed. However, the AER identified, and APT Allgas acknowledged, an error in APT Allgas's application of GST to the proposed service fee.[15] This error is corrected in the AER's proposed revision to APT Allgas's 2011-12 tariff schedule outlined in section 2.6.

2.5 Conclusion

The AER considers APT Allgas has appropriately identified the pipeline to which the access arrangement relates and described the proposed pipeline services in accordance with the requirements of the NGR. The AER approves APT Allgas's proposed pipeline services and specification of reference services as these comply with r. 48(1)(a)–(d) of the NGR.

2.6 Revisions

The AER proposes the following revision:

Revision 2.1: amend table 6 of the proposed 2011-12 tariff schedule at appendix B of the revised access arrangement proposal to reflect an inlet reconnection charge of $96.29 (exclusive of GST) per inlet reconnection.

---

13 AGL Energy, *APT Allgas revised access arrangement proposal*, 27 April 2011.
14 APT Allgas, *Revised access arrangement proposal*, March 2011, p. 7.
15 APT Allgas, Email to the AER, *RE: Question for APT Allgas - error in revised AA appendix B*, 14 April 2011.

Part A – Total revenue (building block components)

3 Capital base

This chapter sets out the AER's consideration and analysis of the opening capital base and projected capital base in the revised access arrangement proposal.

In its revised access arrangement proposal, APT Allgas proposed an opening capital base on 1 July 2011 of $424 million ($ nominal). This was consistent with the AER's assessment of APT Allgas's opening capital base in its draft decision. APT Allgas accepted the AER's draft decision to reduce depreciation by $0.3 million ($ nominal).

The projected capital base is influenced by forecast capital expenditure, forecast depreciation and an inflation adjustment. APT Allgas's revised forecast capex of $129 million ($2010–11) over the access arrangement period is consistent with the AER's draft decision. APT Allgas also accepted the AER's draft decision in relation to inflation. However, APT Allgas proposed an alternative approach to calculating remaining asset lives, which has an effect on the forecast depreciation allowance. As discussed in chapter 4 of this decision, the AER accepts the revised remaining asset lives proposed by APT Allgas.

APT Allgas proposed a closing capital base as at 30 June 2016 of $551 million ($ nominal). The AER proposes a closing capital base of $554 million ($ nominal) based upon the changes to the indexation of the capital base.

3.1 Regulatory requirements

In assessing APT Allgas's opening capital base, the AER is required to consider the transitional provisions of the NGR (Clause 3(2) of schedule 1 of the NGR). This relates to actual or forecast capex (new facilities investment) under s. 8.21 of the Code.

In relation to the opening and projected capital base, the NGR requires APT Allgas to demonstrate:

- capex (by asset class) over the earlier access arrangement period (72(1)(a)(i) of the NGR)
- how the capital base is arrived at including a demonstration of how it is increased or diminished over the previous access arrangement period (r. 72(1)(b) of the NGR)
- the opening capital base is derived in accordance with r. 77(2). Rule 77(2) specifies the components that contribute to the derivation of the opening capital base including conforming capex, depreciation and redundant and disposed of assets
- a forecast of conforming capex (r. 72(1)(c)(i) of the NGR) and depreciation over the access arrangement period, including a demonstration of how it is derived (r. 72(1)(c)(ii) of the NGR)

- that the forecasts have been arrived at on a reasonable basis, and represent the best forecast or estimate possible in the circumstances (r. 74(2) of the NGR)

- the projected capital base is derived using the formula (opening capital base plus forecast conforming capex less forecast depreciation and disposed pipeline assets) in r. 78 of the NGR

- forecast capex is such as would be incurred by a prudent service provider (r. 79(1)(a) of the NGR)

- forecast capex is justifiable on a ground stated in r. 79(2) of the NGR. Such as, where the overall economic value is positive, or that either the expenditure is necessary to maintain and improve the safety of services or to comply with a regulatory obligation or meet levels of demand for services existing at the time the capex is incurred.

Rule 90 of the NGR requires that the access arrangement must contain provisions governing the calculation of depreciation for establishing the opening capital base for the next access arrangement period. The provisions must resolve whether depreciation of the capital base is to be based on forecast or actual capex.

Rule 85(1) of the NGR allows an access arrangement to include a capital redundancy mechanism. The AER may also require such a mechanism in the access arrangement.

The NGR also requires APT Allgas to show the key expenditure performance indicators to be used to support the expenditure to be incurred over the access arrangement period (r. 72(1)(f) of the NGR).

3.2 Revised access arrangement proposal

In its draft decision the AER accepted APT Allgas's forecast capital expenditure and opening capital base as at 1 July 2006. However, the AER adjusted the values for the opening capital base as at 1 July 2011 ($424 million, $ nominal) and the closing capital base as at 30 June 2016 ($563 million, $ nominal). APT Allgas incorporated the AER's adjustment to the opening capital base for the access arrangement period in its revised access arrangement proposal. However, APT Allgas has proposed an alternative calculation for the 30 June 2016 closing capital base, which uses a different forecast depreciation allowance.

3.2.1 Opening capital base

Table 3.1 shows the opening capital base in the revised access arrangement proposal. The proposed opening capital base of $424 million at 1 July 2011 (nominal) is the same as the $424 million approved in the draft decision (amendment 3.1).[1]

[1] AER, *Draft decision*, February 2011, p. 34.

Table 3.1: Revised opening capital base ($m, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Opening capital base	302.7	327.1	350.7	374.0	399.4	423.8
Add capex[a]	25.2	19.2	25.1	26.3	26.4	
Add speculative capex	0.0	0.0	0.0	0.0	0.0	
Add re-used redundant assets	0.0	0.0	0.0	0.0	0.0	
Add indexation	7.4	13.9	8.7	10.8	10.1	
Less depreciation	8.2	9.5	10.4	11.4	12.0	
Less redundant assets	0.0	0.0	0.0	0.0	0.0	
Less disposals and transfers	0.0	0.0	0.05	0.2	0.0	
Closing capital base	327.1	350.7	374.0	399.4	423.8	

Source: APT Allgas, Revised access arrangement information, March 2011, p. 6.
(a) Includes capital contributions.

3.2.1.2 Depreciation used in the roll forward model

The revised access arrangement proposal incorporates the AER's draft decision to recalculate APT Allgas's capital base as at 1 July 2011 using forecast depreciation from the earlier access arrangement period.[2]

3.2.1.3 Adjustment to the capital base for inflation in the earlier access arrangement period

The revised access arrangement proposal incorporates the AER's draft decision to adjust the roll forward model (RFM) so that it uses the March to March CPI to calculate inflation.[3] APT Allgas's revised proposal accepts the AER draft decision inflation forecast of 2.52 per cent.[4]

3.2.2 Projected capital base

In its revised access arrangement proposal, APT Allgas proposed an alternative calculation of remaining asset lives, which impacts on the depreciation allowance. This is the reason for the difference between APT Allgas's proposed closing capital base at July 2016 and the closing capital base in the AER's draft decision.

The revised access arrangement proposal did not incorporate the AER's draft decision amendment to the projected capital base for depreciation. APT Allgas has proposed a projected capital base of $551 million at 31 July 2016 ($ nominal), which reflects forecast capex of $145 million ($ nominal) and depreciation of $18 million ($ nominal) for the access arrangement period.[5] The projected capital base is outlined in table 3.2, and compared with that of the AER's draft decision.

2 APT Allgas, *Revised access arrangement information*, March 2011, p. 6.
3 APT Allgas, *Revised access arrangement information*, March 2011, p. 6.
4 APT Allgas, *Revised access arrangement submission*, March 2011, p. 47.
5 APT Allgas, *Revised access arrangement information*, March 2011, p. 10.

Table 3.2: Revised projected capital base ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Opening capital base	423.8	450.3	473.5	499.2	524.8
AER draft decision opening capital base	*423.8*	*452.5*	*477.9*	*506.0*	*534.1*
plus forecast capex [a]	26.9	26.9	29.5	30.2	31.5
plus AER draft decision forecast capex	*26.9*	*26.9*	*29.5*	*30.2*	*31.5*
less forecast depreciation	0.4	3.8	3.8	4.6	5.0
less AER draft decision forecast depreciation	*-1.8*	*1.5*	*1.4*	*2.1*	*2.4*
less forecast disposals	0.0	0.0	0.0	0.0	0.0
less AER draft decision forecast disposals	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
less forecast redundant assets	0.0	0.0	0.0	0.0	0.0
less AER draft decision forecast redundant assets	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Closing capital base	450.3	473.5	499.2	524.8	551.3
AER draft decision closing capital base	*452.5*	*477.9*	*506.0*	*534.1*	*563.2*

Source: APT Allgas, *Revised access arrangement information*, March 2011, p. 10, and AER, *Draft decision*, February 2011, pp. 31, 42.
(a) These are end of year values.

3.2.2.1 Capital expenditure for the access arrangement period

The revised access arrangement proposal incorporated the forecast capital expenditure of $129 million ($2010–11), consistent with the AER's draft decision.[6]

However, tables 3.2 and 3.3 of APT Allgas's revised access arrangement information show higher capex than that originally proposed by APT Allgas.[7] This is a consequence of APT Allgas using capex figures which have had a half year weighted average cost of capital (WACC) applied to them, which was not shown in the initial access arrangement information.[8] This difference in presentation does not reflect a difference in the underlying real dollar values.

APT Allgas's capex in the revised access arrangement proposal is set out in table 3.3.

6 APT Allgas, *Revised access arrangement information*, March 2011, p. 8; and AER, *Draft decision*, February 2011, pg. 33.
7 APT Allgas, *Access arrangement information*, September 2010, p. 8.
8 APT Allgas, *Access arrangement submission*, September 2010, p. 8.

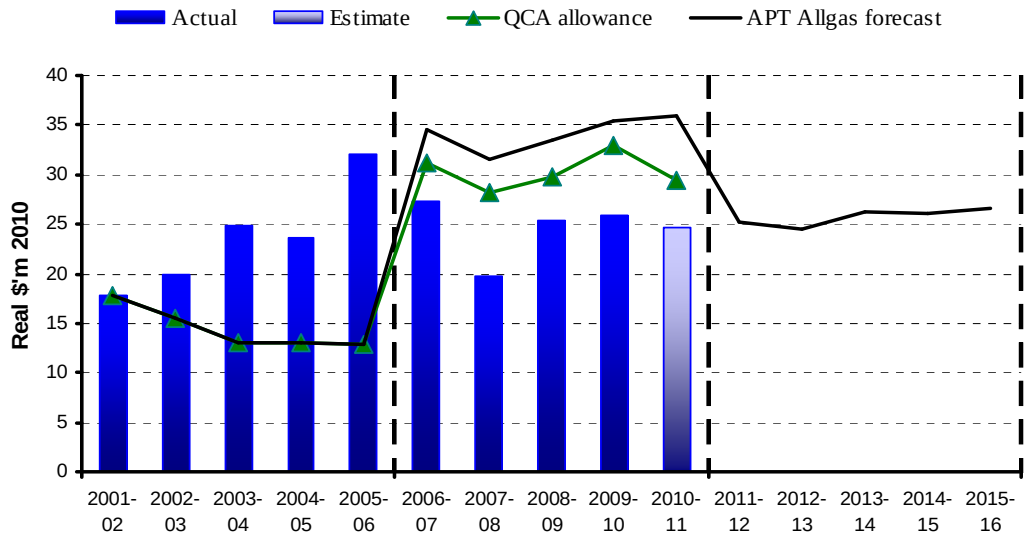
Table 3.3: Proposed forecast capital expenditure for the access arrangement period ($m, 2010–11) [a]

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Customer requested	15.4	16.2	16.6	17.4	18.2	83.8
Network augmentation	1.6	1.6	3.1	2.4	2.6	11.2
Network renewal	5.9	5.9	6.2	6.9	6.6	31.5
Sub total	**23.0**	**23.6**	**25.9**	**26.7**	**27.3**	**126.5**
Non-system capex	3.3	2.1	1.4	0.6	0.5	7.9
Total capex	**26.2**	**25.6**	**27.4**	**27.4**	**27.8**	**134.4**

Source: APT Allgas, *Revised access arrangement information*, March 2011, p. 8.
(a) The AER has converted nominal dollars to 2010–11 real dollars. These values have a half-year WACC applied.

The capex included in APT Allgas's revised access arrangement proposal is illustrated in the figure 3.1 below, compared to actual outturn capex and the regulator approved capex for the earlier two access arrangement periods. This figure presents capex without the half-year WACC applied.

Figure 3.1: APT Allgas's capital expenditure ($2010–11)



Source: APT Allgas, *Revised access arrangement information*, March 2011, p. 8.
APT Allgas, *Access arrangement information*, February 2006, p. 21.
QCA, *Revised access arrangement for gas distribution networks: Allgas Energy - final decision*, May 2006, p. 47.
QCA, *Access arrangements for gas distribution networks: Allgas Energy Limited and Envestra Limited - draft decision*, March 2001, p. 147.

3.2.2.2 Adjustment to the capital base for inflation in the access arrangement period

The revised access arrangement proposal incorporates an inflation forecast of 2.52 per cent which is consistent with the methodology proposed by the AER in the draft decision.[9]

[9] APT Allgas, *Revised access arrangement submission*, March 2011, p. 47.

3.2.2.3 Forecast depreciation allowance in the access arrangement period

The revised access arrangement proposal proposed a different method of calculation for remaining asset lives to that in the AER's draft decision. This difference resulted in a significantly different forecast depreciation allowance for the access arrangement period.[10] Table 3.4 shows the forecast depreciation proposed by APT Allgas due to the change in remaining lives contained in the revised proposal.

Table 3.4: APT Allgas's revised forecast depreciation allowance ($'000, nominal)

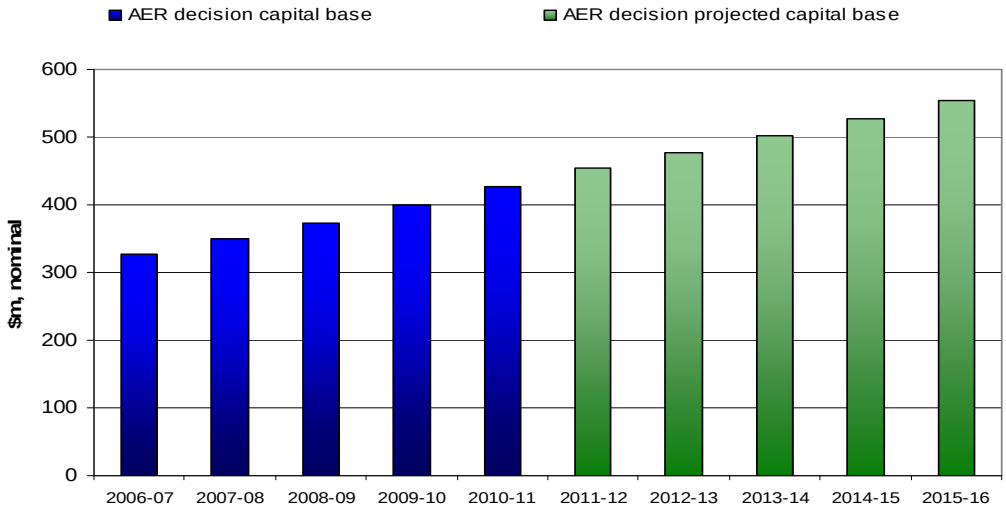
	2011–12	2012-13	2013-14	2014-15	2015-16
Straight-line depreciation	11 084	15 110	15 726	17 151	18 241
Inflationary gain	10 681	11 348	11 932	12 580	13 226
Regulatory depreciation	403	3 762	3 793	4 572	5 015

Source: APT Allgas, *Access arrangement revised submission - PTRM*, March 2011.

3.3 AER's consideration

In its revised access arrangement APT Allgas incorporated the AER's draft decision on its opening capital base and its forecast capex, including the AER's decisions on use of forecast rather than actual depreciation and the appropriate inflation rate. The outstanding issues for consideration of APT Allgas's capital base are the depreciation allowance and the adjustment for inflation.[11] The depreciation allowance is the more significant of these issues in monetary terms. APT Allgas's revised proposal incorporated the AER's draft decision regarding capex in the previous access arrangement period and capex in the access arrangement period. The outcome of the AER's final decision for APT Allgas's capital base is shown in figure 3.2.

Figure 3.2: AER's conclusion on APT Allgas's capital base in the previous access arrangement period and the access arrangement period ($ nominal)



Source: AER analysis; and APT Allgas, *Revised access arrangement information*, March 2011, pp. 6, 10.
Note: These are end of year values.

[10] APT Allgas, *Revised access arrangement submission*, March 2011, pp. 6–10.
[11] The appropriate inflation forecast must be based on the most recent available data.

3.3.2 Opening capital base

APT Allgas's revised access arrangement information incorporated the AER's draft decision on the opening capital base. However, the AER considers the opening capital base figures for 2010–11 must be updated to take into account the latest inflation figures available from the Australian Bureau of Statistics. The forecast inflation for 2010–11 of 2.52 per cent has been updated for actual inflation of 3.33 per cent. The effect of the update for actual inflation for 2010-11 resulted in an increase of the opening capital base to from $424 million to $427 million ($ nominal). Therefore, the AER has revised the value of the opening capital base and proposes the revisions outlined in section 3.5.

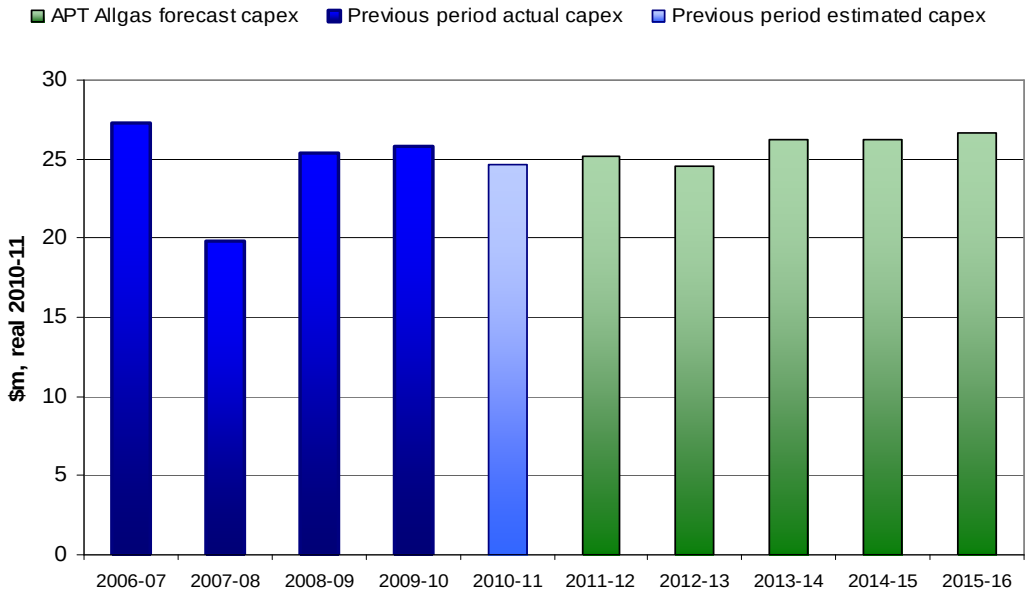
3.3.3 Projected capital base

3.3.3.1 Conclusion on capital expenditure

In its revised access arrangement proposal, APT Allgas accepted the AER's draft decision on forecast capex.[12] While the AER's forecast capex in the draft decision differed marginally from APT Allgas's proposed expenditure, the difference was not material. Consequently, the AER did not require APT Allgas to amend its forecast capex.[13] The AER maintains this position for the final decision.

Figure 3.3 illustrates the actual, estimated and forecast capex included in APT Allgas's revised access arrangement proposal.

Figure 3.3: APT Allgas's forecast capex expenditure ($2010–11)



Source: AER, *Draft decision*, February 2011, p. 30.
APT Allgas, *Access arrangement submission*, September 2010, p. 39.
APT Allgas, *Revised access arrangement information*, March 2011, p. 8.
Note: The forecast capex values are stated without the half-year WACC applied.

[12] Tables 3.2 and 3.3 in the revised access arrangement information state capex as having a half-year WACC applied to it. Although this is suitable for illustrating the calculation of the forecast capital base, the AER considers it should be stated in as-incurred terms in the stated tables.

[13] AER, *Draft decision*, February 2011, p. 30.

3.3.3.2 Depreciation

The AER accepts APT Allgas's forecast depreciation allowance. The AER's assessment of APT Allgas's forecast depreciation allowance in its revised access arrangement proposal is presented in chapter 4 of the final decision. Table 3.5 reproduces the conclusions from that chapter.

Table 3.5: AER approved depreciation for the access arrangement period ($ m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Straight-line depreciation	11.2	15.2	15.8	17.2	18.3
Inflationary gain	10.9	11.6	12.1	12.8	13.5
Regulatory depreciation	0.3	3.6	3.7	4.4	4.9

Source: AER analysis

3.3.3.3 Adjustment to the capital base for inflation

The revised access arrangement proposal incorporates the forecast inflation rate proposed in the draft decision.[14] However, as noted in the draft decision, the forecast inflation amount has been updated based on the most up to date information. As discussed in chapter 5 the AER has determined a forecast inflation rate over the access arrangement period of 2.55 per cent.

3.3.3.4 Summary of the projected capital base

The AER has considered the components of APT Allgas's proposed projected capital base. Given the amendments required to APT Allgas's adjustment of the capital base for inflation, the AER considers that APT Allgas's projected capital base does not comply with r. 74(2) and r. 78 of the NGR. The AER proposes to revise the projected capital base as set out in revision 3.4 of this decision.

3.3.4 Closing capital base for the access arrangement period

As outlined in the draft decision, the AER considers APT Allgas's approach is consistent with r. 90 of the NGR.[15] However, as discussed in chapter four of this decision, the AER does not accept APT Allgas's calculation of forecast depreciation.

In its draft decision, the AER accepted APT Allgas's proposal to use forecast depreciation to roll forward the capital base to 30 June 2016. Subsequently, however, the AER discovered a typographical error in the access arrangement where an incorrect reference was made to the tax asset base. APT Allgas confirmed this was an error and that it did not intend for the tax asset base to be rolled forward using forecast inflation.[16] Accordingly, the AER has removed the reference to "tax" in the relevant section of the access arrangement.

14 APT Allgas, *Revised access arrangement submission*, March 2011, p. 47.
15 AER, *Draft decision*, February 2011, pp. 46–48.
16 APT Allgas, E-mail to the AER, *RE: AER.APT.RP.11: TAB Depreciation*, 28 April 2011.

3.4 Conclusion

Opening capital base

The AER does not approve the opening capital base proposed by APT Allgas for the access arrangement period as it does not comply with r. 77(2) of the NGR.
APT Allgas accepted the elements of the AER's draft decision affecting the opening capital base. However, the AER proposes revision 3.1 to update the opening capital base for actual inflation for the final year (2010–11) of the earlier access arrangement period, which is set out below.

Projected capital base

The AER does not approve the proposed projected capital base proposed by APT Allgas as it does not comply with r. 74(2), r. 78 and r. 79 of the NGR. The AER's proposed revisions 3.2 (forecast capex), 3.3 (forecast depreciation allowance), and 3.4 (projected capital base) are set out below.

Closing capital base for the access arrangement period

The AER approves the proposed estimation of depreciation on the basis of forecast capital expenditure for establishing APT Allgas's opening capital base for the access arrangement period commencing 1 July 2016.

3.5 Revisions

The AER proposes the following revisions:

Revision 3.1: amend the revised access arrangement information to delete Table 3.1 and replace it with the following, and make all other elements of the access arrangement and access arrangement information consistent with the following:

Table 3.6: AER approved opening capital base ($m, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Opening capital base	302.7	327.1	350.7	373.9	399.3	427.0
Add capex[a]	25.2	19.2	25.0	26.1	26.5	
Add speculative capex	0.0	0.0	0.0	0.0	0.0	
Add re-used redundant assets	0.0	0.0	0.0	0.0	0.0	
Add indexation	7.4	13.9	8.7	10.8	13.3	
Less depreciation	8.2	9.5	10.5	11.5	12.1	
Less redundant assets	0.0	0.0	0.0	0.0	0.0	
Less disposals and transfers	0.0	0.0	0.05	0.2	0.0	
Closing capital base	327.1	350.7	373.9	399.3	427.0	

[a] Excludes capital contributions

Revision 3.2: amend the revised access arrangement information to delete Table 3.3 and replace it with the following, and make all other elements of the access arrangement and access arrangement information consistent with the following:

Table 3.7: AER approved forecast capex ($m, 2010-11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Customer requested	14.8	15.5	15.9	16.7	17.4	80.4
Network augmentation	1.6	1.5	3.0	2.3	2.5	10.8
Network renewal	5.7	5.6	6.0	6.7	6.3	30.2
Sub total	22.0	22.6	24.9	25.6	26.2	121.4
Non-system capex	3.1	2.0	1.4	0.6	0.5	7.6
Total capex	25.2	24.6	26.2	26.3	26.7	128.9

Revision 3.3: amend the revised access arrangement and access arrangement information to make consistent with table 3.5 above illustrating the AER's approved forecast depreciation allowance, also discussed in chapter 4 of this decision.

Revision 3.4: amend the revised access arrangement information to delete table 3.8 and replace it with the following, and make all other elements of the access arrangement and access arrangement information consistent with the following:

Table 3.8: Projected capital base ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Opening capital base	427.0	453.4	476.4	502.0	527.6
plus forecast capex [a]	26.7	26.7	29.2	30.0	31.3
add indexation	10.9	11.6	12.1	12.8	13.5
less forecast depreciation	11.2	15.2	15.8	17.2	18.3
less forecast disposals	0.0	0.0	0.0	0.0	0.0
less forecast redundant assets	0.0	0.0	0.0	0.0	0.0
Closing capital base	453.4	476.4	502.0	527.6	554.0

4 Depreciation

The AER's draft decision accepted APT Allgas's proposed straight-line depreciation method and standard asset lives. However, the AER had concerns with APT Allgas's calculation of remaining asset lives and did not accept the forecast regulatory depreciation allowance. The AER determined a forecast regulatory depreciation allowance of $7 million (nominal) based on the straight-line approach for the access arrangement period.

In response to the draft decision, APT Allgas proposed to recalculate the remaining asset lives. The AER considers that the approach adopted by APT Allgas is reasonable. The adjusted remaining asset lives as applied by APT Allgas contribute to an increase in prices of about 1.2 per cent per annum. This increase is greater than the 0.5 per cent per annum increase approved by the AER in the draft decision. However, the AER considers it is unlikely to be so large as to hamper efficient growth in the market for reference services. Therefore, the AER has accepted the revised remaining lives proposed by APT Allgas as being consistent with r. 89 of the NGR.

However, the AER does not accept the forecast regulatory depreciation allowance proposed by APT Allgas for reasons discussed in chapter 3. In considering the AER's proposed changes to the capital base, the AER has calculated a total forecast regulatory depreciation allowance of $17 million (nominal) for the access arrangement period.

4.1 Regulatory requirements

APT Allgas is required to provide a depreciation schedule that sets out the basis upon which the assets constituting the capital base are to be depreciated for determining reference tariffs (r. 88(1) of the NGR). The schedule may consist of a number of separate schedules each relating to an asset or particular asset classes (r. 88(2) of the NGR).

Rule 89(1) of the NGR provides that the depreciation schedule should be designed:

(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and

(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and

(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or particular group of assets; and

(d) so that (subject to rules about capital redundancy), an asset is depreciated only once (i.e. the amount by which an asset is depreciated over its economic life does not exceed the value of the asset as at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation)); and

(e) so as to allow the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

Rule 89(2) states that compliance with r. 89(1) may involve the deferral of a substantial amount of depreciation.

Clause 5(1)(d) of schedule 1 of the NGR, requires the AER, in deciding whether to approve an access arrangement revision proposal from a transitional access arrangement, to take into account the depreciation schedule for the transitional access arrangement under section 8.32 of the Code.[1]

Rule 74(2) states that a forecast or estimate must be arrived at on a reasonable basis; and represent the best forecast or estimate possible in the circumstances.

4.2 Revised access arrangement proposal

The AER's draft decision accepted the proposed standard asset lives and the use of the straight-line approach to calculate depreciation. However, the AER found errors with the remaining lives proposed by APT Allgas, and required revised remaining asset lives be adopted in determining the forecast regulatory depreciation allowance.

4.2.1 Asset lives

APT Allgas did not accept the AER's draft decision amendment to the remaining asset lives. APT Allgas stated that the acceptance of standard asset lives creates a 'duality' of lives for calculating depreciation in the future.[2] APT Allgas submitted that it has recalculated remaining asset lives for all asset classes to be consistent with the AER approved standard lives.[3] APT Allgas's proposed approach to calculating the remaining lives for each asset class is as follows:

1. Using the AER's alternative remaining asset lives based upon the historical standard asset lives[4], and the residual asset value as at 1 July 2011, the annual depreciation can be calculated.
2. The annual deprecation on the opening capital base is altered using the proposed change in standard asset life and subsequent change to the depreciation rate.
3. The revised remaining asset life is then determined by dividing the opening capital base as at 1 July 2011 by the revised annual depreciation as calculated in step 2.[5]

The remaining asset lives as approved by the AER in the draft decision and APT Allgas's revised remaining lives are reproduced for comparison in table 4.1.

1 This clause is also relevant if the AER makes its own proposal for revision of a transitional access arrangement under r. 63 or r. 64 of the NGR.
2 APT Allgas, *Revised access arrangement submission*, March 2011, p.7.
3 APT Allgas, *Revised access arrangement submission*, March 2011, p.7.
4 AER, *Draft decision APT Allgas gas network*, February 2011, p.40, (Table 4.4)
5 APT Allgas, *Revised access arrangement submission*, March 2011, p.7

Table 4.1 AER's remaining asset lives and APT Allgas's proposed remaining asset lives (years)

Asset class	AER's weighted ave. remaining lives	Draft decision remaining lives	APT Allgas proposed remaining lives
Network pressure control facilities	42.9	35.8	34.3
HP Steel mains	87.9	73.4	67.0
Distribution mains	70.5	58.9	44.1
Distribution mains – steel unprotected	11.1	9.3	12.4
Distribution mains – PVC	13.0	13.0	21.7
Distribution mains- copper	73.0	73.0	42.9
M/LP customer services PE	49.4	41.3	41.2
M/LP customer services ST	107.7	107.7	44.9
Contract metering equipment	22.8	19.0	11.4
Tariff metering equipment	19.9	16.6	11.9
SCADA & telemetry	68.1	68.1	13.6
Equipment & Others	5.0	5.0	5.0

Source: APT Allgas, *Revised access arrangement submission*, March 2011, p.9;
AER, *Draft decision APT Allgas gas network*, February 2011, p.40.

4.2.2 Forecast depreciation

The revised remaining asset lives proposed by APT Allgas requires a recalculation of the forecast regulatory depreciation allowance from that determined by the AER in the draft decision. Forecast regulatory depreciation is also subject to adjustment due to changes in the other building block components, namely the capital base and forecast inflation. Table 4.2 summarises the forecast regulatory depreciation allowance proposed by APT Allgas.

Table 4.2 APT Allgas's revised forecast depreciation allowance ($m, nominal)

	2011–12	2012-13	2013-14	2014-15	2015-16
Straight-line depreciation	11.1	15.1	15.7	17.2	18.2
Indexation	10.7	11.3	11.9	12.6	13.2
Regulatory depreciation	0.4	3.8	3.8	4.6	5.0

Source: APT Allgas, *Revised access arrangement submission*, March 2011, p.10.

4.3 AER's consideration

The AER accepts the remaining asset lives as proposed by APT Allgas in its revised access arrangement proposal. It considers the approach adopted by APT Allgas is consistent with r. 89 of the NGR. The AER also considers that the size of the increase in the forecast regulatory depreciation allowance due to these revised remaining asset lives is unlikely to inhibit the efficient growth in the market for reference services. The price impact of revising the remaining asset lives was a concern of the AER in its draft decision. The discussion below explains how APT Allgas addressed these concerns.

APT Allgas accepted the standard asset lives approved in the AER's draft decision. Accordingly, no further discussion is required on this matter.

4.3.1 Remaining asset lives

The AER's draft decision approved a step up in tariffs of about 0.5 per cent per annum due to shorter remaining asset lives. The analysis in the draft decision was complicated by an error APT Allgas had made in the calculation of remaining assets lives in its original proposal. In response to enquiries from the AER, APT Allgas provided two sets of revised remaining asset lives to the AER. This material was submitted after lodgement of the original proposal but before the draft decision.[6] The first set of remaining asset lives were determined to provide a revenue impact similar to that in APT Allgas's original proposal, which the AER accepted in the draft decision. The second set of remaining asset lives corrected for the identified error but otherwise applied the same general approach as in the original proposal. The AER considered that if it had accepted the second set of remaining asset lives, prices would have increased by about 3.2 per cent per annum. This would likely hamper efficient growth in the market for reference services and therefore these remaining asset lives were considered to be inconsistent with r. 89(1)(a) of the NGR. However, the first set of remaining asset lives increased prices by only 0.5 per cent per annum, which was not considered by the AER to be inconsistent with r. 89(1)(a) of the NGR.

APT Allgas revised its approach to determining the remaining asset lives in its revised access arrangement proposal. To calculate the remaining asset lives for its opening capital base as at 1 July 2011 APT Allgas adjusted the weighted average remaining asset lives, as shown in column one of table 4.1. APT Allgas did so by calculating revised annual depreciation as at 1 July 2011.[7] This was based on the annual depreciation derived from the weighted average remaining lives but was adjusted to reflect the change in standard lives of the asset in question.[8] The AER accepted the standard asset lives proposed by APT Allgas in its draft decision.[9] The standard asset lives used by the QCA were considered relatively long compared with other gas

---

6 AER, *Draft decision APT Allgas gas network*, March 2011, pp. 39-41.

7 Annual deprecation is the residual value of the capital base divided by the remaining asset life.

8 In the case where the economic life of an asset is considered to have changed, for example, from 50 to 40 years, the depreciation rate is considered to change from 0.2 per cent per annum to 0.25 per cent per annum. The adjustment factor applied by APT Allgas is the ratio of the new depreciation rate to the old depreciation rate. This method allows for the proportional change in depreciation rates while maintaining the effect of weighting of the assets of which the asset class is comprised.

9 AER, *Draft decision APT Allgas gas network*, March 2011, p. 39.

networks in Australia.[10] For example, network pressure and control facilities previously had a standard asset life of 50 years. However, the AER approved a standard asset life of 40 years for future capex. Based on the difference in these standard asset lives APT Allgas in this example determined the annual depreciation for this asset would be 25 per cent higher (using a straight-line depreciation approach) than previously. The proposed remaining asset lives were then calculated by APT Allgas as the residual asset value as at 1 July 2011 divided by the revised annual depreciation it had determined.

The AER considers this revised approach to be reasonable. On the one hand, the proposed remaining asset lives reflect the change to standard asset lives. Therefore, the approach allows for adjustment of the depreciation schedule which recognises the changes in the expected economic lives of the asset classes consistent with r. 89(1)(c) of the NGR. On the other hand, the AER has investigated the price impact of the revised remaining asset lives, finding that prices will increase by about 1.2 per cent per annum. The AER considers the size of this increase is unlikely to hamper efficient growth in the market for reference services consistent with r. 89(1)(a) of the NGR. The AER therefore accepts the proposed remaining asset lives presented in table 4.1.

4.3.2 Forecast depreciation

The AER has recalculated the forecast regulatory depreciation for APT Allgas to take into account the adjustment to the capital base for the up-to-date inflation indexation and the approved remaining asset lives.

Table 4.3 AER's forecast depreciation for the access arrangement period ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Straight-line depreciation	11.2	15.2	15.8	17.2	18.3
Indexation	10.9	11.6	12.1	12.8	13.5
Regulatory depreciation	0.3	3.6	3.7	4.4	4.9

Source: AER analysis.

Regulatory depreciation is straight-line depreciation net of the inflation indexation applied to the capital base for each year. The inflation forecast has been updated to 2.55 per cent per annum for this decision, as discussed in chapter 5.

APT Allgas's depreciation schedule is consistent with r. 89(d) of the NGR that requires each asset is depreciated only once. No deferral of depreciation under r. 89(2) of the NGR is required in the present circumstances.

4.4 Conclusion

The AER accepts the revised remaining asset lives proposed by APT Allgas as they are consistent with r. 89 of the NGR. In particular, the remaining asset lives reflect the standard asset lives approved in the draft decision. The AER considers the step

[10] AER, *Draft decision APT Allgas gas network*, March 2011, p. 39.

increase in prices associated with the adjustment to remaining asset lives is unlikely to adversely affect the efficient growth in the market for reference services.

However, the forecast regulatory depreciation allowance also needs to be adjusted to reflect the updated inflation forecast discussed in chapter 5. Therefore, the AER does not accept the forecast depreciation allowance proposed by APT Allgas under r. 74(2)(b) of the NGR, and proposes to amend APT Allgas's revised access arrangement proposal to reflect revision 4.1.

4.5 Revisions

The AER proposes the following revision:

Revision 4.1: amend the revised access arrangement and revised access arrangement information to reflect the forecast regulatory depreciation allowance set out in table 4.3.

5 Rate of return

The AER has rejected APT Allgas's proposed rate of return[1] of 11.38 per cent as it is not commensurate with prevailing market conditions in the market for funds and the risks involved in providing reference services. A rate of return of 9.50 per cent is appropriate for the benchmark service provider. The AER has undertaken a number of reasonableness checks to confirm the rate of return it has determined.

This chapter sets out the AER's consideration of the appropriate rate of return for APT Allgas for the access arrangement period, and deals with issues raised in APT Allgas's revised access arrangement proposal. These issues include the determination of the risk free rate, market risk premium (MRP), equity beta and debt risk premium (DRP). APT Allgas's revised access arrangement proposal accepted the AER's approach to calculate the inflation forecast. The AER's draft decision accepted APT Allgas's proposed gearing ratio.

The AER has confirmed its draft decision on the parameters to determine the rate of return. The AER considers that the MRP, equity beta and DRP proposed by APT Allgas were too high with respect to the risks involved in providing reference services under prevailing market conditions. The AER has accepted APT Allgas's proposed averaging period for estimating the risk free rate and the DRP. The rate of return of 9.50 per cent determined by the AER is based on the 20 day averaging period ending 31 May 2011.

5.1 Regulatory requirements

Rule 72(1)(g) of the National Gas Rules (NGR) require that the access arrangement information for a full access arrangement proposal must include the proposed rate of return, the assumptions on which the rate of return is calculated and a demonstration of how it is calculated.

Rule 74 of the NGR requires that any forecast or estimate included in the access arrangement information be arrived at on a reasonable basis, be supported by a statement of the basis of that forecast or estimate, and represent the best forecast possible in the circumstances.

Rule 87(1) of the NGR requires that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.

Rule 87(2) of the NGR requires that in determining a rate of return on capital, it will be assumed that the service provider meets benchmark levels of efficiency, 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. Further, a well accepted approach that incorporates the cost of equity and debt is to be used; and a well accepted financial model is to be used. The weighted average cost of capital (WACC) is given as an example of a well accepted approach, and the capital asset pricing model (CAPM) is given as an example of a well accepted financial model.

[1] Based on the nominal vanilla WACC formulation.

5.2 Revised access arrangement proposal

The AER did not approve APT Allgas's proposed rate of return as it did not comply with r. 87 of the NGR. It required APT Allgas to amend its access arrangement to take account of the rate of return set out in table 5.1.[2]

Table 5.1 AER draft decision on WACC parameters

Parameter	
Nominal risk free rate (%)	5.68
Inflation (%)	2.52
Equity beta	0.80
Market risk premium (%)	6.00
Debt risk premium (%)	3.93
Gearing (%)	60.00
Cost of debt (%)	9.61
Cost of equity (%)	10.48
Nominal vanilla WACC (%)	**9.96**

Source: AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, p. 69.

APT Allgas did not accept the AER's draft decision on the equity beta, MRP and DRP. It accepted the AER's approach to calculate the inflation forecast. In support of its revised proposed DRP, APT Allgas submitted a report from Australia Ratings, which concluded that the Bloomberg fair value estimates should be used to calculate the DRP.[3] APT Allgas nominated an averaging period of 20 business days ending 31 May 2011 to calculate the bond rates.

APT Allgas has proposed a nominal vanilla WACC of 11.38 per cent in its revised access arrangement proposal, based on the risk free rate prevailing at the time of submitting the revised access arrangement proposal. Table 5.2 sets out APT Allgas's revised proposed WACC.[4]

2 AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, p. 69.
3 Australia Ratings, *Estimating the debt risk premium*, March 2011.
4 APT Allgas, *Revised access arrangement submission*, March 2011, p. 47.

Table 5.2 APT Allgas revised access arrangement proposal WACC parameters

Parameter	APT Allgas revised proposal
Nominal risk free rate (%)	5.71
Equity beta	1.10
Market risk premium (%)	6.50
Debt risk premium (%)	4.69
Gearing (%)	60.00
Cost of equity (%)	12.86
Cost of debt (%)	10.40
Nominal vanilla WACC (%)	**11.38**

Source: APT Allgas, *Revised access arrangement submission, Effective 01 July 2011–30 June 2016*, March 2011, p. 47; APT Allgas, *Revised access arrangement information, Effective 01 July 2011–30 June 2016*, March 2011, p. 17.

5.3 AER's consideration

The AER has not accepted APT Allgas's proposed rate of return in its revised access arrangement proposal. The AER considers that the rate of return proposed by APT Allgas is excessive and inconsistent with the requirements of r. 87 of the NGR. In particular, the AER considers that the rate of return proposed by APT Allgas is not the best estimate commensurate with the prevailing conditions in the market and the risk of providing reference services.

Having rejected APT Allgas's proposal the AER now needs to determine an alternative value. In determining an appropriate rate of return the AER has reviewed a variety of evidence and arguments, and has exercised its judgment to arrive at an outcome that it determines best satisfies the requirements of the NGR and NGL. The AER has also compared the rate of return it has determined against high level indicators for reasonableness. These indicators suggest that the rate of return established by the AER is at least sufficient to meet the objectives and requirements of the NGR and NGL.

The AER's considerations are summarised in the following sections:

- an evaluation of why the rate of return set by the AER is appropriate
- equity beta
- market risk premium
- debt risk premium
- averaging period and risk free rate

- gearing (debt to equity) ratio
- method of inflation forecast.

Further details on particular matters, including the overall rate of return, equity beta, MRP and DRP are contained in appendix A.

5.3.1 Evaluation of the overall rate of return

This section considers the overall rate of return resulting from parameters determined by the AER elsewhere in this chapter. This assessment considers whether the overall rate of return determined by the AER is commensurate with prevailing conditions in the market for funds,[5] and that the service provider has an opportunity to recover at least its efficient costs.[6]

The AER's draft decision assessed the overall rate of return using market data and finance theory.[7] This analysis indicated that the overall rate of return set by the AER, although lower than the rate of return proposed by APT Allgas, was at least sufficient to meet the cost of capital faced by regulated service providers.

APT Allgas did not accept the AER's draft decision on the overall rate of return. Its revised proposal disputed the implications of recent regulated asset sales and the cost of equity implied from broker reports.

The techniques available to the AER to assess the overall rate of return, for its draft and now this final decision, can produce a broad range of plausible rates of return. In view of this, the AER primarily relies upon detailed analysis of the input parameters (discussed later in this chapter) in accordance with established finance practice to determine the rate of return. The additional overall techniques are given appropriate consideration in assessing the reasonableness of these results.

The AER has examined broker WACCs, regulated asset sales and trading multiples, and these analyses support the conclusion that the overall rate of return set by the AER is commensurate with prevailing conditions in the market for funds. Further, two of these analyses—recent regulated asset sales and trading multiples—suggest that that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital associated with the risks involved in providing reference services.

For this decision, the AER determines the overall rate of return using a nominal vanilla WACC of 9.50 per cent. This is based on a cost of equity of 10.20 per cent, a cost of debt of 9.04 per cent and a gearing ratio of 60 per cent. The cost of equity is estimated using the CAPM, an MRP of 6 per cent and an equity beta of 0.8. The cost of debt is estimated using a DRP of 3.64 per cent. The risk free rate is estimated at 5.40 per cent using 10 year Commonwealth Government Securities. The reasons behind these parameter inputs are summarised later in this chapter, with further details included in appendix A.

---

5 NGR, r. 87(1).
6 NGL, s. 24(2)(a).
7 AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network, 1 July 2011–30 June 2016*, 17 February 2011, pp. 174–180.

After considering the information before it, the AER considers that the overall rate of return of 9.50 per cent satisfies the requirements of the NGL and NGR. The AER's considerations on the overall rate of return are summarised below, with further details included in appendix A.

Broker reports

The WACC determined by the AER is within the broad range of discount rates applied in equity broker reports (once converted to a consistent reporting basis), as evident in table 5.3.

Table 5.3 Comparison of WACC used by brokers and the AER (per cent)

Broker	Companies assessed	Nominal vanilla WACC
Citigroup	DUE, SKI	9.20–10.90
Credit Suisse	APA	9.35
Deutsche Bank	APA, DUE, SPN	9.22
Goldman Sachs	APA, ENV, SKI	10.04–10.66
Morgan Stanley	SPN	8.16
UBS	SKI	8.04–8.44
Wilson	HDF	10.02
Aggregate range	**APA, DUE, ENV, HDF, SKI**	**8.04–10.90**
AER	**(Benchmark firm)**	**9.50**

Source: Equity broker reports, AER analysis.
Note: This table shows only those brokers who report the WACC in vanilla form or provide sufficient detail to enable conversion to this form. More broker reports are included in appendix A where different forms of WACC are considered. Companies evaluated are APA Group (APA), DUET Group (DUE), Envestra Limited (ENV), Hastings Diversified Utilities Fund (HDF) and Spark Infrastructure Group (SKI).

Regulated asset sales

Sales of regulated assets (including the sale of Country Energy's gas network in October 2010) have been at premiums to the value of the regulated asset base of between 20 and 119 per cent, as evident in table 5.4.[8]

[8] AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network, 1 July 2011–30 June 2016*, 17 February 2011, pp. 174–176.

Table 5.4 RAB multiple for recent regulated asset sales

Date	Acquirer	Target	RAB multiple (times)
Dec 06	APA	Directlink	1.45
Oct 06	APA	Allgas	1.64
Aug 06	APA	GasNet	2.19
Apr 06	Alinta	AGL Infrastructure assets	1.41 – 1.52
Mar 06	APA	Murraylink	1.47
Aug 04	DEUT/Alinta/Alcoa	Dampier to Bunbury Natural Gas Pipeline	1.20
Aug 04	APA	Southern Cross Pipeline and Parmelia Gas	1.47
Apr 03	Alinta/AMP/Aquila	Alinta Gas Network	1.35
Apr 03	Alinta/AMP/Aquila	Multinet Gas	1.44
Apr 03	Alinta/AMP/Aquila	United Energy	1.52
Aug 02	CKI/HEH	Citipower	1.69
Oct 00	Consortium	ElectraNet	1.37
Sep 00	CKI/HEH	Powercor	1.71
Jun 00	Singapore Power	PowerNet	1.49
Dec 99	CKI/HEH	ETSA Utilities	1.26
Jul 99	CKI	19.97% of Envestra	1.49
Jun 99	GPU	GasNet	1.72
Mar 99	Envestra/Boral	Stratus Networks	1.99
Jan 99	Texas Utilities	Westar	1.86

Source: Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 78 and Grant Samuel & Associates Pty Limited, *Independent Expert Report in relation to the Acquisition of the Alinta Assets*, 5 November 2007, p. 65.

The AER considers that the acquisition premiums have been substantial, and that premiums of this magnitude are unlikely to be explained by factors associated with the sale process.[9] This suggests that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital. Market transactions therefore do not support the

[9] Such as expected synergies arising from the sale or misjudgment of the true value of the business. AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 48.

view that regulated rates of return result in under compensation with respect to actual required rates of return. The AER considers that the implied premium it calculated on the sale of Country Energy's gas network in October 2010 is sound, given that it was based on sale details in the official ASX announcement by Envestra.

Trading multiples

Trading multiples for listed businesses operating regulated networks have also exceeded the value of the regulated asset base by between 15 and 81 per cent, as evident in table 5.5.[10]

Table 5.5 RAB multiples of regulated assets using recent market data

Entity	Average RAB as at 30 June 2009	Average RAB as at 30 June 2010
SP AusNet	1.50	1.40
Spark	1.81	1.73
DUET	1.21	1.15
Envestra	1.28	1.21

Source: Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 77. Based on share prices at 29 September 2009 and average nominal RAB for relevant year. RAB is based on the respective regulatory determinations except for DUET which allows for the $908 million expenditure on the Stage 5A and 5B expansion of the Dampier to Bunbury Natural Gas Pipeline.

The AER considers that the trading premiums have been substantial and that premiums of this magnitude are unlikely to be explained by other factors alone.[11] This suggests that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital.

Other assessments

The AER has evaluated a number of other techniques for assessing the overall rate of return raised in the revised proposal—specifically, dividend yields, relative debt returns, credit rating metrics and the Modigliani-Miller theorem. The AER considers that:

- projections based on dividend yields produce such a broad range of results that they do not provide any meaningful conclusion

[10] Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 77; AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 177.

[11] Such as differences in tax structure, gearing or growth options. AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 48.

- analysis of relative returns to debt and equity produces only an absolute lower bound for the cost of equity, which the rate of return established by the AER satisfies

- setting the rate of return to meet credit rating metrics is conceptually invalid, since credit rating agencies rely on both qualitative factors and quantitative ratios

- the Modigliani-Miller theorem, while conceptually sound, faces limitations in terms of simplifying assumptions that prevent its use in estimating a 'real world' rate of return.

Most importantly, none of these analyses indicate that the overall rate of return set by the AER would not allow APT Allgas the opportunity to recover at least its efficient costs incurred in providing reference services.

Conclusion

The AER considers that the analyses of market data support the conclusion that the rate of return established by the AER is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services.[12] The rate of return determined in this decision is at least sufficient to meet the cost of capital faced by regulated service providers.[13]

5.3.2 Equity beta

The equity beta provides a measure of the 'riskiness' of an asset's return compared with the return on the entire market. The equity beta reflects the exposure of the asset to systematic or 'non-diversifiable' risk, which is the only form of risk that requires compensation under the CAPM.

Consistent with the 2009 WACC review, the AER's draft decision considered that an equity beta of 0.8 would ensure that the service provider has the opportunity to recover at least its efficient costs incurred in providing reference services. As shown in table 5.6, the AER considers that CEG's equity beta estimates support the empirical findings in the WACC review of an equity beta range of 0.4 to 0.7 for Australian energy network businesses.[14]

12 NGR, r. 87(1).
13 NGL, s. 24(2)(a).
14 AER, *WACC review final decision*, 1 May 2009, pp. xv–xviii, 239–292, 343–361.

Table 5.6 Equity beta estimates

Company	Equity beta
CEG estimates	
Envestra	0.51
Hastings	1.64
Australian Pipeline	0.54
DUET	0.34
Spark Infrastructure	0.53
SP AusNet	0.14
Simple average	**0.62**
AER WACC review range	**0.41 – 0.68**

Source: Competition Economist Group, *Estimating the cost of capital under the NGR, A report for Envestra*, September 2010, p. 49 and AER, *Final decision, Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, p. 343.

APT Allgas's revised proposal did not accept the AER's draft decision and stated that the equity beta should be 1.1. Consistent with its original proposal, APT Allgas maintained its view that the average regulated energy network business has lower business risk compared to the market average and higher financial risk compared to the market average. Therefore, the average regulated energy network business should have an equity beta of 1.0, which is the same as the market equity beta. APT Allgas also maintained that it has higher systematic risk than the average network business. This is because gas is a fuel of choice compared to electricity and APT Allgas has lower market power compared to other gas distribution businesses.[15]

The AER rejects APT Allgas's revised proposal of an equity beta estimate of 1.1 as it would result in a cost of capital which is excessive with respect to the risk involved in providing reference services. The AER maintains its position in the draft decision and considers that an equity beta of 0.8 provides the best estimate commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services, as required under r. 74(2) and r. 87(1) of the NGR.[16] The AER has reached this conclusion for a number of reasons including the following:

- The AER considers that, on both theoretical and empirical grounds, the lower systematic risk faced by regulated businesses more than offsets the impact of higher financial risk faced by these businesses. This is supported by the AER's empirical estimate of an equity beta range of 0.4 to 0.7 for regulated energy businesses, which is less than the market equity beta of 1.0. The AER's approach to estimating equity betas addresses the impact of such risks by taking a sample of

15 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 44–46.
16 NGL, s. 24(2).

firms with a similar level of systematic risk, and then adjusting the sample for financial risk to reflect the target benchmark gearing level.

- The AER considers that regulated businesses face lower systematic risk than the market, primarily due to the stable cash flows of these businesses. The lower equity beta is the result of a regulatory regime that provides protection to regulated businesses that are not available to those in the competitive environment, including:
  - tariff variation mechanism allows for the annual adjustment for inflation, lowering exposure to inflation risk
  - roll forward of the capital asset base occurs in a manner that lowers exposure to cost overruns for capital expenditure
  - cost pass through mechanism allows for certain costs to be passed on to consumers during the access arrangement period, lowering exposure to costs not forecast at the commencement of the access arrangement period
  - the access arrangement provides for acceleration of the review submission date on occurrence of a trigger event
  - a service provider may submit an access arrangement variation proposal for the AER's approval.[17]
- The AER does not consider that gas being a fuel of choice exposed to competition from alternative energy sources, including electricity means APT Allgas is exposed to more systematic risk. This is because the risk arising from such competition could be mitigated by a diversified investor who holds both electricity and gas stocks.[18]
- The AER does not accept the proposition that APT Allgas has lower market power than other gas distribution businesses and maintains its view in the draft decision that, amongst other things, the high switching costs for a gas user implies APT Allgas would have a higher degree of market power.[19]

The AER has also reviewed Envestra's access arrangement proposal, which applies to a Queensland gas distribution network that is similar to the APT Allgas network. To this end, the AER's consideration of the equity beta in this decision also takes into account the issues raised by Envestra. The AER's detailed consideration of the equity beta in relation to the matters raised in Envestra's revised proposal is included in appendix A.

In conclusion, the AER considers that the empirical evidence presented in the WACC review contains the best available estimate of the equity beta that would apply to a gas

---

17 AER, *Draft decision, APT Allgas, Access arrangement proposal for the Queensland gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 64

18 AER, *Draft decision, APT Allgas, Access arrangement proposal for the Queensland gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 181

19 AER, *Draft decision, APT Allgas, Access arrangement proposal for the Queensland gas network, 1 July 2011–30 June 2016*, 17 February 2011, pp. 183–184

distribution network service provider, taking into account the need to reflect prevailing market conditions and the risks involved in providing reference services.[20] The sample set of data used to derive the equity beta in the WACC review provides a value for an equity beta of between 0.4 and 0.7.

The AER has given consideration to other factors, such as the need to achieve an outcome that is consistent with the national gas objective (NGO)—in particular, the need for efficient investment in natural gas services for the long-term interests of consumers of natural gas. The AER has also taken into account the revenue and pricing principles, the importance of regulatory stability and is also mindful it has recently considered an equity beta of 0.8 to be appropriate, if not overstated, for other gas businesses. On the basis of the information presented, the AER concludes that an equity beta of 0.8 provides APT Allgas with an opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.[21]

5.3.3 Market risk premium

The MRP is the expected return over the risk free rate that investors require to invest in a well diversified portfolio of risky assets.[22] The MRP represents the risk premium investors who invest in such a portfolio can expect to earn for bearing only non-diversifiable (systematic) risk. The MRP is common to all assets in the economy and is not specific to an individual asset or business.

The MRP is not observable because it is a forward looking value. In addition to this, the available evidence that can be used to estimate the MRP is imprecise and subject to varied interpretation, a point that is well recognised in academic literature[23] as well as in reports put forward by regulated entities.[24] As a result, a degree of judgment is required to determine the MRP value that is the best estimate in the circumstances and commensurate with prevailing conditions in the market for funds.

In the draft decision, the AER did not accept APT Allgas' original proposal for an MRP of 6.5 per cent. The AER adopted an MRP of 6 per cent for the purposes of determining the cost of equity using the CAPM. An MRP of 6 per cent was consistently adopted in regulatory decisions prior to the AER's WACC review, including at times when indications were that the MRP was below 6 per cent.[25] At the time of the WACC review the acknowledged the uncertainty in the market due to the onset of the GFC. The AER considered one of two scenarios could have explained market conditions at that time:

---

20 NGR, r. 74(2)(b) and r. 87(1).

21 NGL, s. 24(2).

22 All assets other than the risk free asset have the potential to provide a negative return and are therefore classified as risky assets.

23 See for example Mehra R. and Prescott E.C., 'The equity premium, A puzzle', *Journal of Monetary Economics*, 15, 1985, pp. 145–161; Damodoran A., *Equity Risk Premiums (ERP), Determinants, Estimation and Implications*, September 2008, p. 1; Doran J.S., Ronn E.I. and Goldberg R.S., *A simple model for time-varying expected returns on the S&P 500 Index*, August 2005, pp. 2–3.

24 See for example Officer and Bishop, *Market risk premium, a review paper*, August 2008, pp. 3–4.

25 AER, *Draft decision, APT Allgas Access arrangement proposal for the Queensland gas network*, February 2011, pp. 79–81.

- The prevailing medium-term MRP was above the long-term MRP, but would return to the long-term MRP over time; or

- There had been a structural break in the MRP and the forward looking long-term MRP (and consequently also the prevailing) MRP is above the long-term MRP that previously prevailed.

Due to the uncertainty about the effects of the GFC on future market conditions the AER departed from the previously adopted forward looking MRP estimate of 6 per cent and increased it to 6.5 per cent. The significant uncertainty that characterised markets at the time of the WACC review has substantially diminished. The prevailing conditions in the market for funds have eased.

In its revised proposal, APT Allgas did not agree with the draft decision to adopt an MRP of 6 per cent and maintained its proposal for an MRP of 6.5 per cent. APT Allgas submitted that significant event such as the New Zealand and Japan earthquakes as well as turmoil in the Middle East and Africa could potentially impact on the Australian economy. APT Allgas also submitted that uncertainty following the GFC may still affect investor expectations.[26] However, APT Allgas did not demonstrate how these events had impacted the long-term MRP across the Australian economy.

The AER considers that the appropriate approach is to assess a range of evidence to inform the best estimate of the MRP. In applying its judgment, the AER has considered the following available evidence:

- Historical excess return estimates for three time periods, 1883–2010, 1937–2010 and 1958–2010. These estimates provide a range of 5.9–6.4 per cent if calculated on an arithmetic mean basis and a range of 3.8–4.8 per cent if calculated on a geometric mean basis.[27] These figures estimate the realised return that stocks have earned in excess of the 10-year government bond rate and may inform expectations of the excess return that could be earned in the future.

- DGM based estimates of the MRP incorporating reasonable assumptions provide an estimated range for the MRP of approximately 4.5–5.6 per cent. DGM based estimates of the MRP are highly sensitive to the assumptions made so it is best to consider DGM based estimates of the MRP along with a range of other evidence.

- Implied volatility from the prices of options on the ASX 200 index has returned to pre-GFC levels, which indicates that the MRP is unlikely to be above pre-GFC levels. However, the AER is not aware of a reliable basis for directly estimating the MRP from implied volatility, especially for a long term horizon.

- Surveys of market practitioners prior to the GFC supported 6 per cent as the most commonly adopted value for the MRP. These surveys also indicated that the average MRP adopted by market practitioners was approximately 6 per cent. The latest survey evidence from 2009 and 2010 supports an MRP of approximately

[26] APT Allgas, *Response to AER draft decision*, 23 March 2011, p. 18.
[27] Handley, *Memorandum: Additional Estimates of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 May 2011, p. 1.

6 per cent. However, the latest evidence is based on a limited number of respondents.

- Recent evidence from broker reports indicates that current market practice is to adopt an MRP estimate of approximately 6 per cent on average and a recent report from AMP Capital Investors indicates that its forward looking MRP is lower than 6 per cent.

The AER considers the evidence outlined above supports an MRP of 6 per cent as the best estimate of the MRP. It also indicates that the AER's approach of increasing the MRP to 6.5 per cent at the time of the WACC review is no longer appropriate. The AER's detailed consideration of the evidence is contained in appendix A.

APT Allgas outlined some specific issues for the AER's consideration. The AER has considered the information put forward by APT Allgas and does not consider that an MRP above 6 per cent is justified:

- APT Allgas submitted that the Japanese earthquakes impacted on the All Ordinaries Index and such events could affect investor expectations.[28] The AER notes that such events are likely to impact on investors' short-term expectations but unlikely to affect investors' long-term expectations or the long-term economic outlook for the Australian economy. Furthermore, in its May 2011 *Statement on monetary policy*, the Reserve Bank of Australia (RBA) noted that the Australian equity market fell sharply following the Japanese earthquakes but subsequently recovered all of this decline.[29]

- APT Allgas submitted that historical excess return estimates support an estimate of 6.5 per cent for the MRP. However, the latest historical excess return estimates are in the range 5.9–6.4 per cent and these are likely to be overstated to some degree because they are calculated on an arithmetic mean basis. APT Allgas also submitted that the most relevant period over which to estimate the MRP is from1958 onwards. However, historical excess returns by their nature are highly volatile, which means that longer data series can provide a more statistically robust estimate. The AER notes that there are benefits and draw-backs of using data over longer periods and shorter (but more recent) periods. For this reason the AER has considered historical excess return estimates over a number of periods to inform the best estimate of the MRP.[30]

- APT Allgas submitted that survey evidence is not reliable. However, survey evidence is likely to reflect the views of market practitioners and there is no reason to suspect bias in survey based evidence. The AER notes that there is a range of survey evidence both prior to the GFC, which supports an MRP of

28 APT Allgas, *Response to AER draft decision*, 23 March 2011, p. 18.
29 RBA, *Statement of monetary policy*, May 2011, p. 53. The RBA also noted that following this recovery, the Australian equity market trended downwards in part due to the appreciation of the Australian dollar. The RBA did not attribute this downward trend to the effect of the Japanese earthquakes.
30 APT Allgas, *Response to AER draft decision*, 23 March 2011, pp. 19–22.

6 per cent and this is consistent with the MRP estimates adopted in recent broker reports.[31]

The AER has jointly considered the evidence put forward on the MRP by APT Allgas and Envestra. The AER's detailed consideration of the evidence is contained in appendix A.

In conclusion, the AER considers that available evidence on the MRP is imprecise and as a result the MRP is subject to a margin of variation. The AER has used its judgment to interpret the information before it and considers that the available evidence, both prior to and following the GFC, supports 6 per cent as the best estimate of the forward looking MRP arrived at on a reasonable basis. The AER considers that an MRP within the range of 6.5 to 8 per cent proposed by APT Allgas is excessive based on the available evidence and is not consistent with the requirement that the rate of return be commensurate with prevailing conditions in the market for funds.[32]

The AER also considers that an MRP of 6 per cent is consistent with the revenue and pricing principles set out in section 24(2)(a) of the NGL. These state that the service provider should be provided with a reasonable opportunity to recover at least the efficient costs. The MRP of 6 per cent best meets the NGO, which is to promote efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

5.3.4 Debt risk premium

The DRP is the margin above the nominal risk free rate that a debt holder would require in order for it to invest in a benchmark efficient service provider. When combined with the nominal risk free rate, the DRP represents the return on debt and is an input for calculating the WACC.

The AER's draft decision rejected APT Allgas's proposed approach to establishing the DRP. Instead, the AER determined the DRP based on an average of Bloomberg's BBB fair value estimates (extrapolated to a maturity of 10 years) and the observed yields on the APA Group bond.

APT Allgas did not agree with the AER's approach and its revised proposal determined the DRP based solely on Bloomberg's fair value estimates.[33] This approach provided a DRP of 469 basis points above the risk free rate.[34]

The AER considers that the DRP proposed by APT Allgas is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. Further, the AER considers that the proposed DRP is not consistent with section 24 of the NGL, in so much as the estimate of the benchmark cost of debt has insufficient regard to:

---

31 APT Allgas, *Response to AER draft decision*, 23 March 2011, pp. 23–24.
32 NGR, r. 87(1).
33 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 24–44.
34 For the reasons discussed in section 5.3.5, the AER has approved a 20 day averaging period.

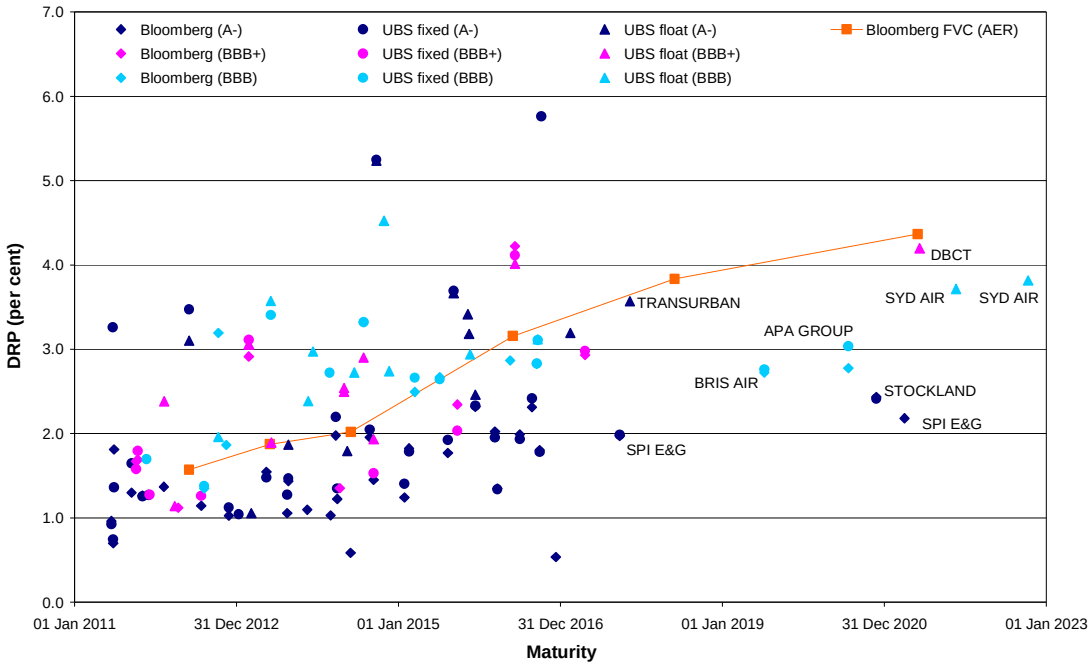
- the regulatory and commercial risks involved in providing the reference service (section 24(5))

- the economic costs and risks of the potential for under and over investment (section 24(6)).

As detailed in appendix A, the AER considers that the evidence in support of the observed yields of the APA Group bond has strengthened significantly since the draft decision. Specifically, observed yields for an additional four bonds with similar terms to maturity and credit ratings as the benchmark corporate bond have become available. These observed yields all support the AER's consideration that the observed yields of the APA Group bond are more reflective of prevailing conditions in the market for funds for the AER's notional benchmark service provider than Bloomberg's (extrapolated) 10 year, BBB fair value estimates.

Further, as figure 5.1 demonstrates, the additional empirical evidence also suggests that Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate is likely to overstate the costs of debt, particularly for regulated network service providers. That is, all observed yields for bonds with characteristics comparable to the benchmark corporate bond are below Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate.

Figure 5.1 Australian corporate bonds with credit ratings ranging from BBB to A–



Source: Bloomberg, UBS, AER analysis.
Note: Yields are annualised, and floating bonds have been converted to fixed rate equivalents. No other adjustments have been made.

On this basis, the AER does not consider it appropriate to set the DRP based solely on the (extrapolated) Bloomberg fair value estimate. The AER considers that greater reliance could reasonably be placed on the APA Group bond to determine the DRP. However, in the current circumstances, the AER considers that some uncertainty exists regarding the appropriateness of setting the DRP based upon a single bond

yield. Accordingly, the AER has exercised its judgment to determine the proportion to apply to both data sources.

The proportion to apply to each data source should reflect their relative suitability for the purposes of establishing a benchmark DRP. The AER considered increasing the emphasis on the APA Group bond relative to the Bloomberg fair value curve, in view of the increased support for the APA Group bond since the draft decision. However, after careful evaluation, the AER considers there are currently insufficient grounds to justify departure from the position in the draft decision. The AER considers that a DRP based equally on the observed yields of the APA Group bond and Bloomberg's fair value estimates would satisfy the requirements of the NGR.[35]

Based on the 20 day averaging period commencing 4 May 2011, these two information sources produce margins over the risk free rate of 4.37 per cent and 2.91 per cent.[36] This results in a DRP of 3.64 per cent (effective annual compounding rate). The AER considers this is the best DRP estimate possible in the circumstances of APT Allgas.

The AER has reached this conclusion for the following reasons:[37]

- There is evidence to suggest that the behaviour of the Bloomberg fair value estimates since the onset of the GFC is somewhat counterintuitive. The extrapolated 10 year DRP derived from Bloomberg is currently nearing all time highs. The spread between Bloomberg's seven and 10 year, AAA rated fair value estimates—which is used by the AER to extrapolate Bloomberg's seven year, BBB rated fair value estimates—also remains at near historical highs. This implies that prevailing conditions in debt markets are more risky now than during the GFC. This is counterintuitive, as substantial evidence indicates that debt market conditions have improved significantly.

- The characteristics of the APA Group bond closely match those of the benchmark corporate bond adopted by the AER, namely its BBB credit rating and near 10 year maturity. As this bond has a lower credit rating than the BBB+ benchmark, its use would be expected to result in a DRP that overstates the benchmark cost of debt.

- The APA Group is an owner of various largely regulated energy network assets. The nature of the underlying risk and markets in which the APA Group operates resembles those of the benchmark gas pipeline service provider. To the extent that credit ratings are an imperfect indicator of default risk, the APA Group bond is

35 This decision contrasts from the most recent final decision of the AER. That decision—for the Victorian electricity distribution businesses—determined the DRP based on a 75 per cent weighting to estimates from Bloomberg and a 25 per cent weighting to estimates from the APA Group bond. The AER also notes that the Victorian final decision is currently the subject of a merits review before the Australian Competition Tribunal.

36 The margin over the risk free rate for the APA Group bond reflects an equally weighted average of the observed yields from Bloomberg and UBS.

37 The AER is concurrently reviewing access arrangement proposals for Envestra's gas distribution businesses in Queensland and South Australia, as well as for APT Allgas's gas distribution business in Queensland. Where relevant, the AER has considered all proposals.

suitable for deriving a DRP that reflects the risks involved in providing reference services.

- A recently issued A– rated, 10 year bond by SP AusNet has observed yields that are below the APA Group bond. Similarly, the A– rated, 10 year bond issued by Stockland has a yield comparable to the APA Group bond.[38] Notably, both yields are significantly below the extrapolated 10 year, BBB rated Bloomberg estimates, and give further support for relying on the APA Group bond instead of only the Bloomberg estimates.

- A recently issued BBB rated, eight year bond by Brisbane Airport has observed yields that are approximately 17 basis points below the APA Group bond and over 165 basis points below Bloomberg's fair value estimates. This also provides support for relying on the APA Group bond instead of only the Bloomberg estimates.

- The BBB rated, Sydney Airport floating rate bonds maturing in 2021 and 2022 respectively, currently exhibit observed yields approximately 63 and 50 basis points below Bloomberg's (extrapolated) 10 year, BBB rated fair value estimates.

- The observed yields for the DBCT bond are now below Bloomberg's (extrapolated) 10 year, BBB rated fair value estimates. For the draft decision, the DBCT bond was the only comparable bond with observed yields above Bloomberg's fair value estimate. As at 31 May 2011, however, observed yields for the DBCT bond are approximately 17 basis points below Bloomberg's (extrapolated) 10 year, BBB fair value estimate.[39]

- The Independent Pricing and Regulatory Tribunal (IPART) recently published its final decision for a discussion paper to develop an approach to setting the debt margin.[40] The indicative debt margin was more than 170 basis points below APT Allgas's proposal. Although the methods used by IPART and the AER differ—notably, IPART has considered shorter term debt—the outcome of IPART's decision suggests that APT Allgas's proposed DRP is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.[41] The Economic Regulation Authority

---

38 The AER considers that the Stockland bond provides a relevant point of reference to assess the reasonableness of both Bloomberg's BBB rated fair value estimates and the APA Group bond yield, albeit to a lesser extent than the Brisbane Airport, Sydney Airport and SP AusNet bonds (given the nature of its operations differ from the AER's notional benchmark service provider). This is discussed in detail in section A.4.3 of this final decision.

39 The decline in observed yields for the DBCT bond is primarily due to a significant reduction in the trading margin on 19 April 2011. Given the recent nature of the change, the AER considers that a longer period is required to properly assess the robustness of the recent observations of the DBCT bond yields. On this basis, the AER remains cautious of the reliability of the observed DBCT bond yields. This issue is discussed in further detail in appendix A.

40 IPART, *Developing the approach to estimating the debt margin, Other industries*, Final decision April 2011.

41 NGR, r. 87(1).

(ERA) has also recently published a draft decision with indicative debt margins more than 150 basis points below APT Allgas's proposal.[42]

- As part of the assessment of APT Allgas's access arrangement proposal, the AER requested and received actual costs of debt data from APT Allgas. This information supports that the AER's estimate of the DRP provides a reasonable opportunity for APT Allgas to recover at least its efficient costs.[43]

5.3.5 Averaging period and risk free rate

The risk free rate measures the return an investor would expect from an asset with zero volatility and zero default risk. The yield on long-term Commonwealth Government Securities (CGS) is often used as a proxy for the risk free rate because the risk of government default on interest and debt repayments is considered to be low.[44]

In its original access arrangement proposal APT Allgas did not propose an averaging period as required by r. 87 of the NGR. Therefore, in its draft decision the AER rejected APT Allgas's proposal. In its revised access arrangement proposal, APT Allgas proposed an averaging period of 20 business days ending 31 May 2011.

The AER considers that the averaging period proposed by APT Allgas meets the requirements of r. 87 of the NGR, including the criteria set out in the draft decision, and therefore accepts the proposal.[45] The AER has reached this conclusion because:

- the averaging period has been nominated in advance of the commencement of the period and therefore does not include a date in the past
- the nominated averaging period is reasonably close to the commencement of the access arrangement period
- the averaging period is between 10 and 40 business days in length.

Using the averaging period of 20 business days ending on 31 May 2011, the AER determines a risk free rate of 5.40 per cent (effective annual compounding rate) for this decision.

5.3.6 Gearing ratio

The gearing ratio is defined as the ratio of the value of debt to total capital—that is, debt and equity—and is used to weight the costs of debt and equity when formulating the WACC.

---

42 ERA, *Draft decision on proposed revisions to the access arrangement for the Dampier to Bunbury natural gas pipeline*, March 2011, p. 168.

43 NGL, s. 24(2).

44 AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, pp. 128–174 (AER, *Final decision: WACC Review*, 1 May 2009).

45 AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, p. 67.

The AER's draft decision accepted APT Allgas's access arrangement proposal to apply a gearing of 60 per cent.[46] Therefore, the gearing ratio was not raised as an issue in APT Allgas's revised access arrangement proposal.

5.3.7 Inflation forecast

The expected inflation rate is not an explicit parameter within the WACC calculation. However, it is used in the revenue model to forecast nominal allowed revenues and to index the capital base. It is an implicit component of the nominal risk free rate, with implications for the return on both equity and debt. The inflation forecast is established consistent with the ten year investment horizon of the risk free rate.

In the draft decision, the AER determined an average forecast inflation rate over a ten year period of 2.52 per cent based on the method of applying the RBA's short-term inflation forecasts extending out for two years and the mid-point of the RBA's target inflation band—that is, 2.5 per cent—for the remaining eight years.[47] The average 10 year forecast is calculated by taking the geometric average of these annual inflation forecasts for each year.[48] APT Allgas accepted the AER's draft decision.[49]

As noted in the draft decision, inflation forecasts can change in line with market sensitive data and regulatory practice in Australia has been to update these forecast values at the time of making a decision. For this decision, the AER has updated the inflation forecast based on the latest RBA expectations set out in table 5.7. The average forecast inflation rate over a ten year period is 2.55 per cent.

Table 5.7 AER inflation rate forecast (per cent)

	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	Jun-21	Geometric average
AER inflation forecast	2.50	3.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.55

Source: RBA, *Statement on monetary policy*, 6 May 2011, p. 63.

5.4 Conclusion

The AER proposes not to approve the rate of return proposed by APT Allgas as it does not comply with r. 87 of the NGR and requires APT Allgas to make the revisions set out in section 5.5.

46 AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, p. 68.

47 It should be noted that the AER has previously used a market-based inflation forecast derived by taking the difference between indexed and nominal CGS yields. The AER notes the resumption of issuance of Treasury Indexed Bonds by the Australian Office of Financial Management in October 2009. The AER will closely monitor developments in capital markets to determine the effect of this new issuance on the relative demand and supply for indexed CGS.

48 AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, pp. 65–66.

49 APT Allgas, *Revised access arrangement submission*, March 2011, p. 47.

5.5 Revisions

The AER proposes the following revision:

Revision 5.1: make all amendments necessary in the revised access arrangement proposal and access arrangement information to take account of the rate of return determined in accordance with table 5.8.

Table 5.8 WACC parameters for the access arrangement period

Parameter	
Nominal risk free rate (%)	5.40
Inflation (%)	2.55
Equity beta	0.80
Market risk premium (%)	6.00
Debt risk premium (%)	3.64
Gearing (%)	60.00
Cost of debt (%)	9.04
Cost of equity (%)	10.20
Nominal vanilla WACC (%)	**9.50**

6 Taxation

The AER's draft decision accepted the post-tax approach, the method in which taxation is to be calculated, the opening tax asset base as at 1 July 2011, and the tax asset lives proposed by APT Allgas. However, the AER rejected APT Allgas's proposed approach to treat capitalised overheads and estimate of the value of imputation credits by investors (gamma) of 0.2.

The AER's draft decision required three amendments to APT Allgas's proposed tax allowance, including:

- *the capitalised overheads be treated as an expense for tax purposes and therefore should be removed from the tax asset base.*
- *the change to gamma from 0.2 to 0.45.*
- *the recalculation of the forecast tax allowance to reflect all amendments affecting APT Allgas's revenue and costs.*

The AER determined in its draft decision that no forecast tax allowance was required for the access arrangement period based upon the treatment of capitalised overheads and the revised revenue and cost figures.

In response to the draft decision, APT Allgas accepted the AER's decision regarding the treatment of capitalised overheads. APT Allgas disagreed with the AER's estimate of gamma of 0.45 and proposed a gamma of 0.25. APT Allgas has requested the forecast tax allowance be revised in order to reflect the proposed changes to gamma, depreciation, and other building block components.

The AER has applied a gamma of 0.25, consistent with the recent Australian Competition Tribunal decision in its review of the AER's electricity distribution determinations for Queensland and South Australia.

The AER has calculated a forecast tax allowance of $1.9 million for the access arrangement period. This forecast reflects the revised revenue and cost figures presented in the various chapters of this decision.

6.1 Regulatory requirements

Rule 72(1)(h) of the NGR provides that the access arrangement information for an access arrangement proposal must include the proposed method for dealing with taxation, and a demonstration of how the allowance for taxation is calculated.

Rule 76(c) of the NGR provides for the estimated cost of corporate taxation as a building block for total revenue insofar as this is applicable.

6.2 Revised access arrangement proposal

The AER's draft decision required three amendments to the calculation of APT Allgas's taxation allowance. These included the following:

- adopt the AER's determination of the treatment of capitalised overheads
- take account of the AER's determination of gamma of 0.45
- make all necessary amendments to revenues, costs and gamma to reflect the tax allowance determined by the AER.

APT Allgas's revised access arrangement proposal accepted the amendment to the treatment of capitalised overheads. However, APT Allgas disagreed with the AER's determination of gamma and proposed that the tax allowance be recalculated to reflect the changes to deprecation and gamma discussed in the revised access arrangement proposal.

6.2.1 Use of imputation credits (gamma)

APT Allgas did not accept the AER's draft decision to adopt a gamma estimate of 0.45. APT Allgas maintained that a gamma value of 0.2 is appropriate in its revised access arrangement proposal.[1] In a letter dated 6 May 2011, APT Allgas submitted that the value of gamma should be 0.25 in accordance with indications made by the Australian Competition Tribunal (Tribunal) in relation to its review of the AER's electricity distribution determinations for Energex, Ergon Energy and ETSA Utilities.[2]

6.2.2 Forecast tax allowance

APT Allgas proposed that the forecast tax allowance be recalculated to take into account its revised position on remaining asset lives and gamma. APT Allgas has revised the remaining asset lives to align with the standard asset lives accepted by the AER. This resulted in a change to the depreciation building block, the revenue requirement and therefore the taxation forecast. APT Allgas's revised access arrangement proposal also includes changes to gamma that impact the final estimate of the tax allowance. The tax allowance proposed by APT Allgas in its revised access arrangement proposal is reproduced in table 6.1.

Table 6.1 APT Allgas's proposed allowance for taxation ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Tax payable	0.9	2.8	2.7	2.9	3.3
Less allowance for imputation credits	0.2	0.6	0.5	0.6	0.7
Tax allowance	0.8	2.2	2.1	2.3	2.7

Source: APT Allgas, *Revised access arrangement submission*, March 2011, p.50.

1 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 47–48.
2 APT Allgas, *Letter to the AER, APT Allgas 2011–16 access arrangement revisions*, 6 May 2011.

6.3 AER's consideration

6.3.1 Use of imputation credits (gamma)

In the draft decision the AER considered the best estimate of gamma was 0.45. This was based on a payout ratio estimate of 70 per cent and an estimated value for a dollar of distributed imputation credits (theta) of 0.65. However, the AER noted that the value of gamma was being considered by the Tribunal, and that the Tribunal decision on the value of gamma would be taken into account for the AER's final decision on APT Allgas' access arrangement.

The AER considers that the findings of the Tribunal on a gamma of 0.25 should be applied for the purposes of this access arrangement review.[3] There is no new evidence currently before the AER that would cause it to depart from the findings of the Tribunal in respect of gamma.

Consistent with the draft decision and the findings of the Tribunal, the AER considers that the best estimate of the payout ratio based on the empirical evidence currently available is 70 per cent.

The AER considers that redemption rate studies that have been adjusted on economically justifiable bases [4] can be used as a check on the reasonableness of the market value of imputation credits as estimated from dividend drop-off studies.[5] The AER may consider further evidence on this in the future.

The AER considers that the market value of distributed imputation credits estimated by dividend drop-off studies is inherently imprecise. Dividend drop-off studies infer a value for imputation credits from the prices of stocks trading around the ex-dividend date. It is not imputation credits that are being traded but rather the package of cash dividends and any imputation credits that may be attached. Furthermore, dividend drop-off studies are affected by estimation issues including multicollinearity and heteroscedasticity.[6] In light of these issues the AER considers that a range of evidence should be considered where available.

However, for the purposes of this decision, the AER has applied a value consistent with findings of the Tribunal. The AER has adopted SFG's latest dividend drop-off study based estimate of the market value of imputation credits of 0.35 for theta. Combined with a payout ratio estimate of 70 per cent this provides a gamma estimate of approximately 0.25.

---

3 See Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No. 5)[2011] A CompT 9*, 12 May 2011.

4 Such as to incorporate any time value loss between when an imputation credits is distributed and when it is redeemed.

5 For example Hathaway and Officer (2004) used their redemption rate estimate for the value of imputation credits as a "background average" to corroborate their dividend drop-off estimate of the market value of imputation credits. See Hathaway and Officer, *The valuation of imputation credits, update 2004*, November 2004, pp. 14–15.

6 AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, pp. 78–79.

6.3.2 Forecast tax allowance

The AER has recalculated APT Allgas's forecast tax allowance as a result of the changes discussed above, and various other changes that affected APT Allgas's proposed revenues/expenditures, including:

- cost of capital
- forecast operating expenditure
- revised opening capital base.

These changes imply that the estimated tax allowance proposed by APT Allgas is not the best possible, as required under r. 74(2) of the NGR. The AER's decision on APT Allgas's forecast tax allowance for the access arrangement period is shown in table 6.2.

Table 6.2 AER tax allowance for the access arrangement period ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Tax payable	0.0	0.0	0.7	0.8	1.1
Less value of imputation credits	0.0	0.0	0.2	0.2	0.3
Tax allowance	0.0	0.0	0.5	0.6	0.8

Source: AER analysis.

6.4 Conclusion

The AER does not accept the tax allowance proposed by APT Allgas. The AER requires amendments be made to the rate of return, operating expenditure, and the opening the capital base. These changes impact on APT Allgas's revenues and expenditures, as outlined in the relevant chapters of this decision, which affect the estimate of the cost of taxation. As a result of these changes, APT Allgas's proposed estimate of the cost of taxation is not representative of the best estimate possible, as required under r. 74(2) of the NGR. Accordingly, the AER proposes revision 6.1 to take account of the various changes impacting its tax allowance, including the change to gamma.

6.5 Revisions

The AER proposes the following revision:

Revision 6.1: amend the revised access arrangement and revised access arrangement information to reflect the tax allowance set out in table 6.2.

7 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other costs of a non-capital nature incurred by a service provider in the provision of distribution pipeline services. This expenditure also includes costs incurred in increasing long-term demand for pipeline services and otherwise developing the market for pipeline services.

In its draft decision, the AER did not accept APT Allgas's opex proposal ($103 million) as being prudent and efficient consistent with the NGR, requiring amendments to:

- *incorporate alternative input cost escalators*
- *reduce the price assumption used to estimate UAG costs*
- *various proposed non-base year costs (step changes).*

Overall, these resulted in the AER accepting $94 million ($2010-11) in opex, which represented a $9 million or 9 per cent decrease from the access arrangement proposal.

While accepting a number of amendments to the non-base year costs, APT Allgas has not accepted amendments in relation to UAG costs, input cost escalators and one of the four proposed non-base year costs. The revised proposal represented a $12 million or 13 per cent increase on the AER's draft decision.

The AER has largely accepted the additional information provided in support of APT Allgas's proposed UAG and non-base year costs. While not accepting the information in support of APT Allgas's proposed input cost escalators, the AER considers the revision ($0.16 million) not large enough to warrant amendment to APT Allgas's revised access arrangement. Therefore, the AER accepts APT Allgas's revised opex forecast as set out in its revised access arrangement proposal. The forecast represents a 26 per cent increase in real terms compared to expenditure over the earlier access arrangement period.

7.1 Regulatory requirements

Rule 91 of the NGR provides that operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

The access arrangement information for an access arrangement proposal must include operating expenditure (by category) over the earlier access arrangement period and a forecast of operating expenditure over the access arrangement period and the basis on which the forecast has been derived.[1]

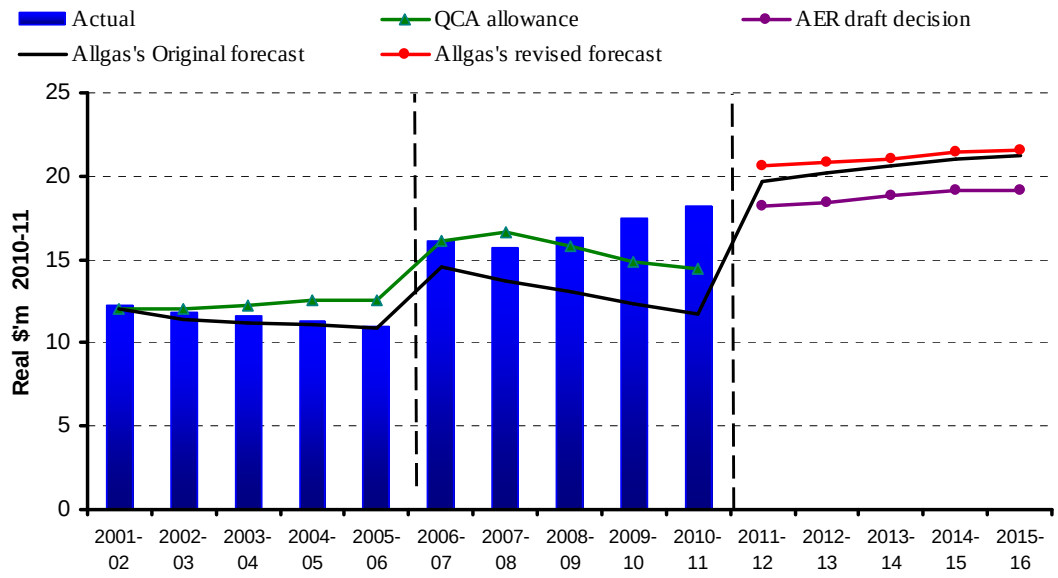
[1] NGR, r. 72(1)(a)(ii) and r. 72(1)(e).

Any forecast or estimate must be supported by a statement of the basis of the forecast or estimate.[2] A forecast or estimate, must be arrived at on a reasonable basis, and must represent the best forecast or estimate possible in the circumstances.[3]

7.2 Revised access arrangement proposal

APT Allgas did not amend its access arrangement consistent with the AER's draft decision. It disagreed with aspects of the AER's amendments to UAG costs, input cost escalators and the hot water changeover program. Further, in responding to the AER's concerns over UAG costs and input cost escalators, APT Allgas submitted alternative forecasts. These revisions resulted in a total opex forecast $12 million (13 per cent) greater than that approved in the AER's draft decision, as summarised in figure 7.1 and disaggregated in table 7.1. UAG is the largest contributor to the increase, representing an increase of $9.5 million on the draft decision.

Figure 7.1: APT Allgas revised proposed opex[4]



Sources: AER, *Draft decision*, February 2011, p. 83.
APT Allgas, *Email to the AER: AER.APT.RP.05 Opex*, 08 April 2011.

2 NGR, r. 74(1)
3 NGR, r. 74(2)
4 All data presented in this chapter has been converted by the AER into $2010-11 using the March CPI of 3.33%, rather than the 2.25% used in the AER's draft decision.

Table 7.1: APT Allgas revised opex proposal ($m, 2010-11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Controllable						
Operating & maintenance	10.7	10.7	10.7	10.8	10.9	53.9
Marketing	1.1	1.1	1.1	1.1	1.1	5.5
Admin & strategic planning	0.8	0.8	0.8	1.0	1.0	4.3
Non-controllable						
Customer services	0.9	1.0	1.0	1.1	1.1	5.1
UAG	4.0	4.0	4.0	4.0	4.0	20.2
Government charges	0.5	0.5	0.5	0.5	0.5	2.7
Metering & billing	1.2	1.3	1.3	1.3	1.4	6.5
Corporate costs	1.4	1.5	1.5	1.5	1.5	7.4
Total opex (excl. debt raising)	**20.6**	**20.8**	**21.1**	**21.4**	**21.6**	**105.5**
Debt raising costs	0.3	0.3	0.3	0.3	0.3	1.4
Total opex	**20.9**	**21.1**	**21.4**	**21.7**	**21.9**	**106.9**

Source: APT Allgas, *Email to the AER: AER.APT.RP.05 Opex*, 08 April 2011.

APT Allgas submitted the following issues for the AER's consideration:

UAG

The AER's draft decision removed the included margin onto the wholesale delivered gas price proposed by APT Allgas – considering it unsubstantiated. APT Allgas did not accept the AER's draft decision and:

- proposed an alternative price that is largely the result of a competitive tender for a gas contract for UAG that it has since obtained
- added an additional cost associated with 20 per cent of a full time equivalent (FTE) to the contract price, to cover UAG calculation and analytical support.

The revised price assumption and resulting total UAG opex is set out in table 7.2, and represents an increase of $9.5 million from the AER's draft decision.

Table 7.2: APT Allgas's revised proposed UAG opex ($2010-11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Volume (GJ)	[text removed – c-i-c]					
Price ($/GJ)	[text removed – c-i-c]					
Labour cost ($m)	0.03	0.03	0.03	0.03	0.03	0.14
Total UAG opex ($m)	4.0	4.0	4.0	4.0	4.0	20.2

Source: APT Allgas, *Email to AER, AER APT RP0104*, 6 April 2011.

Input cost escalators

APT Allgas did not amend its real input cost escalators consistent with the AER's draft decision. APT Allgas:

- proposed revised labour cost escalators that did not include the specific productivity adjustments
- revised the application rates of the labour cost escalators to opex
- forecast alternative and increased regulatory cost escalators.[5]

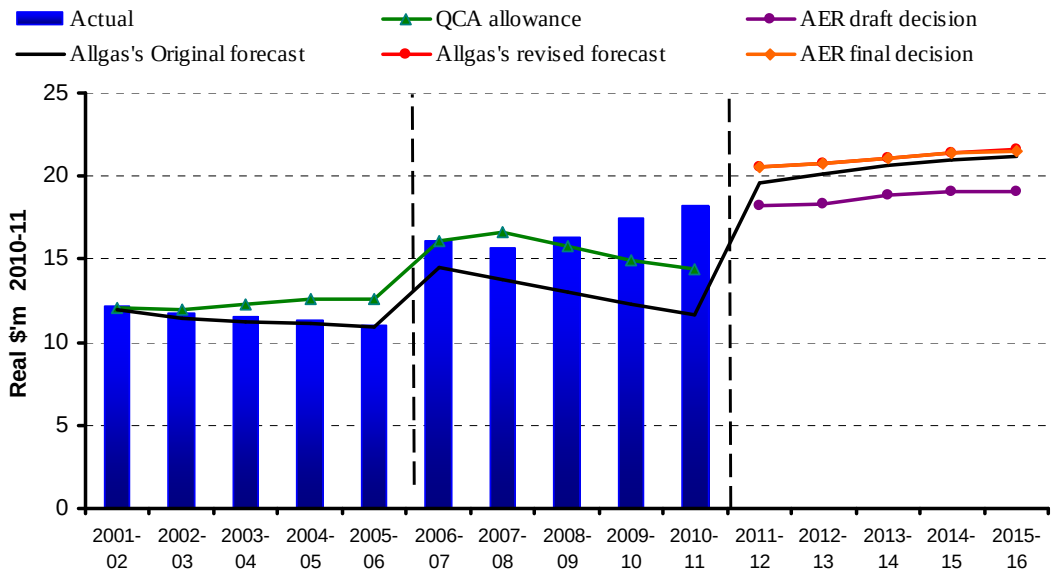
Non-base year costs

APT Allgas accepted the AER's draft decision to revise four of the five proposed non-base year costs. However, it did not accept the AER's draft decision to remove opex associated with its "electricity to gas hot water changeover" program, which represented $2 million in total for the access arrangement period. APT Allgas submitted new information in response to the AER's concerns over the efficiency assumptions for the project, in particular the estimates of uptake numbers, their derivation, and the derivation of the level of the required incentive payment.

7.3 AER's consideration

The AER does not accept APT Allgas's revised opex proposal ($106 million). While being convinced by a number of aspects of APT Allgas's revised proposal, the AER proposes further revisions, to reduce the forecast by $0.16 million.

Figure 7.2: AER final decision on APT Allgas's opex forecast (excl. debt raising costs)



Of the issues considered in APT Allgas's revised access arrangement proposal, the most material concerned UAG costs ($20 million). Other issues considered include alternative input cost escalators ($3.1 million) and the resubmitted market development program associated with hot water conversion incentives ($2 million).

[5] APT Allgas, *Revised access arrangement submission*, March 2011, pp. 53–54.

7.3.1 Unaccounted for gas

The AER considers that the alternative UAG price has largely been estimated on a reasonable basis. However, the AER does not accept the inclusion of costs equivalent to 20 per cent of an FTE to cover UAG analytical support. The AER considers:

- APT Allgas has competitively tendered for a contract to cover UAG losses, receiving offers from two retailers
- Only one of the offers was sufficiently firm to provide a reasonable basis on which to forecast UAG costs over the access arrangement period and has therefore been used in the forecast.
- APT Allgas's addition of 20 per cent of an FTE (totalling $140 000 over the access arrangement period) for UAG calculation and analytical support onto the tendered price, has not been adequately substantiated. APT Allgas's base year expenditure would already incorporate a range of labour costs, and some of this would be related to past efforts in analysing arrangements for covering UAG losses. APT Allgas has not substantiated why the expenditure is required and is in addition to other labour costs already incorporated in its base year expenditure.

Therefore, while accepting APT Allgas's revised UAG price proposal, the AER does not accept that APT Allgas's inclusion of costs equivalent to 20 per cent of an FTE to cover UAG analytical support was a proposal that was arrived at on a reasonable basis. Accordingly, other than the additional proposed staff costs, the AER considers that APT Allgas' UAG opex is consistent with the requirements of r. 74 and r. 91 of the NGR. The AER's proposed revisions to APT Allgas's revised access arrangement proposal are set out in table 7.3.

Table 7.3: AER conclusion on APT Allgas UAG opex ($2010-11)

	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Volume (GJ)			[text removed – c-i-c]			
Price ($/GJ)			[text removed – c-i-c]			
APT Allgas revised proposed UAG opex ($m)	4.0	4.0	4.0	4.0	4.0	20.2
AER revision ($m)	-0.03	-0.03	-0.03	-0.03	-0.03	-0.14
AER approved UAG opex ($m)	4.0	4.0	4.0	4.0	4.0	20.02

Source: APT Allgas, *Email to AER, AER APT RP0104*, 6 April 2011, & AER analysis.

7.3.2 Input cost escalators

APT Allgas's proposed real input cost escalators represented $3.1 million of its total revised opex proposal for the access arrangement period The AER's detailed considerations on real input cost escalation are set out in appendix B. The AER accepts APT Allgas's revised real cost escalator application rates.

However, the AER does not accept APT Allgas's:

- proposed labour escalators—they do not reflect productivity effects of in transforming individual wages to labour costs

- 'regulatory' escalators—insufficient documentation to support the proposed real cost escalator.

The AER considers the forecasts are not made on a reasonable basis, nor the best forecasts possible, inconsistent with r. 74 of the NGR. As a result, the proposed escalators do not contribute to forecasts of operating or capital expenditure that are respectively consistent with r. 79 or r. 91 of the NGR.

The AER engaged DAE to provide updated forecasts of productivity adjusted real growth in the labour price index (LPI), and considers these forecasts to be consistent with r. 74 of the NGR, and by extension r. 91 of the NGR. Accordingly, the AER proposes revisions to the opex forecasts applying the real input cost escalators set out in appendix B. The AER's input cost escalators also represent $3.1 million of the total opex approved by the AER for the access arrangement period.

7.3.3 Gas hot water changeover program

This program ($2 million) is designed to provide financial incentives for conversions from electricity to gas hot water systems. The revised proposal addressed the AER's concerns by adequately substantiating the efficiency assumptions behind the incentive payment program for gas hot water changeovers. The AER considered that APT Allgas:

- provided net present value (NPV) calculations demonstrating that the level of incentive payment has been set efficiently and therefore provides an overall benefit to consumers

- demonstrated that the assumed level of consumer uptake of the incentive program has been estimated as a reasonable extrapolation of the result of previous trials

- now accounted for the impact of the program on its demand forecast.

Therefore, The AER considers that the program has been estimated on a reasonable basis, producing the best forecast possible. Further, it has been shown to be prudent and efficient, consistent with r. 91 of the NGR.

7.3.4 Debt raising costs

Debt raising costs are transaction costs—such as legal fees, underwriting fees or credit rating fees—incurred as debt is raised or refinanced. The AER's draft decision accepted APT Allgas' proposal to determine benchmark debt raising costs using the AER's standard method.[6] The AER updated the inputs to determine a debt raising cost unit rate of 10.9 basis points per annum (bppa), which is applied to the benchmark debt component of the capital base to estimate the total allowance for debt raising costs for the access arrangement period. Although APT Allgas proposed the debt

[6] AER, *Draft decision, APT Allgas access arrangement proposal for the Qld gas network 1 July 2011–30 June 2016*, February 2011, pp. 212–214.

raising cost allowance to be included into the overall WACC, the AER decided to provide the allowance as a separate opex line item to preserve transparency.

APT Allgas' revised access arrangement proposal accepted the AER's approach to include the debt raising cost as an allowance in opex.[7] As the draft decision debt raising cost was based on an indicative discount rate, it needs to be updated for the discount rate applicable to this final decision. Table 7.4 shows the build up of the benchmark debt raising costs, after updating for the discount rate using the nominal vanilla WACC determined in this decision.

Table 7.4: Direct debt raising costs with a nominal vanilla WACC of 9.50 per cent

Fee	Explanation	1 Issue	2 Issues	3 Issues	4 Issues	5 Issues
Amount Raised	Multiples of median MTN ($250m)	$250m	$500m	$750m	$1000m	$1250m
1. Gross underwriting fee	Median gross underwriting spread, up front per issue, amortised	7.17	7.17	7.17	7.17	7.17
2. Legal and road-show	$115K upfront per issue, amortised	0.73	0.73	0.73	0.73	0.73
3. Company credit rating	$50K per annum	2.00	1.00	0.67	0.50	0.40
4. Issue credit rating	4 basis points up front per issue, amortised	0.64	0.64	0.64	0.64	0.64
5. Registry fees	$3.5K per issue, per annum	0.14	0.14	0.14	0.14	0.14
6. Paying fees	$4/$1million per annum	0.04	0.04	0.04	0.04	0.04
Total	**Basis points per annum**	**10.7**	**9.7**	**9.4**	**9.2**	**9.1**

Source: ACG, Bloomberg, AER analysis.

APT Allgas has an opening capital base of $427 million, which leads to a notional debt component of $256 million at the assumed gearing ratio (60 per cent). This amount of debt requires two standard size ($250 million) bond issues. However, in view of the close proximity to the $250 million threshold and the overall accuracy of the APT Allgas forecasts, the AER has estimated debt raising costs on the basis that only one debt issue is required. After adjusting for the discount rate the appropriate unit rate estimate for benchmark debt raising costs is 10.7 bppa. This benchmark multiplied by the debt component of APT Allgas' opening capital base results in a total allowance of $1.42 million ($2010–11) for debt raising costs for the access arrangement period. The AER considers this opex to be in accordance with r. 74 and r. 91 of the NGR.

[7] APT Allgas, *Revised access arrangement submission*, March 2011, p. 117.

7.4 Conclusion

While not accepting the further information provided in respect of APT Allgas's revised proposed input cost escalators and UAG forecast, the AER considers that the necessary adjustments ($0.16 million) are not large enough to warrant amendment to APT Allgas's revised access arrangement proposal. Therefore the AER proposes to approve APT Allgas's access arrangement as set out in table 7.1 of this final decision.

Overall the AER approves $106 million in opex over the access arrangement period as consistent with the NGR (excluding debt raising costs). Figure 7.2 depicts the total opex proposed by the AER in its final decision, against the total opex originally proposed by APT Allgas and the total opex proposed in the AER's draft decision.

In the subsequent access arrangement review, the AER will require that APT Allgas demonstrate that the non-base year costs accepted for this access arrangement period have been removed from the year proposed as being the base year.[8]

[8] These include costs referred to by APT Allgas as representing step and scope changes.

8 Total revenue

The AER has calculated APT Allgas's total revenue requirement over the access arrangement period to be $361 million. The total revenue requirement determined by the AER takes into account the revised access arrangement proposal submitted by APT Allgas.

The main reasons for the difference between the AER revenue requirement and APT Allgas's revised access arrangement proposal includes changes to WACC parameters, the opex forecast, the level of regulatory depreciation, and the forecast cost of taxation. The AER considers that the individual components of the revenue requirement it has determined are efficient and satisfy the revenue and pricing principles under section 24 of the NGL.

Based on the AER approved revenues and demand forecasts, the tariffs for haulage services for both volume and demand customers are expected to rise in real terms by about 5.5 per cent per annum (on average). The tariffs for ancillary services will increase each year only by the rate of change in CPI.

8.1 Regulatory requirements

Rule 72(1)(m) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.

Rule 76 of the NGR provides that total revenue is to be determined for each regulatory year of the access arrangement period using the building block approach. The building block components are:

- a return on the projected capital base for the year
- depreciation on the projected capital base for the year
- forecast operating expenditure for the year
- the estimated cost of corporate income tax for the year (if applicable)
- any penalty/reward from the operation of an incentive mechanism.

Rule 97 sets out certain requirements regarding reference tariff variations. This rule is relevant to this chapter in so far as the X factors presented here form part of the variation mechanism.

8.2 Revised access arrangement proposal

In response to the AER's draft decision, APT Allgas's revised access arrangement proposal addressed a number of components affecting revenue and costs. APT Allgas stated that it has undertaken a 'test of reasonableness' of the revenues and cash flows derived from the factors determined by the AER. APT Allgas noted that its test of reasonableness indicated that the AER's revenue requirement and cash flows are

insufficient to sustain APT Allgas's BBB+ credit rating assumed in estimating its cost of debt.[1]

APT Allgas agreed that changes to the price path (X factors) are required to reflect changes in total revenue. However, APT Allgas stated that the AER needs to provide adequate explanation on the X factor profile it adopts. APT Allgas contended that the AER's amendment to the X factors reduces the incentives of the regulatory regime to increase gas throughput and system utilisation. APT Allgas proposed a sharper initial price rise with lower increases towards the end of the access arrangement period.[2]

APT Allgas revised its proposed fee for the inlet reconnection service, reverting to a value closer to the 2010–11 service fee. This was in response to the AER's draft decision to amend the access arrangement to include the relighting of installed appliances as part of the inlet reconnection service. Therefore, APT Allgas has increased the revenue allocated to ancillary services associated with the increase in the inlet reconnection fee.[3]

APT Allgas's proposed total revenue requirement derived from pipeline services and proposed X factors are shown in table 8.1.

Table 8.1 APT Allgas's total revenue over access arrangement period (revised) ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Return on capital	48.3	51.3	53.9	56.8	59.7
Return of capital	0.4	3.8	3.8	4.6	5.0
Operating and maintenance	21.2	22.0	22.8	23.9	24.6
Benchmark tax liability	0.8	2.2	2.1	2.3	2.7
Carry-over amounts	–	–	–	–	–
Revenue requirement	70.7	79.2	82.7	87.6	92.0
Less: ancillary services revenue	0.7	0.7	0.8	0.8	0.9
Less: capital contributions	0.6	0.6	0.6	0.7	0.7
Total haulage services revenue	69.4	77.9	81.3	86.1	90.4
X Factors	–17.75%	–13.0%	–10.0%	–8.0%	–3.0%

Source: APT Allgas, *Revised access arrangement submission*, March 2011, p.63.

1 APT Allgas, *Revised access arrangement submission*, March 2011, p.63.
2 APT Allgas, *Revised access arrangement submission*, March 2011, p.64
3 APT Allgas, *Revised access arrangement submission*, March 2011, p.3.

8.3 AER's consideration

The AER's final decision assessed the various components of APT Allgas's proposed revenue requirement with regard to the national gas objective (NGO) and the revenue and pricing principles under ss. 23 and 24 of the NGL respectively, and the NGR. In considering the various components of the APT Allgas's cost and revenues the AER has determined a total nominal revenue requirement of $361 million over the access arrangement period. This compares to APT Allgas's proposed total revenue of requirements of $410 million.

The AER requires that APT Allgas's proposed revenue requirement be reduced to reflect the AER's assessment of the various revenue components including:

- the WACC for the access arrangement period
- opex for the access arrangement period
- tax allowance for the access arrangement period.

The AER considers the change to the inlet reconnection fee is reflective of the increased cost of this service required by the AER's amendment in the draft decision.[4] The associated increase in ancillary services revenue reduces the revenue allocated to haulage services, because it is subtracted from the total revenue requirement approved by the AER.

The total revenue requirement determined by the AER is smoothed and converted to tariffs using the forecast demand figures approved by the AER. In deriving the profile of the X factors, the AER has been mindful of potential price shocks to customers and the effects this may have on efficient development of the market. The AER considers these matters relevant factors under r. 97 of NGR. The AER has balanced this concern against the cash flow needs of the businesses. In terms of its cash flow and credit rating, the AER notes the following:

- APT Allgas provided no analysis to show that any particular rating would flow from a particular choice of X factors. It merely asserted that the AER's X factors in the draft decision would not allow it to maintain a benchmark BBB+ rating which it considered inconsistent with the WACC.
- the smoothed cash flows of a regulated business are not the only consideration of a ratings agency, when assessing a business' credit worthiness. Credit rating agencies rely on qualitative factors instead of only quantitative ratios
- the requirement of NPV neutrality under r. 92(2)(a) and (b) of the NGR allows APT Allgas to recover its revenue requirement regardless of the profile of X factors.
- the overall revenue requirement has increased from the draft decision.

[4] AER, Draft decision APT Allgas Qld gas network , December 2010, p.5

- the profile of price increases is negatively sloped with higher price increases in earlier years, although not as steep as APT Allgas would prefer.

The AER disagrees with APT Allgas's assertion that a flatter price profile is inconsistent with the incentives of a price cap. A steeper X factor profile as advocated by APT Allgas will increase prices more quickly than otherwise. The AER does not consider that this would encourage greater throughput and system utilisation because the price shock imposed upon APT Allgas's customers is likely to reduce (rather than encourage) demand for the services. Therefore, a smoother X factor profile which reduces price shocks, is not inconsistent with the incentives of a price cap to encourage greater throughput and network utilisation.

The annual revenue requirements and annual price changes (as indicated by the X factors) are summarised in table 8.2. The AER accepts that the same X factors will apply to all volume and demand customers, as discussed in chapter 11. The X factors determined by the AER indicate there will be real increases of about 5.5 per cent per annum (on average) in haulage reference service tariffs over the access arrangement period. There are no real price changes for ancillary services fees, which will be indexed by the change in CPI each year.

Table 8.2 AER's conclusion on APT Allgas's annual revenue requirement and X factors ($m, nominal)[a]

	2011–12	2012–13	2013–14	2014–15	2015–16
Return on capital	40.6	43.1	45.3	47.7	50.1
plus regulatory depreciation[b]	0.3	3.6	3.7	4.4	4.9
plus operating and maintenance	21.4	22.2	23.0	24.0	24.8
plus corporate income tax	0.0	0.0	0.5	0.6	0.8
Total revenue	**62.2**	**68.9**	**72.5**	**76.8**	**80.6**
less forecast capital contributions	0.7	0.7	0.8	0.8	0.9
less ancillary services revenue	0.6	6.1	0.6	0.7	0.7
Total haulage services revenue	**61.0**	**62.1**	**71.0**	**75.3**	**79.1**
Smoothed haulage services revenue	**58.5**	**64.5**	**71.1**	**77.6**	**84.0**
X factors[c]					
Haulage reference services (%)	–10.50	–5.00	–5.00	–4.00	–3.00
Ancillary service fees (%)	0	0	0	0	0

(a) Numbers may not add due to rounding.
(b) Regulatory depreciation includes the negative depreciation impact of inflation on the capital base.
(c) Negative values for X indicate real price increases under the CPI–X formula.

8.4 Conclusion

The AER does not approve the revenue requirement proposed by APT Allgas because it does not comply with r. 76 of the NGR. This is due to differences in the building block components proposed by APT Allgas and determined by the AER. The AER also considers the proposed 17.75 per cent increase in tariffs in the first year of the access arrangement period poses a significant impact on consumers and is likely to hamper the efficient growth of the market for reference services. Accordingly, the AER has adopted a smoother X factor profile with regard to r. 97 of the NGR. The AER proposes revisions to APT Allgas's proposed revenue requirement in accordance with changes to the various revenue components, as discussed in the relevant chapters of this decision.

8.5 Revisions

The AER proposes the following revision:

Revision 8.1: amend the revised access arrangement and revised access arrangement information to reflect the annual revenue requirement and X factors set out in table 8.2.

Part B - Tariffs

9 Demand forecasts

Demand forecasts are used to calculate the reference tariffs and also influence forecast capital and operating expenditure linked to network growth.

In its draft decision, the AER accepted APT Allgas's domestic customer numbers, total volume business consumption and demand MDQ forecasts, but required two amendments:

- *an increase in forecast residential consumption in the western region to account for weather sensitive space heating demand*
- *a reduction in forecast volume business customer numbers to reflect lower levels of expected business connections.*

In response to the draft decision, APT Allgas adjusted the forecasting approach for domestic consumption in the western region to better account for weather sensitive heating demand. The AER considers that the adjustment applied by APT Allgas adequately addresses the concerns expressed in the draft decision, and accepts the revised forecast is reasonable.

However, the AER considers APT Allgas has not justified a move away from the draft decision in relation to the volume business customer forecasts. As a result, the AER has adjusted the revised volume business consumption forecast to the levels presented in table 9.6, which reflect recent trends in average volume business consumption.

9.1 Regulatory requirements

Rules 72(1)(a)(iii) and 72(1)(d) of the NGR provide that the access arrangement information for a full access arrangement proposal for a distribution pipeline must include:

- usage of the pipeline over the earlier access arrangement period showing, for a distribution pipeline, minimum, maximum and average demand, and customer numbers in total and by tariff class
- to the extent that it is practicable, a forecast of pipeline capacity and utilisation of pipeline capacity over the access arrangement period and the basis on which the forecast has been derived.

Rule 74(1) of the NGR provides that any information in the nature of a forecast or estimate must be supported by a statement explaining the basis of the forecast or estimate.

Rule 74(2) of the NGR provides that a forecast or estimate must be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.

9.2 Revised access arrangement proposal

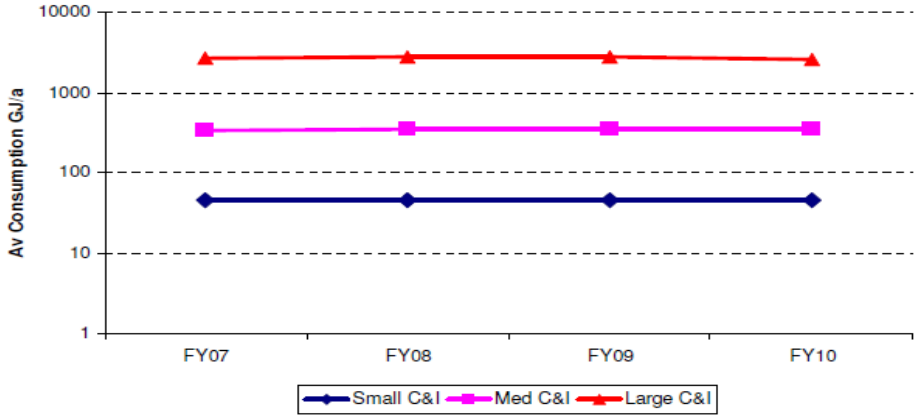
In its draft decision, the AER accepted APT Allgas's domestic customer numbers, total volume business consumption and demand MDQ forecasts, but required the following amendments:

- an increase in the domestic consumption forecast in the western region to account for weather sensitive space heating demand
- a reduction in forecast volume business customer numbers to reflect lower levels of expected business connections based on analysis of the recent historical trend.

APT Allgas did not accept the draft decision amendment to the western region domestic consumption forecast based on the AER's estimation of weather sensitive heating demand in the region. Instead, the revised access arrangement proposal adopted an alternative approach to forecasting weather sensitive heating demand for the region. APT Allgas proposed to use an annual heating degree day (HDD) index to estimate weather sensitive demand, as the index provides a better measure of heating requirements than the annual average minimum temperature used by the AER in the draft decision.[1]

APT Allgas did not accept the AER's draft decision to reduce the volume business customer numbers forecast without any adjustment to the total volume business consumption forecast. APT Allgas rejected the draft decision adjustment[2] because it results in an increase to the forecast average volume business consumption.[3] Contrary to the draft decision, APT Allgas stated it expects the average consumption to remain stable and proposed to use average consumption for the past three years to calculate total volume business consumption.[4] To support this assumption, APT Allgas analysed recent data on average volume business consumption and customer numbers grouped by the levels of annual consumption, as presented in figures 9.1 and 9.2.[5]

Figure 9.1: Average volume business customer consumption by size of annual consumption (GJ)

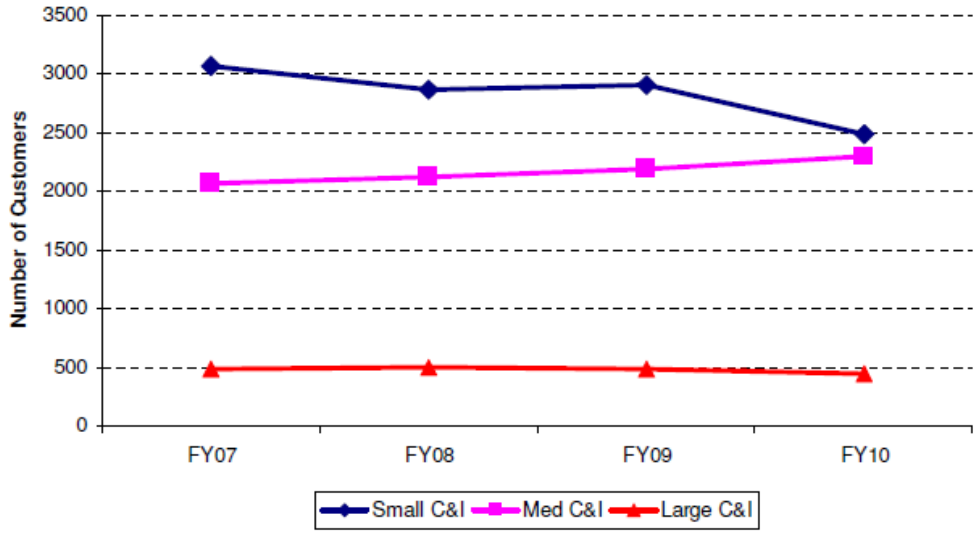


Source: APT Allgas, *Revised access arrangement submission*, March 2011, p. 68.

1 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 67–69.
2 AER, *Draft decision*, February 2011, pp. 111 and 117.
3 APT Allgas, *Revised access arrangement submission*, March 2011, p. 67.
4 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 70–76.
5 Volume business customers have been referred to as commercial and industrial (C&I) customers in the figures contained in the APT Allgas revised proposal, reproduced as figures 9.1 and 9.2.

Note: The y-axis presented in the figure is in increasing scale.

Figure 9.2: Volume business customer numbers by size of annual consumption



Source: APT Allgas, *Revised access arrangement submission*, March 2011, p. 69.

As shown in the figures, C&I customers have been divided into small, medium and large customer groups, for customers with 30-100 GJ, 100-1,000 GJ and 1,000-10,000 GJ annual consumption respectively. APT Allgas stated that since figure 9.1 shows the average consumption for each customer group remains constant over recent years, this demonstrated that its assumption of flat volume business customer average consumption is reasonable.

The revised forecast represents a 5.7 per cent reduction to total volume business consumption over the access arrangement period compared to the AER's draft decision.[6] Table 9.1 compares the draft decision and revised access arrangement proposal forecasts.

Table 9.1: APT Allgas revised demand forecasts (TJ)

		2011-12	2012-13	2013-14	2014-15	2015-16
Residential consumption	Draft decision	824	846	868	891	914
	Revised proposal	802	819	835	853	871
Volume business consumption	Draft decision	2121	2190	2261	2334	2408
	Revised proposal	2081	2107	2134	2161	2187

Source: APT Allgas, *Revised proposal, Demand Summary - CONFIDENTIAL (AERv4 - DD Response).xls*, March 2011 (confidential).

6 APT Allgas, *Revised access arrangement submission*, March 2011, p. 70.

APT Allgas adjusted the revised demand forecasts as set out in table 9.2 to account for the expected impacts of the proposed electricity to gas hot water changeover program.[7]

Table 9.2: Electricity to gas hot water changeover program

	2011–12	2012–13	2013–14	2014–15	2015–16
Volume class consumption – TJ	4	7	11	14	18

Source: APT Allgas, Email to the AER, *RE: Questions - APT Allgas, attachment 20110406 Response to AER questions AER APT RP 01 04*, 6 April 2011.

9.3 Summary of submissions

The AER received one submission from APT Allgas on its own revised access arrangement proposal. APT Allgas presented further information in relation to the revised volume business consumption forecast including:

- the use of historical average volume business consumption over the past three years to forecast total consumption is reasonable and is consistent with ACIL Tasman's advice to the AER which stated that

> ACIL Tasman considers that it is generally reasonable to assume that consumption rates in the Volume Business customer class will continue at historical average rates, assuming no significant change in the customer base.

- the AER's draft decision to reduce the volume business customer numbers forecast without any adjustment to the total volume business consumption forecast implicitly assumes a dramatic increase in the average level of volume business customer consumption which is inconsistent with the advice of its own consultant and not supported by any evidence before the AER.

- the revised access arrangement proposal total volume customer consumption forecast is "the best forecast or estimate possible in the circumstances" in accordance with r. 74(2)(b) of the NGR. This forecast is calculated by multiplying the reduced customer numbers recommended by ACIL Tasman and accepted by the AER in the draft decision, and the historical average volume business consumption over the past three years.

9.4 AER's consideration

The AER's draft decision accepted APT Allgas's domestic customer numbers, total volume business consumption and demand MDQ forecasts, but required two amendments:

- an increase in forecast residential consumption in the western region to account for weather sensitive space heating demand

[7] See chapter 7 of this final decision.

- a reduction in forecast volume business customer numbers to reflect lower levels of expected business connections.

APT Allgas addressed these two issues in its revised proposal. The AER's consideration of these issues follows.

9.4.1 Residential consumption forecast

The AER's draft decision amended the domestic consumption forecast in the western region to account for weather sensitive heating demand. APT Allgas did not accept the amendment to the forecast based on the AER's estimation of weather sensitive heating demand in the region. Instead, APT Allgas revised the consumption forecast based an alternative approach for estimating heating demand.

The AER accepts that the revised consumption forecast for the western region is reasonable and represents the best possible forecast in the circumstances. The AER considers the material presented in the revised access arrangement proposal offers sufficient support for the proposed forecasting methodology, and the data used to develop the revised forecast.

The AER accepts the use of the heating degree day (HDD) index for forecasting weather normalised domestic consumption in the western region is reasonable because:

- the HDD index is widely used for measuring heating requirements[8] and has been used to predict gas consumption in other networks

- the HDD index is available for a longer period of time (over 50 years) compared to the average minimum temperature data (12 years) used in the draft decision. This allows for the analysis of longer term trends in weather conditions.

The AER accepts the proposed approach to forecasting domestic consumption in the western region is reasonable for the following reasons:

- APT Allgas accepted the AER's draft decision to use the weighted average of the central and southern region domestic customer average consumption as a proxy for the non-temperature sensitive base load for the western region.

- the equation used to estimate the temperature sensitivity factor as presented below appears reasonable as it appropriately captures the relationship between weather conditions and heating demand.

  Total consumption = Base Load + (HDD * Sensitivity Factor)

- the use of linear extrapolation of historical trend to forecast the future temperature sensitivity factor is reasonable in the circumstances as the historical trend is derived based on all available actual consumption data.

[8] See Bureau of Meteorology, http://www.bom.gov.au/jsp/ncc/climate_averages/degree-days/index.jsp (viewed 5 May 2011).

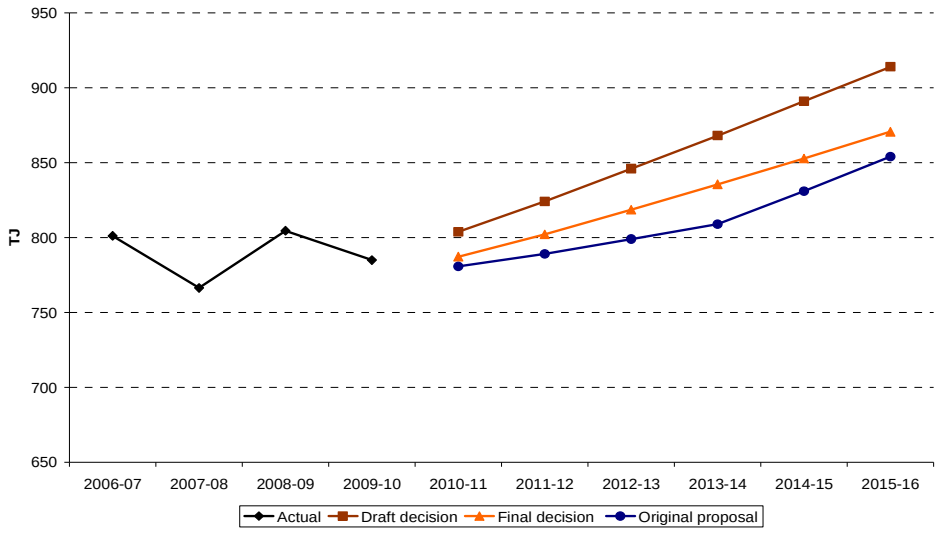
Table 9.3 and figure 9.3 compare the access arrangement proposal, draft and final decision total domestic consumption forecasts.

Table 9.3: Total domestic consumption forecasts (TJ)

	2011–12	2012–13	2013–14	2014–15	2015–16
Access arrangement proposal	789	799	809	831	854
Draft decision	824	846	868	891	914
Final decision	802	819	835	853	871

Source: AER, *Draft decision*, February 2011, p. 116.

Figure 9.3: Total domestic consumption forecasts (TJ)



Source: AER, *Draft decision*, February 2011, p. 116.
APT Allgas, *Revised proposal*, *Demand Summary - CONFIDENTIAL (AERv4 - DD Response).xls*, March 2011 (confidential).

9.4.2 Volume business consumption forecast

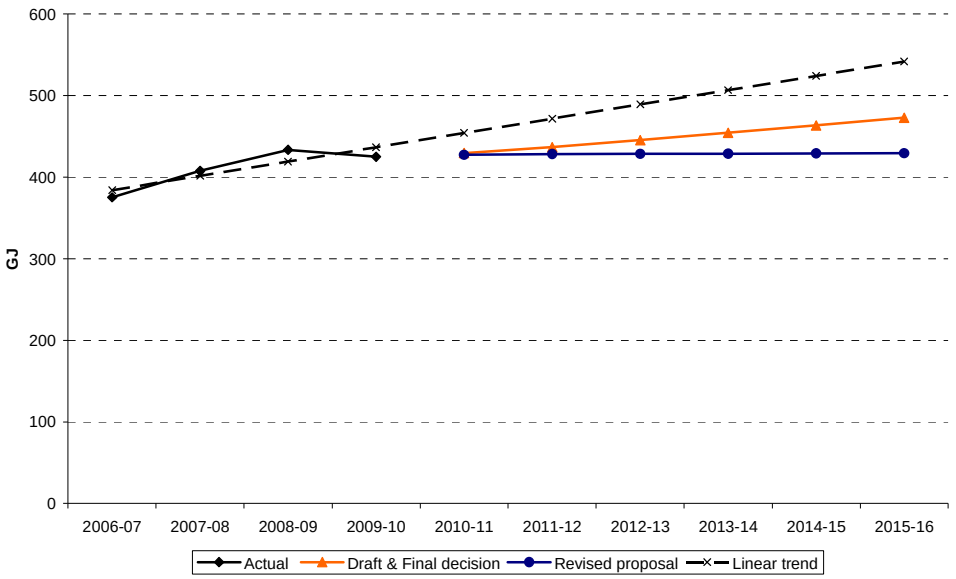
APT Allgas did not accept the AER's draft decision to reduce the volume business customer numbers forecast without any adjustment to the total volume business consumption forecast. APT Allgas rejected the draft decision adjustment because it resulted in average volume business consumption rising by 1.8 per cent each year from 2010-11, as shown in figure 9.4.[9] By comparison, APT Allgas expects average volume business consumption to remain constant and proposed to use average consumption for the past three years to forecast total volume business consumption.[10] The AER has considered the information provided by APT Allgas in support of its revised access arrangement proposal. However, it does not consider the reasons provided justify a move away from the draft decision.

The AER agrees there has been little movement in average volume business consumption for each customer group in recent years, as evident in figure 9.1. However, over the same period the number of medium volume business customers has steadily increased while small volume business customer numbers have

9 AER, *Draft decision*, February 2011 pp. 111 and 117.
10 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 70–76.

decreased, as shown in figure 9.2. It follows that average consumption for volume business customers (as a whole) has increased by on average around 4.3% over the last 4 years as shown in figure 9.4.

Figure 9.4: Average volume business consumption forecasts (GJ)



Source: APT Allgas, *Revised proposal, Demand Summary - CONFIDENTIAL (AERv4 - DD Response).xls*, March 2011 (confidential).

Based on the evidence available, the AER considers that APT Allgas has not taken into account the changing mix of volume business customers that is affecting consumption levels overall. This observed increase in average consumption for volume business customers (as a whole) over the last 4 years could be driven either by:

- existing small C&I customers increasing their consumption, which moves them to the medium C&I group, or
- an increase in small customer disconnections and new medium C&I customer connections.

Regardless of the cause, there is a clear observed trend of increasing average consumption for volume business customers. As result, the AER confirms its draft decision regarding forecast volume business customer consumption. These forecasts are supported by recent historical trends and represent the best forecast available in the circumstances. The AER's decision on the volume business consumption forecast is set out in table 9.4.

Table 9.4: Volume business demand forecasts (TJ)

	2011–12	2012–13	2013–14	2014–15	2015–16
Revised access arrangement proposal	2081	2107	2134	2161	2187
Final decision	2121	2190	2261	2334	2408

9.4.3 Demand forecast adjustments for electricity to gas hot water changeover program

APT Allgas proposed to adjust the revised demand forecasts to account for the expected impacts of the proposed electricity to gas hot water changeover program.[11]

The AER accepts that it is reasonable to adjust the demand forecasts to incorporate impacts outside of the forecasting model. Based on its assessment of the proposed program as set out in section 7.3.3 of this final decision, the AER accepts the proposed adjustments as set out in table 9.5.

Table 9.5: Electricity to gas hot water changeover program adjustment

	2011–12	2012–13	2013–14	2014–15	2015–16
Volume class consumption – TJ	4	7	11	14	18

Source: APT Allgas, Email to the AER, *RE: Questions - APT Allgas, attachment 20110406 Response to AER questions AER APT RP 01 04*, 6 April 2011.

9.5 Conclusion

The AER accepts APT Allgas's revised domestic consumption forecast is reasonable and represents the best forecast available in the circumstances. The reasons for the decision are set out in section 9.4.1.

The AER considers the material provided in APT Allgas's revised access arrangement proposal and submission does not justify a move away from its draft decision on the average and total volume business consumption forecasts. Consequently, the AER maintains its draft decision and proposes to adjust the revised volume business consumption forecast as shown in table 9.3 to reflect the recent historical trend in average volume business consumption.

The AER accepts it is reasonable to adjust the demand forecasts as shown in table 9.5 to incorporate the impact of the electricity to gas hot water changeover program.

9.6 Revisions

The AER proposes the following revision:

Revision 9.1: amend the revised access arrangement information to delete Table 4.1 and replace it with the following table:

Table 9.6: AER draft decision on APT Allgas's demand forecasts

	2011–12	2012–13	2013–14	2014–15	2015–16
Volume class customer numbers	87 213	90 178	93 215	96 327	99 533
Demand class customer numbers	102	103	104	105	106
Volume class consumption – TJ	2927	3016	3107	3201	3297
Demand class consumption – TJ	6970	6985	7000	7015	7030

[11] See chapter 7 of this final decision.

10 Reference tariffs

An access arrangement is required to set out how a service provider intends to charge for reference services. The NGR requires that the basis for setting reference tariffs be explained. This is done by defining the tariff classes and comparing the revenue to be raised by each reference tariff with the cost of providing service to each tariff class.

In its draft decision, the AER accepted the volume tariff, 10 zonal demand tariffs, and three ancillary services tariffs proposed by APT Allgas. However, the AER had concerns with the detail of how these tariffs were determined and applied. APT Allgas's revised proposal has addressed these concerns.

This chapter presents the revised tariffs for 2011-12, reflecting the proposed revisions to revenues and demand set out by the AER in this decision.

10.1 Regulatory requirements

With respect to reference tariffs, the NGR requires APT Allgas to:

- specify the tariffs for each reference service (r. 48(1)(d)(i) and (ii))
- demonstrate that total revenue is allocated between reference and other services on the basis of costs allocated according to certain principles (r. 93(1) and (2))
- divide reference service customers into tariff classes (r. 94(1)) that are economically efficient and avoid unnecessary transaction costs (r. 94(2))
- describe the proposed approach to the setting of tariffs, including the method used to allocate costs, and demonstrate the relationship between tariffs and costs and provide a description of any applicable pricing principles (r. 72(1)(j))
- demonstrate that revenue expected from each tariff class is within certain lower and upper thresholds (r. 94(3))
- demonstrate that each tariff and its charging parameters must take into account long run marginal costs, transaction costs and customer responses to price signals (r. 94(4))
- demonstrate that prudent discounts offered to customers are necessary for competition or efficiency reasons and that this will likely lead to lower tariffs for other customers (r. 96).

10.2 Revised access arrangement proposal

In its draft decision, the AER required various amendments regarding APT Allgas's propose tariffs. These amendments related to:

- tariff classes
- allocation of revenue to tariff classes

- tariff revenues and parameters
- the tariffs for 2011-12.

APT Allgas's response to these amendments follows.

10.2.1 Tariff classes

In its revised access arrangement proposal, APT Allgas revised its categorisation of demand and volume customers to be consistent with its 2006-11 access arrangement and therefore has not included a discussion of the new basis for categorising demand and volume class customers.[1] APT Allgas removed the requirement for volume customers to have an MDQ of less than 50 GJ. APT Allgas accepted that there would be administrative issues with such a requirement. Changes were made in clauses 2.1.1 and 2.1.2 of the access arrangement and access arrangement information to reflect this amendment.[2]

10.2.2 Allocation of revenue to tariff classes

APT Allgas revised its access arrangement information to include discussion on the basis of tariffs including cost allocation as previously submitted in its access arrangement submission. This information was expanded to include discussion on reference ancillary services and capital contributions. Ancillary services tariffs were determined by APT Allgas using a building block cost methodology. The unit costs were built up from contractor costs, internal processing labour and overhead allowances. Quantities were based on historical actuals that were adjusted for expected changes in the total customer base. Capital contributions were forecast utilising actual contributions for 2009-10 adjusted for CPI and expected customer connection numbers over each year of the access arrangement period.[3]

10.2.3 Tariff revenues and parameters

With respect to the relationship between expected revenue and stand alone costs for demand customers, APT Allgas largely relied on the analysis and cost allocation process adopted for the 2006-11 access arrangement submission. This process allocated revenue from demand customers based on all standalone costs for demand customers.[4]

APT Allgas stated that it has assessed the revenue requirement from demand customers and volume customers based on stand alone and avoidable costs. It found that utilising the tariff structure developed under the current access arrangement and escalating both tariffs by a common X factor, the resultant revenue streams lay reasonably between the stand alone and avoidable costs for each class. Based on this analysis, APT Allgas decided to adopt a common tariff increase for both classes for the access arrangement period.[5]

1 APT Allgas, *Revised access arrangement submission*, March 2011, p. 78.
2 APT Allgas, *Revised access arrangement submission*, March 2011, p. 79.
3 APT Allgas, *Revised access arrangement submission*, March 2011, p. 77.
4 APT Allgas, *Revised access arrangement submission*, March 2011, p. 78.
5 APT Allgas, *Revised access arrangement submission*, March 2011, p. 78.

APT Allgas stated that the forecast revenue for demand customers in 2011-12 does not fully reflect the smoothing of revenues in subsequent years, and hence it is not valid to compare forecast 2011-12 revenue directly with stand alone costs.[6]

APT Allgas included commentary on ancillary service transaction costs and customer responses in its revised access arrangement information. The revised access arrangement information also now includes an analysis of LRMC for demand customers.[7]

10.2.4 Tariffs for 2011-12

In its revised access arrangement, APT Allgas updated its proposed tariffs for 2011-12.[8] These revised tariffs reflected the various changes APT Allgas made following the AER's draft decision. APT Allgas stated that volume customer tariffs should be specified in units of '$/GJ' rather than '$/GJ/day'. It also stated that ancillary service tariffs for inlet disconnection and inlet reconnection should be specified as '$/each' rather than '$/day'.[9]

10.3 AER's consideration

In its draft decision, the AER considered that APT Allgas's descriptions of its proposed reference tariffs were largely compliant with the requirements of the NGR. However, where aspects of the proposal did not meet NGR requirements APT Allgas was required to:

- include all discussion of the basis for tariffs required under r. 72 of the NGR
- include discussion of ancillary services and capital contributions in the cost allocation description
- demonstrate the relationship between costs and tariffs, including for ancillary services, and to address the treatment of capital contributions
- demonstrate that APT Allgas has had regard to economic efficiency and transaction costs in proposing the new basis for categorising volume and demand customers
- demonstrate that revenue is allocated between reference and other services in the ratio in which costs are allocated between reference and other services
- demonstrate that costs are allocated between reference and other services according to r. 93(2) of the NGR
- clarify the relationship between expected revenue and stand alone costs for demand customers

[6] APT Allgas, *Revised access arrangement submission*, March 2011, p. 78.
[7] APT Allgas, *Revised access arrangement submission*, March 2011, p. 78.
[8] APT Allgas, *Revised access arrangement proposal*, March 2011, Appendix B.
[9] APT Allgas, *Revised access arrangement submission*, March 2011, p. 83.

- include consideration of transaction costs and customer responses for ancillary services

- address how tariffs and charging parameters for demand tariffs take account of long run marginal costs

- exclude all references to MDQ as a basis for categorising customers as volume or demand customers.

The AER required amendments to rectify these issues. APT Allgas's revised proposal has satisfactorily addressed all these issues. However, the tariffs for 2011-12 still require revision from those proposed by APT Allgas, due to the AER's proposed revisions to revenues and demand set out in this decision.

No submissions were received on this matter.

10.3.1 Accepted changes

The AER accepts APT Allgas's revised proposal to include discussion on the basis of tariffs in its access arrangement information (this information was previously only in its access arrangement submission). The expanded discussion on reference ancillary services and capital contributions has also been accepted by the AER as being consistent with r. 72(1)(j)(i) of the NGR.

The AER accepts APT Allgas's additional discussion on the transaction costs and customer responses regarding the charging parameters for ancillary services under r. 94(4) of the NGR. The AER also accepts APT Allgas's additional discussion on how the charging parameters for demand tariffs take account of long run marginal costs under r. 94(4) of the NGR.

APT Allgas's revised proposal did not demonstrate that costs were allocated between reference and other services according to r.93(2) of the NGR as required by the AER draft decision. Based on confidential information presented by APT Allgas, the AER is satisfied that the cost allocation between reference and other services is consistent with r. 93(2) of the NGR. The AER wrote to APT Allgas seeking further detail on how revenues are allocated between reference and other services.[10] The only 'other service' offered by APT Allgas is a negotiated service. In response to the AER's inquiry, APT Allgas provided a confidential demonstration of the revenues and costs.[11] The AER was satisfied with this demonstration.

The AER has reviewed APT Allgas's calculations of the standalone costs for demand customers and accepts the tariffs are consistent with r. 72(1)(j)(i) and r. 94(3) of the NGR. The AER interpreted APT Allgas's original proposal in error.

The AER accepts APT Allgas's revised proposal to remove the requirement for volume customers to have an MDQ of less than 50 GJ as being consistent with r. 94(2) and r.94(4) of the NGR.

---

10 AER, E-mail to APT Allgas, *AER.APT.RP.08: Negotiated service*. 13 April 2011.

11 APT Allgas, E-mail to the AER, *FW:AER.APT.RP.08: Negotiated service*. 20 April 2011 (confidential).

10.3.2 Further revisions

The AER proposes to recalculate the tariffs for 2011-12 from those proposed by APT Allgas. These tariffs reflect the revisions to revenues and demand proposed by the AER as set out in this decision. The AER accepts the units of measure (for example, $/GJ) used by APT Allgas in its revised access arrangement for the various tariff components.

10.4 Conclusion

The AER considers that the tariffs proposed by APT Allgas meet many of the requirements of the NGR, including r. 48(1)(d)(i), r. 72(1)(j)(i), r.93(1), r.93(2), r. 94(1), r. 94(4), r. 96(2)(i) and r. 96(2)(b). However, the AER proposes that all reference tariffs require revision to reflect amendments to total revenue and demand set out in chapters 8 and 9.

10.5 Revisions

The AER proposes the following revisions:

Revision 10.1: the following tariff schedule 2011–12 should be reflected in the access arrangement:

Table 10.1: Volume Tariffs for 2011-12 - GST exclusive dollars

Network Charges		
Base Charge	($/day)	0.5539
Up to 1.7 GJ of gas delivered per day	($/GJ)	9.1118
Next 8.3 GJ of gas delivered per day	($/GJ)	6.6813
All gas delivered over 10 GJ per day	($/GJ)	4.7342

Table 10.2: Demand Tariffs for 2011-12 – Brisbane Region - GST exclusive dollars

Network Charges		**Zone 1**	**Zone 2**	**Zone 3**
		DZ01	**DZ02**	**DZ03**
Base Charge (MHQ)	($/GJ of MHQ/day)	$2.1645	$3.0795	$2.5713
MDQ of 50GJ or less	($/day)	$79.5100	$115.0850	$129.9150
Greater than 50GJ but not greater than 125 GJ of MDQ	($/day)	$79.5100 + $0.8818/GJ of MDQ for MDQ over 50	$115.0850 + $1.6392/GJ of MDQ for MDQ over 50	$129.9150 + $2.6341/GJ of MDQ for MDQ over 50
Greater than 125GJ but not greater than 275 GJ of MDQ	($/day)	$145.6450 + $0.6218/GJ of MDQ for MDQ over 125	$238.0250 + $1.3566/GJ of MDQ for MDQ over 125	$327.4725 + $1.9558/GJ of MDQ for MDQ over 125

Greater than 275GJ but not greater than 525 GJ of MDQ	($/day)	$238.9150 + $0.2713/GJ of MDQ for MDQ over 275	$441.5150 + $0.6331/GJ of MDQ for MDQ over 275	$620.8425 + $1.0740/GJ of MDQ for MDQ over 275
Greater than 525GJ of MDQ	($/day)	$306.7400 + $0.2374/GJ of MDQ for MDQ over 525	$599.7900 + $0.2487/GJ of MDQ for MDQ over 525	$889.3425 + $0.2939/GJ of MDQ for MDQ over 525

Table 10.3: Demand Tariffs for 2011-12 – South Coast Region -GST exclusive dollars

Network Charges		**Zone 4**	**Zone 5**	**Zone 6**
		DZ04	**DZ05**	**DZ06**
Base Charge (MHQ)	($/GJ of MHQ/day)	$1.9176	$3.8835	$3.8887
MDQ of 50GJ or less	($/day)	$159.7850	$159.7050	$167.4500
Greater than 50GJ but not greater than125 GJ of MDQ	($/day)	$159.7850 + $2.8941/GJ of MDQ for MDQ over 50	$159.7050 + $3.0524/GJ of MDQ for MDQ over 50	$167.4500 + $3.2219/GJ of MDQ for MDQ over 50
Greater than 125GJ but not greater than 275 GJ of MDQ	($/day)	$376.8425 + $2.4871/GJ of MDQ for MDQ over 125	$388.6350 + $2.6341/GJ of MDQ for MDQ over 125	$409.0925 + $2.7584/GJ of MDQ for MDQ over 125
Greater than 275GJ but not greater than 525 GJ of MDQ	($/day)	$749.9075 + $2.0914/GJ of MDQ for MDQ over 275	$783.7500 + $2.2610/GJ of MDQ for MDQ over 275	$822.8525 + $2.3627/GJ of MDQ for MDQ over 275
Greater than 525GJ of MDQ	($/day)	$1272.7575 + $1.8201/GJ of MDQ for MDQ over 525	$1349.0000 + $1.9671/GJ of MDQ for MDQ over 525	$1413.5275 + $2.0575/GJ of MDQ for MDQ over 525

Table 10.4: Demand Tariffs for 2011-12 – Toowoomba Region - GST exclusive dollars

Network Charges		**Zone 7**	**Zone 8**
(Exclusive of GST)		**DZ07**	**DZ08**
Base Charge (MHQ)	($/GJ of MHQ/day)	$2.1727	$3.9974
MDQ of 50GJ or less	($/day)	$61.5100	$79.7000
Greater than 50GJ but not greater than125 GJ of MDQ	($/day)	$61.5100 + $0.4070/GJ of MDQ for MDQ over 50	$79.7000 + $0.8592/GJ of MDQ for MDQ over 50
Greater than 125GJ but not greater than275 GJ of MDQ	($/day)	$92.0350 + $0.3278/GJ of MDQ for MDQ over 125	$144.1400 + $0.6670/GJ of MDQ for MDQ over 125
Greater than 275GJ but not greater than 525 GJ of MDQ	($/day)	$141.2050 + $0.2713/GJ of MDQ for MDQ over 275	$244.1900 + $0.4522/GJ of MDQ for MDQ over 275
Greater than 525GJ of MDQ	($/day)	$209.0300 + $0.2487/GJ of MDQ for MDQ over 525	$357.2400 + $0.26/GJ of MDQ for MDQ over 525

Table 10.5: Demand Tariffs for 2011-12 – Oakey Region - GST exclusive dollars

Network Charges		**Zone 9**	**Zone 10**
(Exclusive of GST)		**DZ09**	**DZ10**
Base Charge (MHQ)	($/GJ of MHQ/day)	$1.9801	$2.1140
MDQ of 50GJ or less	($/day)	$64.7900	$141.5500
Greater than 50GJ but not greater than 125 GJ of MDQ	($/day)	$64.7900 + $0.5200/GJ of MDQ for MDQ over 50	$141.5500 + $2.6567/GJ of MDQ for MDQ over 50
Greater than 125GJ but not greater than275 GJ of MDQ	($/day)	$103.7900 + $0.4296/GJ of MDQ for MDQ over 125	$340.8025 + $2.1366/GJ of MDQ for MDQ over 125

Greater than 275GJ but not greater than 525 GJ of MDQ	($/day)	$168.2300 + $0.3052/GJ of MDQ for MDQ over 275	$661.2925 + $1.3114/GJ of MDQ for MDQ over 275
Greater than 525GJ of MDQ	($/day)	$244.5300 + $0.2487/GJ of MDQ for MDQ over 525	$989.1425 + $0.5653/GJ of MDQ for MDQ over 525

Table 10.6: Reference Ancillary Services charges for 2011-12 - GST exclusive dollars

Reference Ancillary Service		**Charges**
Special Meter Read	($/each)	18.96
Inlet Disconnection	($/each)	52.07
Inlet Reconnection	($/each)	96.29

11 Tariff variation mechanism

An access arrangement is required to set out how tariffs may be varied during the access arrangement period. APT Allgas has proposed a tariff variation mechanism that allows tariffs to be adjusted by inflation and, where applicable, an X factor each year. In addition, APT Allgas has proposed a mechanism for adjusting tariffs in the event of an approved cost pass through.

The purpose of the tariff variation mechanism is, amongst other things, to permit the building block revenues to be recovered over the access arrangement period smoothly and to take account of actual inflation.

The AER approves the tariff variation mechanism proposed by APT Allgas as complying with r. 92(2) of the NGR. However, the X factors have been revised to reflect the changes to the forecast total revenue identified in other chapters of this decision.

APT Allgas has broadly accepted the cost pass through mechanism as specified in the draft decision, but has proposed a number of further revisions. The AER has accepted several of these proposed revisions, and a number of applicable revisions proposed by Envestra in its simultaneous access arrangement proposal, where the AER considers the revisions better promote the requirements of the NGR and NGL.

Certain requirements of the annual tariff approval process have been revised by the AER. The proposal for the coming tariff year must be lodged 50 business bays before the end of the current tariff year. The quantity data used in the variation formulas must be audited.

11.1 Regulatory requirements

Rule 72(1)(k) of the NGR requires that the access arrangement information for a full access arrangement proposal must include the service provider's rationale for any proposed reference tariff variation mechanism.

Rule 92(1) of the NGR requires that a full access arrangement must include a mechanism for variation of a reference tariff over the course of an access arrangement period. Rule 92(2) of the NGR provides that the reference tariff variation mechanism must be designed to equalise in present value terms forecast revenue from reference services over the access arrangement period and the portion of total revenue allocated to reference services for the access arrangement period.

Rule 97(1) of the NGR requires that a reference tariff variation mechanism may provide for variation of a reference tariff in accordance with a schedule of fixed tariffs; or in accordance with a formula set out in the access arrangement; or as a result of a cost pass through for a defined event; or a combination of 2 or more of these operations.

Rule 97(2) of the NGR provides that a formula for variation of a reference tariff may (for example) provide for variable caps on the revenue to be derived from a particular combination of reference services; or tariff basket price control; or revenue yield control; or a combination of all or any of these factors.

In deciding whether a particular reference tariff variation mechanism is appropriate to a particular access arrangement, the AER must have regard to the various factors in r. 97(3) of the NGR including the need for efficient tariff structures; and the possible effects of the reference tariff variation mechanism on administrative costs; and the regulatory arrangements (if any) applicable to the relevant reference services; and the desirability of consistency between regulatory arrangements for similar services; and any other relevant factor.

Rule 97(4) of the NGR requires that a reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff.

11.2 Revised access arrangement proposal

In its draft decision, the AER required various amendments regarding APT Allgas's propose approach to tariff variations. These amendments related to:

- The annual tariff variation mechanism
- The cost pass through mechanism
- The approval process for annual tariff variations

APT Allgas's responses to these matters follow.

11.2.1 Annual tariff variation mechanism

11.2.1.1 Revenue equalisation

APT Allgas revised the X factors in the tariff control and rebalancing formulas based on the various changes it had made to its revised proposal, consistent with r. 92(2) of the NGR.

11.2.1.2 Tariff control and rebalancing formulas

APT Allgas accepted the AER's draft decision that a weighted average price cap (WAPC) rather than a price path, be adopted for tariff variations during the access arrangement period. However, APT Allgas did raise an objection that the AER's discussion on this matter had not been couched in terms of r. 97 of the NGR.[1] APT Allgas also accepted the rebalancing formula in the AER's draft decision.[2]

Both the tariff control and rebalancing formulas were accepted by APT Allgas subject to minor errors in both formulas. APT Allgas identified that "i" and "j" had been misused in the definition of p_{t-1}^{ij} and q_{t-2}^{ij}. It also identified a typographical error, with an unnecessary additional parenthesis in both formulas.[3] The tariff control and rebalancing formulas are set out in APT Allgas's revised access arrangement.[4]

1 APT Allgas, *Response to the AER draft decision*, pp. 85-86.
2 APT Allgas, *Revised access arrangement*, pp.12-13.
3 APT Allgas, *Response to the AER draft decision*, p. 88.
4 APT Allgas, *Revised access arrangement*, pp. 11-13.

APT Allgas accepted the AER's draft decision to not include an adjustment factor (A factor) for under/over recoveries related to unaccounted for gas in the tariff variation mechanism, subject to the AER approving it revised forecast UAG costs. APT Allgas indicated that to provide certainty regarding UAG costs it has now entered a contract regarding the cost of gas for the length of access arrangement period. It states that these costs are now 'locked in' and should be included in the forecast operating costs.[5]

11.2.2 Cost pass through tariff mechanism

APT Allgas broadly accepted the AER's approach to cost pass throughs, and incorporated many of the AER's required revisions. [6] However, APT Allgas proposed further revisions to:

- definitions of specific cost pass through events:
    - regulatory change event – proposed to remove the words 'substantially affects the manner in which APT Allgas provides reference services (as the case requires)'
    - tax change event – proposed to include new definitions relating to 'Tax' and 'Authority' in the glossary
    - insurer credit risk event – proposed to remove the requirement that an insurer be a 'nominated' insurer
    - natural disaster event – proposed to replace the words 'regulatory control period' with the words 'access arrangement period', and to replace 'forecast operating expenditure' by 'approved revenue requirement'.
- the materiality threshold: event costs would be annualised for comparison against the smoothed forecast revenue.
- the procedure for cost pass through event variations: the AER would have discretion to extend the 90 day time frame in which APT Allgas would be required to notify the AER of cost pass through events occurring.
- the application of cost pass through tariff variations: that provisions should be included to allow for cost pass through tariff variations to be passed through mid-year, where the AER considers it is necessary.[7]

APT Allgas also proposed to include an additional 'carbon pricing event',[8] defined as 'an event which results in the imposition of legal obligation on APT Allgas or third party arising from the introduction or operation of a carbon emissions trading scheme imposed by the Commonwealth, a State or Territory or an Authority and result in APT Allgas incurring costs directly or indirectly (including under statute or contract) and includes:

5 APT Allgas, *Response to the AER draft decision*, pp. 86-87.
6 Envestra, *Revised Qld access arrangement proposal*, March 2011,
7 APT Allgas, *Response to the AER draft decision*, March 2011, pp. 91–100.
8 APT Allgas, *Response to the AER draft decision*, March 2011, p. 100.

(a) the cost of acquiring emissions allowances, permits or units (howsoever called);

(b) costs incurred in order to reduce liability for carbon emission associated with the production, transport or supply of gas, or otherwise in connection with APT Allgas's gas distribution business or the provision of reference services; and

(c) administrative and compliance costs associated with the introduction or operation of such a scheme, including reporting costs.

11.2.3 Annual tariff variation approval

APT Allgas proposed that it submit its annual tariff variation proposal 40 business days before 1 July each year. It rejected the AER's draft decision to require 50 business days notice before 1 July each year on the grounds that this submission date would allow only 4 days for it to prepare its proposal following the release of the March CPI.

APT Allgas proposed that the quantities used for the tariff control and rebalancing formulas only be audited in circumstances that APT Allgas proposes to change the relative weightings of the tariff components. In the AER's draft decision amendment 11.3(ii) required quantities to be audited annually. APT Allgas argues that this creates additional costs for customers. It also referred to the AER's framework paper for NSW and ACT DNSPs where the AER said it would require audited quantity data, but also indicated it would allow some flexibility to accept unaudited data where the AER was satisfied with the quality of the data.[9]

APT Allgas partially accepted the amendment in AER's draft decision for 'late' price approval. In such circumstances, APT Allgas agreed that tariffs should be indexed by the previous change in CPI on 1 July and the variation to be subsequently corrected for actual values once these are approved by the regulator. However, APT Allgas considered that the approach should also take into account the time value of money and therefore proposed that an adjustment for the time value of money form part of the correction.[10]

APT Allgas proposed to change the way an error was described in amendment 11.3 of the AER's Draft Decision. The revised paragraph proposed by ATP Allgas clarifies that an error must be a real error, rather than an 'apparent' error, and limits corrections to errors 'made in the access arrangement period'.[11]

11.3 AER's consideration

In its draft decision, the AER required various amendments regarding APT Allgas's propose approach to tariff variations. These amendments related to:

- the annual tariff variation mechanism

[9] APT Allgas, *Response to the AER draft decision*, pp. 87-88 and p.91.
[10] APT Allgas, *Response to the AER draft decision*, pp. 90-91.
[11] APT Allgas, *Response to the AER draft decision*, p. 91 and APT Allgas, *Revised Access Arrangement*, p. 14.

- the cost pass through mechanism
- the process for annual tariff variation approval

These matters are discussed below. No submissions were received on these matters.

11.3.1 Annual tariff variation mechanism

11.3.1.1 Revenue equalisation

The AER considers that APT Allgas's annual tariff variation mechanism does not comply with r. 92(2) of the NGR, as the X factors for reference services must be amended as set out in revision 11.1. The revised X factors reflect the changes to forecast total revenue in the access arrangement period which occurs as a result of changes to the building block components that make up total revenue.[12] Further, amendment in forecast revenue is required to reflect changes to forecast demand. The changes in total revenue are outlined in the total revenue chapter 8 and changes to forecast demand are outlined in the demand chapter 9 of this draft decision.

11.3.1.2 Tariff control and rebalancing formulas

APT Allgas accepted the AER's draft decision that the tariff control formula should be a based on a WAPC. The AER therefore affirms its draft decision in this matter. In response to APT Allgas's concerns regarding the legal basis from the AER's decision, the AER considered Rule 97 of the NGR in reaching its draft decision, although the discussion in its draft decision may not have been couched in these terms. To clarify, the AER considers that the use of a WAPC is consistent with the way tariff variations have occurred to date for APT Allgas. In particular, the annual tariff variation template that APT Allgas has completed for the last 5 years for the QCA and AER has included a WAPC formula. This formula is set out in the introductory sheet of the template and differs from the simple price path formula that was contained in the access arrangement document. In this regard, the AER considers that using a WAPC would represent at continuation of the tariff variation approach as previously applied, consistent with r.97(c) of the NGR. The AER was also mindful of the desirability of consistency between regulatory arrangements (r.97(d) of the NGR) which is reflected by the fact that the AER's draft decision presented the same WAPC and side constraint formulas for APT Allgas and Envestra.

APT Allgas accepted the AER's draft decision to not include an adjustment factor (A factor) for UAG. The AER therefore affirms its draft decision in this matter. As for other opex costs, the AER considers that a forecast of efficient UAG costs should be included in the opex allowance without any under/overs adjustment for actual cost outturns. The AER considers that APT Gas should be able to manage UAG costs in various ways. In its revised proposal, APT Allgas indicated that it had now chosen to contract for the cost of gas over the access arrangement period. The AER's assessment of the efficiency of the revised forecast UAG costs is presented in chapter 7. That assessment is separate from the AER's decision to reject APT Allgas's original proposal for an A factor.

[12] NGR, r.76.

Given that APT Allgas accepted the rebalancing formula in the draft decision and that the AER had previously assessed this formula to be consistent with the NGR, the AER also accepts this formula for rebalancing tariffs.

The AER accepts the tariff control and rebalancing formulas as contained in APT Allgas's revised access arrangement, including the minor corrections noted in APT Allgas's response to the draft decision.[13]

11.3.2 Cost pass through mechanism

The AER's considerations on APT Allgas's proposed revisions are set out as follows:

- specific cost pass through event definitions
  - regulatory change event
  - tax change event
  - insurer credit risk event
  - carbon pricing event
  - other event definition issues
- process for cost pass through event tariff variations
- application of cost pass through event tariff variations
- pass through of costs in the subsequent period
- materiality threshold.

11.3.2.1 Specific event definitions

Regulatory change event

The AER accepts APT Allgas's submission that the definition of a 'regulatory change event' should include the imposition of *new* regulatory obligations or requirements. However, the AER also considers:

- the definition should include the *removal* of regulatory obligations or requirements
- APT Allgas's revised proposal that the words following 'substantially' be deleted from the definition should be rejected, as the relevant cost impacts are only those that relate to the manner in which APT Allgas provides reference services

In relation to the first two points, the AER considers–

- a 'regulatory change event' should be interpreted broadly, so as to encompass the imposition of, removal of, or the change in, a regulatory obligation.

[13] APT Allgas, *Revised access arrangement*, pp. 11-13.

- there is no basis for distinguishing a change in regulatory obligation from a imposition of a new regulatory obligation, or from the removal of an existing regulatory obligation.

The AER also considers the regulatory change event should also be amended to eliminate any overlap between the regulatory change event, service standard event and tax change event. The regulatory change event, as defined in the AER's draft decision, did not include the specification that a regulatory change event is a change in regulatory obligation that falls within no other category of Cost pass through Event. The AER considers that a revision to this effect does not alter the nature of event that would qualify as a regulatory change event, but eliminates any potential overlap between events.

The AER's revised event definition is set out in amendment 11.2.

Tax change event

The AER accepts APT Allgas's revised proposal to incorporate two additional definitions – for a 'Tax' and an 'Authority'[14]. The AER considers that these definitions as appropriate, as they support and clarify the meaning of a 'tax change event'. The AER considers these revisions promote clarity and regulatory certainty, which are in the long term interests of users, prospective users and APT Allgas.

The AER's revised event definition is set out in amendment 11.2.

Insurer credit risk event

The AER accepts APT Allgas's revised proposal to delete the word 'nominated' before the word 'insurer'.

The original definition, as currently set out in the draft decision, does not specify any nomination process. The AER accepts that, in submitting a pass through application, APT Allgas would be required to demonstrate that the relevant insurer was an existing insurer of APT Allgas's. Therefore, subject to the materially threshold being met, an event in which any of APT Allgas's existing insurers becomes insolvent would qualify as an 'insurer credit risk event'. The AER has also revised the definition in response to Envestra's proposal to include an additional sub-clause, for circumstances where the insolvency of one of APT Allgas's insurers results in material self-funding costs to APT Allgas, where it would otherwise have been covered under an insurance policy.

The AER's revised event definition is set out in amendment 11.2.

Carbon pricing event

The AER does not accept APT Allgas's proposed carbon tax event,[15] and does not consider it necessary to establish a new cost pass through event specific to carbon tax.

The AER considers that the other defined cost pass through events–namely, the regulatory change event, service standard event and tax change event–are sufficiently

[14] APT Allgas, *Response to the AER's decision*, March 2011, p. 98
[15] APT Allgas, *Response to the AER's decision*, March 2011, p. 99.

comprehensive to capture most events relating to policy changes, including a proposed carbon tax regime. In addition, for an event to qualify as a cost pass through, the materiality threshold would still need to be met.

The AER cannot pre-qualify an event or confirm that it would be a cost pass through event. All cost pass through applications must be assessed based on the specifics of the event when it has occurred, and the AER cannot make such an assessment prior to these specifics being available. However, the AER considers it is appropriate to offer a preliminary and non-binding view based on its interpretation on the definitions of cost pass through events. In the circumstances of this access arrangement review, the AER considers that a carbon tax as proposed would, subject to the materiality threshold being satisfied, most likely qualify as a tax change event.

Other event definition issues

The AER has identified minor errors in the draft decision, and accepts APT Allgas's proposed revisions to correct these errors.[16] The words 'regulatory control period' should be substituted for 'access arrangement period' to reflect the appropriate gas terminology. Also, APT Allgas proposed that the words 'forecast operating expenditure' in the natural disaster event should be replaced with 'approved annual revenue requirement'.[17] The AER does not accept this revision, as there is no 'approved annual revenue requirement' under a weighted average price cap. The reference to forecast operating expenditure is appropriate, as this is where the self-insurance costs excluded by the clause would be allowed for in the final decision.

Regarding the regulatory change event, and service standard event, the AER considers:

- the word 'substantially' is a qualitative and undefined concept, and would therefore introduce uncertainty and ambiguity for the service providers and the network users; and increase administrative costs for the AER

- the deletion of the word is consistent with the AER's approach to defining specific cost pass through (or trigger) events – that is, having a clear set of events that could appropriately balance the distribution of risks between service providers and network users

- the deletion of the word is therefore consistent with the national gas objectives in the NGR and the revenue and pricing principles in the NGL.

For the reasons stated above, the AER accepts Envestra's revised proposal to delete the word 'substantially' from the definition of the 'regulatory change event', and similarly considers the word 'substantially' should be removed from the definition of the 'service standard event'.

The AER's revised event definitions are set out in revision 11.2.

16 APT Allgas, *Response to the AER's decision*, March 2011, p. 99.
17 APT Allgas, *Revised access arrangement submission*, March 2011, p. 99; APT Allgas, *Revised access arrangement proposal*, March 2011, p. 16.

However, the AER does not accept APT Allgas's revised proposal to remove the remainder of the clause following the word 'substantially', which relate to the manner in which reference service is provided. The AER considers that the business should only be compensated through the pass through mechanism for regulatory changes that directly relate to the provision of reference services. For an event to qualify as a 'regulatory change event', the AER considers that it must both:

- affect the manner in which the reference service is provided
- satisfy the materiality threshold.

11.3.2.2 Process for cost pass through event tariff variations

APT Allgas amended its process for cost pass throughs in its access arrangement as required in the AER's draft decision, but included a further revision. Specifically, APT Allgas provided for the AER to have discretion to increase the required time for notification of a cost pass through event occurring.[18]

The AER accepts APT Allgas's proposed revision in principle, but proposes to revise the process description further. Where the costs of a pass through event take longer than 90 days to calculate and verify, APT Allgas should not be limited from passing through such an event. Rather than introducing another AER assessment, the AER considers it is preferable that APT Allgas submit estimates of the costs to be incurred within the mandated timeframe. The AER will assess APT Allgas's proposed costs or estimates against the expenditure requirements under the NGR and NGL before approving any such pass through application.

The AER considers this revision increases the flexibility of the cost pass through mechanism, while ensuring the appropriate balance of risk sharing between APT Allgas and its users.

11.3.2.3 Application of cost pass through event tariff variations

APT Allgas revised its access arrangement proposal to include the AER's required amendments, but added a revision to permit mid-year cost pass through tariff variations where the AER considers it necessary.[19]

The AER does not accept the proposed revision, on the basis that mid year tariff variations create unnecessary administrative complexity and introduce inefficient price volatility for users and prospective users. Where a material pass through event occurs during a regulatory year, the AER considers APT Allgas has sufficient scope to defer other expenditure until the next regulatory year, in order to preserve the reliability of reference services in the interim.

The AER considers this amendment creates the appropriate balance of risk sharing, and therefore the long term interests of users, prospective users and APT Allgas.

---

18 APT Allgas, *Response to the AER's decision*, March 2011, p. 92.
19 APT Allgas, *Response to the AER's decision*, March 2011, p. 96.

11.3.2.4 Pass through of costs in the subsequent period

APT Allgas revised its access arrangement proposal to include provisions for the carryover of pass through amounts into the subsequent access arrangement period.[20]

The AER does not accept this proposed revision, as it is unnecessary and inconsistent with the overall goals of a cost pass through mechanism. The only events that would qualify under the proposed clause are those first occurring during the last year of the access arrangement period. The AER considers the purpose of a cost pass through mechanism is to allow for tariff variations associated with material unforseen events during an access arrangement period, where the service provider could otherwise not recover these costs until the subsequent period. APT Allgas's proposed amendment effectively substitutes the cost pass through application process for the full access arrangement review. Where the inclusion of event costs in tariffs would not take place until the subsequent access arrangement period, they should be assessed in the next access arrangement review. The AER considers this better promotes the long term interests of users, prospective users and APT Allgas than APT Allgas's proposed revision.

11.3.2.5 Materiality threshold

APT Allgas amended its access arrangement to include the AER's materiality threshold, but proposed a revision that materiality be determined relative to the annualised costs of a cost pass through event.[21]

The AER does not accept APT Allgas's proposed revision. The materiality threshold is set at one per cent of smoothed forecast revenue requirement, to ensure that costs are only passed through where they create a significant financial impact on APT Allgas. By annualising costs, a relatively small event that occurred over a short period of time may, when converted into an annual figure, exceed the materiality threshold. This is not consistent with the overall objective of the cost pass through mechanism. The defined materiality threshold is intended to set clear and transparent guidance for what the AER will accept as a material financial impact.

11.3.3 Annual tariff variation approval

The AER does not accept ATP Allgas's proposed deadline for submitting its annual tariff variation proposals. The updating for March CPI is a relatively straight forward matter. If a template like the one used during the earlier access arrangement period were used, the updating of figures should be a straight forward process. The change in CPI also affects all tariffs in a symmetrical fashion, so this should not affect the relatively of any rebalancing of the tariffs. Should the publication of the March CPI be delayed, this could be updated during the assessment period. For the reasons outlined in the draft decision, the AER considers that 50 business days notice is necessary to conduct its own assessment and still provide customers (retailers) with reasonable notice of the tariff variations.[22] Accordingly, the AER rejects APT Allgas's revised proposal on this matter and requires the annual tariff variation to be submitted 50 business days before 1 July each year.

---

20 APT Allgas, *Response to the AER's decision*, March 2011, p. 96–97.
21 APT Allgas, *Response to the AER's decision*, March 2011, p. 100.
22 AER, *Draft Decision*, p. 135.

APT Allgas's proposal that quantities only be audited where it proposes to change the relative weightings of the tariff components is not workable. Weightings will necessarily change each year as consumption changes. This is why quantities are used as weights in the WAPC. The quantity data to be used in the control formulas are also based on lagged data for two years. It would be unworkable for data to be audited two years after the fact. The objectivity of the weightings is an important feature of a price cap form of control as opposed to a revenue cap. The AER considers that APT Allgas should conduct an audit of the quantity data used to support its pricing proposals. A moderate (negative) assurance audit is required from APT Allgas. [23] The level of audit assurance reflects on one hand the costs and time involved in such audits and the need for robust data on the other. However, the AER reserves the right to require a reasonable (positive) audit assurance of the quantity data in the future.

The AER accepts APT Allgas's revised proposal that the time value of money be accounted for in the adjustment mechanism used when the annual price approval is delayed beyond 1 July. The AER does not expect the provision to roll tariffs over from one year to the next in the case of a late decision ever to be used. Even if it were to occur, it is unlikely that the delay between the start of the tariff year and the subsequent approval is likely to be small. Consequently, the adjustment in terms of the time value of money is also likely to be small. Nonetheless, the AER agrees that as a matter of principle, the time value of money should be accounted for in such circumstances and therefore accepts APT Allgas revised proposal on this matter.

The AER accepts the proposed changes by APT Allgas to how an error is described in its access arrangement. The AER agrees that an error must be investigated and found to be real before it can be corrected. It also agrees that corrections for past errors in annual tariff variations should be limited to those variations made in the access arrangement period.

11.4 Conclusion

The AER did not accept the revised tariff variation mechanism proposed by APT Allgas as it does not comply with r. 92(2) of the NGR in terms of the value of the X factors.

The AER's conclusions on specified cost pass through events are set out in table 11.1, and its conclusion on other issues regarding the cost pass through variation mechanism are set out in table 11.2. Where the AER has accepted a revision from either business, it has incorporated the revision into its decisions for both APT Allgas and Envestra. The AER considers these revisions result in a cost pass through mechanism that promotes the long term interests of users, prospective users, and APT Allgas.

[23] ASAE 3000 is the relevant audit standard.

Table 11.1 Defined Cost pass through Events – Revised proposals and AER's conclusions

Cost pass through Events	Revision proposed by	Revision proposed	AER's conclusion
Regulatory change event	Envestra	Delete the word 'substantially'	Accepts Envestra's proposed revision
Regulatory change event	APT Allgas	Delete the words 'substantially affects the manner in which APT Allgas provides reference services (as the case requires)'.	Rejects APT Allgas's proposed revision, but accepts the deletion of the word 'substantially'.
Service standard event	Envestra	Delete the word 'substantially'	Accepts Envestra's proposed revision
Tax change event	APT Allgas	Include new definitions relating to 'Tax' and 'Authority' in the glossary	Accepts APT Allgas's revised proposal.
Network user failure event	Envestra	Add the words 'becomes insolvent or' after the words 'whereby an existing network user'.	Rejects Envestra's proposed revision
Insurer Credit Risk Event	APT Allgas	Delete the word 'nominated'	Accepts APT Allgas's new definition
Insurance cap event	Envestra	Delete the words: 'this event excludes all costs incurred beyond an insurance cap that are due to Envestra's negligence, fault, or lack of care'.	Rejects Envestra's proposed revision
Natural disaster event	APT Allgas	Substitute 'regulatory control period' for 'access arrangement period', and substitute 'forecast operating expenditure' for 'approved revenue requirement'	Accepts 'access arrangement period' revision, but rejects 'approved revenue requirement' revision.
Insurer insolvency event (new cost pass through event)	Envestra	Add an 'insurer insolvency event' by inserting : "An 'insurer insolvency event' means the insolvency of an insurer resulting in material losses to Envestra as a result of unsatisfied claims."	Accepts Envestra's revised proposal in principle. However, this new event is added by revising the 'insurer credit risk event'. Revision requires adding the following text at the end: "(c) incurs additional costs associated with self funding an insurance claim, which, would have otherwise been covered by the insolvent insurer."
Carbon pricing event (new cost pass through event)	APT Allgas	Proposed a new event to capture costs arising from the proposed carbon tax.	Rejects APT Allgas's proposed revision

Table 11.2 Other cost pass through issues – Revised proposals and AER's conclusions

Other matters	Revision proposed by	Revision proposed	AER's conclusion
Materiality threshold	Envestra	Add the word 'first' in front of the last word 'incurred'	Rejects Envestra's proposed revision
Materiality threshold	APT Allgas	Add the word 'annualised' in front of 'impact'	Rejects APT Allgas's proposed revision
Process for cost pass through applications	APT Allgas	Gave the AER discretion to extend the time required for notification of an event.	Accepts APT Allgas's proposal inc principle, but required an alternative revision (as proposed by Envestra).
Process for cost pass through applications	Envestra	Proposed to notify the AER of pass through costs when they are known or can be estimated.	Accepts Envestra's proposed revision.
Application of cost pass through event variations	APT Allgas	Proposed that the AER should have discretion to allow mid-period tariff changes where the AER considers APT Allgas's financial viability is at risk.	Rejects APT Allgas's proposed revision.
Pass through of costs in the subsequent period	APT Allgas	Proposed that qualifying pass through event costs incurred in the last year of the regulatory period should be passed through in the next access arrangement period.	Rejects APT Allgas's proposed revision.

The AER did not accept the revised submission date for the annual price approval process. The AER considers that the annual pricing proposal should be submitted by APT Allgas 50 business days before the end of each tariff year.

The AER did not accept APT Allgas's proposal regarding the annual auditing requirements. The AER considers that the quantity data used in the annual tariff approval process should be subject to a negative assurance audit each year.

11.5 Revisions

The AER proposes the following revisions:

Revision 11.1: revise the access arrangement to include the following X factors in the tariff control and rebalancing formulas.

X_t is -0.05 for 2012–13
X_t is -0.05 for 2013–14
X_t is -0.04 for 2014–15
X_t is -0.03 for 2015–16

Revision 11.2: revise the access arrangement to amend section 4.5.3 as follows:

Subject to the approval of the Regulator under the NGR, Reference Tariffs may be varied after one or more Cost pass through Event/s occurs, in which each individual event materially increases or materially decreases the cost of providing the reference services. Any such variation will take effect from the next 1 July.

In making its decision on whether to approve the proposed Cost pass through Event variation, the AER must take into account the following:

- the costs to be passed through are for the delivery of pipeline services
- the costs are incremental to costs already allowed for in reference tariffs
- the total costs to be passed through are building block components of total revenue
- the costs to be passed through meet the relevant National Gas Rules criteria for determining the building block for total revenue in determining reference services
- any other factors the AER considers relevant and consistent with the NGR and NGL.

Cost pass through Events are:

- a regulatory change event;
- a service standard event;
- a tax change event;
- a terrorism event;
- a network user failure event;
- an insurer credit risk event;
- an insurance cap event;

- a natural disaster event;

Where

Regulatory change event—means:

An imposition of, a change in, or the removal of a regulatory obligation or requirement that:

(a) falls within no other category of Cost pass through Event; and

(b) occurs during the course of the access arrangement period; and

(c) affects the manner in which APT Allgas provides reference services (as the case requires); and

(d) materially increases or materially decreases the costs of providing those services.

Service standard event—means:

A legislative or administrative act or decision that:

(a) has the effect of:

(i) varying, during the course of the access arrangement period, the manner in which APT Allgas is required to provide a reference service; or

(ii) imposing, removing or varying, during the course of an access arrangement period, minimum service standards applicable to prescribed reference services; or

(iii) altering, during the course of an access arrangement period, the nature or scope of the prescribed reference services, provided by APT Allgas; and

(b) materially increases or materially decreases the costs to APT Allgas of providing prescribed reference services.

Tax change event—means:

A tax change event occurs if any of the following occurs during the course of the access arrangement period for APT Allgas:

(a) a change in a relevant tax, in the application or official interpretation of a relevant tax, in the rate of a relevant tax, or in the way a relevant tax is calculated;

(b) the removal of a relevant tax;

(c) the imposition of a relevant tax; and

In consequence, the costs to APT Allgas of providing prescribed reference services are materially increased or decreased.

Terrorism event—means:

An act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of in connection with any organisation or government), which from its nature or context is done for, or in connection with, political, religious, ideological, ethnic or similar purposes or reasons (including the intention to influence or intimidate any government

and/or put the public, or any section of the public, in fear) and which materially increases the costs to APT Allgas of providing a reference service.

Network user failure event —means:

A network user failure event means the occurrence of an event whereby an existing network user is unable to continue to supply gas to its customers, and those customers are transferred to another network user, and which materially increases the costs of APT Allgas providing reference services.

Insurer credit risk event—means:

An event where the insolvency of the insurers of APT Allgas occurs, as a result of which APT Allgas:

(a) incurs materially higher or lower costs for insurance premiums than those allowed for in the access arrangement; or

(b) in respect of a claim for a risk that would have been insured by APT Allgas's insurers, is subject to a materially higher or lower claim limit or a materially higher or lower deductible than would have applied under that policy; or

(c) incurs additional costs associated with self funding an insurance claim, which, would have otherwise been covered by the insolvent insurer.

Insurance cap event—means:

An event that would be covered by an insurance policy but for the amount that materially exceeds the policy limit, and as a result APT Allgas must bear the amount of that excess loss. For the purposes of this Cost pass through Event, the relevant policy limit is the greater of the actual limit from time to time and the limit under APT Allgas's insurance cover at the time of making this access arrangement. This event excludes all costs incurred beyond an insurance cap that are due to APT Allgas's negligence, fault, or lack of care. This also excludes all liability arising from the APT Allgas's unlawful conduct, and excludes all liability and damages arising from actions or conduct expected or intended by APT Allgas.

Natural disaster event—means:

Any major fire, flood, earthquake, or other natural disaster beyond the control of APT Allgas (but excluding those events for which external insurance or self insurance has been included within APT Allgas's forecast operating expenditure that occurs during the access arrangement period and materially increases the costs to APT Allgas of providing reference services.

Materiality threshold is defined as:

For the purpose of any defined Cost pass through Event, an event is considered to materially increase or decrease costs where that event has an impact of one per cent of the smoothed forecast revenue specified in the access arrangement information, in the years of the access arrangement period that the costs are incurred.

Revision 11.3: revise the access arrangement to amend section 4.5.4 as follows:

APT Allgas will notify the AER of a Cost pass through event within 90 business days of the Cost pass through event occurring, whether the Cost pass through event would lead to an increase or decrease in Reference Tariffs.

When the costs of the pass through event incurred are known (or able to be estimated to a reasonable extent), then those costs shall be notified to the AER. When making such notification to the AER, APT Allgas will provide the AER with a statement, signed by an authorised officer of APT Allgas, verifying that the costs of any pass through events are net of any payments made by an insurer or third party which partially or wholly offsets the financial impact of that event (including self insurance).

The AER must notify APT Allgas of its decision to approve or reject the proposed variations within 90 Business Days of receiving the notification. This period will be extended for the time taken by the AER to obtain information from APT Allgas, obtain expert advice or consult about the notification.

The AER will endeavour to make its decision on whether APT Allgas should vary Reference Tariffs due to the occurrence of a Cost pass through event within 90 business days of receiving a notification from APT Allgas.

However, if the AER determines the difficulty of assessing or quantifying the effect of the relevant Cost pass through event requires further consideration, the AER may require an extension of a specified duration. The AER will notify APT Allgas of the extension, and its duration, within 90 business days of receiving a notification from APT Allgas.

Revision 11.3: revise the access arrangement to include a requirement that the annual tariff variation proposal be submitted by APT Allgas 50 business days before the end of each tariff year.

Revision 11.4: revise the access arrangement to include a requirement that the historical quantities used in the annual tariff variation approval process be subject to an audit each year.

Part C – Other provisions of an access arrangement

12 Non-tariff components

APT Allgas's access arrangement sets out proposed terms and conditions that are not directly related to the nature or level of tariffs paid by users, but which are important to the relationship between the network service provider and users.

In its draft decision, the AER accepted some of the terms and conditions but required amendments in most of them. In response to the draft decision, APT Allgas has:

- *accepted most of the AER's amendments*
- *partly accepted some with proposed modifications to the wording of the relevant clauses*
- *not accepted other amendments and proposed revisions to the AER.*

The AER accepts most of APT Allgas's proposed modifications to the wording of clauses as they do not affect the substance of the clauses. However, the AER proposes not to approve some of APT Allgas's revised terms and conditions. The AER considers that amended provisions for these terms and conditions better promote the national gas objective in s. 23 of the NGL. The AER considers that the national gas objective requires the AER to balance the interests of the service provider and users.

In its draft decision, the AER accepted APT Allgas's proposals in relation to queuing requirements and the revision commencement date but required amendments to the capacity trading requirements, extensions and expansions policy, review submission date and the lack of a trigger event for the acceleration of the submission date.

In response to the draft decision, APT Allgas revised its capacity trading requirements and review submission date but did not accept other amendments to the non-tariff components. The AER accepts APT Allgas's revised capacity trading requirements, review submission date and removal of the trigger events for the acceleration of the review submission date. However, the AER does not propose to approve part of APT Allgas's extensions and expansions policy as APT Allgas has not justified a move away from the draft decision.

12.1 Terms and conditions

12.1.1 Regulatory requirements

Rules 48(1)(d)(i) and 48(1)(d)(ii) of the NGR require a full access arrangement to specify the reference tariff and other terms and conditions on which reference services will be provided.

There are no specific rules in the NGR that guide the AER's assessment of proposed non-tariff terms and conditions. However, in considering APT Allgas's proposed terms and conditions the AER has had regard to rule 100 of the NGR.

Rule 100 of the NGR requires that an access arrangement be consistent with the national gas objective and the rules and procedures in force when the terms and conditions of the access arrangement proposal are determined or revised. The national gas objective is to promote efficient investment in, and efficient operation and use of,

natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.[1]

The AER has full discretion in assessing APT Allgas's proposed terms and conditions. Full discretion means that the AER has discretion to withhold its approval to an element of an access arrangement proposal if, in the AER's opinion, a preferable alternative exists that:

- complies with applicable requirements of the NGL and NGR
- is consistent with applicable criteria (if any) prescribed by the NGL and NGR. [2]

12.1.2 Revised access arrangement proposal

In the draft decision, the AER proposed 22 amendments which APT Allgas was required to incorporate in the proposed terms and conditions before its access arrangement can be approved. APT Allgas accepted most of the AER's required amendments and revised its access arrangement proposal accordingly. However, APT Allgas has only partly accepted some of the amendments and proposed modifications to the wording of the relevant clauses, and not accepted other amendments. Table 12.1 summarises APT Allgas's response to the AER's draft decision on terms and conditions:[3]

Table 12.1 APT Allgas's response to the AER's draft decision required amendments

APT Allgas's response	AER's draft decision amendments
Accepted	12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.8, 12.12, 12.13, 12.14, 12.16, 12.17, 12.18, 12.19, 12.20, 12.21, 12.22 (total 17)
Partly accepted and proposed modifications in the wording	12.7, 12.11, 12.15 (total 3)
Not accepted and requested revisions	12.9, 12.10 (total 2)

Source: APT Allgas, *Revised access arrangement proposal - terms and conditions*, March 2011.

The reasons for APT Allgas partly accepting or not accepting the amendments listed above are set out in terms and conditions section 12 of its revised access arrangement submission.[4]

12.1.3 AER's consideration

The AER's assessment of APT Allgas's proposed terms and conditions and issues raised in response to the AER's draft decision is set out in detail in appendix D and summarised in the table below. Appendix D covers only those amendments which APT Allgas either did not accept or only partly accepted (for example, by proposing changes to the wording of the relevant clauses).

1 NGL, s. 23.
2 NGR, r. 40(3).
3 APT Allgas, *Revised access arrangement proposal - terms and conditions*, March 2011, pp. 3–38; APT Allgas, *Revised access arrangement submission*, March 2011, pp. 101–116.
4 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 101–116.

In assessing APT Allgas's revised terms and conditions the AER has had regard to the national gas objective. The AER considers that in order to achieve the national gas objective the interests of both consumers and gas pipeline service providers need to be taken into account. In making the final decision, the AER has reviewed APT Allgas's revised access arrangement proposal including the revised terms and conditions.

Table 12.2 shows a summary of the AER's required amendments to the terms and conditions which APT Allgas did not accept or has accepted in part but proposed modifications to the wording of clauses along with the AER's assessment and proposed revisions.

Table 12.2 Summary of the terms and conditions partly accepted with proposed amendments or not accepted by APT Allgas and the AER's assessment

Matter	AER draft decision amendment	APT Allgas T&C clauses	APT Allgas response/ proposed modifications/ revisions	AER's consideration/ proposed revision
Delivery point pressures– Failure to comply	12.7	Clause 5.2.2	Accepted in part and submitted that its negligence is only relevant in circumstances where it may have some control, such as in clause 5.2.2(a). For this reason, the AER proposed amendment has been limited to apply to clause 5.2.2(a) only.	AER draft decision required an amendment to clarify that APT Allgas is not relieved of its obligations if the failure to deliver gas within the range of pressures is due to its negligence. APT Allgas has amended clause 5.2.2(a) and submitted that events set out in clauses 5.2.2(b) and 5.2.2(c) are wholly outside the control of APT Allgas and APT Allgas's acts or omissions are irrelevant. In view of APT Allgas's explanations, the AER accepts proposed modification.
Cost pass through	12.9 and 12.10	Clause 9.1 and 9.2	Not accepted and submitted that the T&C apply to all pipeline services, not just reference services. APT Allgas has revised Part 9 of the T&C to clarify that reference tariffs will be varied in accordance with the tariff variation mechanism.	AER accepts revised clause 9.1 pertaining to variation of reference tariffs. Clause 9.2 pertains to variation of charges for non-reference services. The NGR and NGL do not provide specific guidelines for variation of non-reference tariffs. The AER considers that it is open for APT Allgas to negotiate charges for non-reference services with the users directly.
Information and assistance	12.11	Clause 10	Accepted in part and proposed modifications to the wording.	AER accepts APT Allgas's proposed modifications. The AER considers that it is reasonable for each party to charge a fee to cover costs reasonably incurred in connection with provision of the information on reciprocal basis. No revision is required.
Warranties, indemnities and limitation of liability	12.15	Clause 14.3	Accepted in part and proposed modifications to the wording.[5]	AER accepts APT Allgas's proposed modifications and considers that it is appropriate for the liability cap to be reciprocal and any claim by APT Allgas against a user should also be limited. APT Allgas is required to amend clause 14.3 as set out in the proposed revision 12.1.

Source: APT Allgas, *Revised access arrangement proposal- terms and conditions*, March 2011, and AER assessment.

[5] APT Allgas, Email to the AER, *AER.APT.RP.12*, 19 May 2011.

12.1.4 Conclusion

The AER accepts the modifications to the wording of clause 10 proposed by APT Allgas as they do not affect the substance of the clauses proposed by the AER. The AER does not accept certain revisions proposed by APT Allgas as shown in table 12.2. The AER considers that consistent with the national gas objective, revisions are required to balance appropriately the interests of APT Allgas and users.

12.1.5 Revisions

The AER proposes the following revision:

Revision 12.1: amend the terms and conditions (appendix C) of the revised access arrangement proposal by deleting clause 14.3 and replacing it with the following:

'Notwithstanding any other provision of this Access Agreement, any claim or claims by one party against the other party arising out of or in connection with this Access Agreement shall except for the matters noted in paragraphs (a) to (c) be limited to $100 000 in total in any one calendar Year during the Term:

a) obligations to pay money in respect of services provided under or in connection with the Access Arrangement

b) the User's obligation to provide gas to the specification, pressure and quality required under the Access Arrangement; and

c) the indemnity set out in clause 14.5 of these terms and conditions.'

12.2 Capacity trading requirements

12.2.1 Regulatory requirements

Under r. 48(1)(f) of the NGR, capacity trading requirements are to be included in a full access arrangement. Rule 105(1) of the NGR requires that capacity trading requirements must provide for capacity transfers in accordance with the rules or procedures of the relevant gas market, if the service provider is registered as a participant in a particular gas market. If the service provider is not registered, or the rules or procedures do not address capacity trading, then capacity trading requirements must comply with r. 105 of the NGR.

Rules 105(3) and 105(2) of the NGR concern the transfer of capacity trading requirements with and without the service provider's consent. Capacity trading requirements may specify conditions under which consent will or will not be given, and the conditions to be complied with if consent is given. A service provider is precluded from withholding its consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so. [6]

The terms and conditions for changing receipt and delivery points are to be included in a full access arrangement. [7] Rule 106 of the NGR requires that an access arrangement must provide for the change of a receipt or delivery point with the service provider's consent. The service provider is precluded from withholding its

6 NGR, r. 105(4).
7 NGR, r. 48.

consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so. The access arrangement may specify conditions under which consent will or will not be given and conditions to be complied with if consent is given. [8]

12.2.2 Revised access arrangement proposal

Amendment 12.23 of the draft decision required APT Allgas to amend capacity trading section 5 of the access arrangement proposal to include an appropriate example. The AER considered that amended requirements could better promote the national gas objective in s. 23 of the NGL and better adhere to the pipeline coverage criteria in s. 15 of the NGL.

APT Allgas has incorporated amendment 12.23 of the draft decision in clause 5.3 and 5.4 of the revised access arrangement proposal.[9]

12.2.3 AER's consideration

The AER approves clauses 5.3 and 5.4 of the revised access arrangement proposal.

12.3 Extensions and expansions policy

12.3.1 Regulatory requirements

Under r. 48 of the NGR, extension and expansion requirements are to be included in a full access arrangement. [10] Rule 104(1) of the NGR requires that extension and expansion requirements may state whether the applicable access arrangement will apply to incremental services provided as a result of a particular extension or expansion or outline how this may be dealt with at a later time. If the requirements provide that an access arrangement applies to incremental services, r. 104(2) of the NGR states that the requirements must deal with the effect of the extension or expansion on tariffs.

12.3.2 Revised access arrangement proposal

The AER's draft decision did not accept APT Allgas's extensions and expansions policy and required the following amendments:[11]

- if APT Allgas proposes a high pressure pipeline extension of the covered pipeline, it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and will be covered by this access arrangement[12]

- any extensions to and expansions of the capacity of the Network which are not high pressure pipeline extensions will be treated as part of the Network and covered by this access arrangement. Not later than 20 Business Days following the expiration of its financial year, APT Allgas must notify the AER of all extensions

8 NGR, r. 106.
9 APT Allgas, *Revised access arrangement proposal*, March 2011, p. 20.
10 NGR, r. 48(1)(g).
11 Amendments 12.24–12.26 of the draft decision are summarized here. For complete amendments see: AER, *Draft decision*, February 2011, pp.167–168.
12 AER, *Draft decision*, February 2011, amendment 12.24, pp.167–168.

of low or medium pressure pipelines and expansions of the capacity and set out why this was necessary.[13]

- APT Allgas will notify the AER to seek approval of any proposed surcharge to be levied on users of incremental services, and designed to recover non-conforming capital expenditure subject to rule 84(4) of the NGR.[14]

APT Allgas has partly accepted the amendment relating to medium and low pressure extensions and expansions with some modifications to the wording of clause 6.1 (amendment 12.25).[15] It has also partly accepted the amendment relating to notifying the AER to seek approval of any proposed surcharge to be levied on users of incremental services (amendment 12.26). APT Allgas has submitted that Part 3 of the revised access arrangement is the most appropriate place to situate the clause regarding surcharges as the application of surcharges is not necessarily limited to extensions or expansions of the network.[16]

APT Allgas did not accept the amendment relating to the imposition of new and extensive reporting requirements (second part of amendment 12.25) and submitted that it is currently providing information including length of mains and new extensions to other government departments. The AER reporting requirement will be imposing a cost for no clear benefit.

APT Allgas also did not accept the amendment relating to high pressure extensions (amendment12.24) and submitted:

- within the framework of the NGL and the Australian Energy Market Agreement, matters relating to coverage of natural monopoly infrastructure rests squarely with the National Competition Council (NCC). It is therefore beyond the powers of the AER to place itself in the position of deciding whether an asset should be covered or not

- the access arrangement should apply, and therefore coverage should be extended to, the 'business as usual' organic growth of the gas distribution network. A key underlying assumption to this view is that the organic extensions and expansions are incremental to the existing network

- medium and low pressure extensions or expansions should be part of the covered pipeline for both access arrangement and coverage purposes

- high pressure extensions and expansions are not necessarily 'business as usual' activities. It is possible for some high pressure extensions to be significant relative to the rest of the network. APT Allgas agrees with the AER that it also does not consider that all high pressure extensions should be covered by default.

13 AER, *Draft decision*, February 2011, amendment 12.25, pp.167–168.
14 AER, *Draft decision*, February 2011, amendment 12.26, p.168.
15 APT Allgas, *Revised access arrangement proposal*, March 2011, p. 22; APT Allgas, *Revised access arrangement submission*, March 2011, pp. 106–112. Note: Clause 6.1 was previously clause 6.2 as per APT Allgas, *Access arrangement proposal,* September 2010, 18.
16 APT Allgas, *Revised access arrangement submission,* March 2011, pp. 106–112.

12.3.3 AER's consideration

The AER accepts amended clause 6.1 of the revised access arrangement proposal relating to medium and low pressure extensions and expansions.[17] The AER considers that modifications proposed by APT Allgas to the wording of clause 6.1 do not affect the substance of the clause.

The AER also accepts amended clause 6.3 of the revised access arrangement proposal and APT Allgas's proposal to situate the clause regarding surcharges in Part 3 of the revised access arrangement proposal as application of these surcharges is not necessarily limited to extensions or expansions of the network.

The AER's consideration of issues raised by APT Allgas in not accepting the AER's required amendments relating to high pressure extensions, other expansions and extensions and reporting requirements are discussed below:

12.3.3.1 Reporting requirements

The AER has considered APT Allgas's submission that reporting requirements proposed by the AER will be imposing a cost for no clear benefit. The AER has reconsidered its position and is satisfied that the draft decision amendment relating to the reporting requirements is not necessary because:

- APT Allgas is required to give the Australian Energy Market Commission (AEMC) a revised description of the pipeline when this is affected by an extension or capacity expansion.[18] The AER can seek to obtain this information from the AEMC. A Memorandum of Understanding between the two parties addressees information sharing.[19] This avoids any additional regulatory burden on APT Allgas

- to the extent necessary, the AER may also seek to exercise its information gathering powers under the NGL to specifically request APT Allgas to keep, maintain and provide necessary information.[20]

12.3.3.2 High pressure extensions

The AER does not accept revised clause 6.2 relating to the extension of the high pressure network for the following reasons:

- the AER does not agree with APT Allgas that it is beyond powers of the AER to decide whether an asset should be covered or not. Under r. 40(3) of the NGR, the AER has full discretion to impose preferable extension and expansion requirements in an access arrangement review where they also comply with applicable requirements and criteria under the NGL and the NGR. The AER

17 APT Allgas, *Revised access arrangement proposal*, March 2011, p. 22.
18 NGR, r. 134.
19 AER, AEMC and ACCC, Memorandum of Understanding between Australian Energy Market Commission and Australian Energy Regulator and Australian Competition and Consumer Commission, 2 July 2009, viewed 7 April 2011, <http://intranet.accc.gov.au/content/index.phtml/itemId/680478>.
20 NEL, s. 48(1).

considers that an amended version of APT Allgas's access arrangement proposal would better promote the national gas objective.[21]

- the AER does agree with APT Allgas that an access arrangement should apply and coverage should be extended to the 'business as usual' organic growth of the gas distribution network for all expansions and extensions as it may include high pressure extensions. The AER partly agrees with APT Allgas's proposal that medium and low pressure extensions or expansion should be part of the covered pipeline for both access arrangement and coverage purposes as it may not be applicable to all extensions

- consistent with its previous decisions the AER considers that unlike extensions, all expansions to the pipeline should be covered by default. Pipeline expansions involve the augmentation of pipeline capacity of the existing pipeline, and are likely to be used by the existing pipeline users.[22] Relative to pipeline extensions, they are much less likely to serve a new or isolated customer as a bypass option. As such, it is appropriate that all pipeline expansions form part of the covered pipeline and that the pipeline services offered with these expansions be covered under the access arrangement

- the AER agrees with APT Allgas that high pressure extensions and expansions are not necessarily 'business as usual' activities. APT Allgas has also agreed with the AER that it does not consider that all high pressure extensions should be covered by default.

12.3.4 Conclusion

The AER accepts APT Allgas's revised access arrangement proposal relating to medium and low pressure extensions (clause 6.1) and treatment of covered pipelines (clause 6.3). The AER also accepts APT Allgas's submission on the reporting requirements and does not seek to impose the draft decision amendment related to the reporting requirements.

However, the AER does not accept amended clause 6.2 relating to extensions of the high pressure network. The AER considers that an amended policy would better promote the national gas objective in s. 23 of the NGL.

12.3.5 Revisions

The AER proposes the following revision:

Revision 12.2: amend section 6.2 of the revised access arrangement proposal as follows:

21 NGL, s. 23.

22 For example: AER, *N.T. Gas Draft decision*, April 2011, pp.183–184; AER, *Envestra SA draft decision*, February 2011, p. 246; AER, *Envestra Qld draft decision*, February 2011, p. 227; AER, *Jemena Gas Network draft decision*, February 2010, pp. 348–350; AER, *ActewAGL draft decision*, November 2009, pp. 185–186; AER, *Country Energy draft decision*, November 2009, pp. 140–141.

If APT Allgas proposes a high pressure pipeline extension of the covered pipeline, it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and will be covered by this access arrangement.

For the purposes of this section 6, a high pressure pipeline extension means a pipeline that exceeds one kilometre in length and is proposed to be built to a postcode area previously not serviced by reticulated gas.

A notification given by APT Allgas under this clause 6.2 must:

a) be in writing

b) state whether APT Allgas intends for the proposed high pressure pipeline extension to be covered by this Access Arrangement

c) describe the proposed high pressure pipeline extension and describe why the proposed extension is being undertaken and

d) be given to the AER before the proposed high pressure pipeline extension comes into service.

APT Allgas is not required to notify the AER under this clause 6.2 to the extent that the cost of the proposed high pressure pipeline extension has already been included and approved by the AER in the calculation of Reference Tariffs.

After considering APT Allgas's application, and undertaking such consultation as the AER considers appropriate, the AER will inform APT Allgas of its decision on APT Allgas's proposed coverage approach for the high pressure pipeline extension.

The AER's decision referred to above, may be made on such reasonable conditions as determined by the AER and will have the effect stated in the decision.

12.4 Review dates

12.4.1 Regulatory requirements

Rule 49(1) of the NGR requires that a full access arrangement that is not voluntary must contain a review submission date and a revision commencement date and must not contain an expiry date.

In general, a review submission date will fall four years after the current access arrangement took effect or the last revision commencement date, and a new revision commencement date will fall one year later. [23] The AER is required to accept a service provider's proposed review submission and commencement dates if these are made in accordance with the general rule set out in r. 50 of the NGR. It may also approve dates that do not conform to the general rule if it is satisfied that the dates are consistent with the national gas objective and the revenue and pricing principles. [24]

[23] NGR, r. 50(1).
[24] NGR, r. 50(4).

The review submission date may advance on that fixed in the access arrangement if a specified trigger event occurs. [25] Rule 51(2) of the NGR provides examples of possible trigger events in an access arrangement. The AER may insist on the inclusion of trigger events and may specify the nature of the trigger events. [26]

12.4.2 Revised access arrangement proposal

The AER's draft decision did not accept APT Allgas's review submission date and lack of a trigger event for the acceleration of the submission date, and required the following amendments:

- APT Allgas will submit revisions to this access arrangement to the AER on or before 1 July 2015[27]

- the AER may require APT Allgas to revise its access arrangement for inconsistencies between the proposed terms and conditions and the NGL or NGR. The revisions submission date stated in clause 1.4 of the access arrangement proposal will advance on the occurrence of a trigger event described below. For the purposes of this clause, a 'trigger event' occurs if:

    - there is an amendment to the NGL or the NGR, or the National Energy Retail Law (NERL) or National Energy Retail Rules (NERR) commence operation in Queensland; or

    - the STTM does not operate as anticipated and the access arrangement does not effectively accommodate the STTM; and

    - the AER provides APT Allgas with a notice stating that the circumstances described in (a) or (b) are significant. An amendment or the commencement in Queensland of the National Energy Retail Law or National Energy Retail Rules is significant if it affects reference tariffs. The new review submission date will be the date 6 months from the date of the notice provided by the AER under this clause[28]

APT Allgas has accepted the AER's proposed amendment 12.27(1) by revising its review submission date to 1 July 2015.[29] However, APT Allgas did not accept amendment 12.27(2) and did not include trigger events for acceleration of the review submission date on the basis that:[30]

- it is outside of the AER's powers to vary or revoke an access arrangement, or require a service provider to submit a revised access arrangement. The NGR contain specific provisions setting out the circumstances under which the service provider (r. 52 and r. 65) or the AER can revise an access arrangement (r. 68 and r. 51)

25 NGR, r. 51(1).
26 NGR, r. 51(3).
27 AER, *Draft decision*, February 2011, amendment 12.27, p.170.
28 AER, *Draft decision*, February 2011, amendment 12.27, pp.170–171.
29 APT Allgas, *Revised access arrangement proposal*, March 2011, p. 2.
30 APT Allgas, *Revised access arrangement submission*, pp. 113–116.

- any inconsistency arising from another source, for example a change to the NGL or NGR, would not satisfy the conditions under r. 68 and the AER could not vary or revoke the access arrangement to correct for such an inconsistency

- including a trigger event for the National Energy Customer Framework (NECF) or the Short Term Trading Market (STTM) is unnecessary and imposes considerable additional risk and cost on the service provider that is unnecessary in the circumstances.

12.4.3 AER's consideration

The AER accepts APT Allgas's revised review submission date of 1 July 2015 as incorporated in clause 1.4 of the revised access arrangement proposal.[31]

The AER's consideration of issues raised in APT Allgas's revised proposal for non-inclusion of trigger event is discussed below:

- the AER considers that it is important to ensure that the terms and conditions are consistent with the NERL and the NERR

- the AER agrees with APT Allgas's submission that accelerating the access arrangement review submission in these circumstances can be considered a heavy handed response to ensuring that any costs imposed by the NECF and revised terms and conditions can be considered by the AER. Rule 65(1) of the NGR provides that a service provider may submit for the AER's approval a proposal for variation of the applicable access arrangement. This is considered a more appropriate avenue to implement any revised terms and conditions in the access arrangement upon the commencement of the NERR

- the AER accepts APT Allgas's revised proposal to remove the trigger events as required in amendment 12.27(2) of the draft decision. To ensure compliance with the NERR, the AER expects that APT Allgas will submit a variation to the access arrangement under rule 65(1) to ensure that the terms and conditions are consistent with the NERR.

12.4.4 Conclusion

The AER accepts APT Allgas's revised access arrangement proposal to remove the trigger events as required in amendment 12.27(2) of the draft decision.

[31] APT Allgas, *Revised access arrangement proposal*, March 2011, p. 2.

A. Detailed WACC issues

This appendix outlines the AER's consideration of detailed issues in relation to APT Allgas's proposed rate of return, under the following sections:

- overall rate of return
- equity beta
- market risk premium (MRP)
- debt risk premium (DRP).

This appendix should be read in conjunction with chapter 5.

A.1 Overall rate of return

This section addresses in detail the different techniques available to the AER to assess the overall rate of return.

A.1.1 Broker reports

Equity analysts release broker reports on the six listed companies operating regulated energy networks in Australia. These reports include a wide variety of information and analysis on the current position of these companies, as well as forecasts or predictions of future performance.

The AER's draft decision referred to the weighted average cost of capital (WACC) available from these broker reports used to discount future cash flows as potentially relevant to the evaluation of the cost of equity.

In general, the broker reports do not state the full assumptions underlying their analysis, or provide thorough explanations of how they arrive at their forecasts and predictions.[1] The AER therefore considers that caution should be exercised in interpreting the broker reports, since these assumptions may be incompatible with the AER's framework or the underlying calculations may be incorrect. In practice, reports from different brokers for the same company generally contain conflicting forecasts, reflecting disparate views on the correct evaluation technique.

Further, this analysis is only valid to the extent that these six companies are a reliable proxy for the benchmark firm.[2] In particular, the companies undertake both regulated and unregulated activities which are assessed by the brokers in aggregate—but only the regulated activities are directly relevant to the benchmark firm. The AER

---

1 This is not intended as a criticism, since the proprietary methodologies for evaluating shares are confidential as a source of competitive advantage in the course of ordinary commercial enterprise. Further, the primary end users of these documents (investors seeking insight into future share prices) do not require disclosure of this detail.

2 AER, *Final decision, Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, pp. 77–82, 97–110 (AER, *Final decision, WACC review*, May 2009).

therefore considers that, in general, this means the overall rate of return implied by these broker reports will likely overstate the rate of return for the benchmark firm.[3]

The broker reports often evaluate the present value of the company by estimating all future incoming and outgoing cash flows for the company, and then discounting each cash flow. The discount rate is the broker's estimate of the WACC for the company.

The AER considers that the WACC estimates from recent broker reports (primarily published in February 2011) indicate that the rate of return set by the AER is commensurate with prevailing conditions in the market for funds. The WACC determined by the AER is within the broad range of discount rates applied in the equity broker reports (once converted to a consistent reporting basis), as evident in table A.1. For comparative purposes the AER has also included the headline WACC for broker reports where it could not reproduce a WACC consistent with the formulation adopted by the AER due to insufficient information.

Table A.1 Comparison of WACC used by brokers and the AER (per cent)

Broker	Companies assessed	Vanilla WACC	Headline WACC
Austock	SKI	–	8.62
Citigroup	DUE, SKI	9.20–10.90	–
Credit Suisse	APA	9.35	7.81
Deutsche Bank	APA, DUE, SPN	9.22	7.80
Goldman Sachs	APA, ENV, SKI	10.04–10.66	8.20–8.50
JP Morgan	APA, DUE, HDF, SKI	–	6.50–8.50
Macquarie	APA, ENV, SKI	–	6.70–7.90
Merrill Lynch	APA, ENV, HDF	–	7.40–8.80
Morgan Stanley	SPN	8.16	7.70
UBS	SKI	8.04–8.44	6.50–6.80
Wilson	HDF	10.02	8.25
Aggregate range		**8.04–10.90**	**6.50–8.80**
AER	**(Benchmark firm)**	**9.50**	**–**

Source: Equity broker reports, AER analysis.
Note: Companies evaluated are APA Group (APA), DUET Group (DUE), Envestra Limited (ENV), Hastings Diversified Utilities Fund (HDF), Spark Infrastructure Group (SKI), and SP AusNet (SPN).

[3] The underlying reason is that the regulated activities of the firms—operation of monopoly transmission and distribution networks—are less risky than the unregulated activities they undertake in competitive markets. Greater risk requires greater return (and vice versa).

A.1.2 Recent sale of regulated assets

The AER considers that recent sales of regulated assets can provide useful insight into whether the AER's WACC adequately compensates regulated service providers. The following issues, identified by the AER's consultant, Professor Davis[4], were raised in the draft decision:[5]

- In principle, if the market value exceeds book value, this suggests that the regulatory rate of return is above that required by investors, and the converse when book value exceeds market value.

- Various factors may cause market and book values to differ at the date of regulatory determinations.

The AER's draft decision presented research by Grant Samuel & Associates Limited that showed regulated firms have been recently purchased at implied RAB multiples of at least 1.2.[6] In addition, the AER included a reference to the purchase of Country Energy's NSW gas network by Envestra at a premium of approximately 26 per cent to the 2010 RAB. While other factors may be present, the AER does not consider that they fully explain the substantial premiums implied on the RAB of regulated utilities.

In its revised proposal, APT Allgas stated it is not appropriate to draw conclusions about the reasonableness of the AER's rate of return from RAB multiples observed in energy acquisitions.[7] The AER considers that, based on the significant premiums reported in the Grant Samuel study, APT Allgas has not demonstrated that the regulated WACC has not adequately compensated firms.

Given that recent calculations of RAB multiples are significantly above one, the AER considers that the decline in recent multiples still suggest that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital. Market transactions therefore do not support the view that regulated rates of return result in under compensation with respect to actual required rates of return.

A.1.3 Cost of equity vs. cost of debt

The AER's draft decision rejected analysis intended to demonstrate a predictable relationship between the cost of equity and the cost of debt presented by Synergies (on behalf of APT Allgas). The analysis suggested the use of 4.5 per cent as a guide for the average difference between the cost of equity and cost of debt.[8] The AER raised concerns with the assumptions and corresponding data employed to calculate

---

4 Davis, *Cost of equity issues: A report for the AER,* 16 January 2011, p. 7 (Davis, *Cost of equity*, January 2011).

5 AER, *Draft decision, APT Allgas, Access arrangement proposal for the Queensland gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 174.

6 Grant Samuel and Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 78 and Grant Samuel and Associates Pty Limited, *Independent Expert Report in relation to the Acquisition of the Alinta Assets*, 5 November 2007, p. 65.

7 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision*, 23 March 2011, p. 15.

8 APT Allgas Energy Pty Limited, *Access Arrangement Submission*, September 2010, p. 64.

the 4.5 per cent difference, which resulted in an overstatement with respect to the benchmark service provider because:[9]

- The return on equity is based on the All Ordinaries Accumulation index, which has an equity beta greater than that considered appropriate for a benchmark service provider.

- The return on debt is based on the UBS Australian Composite Index, which is likely to have a higher credit grade than that considered to reflect the appropriate credit rating for a benchmark service provider.

In its revised proposal, APT Allgas agreed that the matters raised by the AER would reduce the difference between the returns on equity and debt.[10] However, it questioned whether the difference, when adjusted in such a manner, would support the implied difference based on the AER's rate of return. APT Allgas did not present an approach to quantify the impact based on the required adjustments. It maintained the difference between the returns on equity and debt that it submitted provides a legitimate basis for a 'reasonableness check'.

Taking account of the revised proposal, the AER maintains its position from the draft decision that analysis of the relative returns to debt and equity provides no indication that the overall rate of return set by the AER is unreasonable. There is no reason to expect a constant difference between the return on debt and the return equity over time, and no reasonable basis to apply the 4.5 per cent differential advocated by APT Allgas. The difference between the return on equity and the return on debt set by the AER (1.16 per cent) is within the broad range of acceptable figures that are generated by this technique.

A.1.4 Modigliani-Miller theorem

The AER's draft decision presented analysis using the Modigliani-Miller framework, in response to the theorem being employed by Synergies, to help explain the relationship between the cost of equity and debt in a frictionless market. The theorem was not applied to estimate any parameters or components of the WACC, but as a 'reasonableness check', which suggested the rate of return set by the AER adequately compensated APT Allgas.

In its draft decision, the AER noted that Professor Davis and Associate Professor Handley both cautioned the use of the Modigliani-Miller theorem to imply a relationship between the costs of debt and equity.[11] They considered the Modigliani-Miller theorem in the presence of risky debt is based on the assumption that equity and debt are priced in the (same) integrated market, rather than being priced in (separate) segmented markets. Further, Davis and Handley stated that when this assumption holds, an exact relationship between the firm's cost of debt and equity can

---

9 AER, *Draft decision, APT Allgas, Access arrangement proposal for the Queensland gas network, 1 July 2011–30 June 2016*, 17 February 2011, p. 178.

10 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision*, 23 March 2011, p. 16.

11 Kevin Davis, *Cost of Equities – A Report for the AER*, 16 January 2011, p. 19 and John Handley, Peer Review of Draft Report by Davis on the Cost of Equity, 18 January 2011, pp. 9-10.

be established. However, when this relationship is violated this could imply that equity and debt is priced in:

- an integrated market and the equity risk premium is too low/high
- an integrated market and the debt risk premium is too low/high
- in segmented markets and so the Modigliani-Miller theorem cannot be used to infer that the equity is mispriced relative to the debt.[12]

In its revised proposal, APT Allgas did not accept the Modigliani-Miller analysis presented by the AER, on the basis that taxes and bankruptcy costs exist and they affect returns.[13]

The AER considers that the Modigliani-Miller theorem is conceptually sound. It acknowledges that taxes and bankruptcy costs affect returns. As such, the Modigliani-Miller theorem is limited by simplifying assumptions that diminish its use in estimating a 'real world' rate of return. Nonetheless, this framework remains a useful starting point for a theoretical check on the overall rate of return. While being aware of its limitations as an estimation tool, the AER applied the Modigliani-Miller proposition two as a conceptual reasonableness check of the AER's WACC. This analysis based on the return required for unlevered equity indicated that the AER's WACC does not under compensate the service provider. Utilising the same approach from the draft decision, the AER has calculated the return on unlevered equity using the parameters from the APT Allgas revised proposal. The Modigliani-Miller proposition two implies that this unlevered return on equity, of 8.57 per cent, is an appropriate WACC .[14] This compares with the AER's WACC of 9.50 per cent for this final decision.

A.1.5 Credit rating metrics

In its revised proposal, APT Allgas stated that the AER's draft decision would have a significant and adverse impact on its ability to maintain the assumed benchmark credit rating of BBB+.[15] APT Allgas calculated financial ratios based on the key credit rating metrics and concluded that:

- the funds from operations (FFO) interest coverage ratio suggests that APT Allgas would meet the requirements for BB but not BBB+.[16]
- the FFO to total debt is below any of the minimum requirements to achieve the benchmark credit rating.[17]

---

12 John Handley, *Peer Review of Draft Report by Davis on the Cost of Equity*, 18 January 2011, p. 9-10.

13 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision*, 23 March 2011, pp. 19–20.

14 This has increased since the draft decision, as a result of APT Allgas's revision to its proposed risk free rate.

15 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision (Confidential)*, 23 March 2011, p. 120-121.

16 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision (Confidential)*, 23 March 2011, p. 120-121.

Based solely on the above metrics, APT Allgas considered it would not maintain an investment grade credit rating, let alone BBB+. Although APT Allgas recognised that there are a number of factors that impact on the credit rating, it stated the financial ratios that would result from the AER's draft decision were materially below the indicative ratios required by Standard & Poor's.[18]

The AER does not accept APT Allgas' conclusion that the overall rate of return set by the AER cannot sustain a credit profile consistent with a benchmark BBB+ credit rating. The AER acknowledges that cash flow based ratios (in particular, FFO to interest cover and FFO to total debt) are used by Standard and Poor's in making credit rating assessments.[19] The AER considers that the target credit rating metrics presented by APT Allgas—FFO to interest cover of ≥3.8 times, and FFO to total debt of ≥18 per cent—are not accurate. These ratios are determined by reference to a 2006 Standard and Poor's guideline that has been superseded.[20] Further, the metrics are for all utilities (not just regulated utilities) in the US, and so are of limited relevance to the circumstances of the benchmark firm.

Most importantly, the AER considers that, although the cash flow based ratios are relevant indicators, there are many other quantitative and qualitative factors which Standard & Poor's considers in its assessment of a credit rating. This point is emphasised in the 2008 Standard and Poor's corporate ratings criteria:

> We strive for transparency around the rating process. However, it is critical to realize—and it should be apparent—that the ratings process cannot be reduced to a cookbook approach: Ratings incorporate many subjective judgments, and remain as much an art as a science.
>
> …
>
> Credit ratings often are identified with financial analysis—especially ratios. And we publish ratio statistics and benchmarks both for sectors and individual companies. But ratings analysis starts with the assessment of the business and competitive profile of the company. Two companies with identical financial metrics are rated very differently, to the extent that their business challenges and prospects differ.[21]

In its 2009 Criteria Methodology, Standard & Poor's noted:[22]

> Still, it is essential to realise that the financial benchmarks are guidelines, neither gospel nor guarantees. They can vary in non-standard cases: For

---

17 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision (Confidential)*, 23 March 2011, p. 120-121.

18 APT Allgas Energy Pty Limited, *Access Arrangement Submission – Response to AER draft decision (Confidential)*, 23 March 2011, p. 120-121.

19 AER, *Final decision, WACC review*, pp. 374–376, 385–386.

20 More recent documents from Standard and Poor's do not present precise ratios or omit them entirely. Standard and Poor's, *Corporate Ratings Criteria 2008*, 15 April 2008; Standard and Poor's, *Criteria Methodology: Business Risk/Financial Risk Matrix Expanded*, 27 May 2009; and Standard and Poor's, *Utilities: Key credit factors: Business and financial risks in the investor-owned utilities industry*, 26 November 2008 (republished 28 October 2010).

21 Standard and Poor's, *Corporate Ratings Criteria 2008*, 15 April 2008, p. 20.

22 Standard and Poor's, *Criteria Methodology: Business Risk/Financial Risk Matrix Expanded*, 27 May 2009, pp. 4–5.

> example, if a company's financial measures exhibit very little volatility, benchmarks may be somewhat more relaxed.
>
> Moreover, our assessment of financial risk is not as simplistic as looking at a few ratios.

Similarly, in the earlier (2006) version of Standard & Poor's Corporate Rating Criteria which was referred to by APT Allgas, Standard & Poor's noted:[23]

> The ratio medians are purely statistical, and are not intended as a guide to achieving given rating level. They are not hurdles or prerequisites that should be achieved to attain a specific debt rating.
>
> Caution should be exercised when using the ratio medians for comparisons with specific company or industry data because of differences in method of ratio computation, importance of industry or business risk, and the impact of mergers and acquisitions.[24]

The regulatory regime allows APT Allgas to recover stable revenues, provides incentives for efficient performance, and includes a cost recovery mechanism for significant unforseen events. All of these factors are likely to relax the credit profile benchmarks against which APT Allgas is assessed. On this basis, the AER does not accept APT Allgas' conclusion that the overall rate of return set by the AER cannot sustain a credit profile consistent with a benchmark BBB+ credit rating.

A.1.6 Conclusion

The AER considers that the analyses of market data support the conclusion that the rate of return established by the AER is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services.[25] The rate of return determined in this decision is at least sufficient to meet the cost of capital faced by regulated service providers.[26]

A.2 Equity beta

This section sets out the AER's consideration of matters raised in the revised proposal regarding the AER's approach to determine the equity beta in the draft decision.

A.2.1 Use of Australian or US data

The key issue in the CEG report is whether to rely on estimates of the equity beta generated using US data instead of the estimates based on Australian data.

The adopted benchmark service provider is Australian and the AER sets the rate of return using a domestic CAPM.[27] The AER considers that this provides a strong

---

23 The AER notes that some of the median ratios referred to by APT Allgas have been removed from a subsequent version of the Corporate Rating Criteria. See Standard and Poor's, *Corporate Ratings Criteria*, 2006, p. 42.

24 Standard and Poor's, *Corporate Ratings Criteria*, 2008, p. 52-53

25 NGR, r. 87(1).

26 NGL, s. 24(2)(a).

27 AER, *Draft decision*, February 2011, p. 183, 184; see also AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, p. 71, 267, 269, 278 and AER, *Final decision, WACC review*, May 2009, pp. 77–82, 255.

rationale for estimating all CAPM inputs (such as the equity beta) using Australian data.[28] The use of a foreign proxy is a suboptimal outcome that can only be justified where there is evidence that this will produce more reliable estimates of the domestic equity beta than the Australian estimates themselves. [29] The onus remains on any party wishing to depart from the use of domestic data to establish that a foreign proxy will be more reliable.

This section considers in detail the arguments from CEG on the relative reliability of the Australian and US estimates.

Australian estimates

The CEG report stated that the Australian equity beta estimate used by the AER is unreliable because:

- it is based on an overall sample of just six Australian securities' returns[30]
    - these firms are 'highly volatile'
    - only two of these companies have sufficiently long trading histories
- the highest estimated equity beta (HDF) is given less weight on spurious grounds.[31]

The AER maintains its position from the draft decision that the Australian equity beta estimates (drawn from the WACC review) are sufficiently robust, and considers that the claims by CEG are unfounded. In particular, the equity beta estimates:

- rely on an estimation period (after the technology bubble but before the GFC) that is likely to reflect long-term market conditions going forward[32]
    - the period (around five years) is long enough to provide statistically robust equity beta estimates when using weekly and monthly trading intervals[33]
    - estimates during this period are not 'highly volatile'[34]
- rely on an overall sample of nine companies, not six[35]
    - five of these companies (not two) have trading histories of around five years[36]

---

28 AER, *Final decision, WACC review*, May 2009, pp. 255, 260–264.
29 AER, *Final decision, WACC review*. May 2009, pp. 260–264, 311–332.
30 CEG, *WACC estimation*, March 2011, pp. 1, 20–21.
31 CEG, *WACC estimation*, March 2011, p. 1.
32 AER, *Final decision, WACC review*, pp. 267–271; and AER, *Draft decision*, February 2011, pp. 266–267
33 AER, *Final decision, WACC review*, pp. 271–275.
34 AER, *Final decision, WACC review*, pp. 278–292, 326–328.
35 The CEG report overlooked the WACC review consideration of Alinta (AAN), Australian Gas Light (AGK) and GasNet Australia (GAS). AER, *Final decision, WACC Review*, May 2009, pp. 255, 307–311, 317–320.

- all nine companies have trading histories that are sufficiently long to permit reasonable assessments to be made[37]
- portfolio analysis across the entire period (around five years) appropriately incorporates firms with shorter duration trading histories[38]

- rely on appropriate statistical analysis
  - using an appropriate formula to adjust for leverage[39]
  - using estimation intervals (weekly and monthly) that mitigate problems arising from trading bias[40]
  - checking for problems such as autocorrelation and heteroscedasticity.

CEG stated there are only two Australian companies with sufficiently long trading histories based upon an AER statement in the draft decision for Envestra.[41] CEG appears to misconstrue this to mean that a company must have more than 850 trading days of data before it provides a reasonable basis for a reliable beta estimate.

The AER rejected CEG's analysis of Australian equity beta estimates because it used (up to) 600 days of data *during the GFC*.[42] It is not the length of the estimation period alone, but the combination of period length and period timing that renders this analysis unreliable.[43] As stated in the draft decision for Envestra, the minimum length for reliable beta estimation is a function of the underlying conditions, and during the GFC conditions were such that beta estimation became much more inaccurate than normal.[44] This means that a period length which may have been appropriate during stable market conditions would be inappropriate when chosen during the GFC. Hence, there is no contradiction in the AER's rejection of the CEG analysis (using up to 600 trading days), and the use of companies with similar length trading histories in the WACC review.[45]

---

36 In addition to APA Group (APA, six years and eight months) and Envestra (ENV, six years and eight months) the WACC review analysis includes AAN (five years and eight months), AGK (four years and ten months), and GAS (four years and eleven months). AER, *Final decision, WACC review*, May 2009, pp. 255, 317–320; and Henry, *Estimating beta*, 23 April 2009, pp. 10–11, 14–15.

37 AER, *Final decision, WACC review*, pp. 255–260; see also discussion on the minimum length for the estimation period in this appendix.

38 AER, *Final decision, WACC review*, pp. 307–311, 320–326.

39 AER, *Final decision, WACC review*, pp. 265–267.

40 AER, *Final decision, WACC review*, pp. 275–278.

41 CEG stated 'The AER has rejected the relevance of beta estimates I presented because they were only based on 600 trading days (or around 2.4 years).' CEG, *WACC estimation*, March 2011, pp. 20–21 (paragraph 67).

42 AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, pp. 266–268.

43 Davis, *Cost of equity*, January 2011, p. 18.

44 AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, p. 268.

45 For clarity, the AER considers that the shorter periods presented by CEG would be inappropriate, even without consideration of the specific period. The minimum period analysed by CEG is just 20 trading days. Such a period would be inappropriate regardless of whether it is measured during the

The AER clarifies that it was not attempting to define a specific start date for the GFC in its draft decision for Envestra.[46] The AER acknowledges that there is no real consensus on the precise beginning of the GFC, or (more relevantly) about the date when it began to substantially affect Australian equity prices (and therefore equity beta estimation). There is some justification for using an estimation period ending on 1 September 2008, given that the ASX All Ordinaries index had its steepest fall across the subsequent two months (a decline of around 25 per cent). On the other hand, this share market index fell by 11 per cent in January 2008, supporting an estimation period ending on 31 December 2007. Nonetheless, the AER considers that its analysis of equity betas using a period of five and a half years would not be unduly influenced by the eight months to September 2008.[47] CEG has not presented evidence that Australian equity betas would differ if the estimation period ended in 2007.

The executive summary of the CEG report stated that 'the AER gives less weight to the highest estimated beta for the Australian sample on spurious grounds'.[48] However, there is no analysis to support this claim in the body of the CEG report. The AER considers that it has given appropriate weight to the Hastings Diversified Utilities Fund (HDF) equity beta, including it in portfolios with equal or value weighting (as relevant), and in its analysis of aggregate individual equity betas.[49] The AER did note that caution should be used in interpreting the equity beta for HDF produced by CEG, which was more than three times the next highest estimate.[50] However, giving 'full weight' to the CEG estimate for HDF still produces an average equity beta estimate which accords with the range from the AER's WACC review.[51]

The empirical evidence available to the AER suggests an equity beta of between 0.4 and 0.7 ensures the service provider has the opportunity to recover at least its efficient costs incurred in providing reference services and in meeting regulatory requirements. Based on this information, an equity beta of 0.8 would not under compensate the benchmark service provider for the risks of providing reference services.

The AER has cross-checked this by obtaining a recent Grant Samuel independent report which used an equity beta estimate of 0.8 to 0.9, suggesting that the equity beta estimates for energy distribution businesses remain unchanged as a consequence of the GFC.

GFC or not. The AER considers that a period less than a year (approximately 50 observations using weekly measurement intervals) is likely to be too short for reliable estimation, regardless of the location of that period.

46 AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, pp. 266–267.

47 The WACC review also considered five year equity beta estimates (from ACG) ending in May 2008, with similar results to those ending in September 2008. AER, *Final decision, WACC review*, May 2009, pp. 320–321.

48 CEG, *WACC Estimation*, March 2011, p. 2.

49 AER, *Final decision, WACC review*, May 2009, pp. 317–328.

50 AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, p. 77.

51 As shown in table 5.6 of chapter 5.

US estimates

CEG stated that instead of Australian equity beta estimates, its US equity beta estimates (but not the US equity beta estimates from the AER's WACC review) should be used in the domestic CAPM. CEG stated that:

- there is a larger pool of available data for estimating equity betas[52]
    - there are 77 US regulated securities
    - these US firms have long trading histories
- the US equity beta estimates used by the AER in the WACC review are unreliable, because changing aspects of the analysis leads to a higher equity beta[53]
- there are conceptual and empirical grounds to establish a relationship between US equity betas and equity betas in Australia[54]
    - with one exception, differences between US and Australia have not been quantified, so the a priori position is that US equity betas will equate to Australian equity betas
    - the exception is that international differences in the regulatory framework mean that US regulated utilities will have lower exposure to systematic risk than Australian regulated utilities

On this basis, CEG concluded that the US equity beta estimates of 'around one' should be used by the AER.[55]

The AER considers that the key issue here is whether or not there are reasonable grounds to establish a relationship between Australian and US equity beta estimates.

In the WACC review the AER noted the difference in the regulation of businesses, the regulation of the domestic economy, geography, business cycles, weather and a number of different factors are likely to result in differences between equity beta estimates for similar businesses between countries.[56] It is difficult to assign quantitative impacts to each of these qualitative factors and as such the use of Australian securities data for equity beta estimation seeks to encompass all of the factors within the CAPM framework in a first-best approach. For this reason and consistent with the WACC review, the AER considers foreign estimates of equity beta should only be used as a cross-check of domestic equity beta estimates.

The AER considers that the CEG report does not comprehensively evaluate the differences between Australia and the US. CEG focussed on just one aspect of the regulatory framework—the form of revenue control. It did not consider the numerous

---

52 CEG, *WACC estimation*, March 2011, pp. 1, 16–21, 25–27.
53 CEG, *WACC estimation*, March 2011, pp. 12–15.
54 CEG, *WACC estimation*, March 2011, pp. 21–25.
55 CEG, *WACC estimation*, March 2011, pp. 2, 27.
56 AER, *Final decision, WACC review*, May 2009, pp. 261–264.

other aspects of the regulatory framework that affect the exposure of the firm to systematic risk, and which differ substantially on an international basis:

- Avenues for price adjustments outside of the main revenue control form—In the Australian context, this includes the provision for pass throughs that allows for increase to revenues in response to major market events. These directly reduce exposure to systematic risk, since the service provider is able to recover the impact of any adverse market wide event.

- Timing of regulatory reviews—A longer period between regulatory assessments increases exposure to systematic risk, since there is more time for the firm to accrue benefit/incur detriment from market-wide movements before the regulator resets the revenue. In the Australian context, regulatory arrangements are generally for five years, and there is opportunity to reopen an access arrangement early, which further reduces systematic risk.

- Approach to inflation adjustment—In the Australian context, there is an annual indexation to prices (and capital base) for inflation that almost eliminates exposure to interest rate risk, which is a factor in overall systematic risk.[57]

There are also significant international differences on a range of broad framework questions, such as the availability and scope of appeals, the burden of proof on the regulator and the relative service standards that apply.[58] These have direct relevance to the profitability of the regulated firm and secondary impacts on exposure to systematic risk.

It is difficult to quantify the impact of these qualitative factors or undertake a conceptual evaluation of the overall impact on equity beta. Neither CEG nor the AER has attempted to undertake the analysis that captures the completeness of the factors, the interaction of the factors with each other, and the overall impacts of the factors to gauge whether foreign equity beta estimates overestimate, underestimate or equate to domestic equity betas. The onus to establish such a relationship rests on those who wish to use the US data instead of the Australian data.

Accordingly, the AER considers that that there are no reasonable grounds to conclude that the US equity betas should be equivalent to Australian equity betas, or that the US equity betas should be below Australian equity betas. Rather, the AER considers that this lack of evidence strongly supports the use of a domestic equity beta, which means that these (potentially unresolved) issues are avoided.

CEG appears to misinterpret the position of the New Zealand Commerce Commission's (NZCC) expert advisors when it stated that 'Professor Franks argues that the US regulatory regime is lower risk relative to 5 year regulatory regimes such

---

[57] The residual inflation risk relates to the timing of the indexation (once a year) and the possible misspecification of the proxy (CPI) for true inflation.

[58] IPART, *Changes in regulated electricity retail prices from 1 July 2011, Draft report*, April 2011, pp. 82-84.

as in Australia'.[59] In context, this expert advice to the NZCC focuses on the fact that the use of foreign proxies in a domestic CAPM introduces an additional source of error, relative to using domestic estimates directly.[60] Fundamentally, such a position goes against CEG's suggestion that US equity beta estimates should be used instead of Australian equity beta estimates.

It may be the case that Dr Lally, another of the NZCC expert advisers, considers the US equity betas to be an underestimate of the NZ equity betas.[61] However, it appears that Professor Franks takes the opposite view. The paper by Boyle et al. that Professor Franks endorses explicitly refutes the Alexander et al. claim that the US has a 'lower risk' regulatory regime. After consideration of the evidence, this position is then adopted by the NZCC, which stated:

> Dr Lally's approach [making an upward adjustment to US asset beta estimates] was criticised by Boyle, Evans and Guthrie, (Boyle et al.) who indicated that:
>
> - the sample of US electricity utilities operated other services as well as regulated electricity services;
> - the structure of the US electricity industry had changed and that many state regulators had adopted incentive regulation;
> - Lally's claim that US electricity utilities are subject to rate-of-return regulation with annual resetting of prices was a gross over-simplification and ignored the incentive regulation implemented in many states; and
> - it was incorrect that rate-of-return regulated firms are reviewed annually. [62]

The final reasons paper from the NZCC reviews a number of other academic papers on the differences between regulatory regimes in the allocation of systematic risk. These include Buckland and Fraser, and Joskow, Kwoka and Pfeifenberger. [63] The NZCC concluded that there are strong theoretical grounds that the regulatory regime

---

59 CEG, *WACC estimation*, March 2011, p. 22 (paragraph 75). Quote is from Franks, J., M. Lally and S. Myers, *Recommendations to the New Zealand Commerce Commission on an Appropriate Cost of Capital Methodology*, December 2008, p. 33 (paragraph 140).

60 Franks, J., M. Lally and S. Myers, *Recommendations to the New Zealand Commerce Commission on an Appropriate Cost of Capital Methodology*, December 2008, p. 33 (paragraphs 138–140)

61 It was on Dr Lally's advice that the NZCC increased the observed US asset beta by 0.1 to obtain an asset beta for an electricity distribution company in NZ. New Zealand Commerce Commission, *Input methodologies (Electricity distribution and gas pipeline services), Reasons paper, Final decision*, December 2010, p. 532 (paragraph H8.11) and pp. 533–534.

62 NZCC, *Input methodologies (Electricity Distribution Servicest), Draft Reasons Paper*, June 2010, p.291–293. Source papers are Boyle, G., L. Evens, and G. Guthrie, *Estimating the WACC in a Regulatory Setting*, New Zealand Institute for the Study of Competition and Regulation, March 2006 and I. Alexander, C. Mayer, and H. Weeds, *Regulatory Structure and Risk: An International Comparison*, Policy Research Working Paper 1698, The World Bank, December 1996.

63 Buckland, R., and P. Fraser, 'Political and Regulatory Risk: Beta Sensitivity in U.K. Electricity Distribution', *Journal of Regulatory Economics*, 2001, vol. 19(1), pp. 5-25; Joskow, P., *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks, A Paper Prepared for the National Bureau of Economic Research Conference on Economic Regulation*, 9-10 September, 2005; Kwoka, J., *Investment Adequacy Under Incentive Regulation, Northwestern University Working Paper*, September 2009; and Pfeifenberger, J., *Incentive Regulation: Introduction and Context*, Presentation at AUC PBR Workshop, Edmonton , Alberta, May 26-27, 2010.

can influence the level of systematic risk. However, there are no theoretical grounds to conclude that such a difference exists between the US and NZ (or Australia). Real world regulatory regimes are far more complicated than that acknowledged in the CEG analysis. There is no distinct difference between the 'low powered' regulatory regime in the US and the 'high powered' regime in the UK, and certainly no a priori expectation about where Australia sits on this spectrum.

It is somewhat of a mis-statement to say that the NZCC ceased to make this upward adjustment on the basis that 'it could not find reliable empirical evidence that differences in regulatory regimes affected the equity beta of regulated businesses.' The NZCC observed the (stable and robust) finding that the US equity betas are above those in NZ and Australia.

The NZCC's decision cited by CEG estimated the average US asset beta (0.29) to be above the midpoint for Australian asset betas (0.24) and New Zealand asset betas (0.23).

This is also confirmed elsewhere. The Victorian Essential Services Commission's decision cited by CEG estimated the Australian equity beta at between 0.5 and 0.7, with the US equity beta between 0.6 and 0.8.[64] That is, the empirical result was that equity betas in the US were above those in Australia.

The AER considers that the sensitivity analysis of equity beta estimates from US regulated firms does not lead to the conclusion that the AER's Australian equity beta estimates should not be used. The AER acknowledges that estimates of equity beta may be affected by altering the estimation period, end of estimation period, sampling period (i.e. monthly vs. weekly or daily returns), or firms included within the sample.[65] The analysis conducted by CEG is on US data and the evident variability suggests that there is no advantage relative to using Australian data. Further, the AER considers that the CEG analysis makes arbitrary adjustments (such as omitting monthly estimates) and fails to report statistical tests of its results.

An alternative comparison of international differences in equity betas for regulated network utilities was commissioned by the Office of the Gas and Electricity Markets (Ofgem) in 2009. PricewaterhouseCoopers analysed 24 comparable companies in the UK, US, Spain, Italy, Canada and Australia. The relevant set of close comparators is presented in table A.2.

---

64 Essential Services Commission, *Gas access arrangement review 2008–2012, Final decision*, 7 March 2008, p. 476.

65 CEG, *WACC estimation*, March 2011, pp. 12–20.

Table A.2 International equity betas from PwC analysis for Ofgem

Company	Country	Sector	Dec 2007	Sept 2008
AGL Resources	USA	ED +VI	0.35	0.20
Enagas	Spain	GT	0.58	1.18
First Energy	USA	ED ET +VI	0.35	0.25
National Grid	UK	ED ET GD GT	0.45	0.98
New Jersey Resources	USA	GD GT	0.83	0.88
Northwest Natural Gas	USA	GD GT	0.88	1.10
Piedmont Natural Gas	USA	GD GT	0.68	0.83
Red Electrica	Spain	ET	0.45	0.93
Scottish and Southern	UK	ED ET +VI	0.58	1.28
Snam Rete Gas	Italy	GT	0.43	0.60
Transcanada	Canada	GD GT +VI	0.45	0.18
Unisource Energy	USA	ED ET GD GT	0.10	0.68
WGL Holdings	USA	GD GT	1.03	1.08
Range			**0.10 – 1.03**	**0.18 – 1.28**
Average			**0.55**	**0.78**

Source: PricewaterhouseCoopers, Office of Gas and Electricity Markets, Advice on the cost of capital analysis for DPCR5, Final Report, 1 December 2009, pp. 37–45 (figures 13, 16–19); AER analysis.

Notes: Sector codes are electricity distribution (ED), electricity transmission (ET), gas distribution (GD), gas transmission (GT), vertically integrated entity operating in electricity generation and/or retail (+VI). Asset betas have been re-levered to 60 per cent using the Brealey and Myers formula and assuming a debt beta of zero. The entities shown here are the final comparator sets used by PwC, excluding Australian companies and water/sewerage companies, after adjustment for vertical integration (0.1 asset beta).

As is evident from table A.2, the average equity beta for the five years to December 2007 was 0.55, and the average for the five years to September 2008 was 0.78.

CEG has stated that since there is higher volatility in the US share market than the Australian share market, there is a statistical basis to conclude that US equity betas are higher than Australian equity betas.[66] The AER considers that this statement appears to confuse volatility with covariance, when the two are different statistical concepts. Such an assertion implies that it would be appropriate to calculate the beta of a US regulated utility using an Australian equity market index (or vice versa). Even if such analysis were conceptually valid (which it is not), there are no statistical

[66] CEG, *WACC estimation*, March 2011, p. 24 (paragraphs 79–80).

grounds to presume that the US regulated utility would have a higher equity beta if measured against the Australian index.

Based on the evidence before it, the AER considers there is no reasonable basis to conclude that US data should be used in place of Australian data, or that US equity beta estimates would better compensate Australian regulated utilities. This is consistent with the AER's draft decision and the 2009 WACC review.

A.2.2 Evidence of a 'low beta bias' in returns relative to that predicted by the CAPM

The claims by CEG and Professor Grundy of a 'low beta bias' in the CAPM have been considered by the AER in the context of assessing the alternative cost of equity models put forward by another gas distribution business (Envestra).[67] The AER considers that there is no reasonable basis to conclude that the standard CAPM implemented by the AER results in a bias. The empirical finding of 'low beta bias' plausibly arises from the flaws in the type of testing employed, rather than any deficiency in the CAPM.

A.2.3 Conclusion

The AER considers that the empirical evidence presented in the WACC review contains the best available estimate of the equity beta that would apply to a gas distribution network service provider, taking into account the need to reflect prevailing market conditions and the risks involved in providing reference services.[68] The sample set of data used to derive the equity beta in the WACC review provides a value for an equity beta of between 0.4 and 0.7.

The AER has given consideration to other factors, such as the need to achieve an outcome that is consistent with the NGO—in particular, the need for efficient investment in natural gas services for the long-term interests of consumers of natural gas. The AER has also taken into account the revenue and pricing principles, the importance of regulatory stability and is also mindful it has recently considered an equity beta of 0.8 to be appropriate, if not overstated, for other gas businesses. On the basis of the information presented, the AER concludes that an equity beta of 0.8 provides APT Allgas with an opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.[69]

A.3 Market risk premium

This section sets out the AER's consideration of matters raised in the revised proposal regarding the AER's approach to determine the MRP in the draft decision.

A.3.1 The notional time horizon for the MRP

The AER has determined that the CAPM should be used to estimate the cost of equity (the required return on equity) within the WACC. The CAPM is defined as:

---

67 AER, *Final decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016,* June 2011, appendix A.3.2.

68 NGR, r. 74(2)(b) and r. 87(1).

69 NGL, s. 24(2).

Return on equity $= r_f + \beta_e \times [E(r_m) - r_f]$

$= r_f + \beta_e \times MRP$

The MRP is the expected return on the market portfolio,[70] $E(r_m)$, minus the risk free rate, r_f. Within the CAPM the risk free rate appears twice, as the return on the risk free asset and within the calculation of the market risk premium. The AER has accepted the use of the yield on 10 year Commonwealth Government Securities (CGS) as the proxy for the risk free rate. To maintain consistency within the CAPM, the MRP should also be estimated using the yield on 10 year CGS as the proxy for the risk free rate.[71]

VAA stated that it is necessary for the MRP be estimated using the same risk free rate (i.e. the yield on 10 year CGS) across the entire CAPM equation. However, it stated that the outcome is not necessarily an MRP that is relevant for a 10 year horizon. VAA noted that the MRP calculated using the yield on the 10 year CGS as the proxy for the risk free rate is used for investments of various lengths but that most asset investment decisions under regulatory regimes are long-term.[72]

The AER agrees with VAA that the investment horizon for most regulated assets is long-term. Although the CAPM can be used to provide annual rates of return, the CAPM is a one period model. In theory it provides an estimate of the required rate of return for a single investment with a particular investment horizon.[73] The investment horizons for regulated assets owned and operated by energy network businesses vary both between assets and across businesses. However, because the AER has accepted the use of the yield on 10 year CGS as the proxy for the risk free rate parameter in the CAPM, the AER considers it appropriate to calculate the MRP with the assumption of a 10 year investment horizon. This is consistent with an earlier report from VAA. In that report, VAA stated that insofar as the yield on a 10 year CGS is used as the proxy for the risk free rate, this implies a 10 year planning horizon.[74]

Historical excess return estimates

The MRP represents investors' expectations of the future. Realised excess stock market returns are likely to inform investors' expectations of the future. However, the AER considers that investors' expectations and their required MRP are unlikely to be solely informed by past excess returns. The AER considers that investors' expectations are likely to be informed by a range of factors including current market conditions and the economic and financial markets outlook. In estimating the MRP, the AER is attempting to estimate investors' expectations of what the MRP will be in

---

70 The market portfolio is the diversified portfolio of all assets in the economy. The expected return on the market portfolio represents the return across all assets in the market.

71 The Australian Competition Tribunal has also noted the importance of consistency between the term of the risk free rate and the MRP. Australian Competition Tribunal, *Application by GasNet Australia (Operations) Pty Ltd [2003] ACompT 6*, p. 24.

72 VAA, *Comments on market risk premium in draft decision by AER for Envestra February 2011*, March 2011, pp. 6–7 (VAA, *Comments on market risk premium*, March 2011).

73 This is supported by the report from SFG, which noted that the CAPM is a one-period model that is silent on the length of the period. See SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 17–18.

74 VAA, *Market risk premium, a review paper*, August 2008, p. 8.

the future and not simply estimating the excess stock market returns that have been achieved in the past.

In the draft decision, the AER considered estimates of historical excess returns for three different periods of differing length and data quality as calculated by Associate Professor Handley. These estimates were adjusted to incorporate a value for the imputation credit utilisation rate (theta) of 0.65, consistent with the theta estimate used to estimate the cost of corporate income tax in the draft decision. For this final decision the AER has departed from the draft decision and adopted a theta estimate of 0.35. This is discussed in chapter 6. The latest historical excess return estimates, adjusted to incorporate a value for theta of 0.35 are outlined in table A.3.

Table A.3 Historical excess return estimates means—assuming an imputation credit utilisation rate of 0.35 (per cent)

Period	Historical excess returns (geometric means)	Historical excess returns (arithmetic means)
1883–2010	4.8	6.2
1937–2010	3.9	5.9
1958–2010	3.8	6.4

Source: Handley, *Memorandum: Additional Estimates of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 May 2011, p. 1.

Periods used to estimate historical excess returns

As noted in the draft decision, the AER has chosen to consider the periods outlined above for the following reasons:

- The period 1883 to 2010 provides a large sample, which incorporates many years of excess returns data as well as large negative and positive market events. However, for the period up to 1937 there is a relatively small sample of stocks available and includes periods of government stock price controls.[75]
- The period 1937 to 2010 provides a slightly smaller number of observations than the 1883 to 2010 period, but it incorporates a consistently larger sample of stocks and avoids the problems associated with data prior to 1937.
- The two periods above both incorporate data from the Lamberton data series up to 1958, which is likely to overstate historical excess returns prior to 1958. The Lamberton data series uses an equal weighted rather than value weighted average of stock returns, which results in a bias towards high yielding small stocks. In addition to this, the Lamberton data series comprises dividend paying stocks only, which results in an overstatement of the market average. This is because not all stocks pay dividends. In estimating historical excess returns, Brailsford et. al. considered 1958 to be a critical break in the sample period that reflected a shift

[75] Brailsford, Handley and Maheswaran, 'Re-examination of the historical equity risk premium in Australia', *Accounting and Finance*, vol. 48, 2008, pp. 78–79.

from poor to relatively good quality data.[76] Brailsford et. al. sourced data from the ASX, which adjusted the pre-1958 data to account for the likely overstatement of equity returns in the Lamberton data series. This data was also used by Handley in his latest estimates of historical excess returns.

- The period 1958 to 2010 provides a smaller number of observations, but it avoids the issues associated with data prior to 1958.

VAA submitted that the MRP estimated for the period 1883–2010 and assuming a theta value of 0.35, is 7.6 per cent. It also provided a graph of progressive long-term estimates from 1883–2010.[77] However, this analysis appears to be based on data prior to 1958 that is not adjusted for the likely overstatement of historical excess returns that was identified by Brailsford et. al. This is inconsistent with VAA's prior estimates, which used pre-1958 data that incorporated the adjustments identified by Brailsford et. al.[78] VAA does not explain why it departed from its previous approach and the AER is unaware of any evidence to suggest that the Brailsford et. al. analysis was incorrect. As a result, the AER does not consider it reasonable to adopt VAA's analysis for historical excess return estimates from 1883 onwards.

VAA also submitted that, if the excess return observation for 2008 were given a one in 128 year weight within the historical excess return estimate for the 1958–2010 period, its estimate would increase from 6.4 to 7.2 per cent. VAA submitted that there was a stock market excess return of approximately –47 per cent in 2008. However, VAA did not actually advocate using its 7.2 per cent estimate (which gives the excess return observation for 2008 a one in 128 year weight) for the 1958–2010 period. VAA simply noted that using a longer time series better reflects the likelihood of events such as the GFC occurring.[79]

The AER has considered estimates of the MRP for longer periods, including 1883–2010 and 1937–2010. Although the excess return observation for 2008 was –47 per cent, the excess return observation for 2009 was approximately 35 per cent.[80] Further, as illustrated in figure A.1, individual excess return observations range from between –47 per cent to over 50 per cent. Therefore, it does not seem reasonable to make a one-off adjustment to the observation for 2008 in any of the periods considered.

---

[76] This is the date from which the SSE began calculation of the Sydney All Ordinary Index and data after 1958 did not rely exclusively on the unadjusted Lamberton data series. Brailsford et. al. also note that they use data for 1883-1979 sourced from the ASX, which was adjusted to account for overstatement due to the exclusion of dividend paying stocks and by equal weighting of stocks over some periods in the data sample. Brailsford, Handley and Maheswaran, 'Re-examination of the historical equity risk premium in Australia', *Accounting and Finance*, 48, 2008, pp. 73–97.

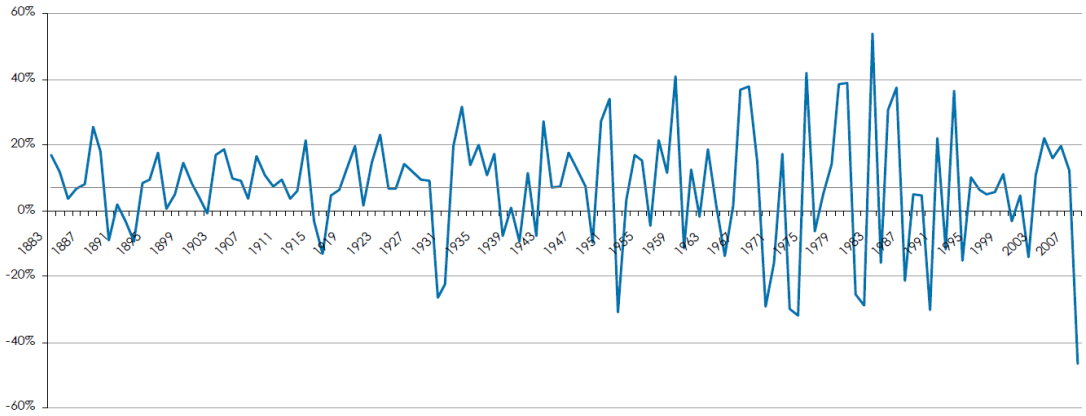
[77] VAA, *Market risk premium update, prepared for Envestra*, April 2011.

[78] See VAA, *Comments on the AER draft distribution determination for Victorian electricity distribution network service providers*, July 2010, p. 21.

[79] VAA, *Market risk premium update, prepared for Envestra*, April 2011.

[80] Handley, *Memorandum: Additional Estimates of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 May 2011, p. 1 (Handley, *Memorandum: Equity Risk Premium 1883 to 2010*, May 2011).

Figure A.1 Realised excess market return observations



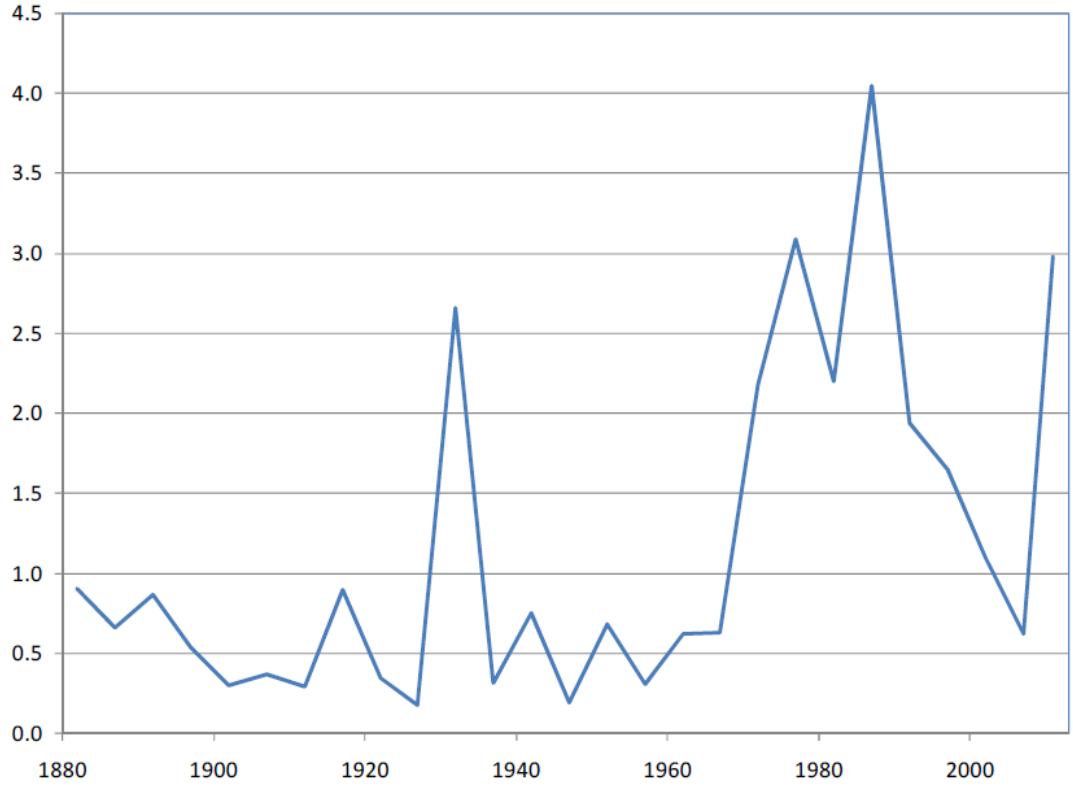
Source: Officer and Bishop, *Market risk premium, further comments*, January 2009, p. 4.

NERA suggested that historical evidence indicates that the Australian market portfolio was substantially less risky in the latter part of the 19th century, and the earlier part of the 20th century, than the latter part of the 20th century and the beginning of the 21st century.[81] NERA analysed stock market variance and stock market volatility over progressive 5 year periods from 1883 to 2011 and concluded that there is statistically significantly greater volatility in the post-1958 period than the pre-1958 period. NERA suggested that one way to take this into account would be to use post-1958 data only, which it stated would tend to support an MRP estimate of 6.5 per cent.[82] The AER considers that NERA's analysis simply shows that there have been periods of high and low stock market variance and volatility over time, which can be seen from figure A.2.

81 NERA, *The market risk premium, a paper for Multinet and SP AusNet*, 29 April 2011, p. 2 (NERA, *Market risk premium*, April 2011).

82 NERA, *Market risk premium*, April 2011, pp. 3–8.

Figure A.2 Stock market variance by half decade as estimated by NERA



Source: NERA, *The market risk premium, A report for Multinet Gas and SP AusNet*, 29 April 2011.

The AER has considered the period 1958 onwards based on the analysis by Brailsford et. al., which suggested that the post-1958 period contains the highest data quality. However, the data used to estimate historical excess returns is actually different to the data used by NERA to estimate stock market variance and volatility (it does not incorporate dividend yield data).[83] As a result it does not seem appropriate for NERA to segment this different dataset at 1958. If NERA's data was segmented at 1958 on an economically justifiable basis,[84] its analysis may be relevant. However, NERA did not posit any economic reasons why volatility would be greater after 1958 in particular.[85] Rather NERA's analysis simply chose the year 1958 to segment the data because it was the latest sub-period used by the AER when estimating historical excess returns. As outlined above, the AER has considered the three different time periods of 1883–2010, 1937–2010 and 1958–2010 because each time period has its own benefits and draw-backs. For example the period 1883–2010 is the longest period and also has the smallest confidence interval (3.3 – 9.1 per cent), but is affected by

83 NERA's data does not incorporate dividend yield data, nor is it clear if it incorporates adjustments to pre-1958 data noted by Brailsford et. al., which is discussed above.

84 For example, if there was some fundamental change in the stock market in 1958.

85 NERA did not provide analysis of the statistical properties of its dataset, as distinct from other datasets.

data quality concerns. The period 1958–2010 is shorter, but it corresponds to a period of higher quality data and has the widest confidence interval (0.2 – 12.7 per cent).[86]

Variability of excess returns and the method of averaging

SFG stated that historical excess return estimates have very wide confidence intervals[87] and an estimate of 6.5 per cent could not be rejected on statistical grounds.[88] The AER acknowledges that the estimated averages of historical excess returns (calculated on an arithmetic basis) have wide confidence intervals and neither 6.5 nor 6 per cent can be rejected on statistical grounds.[89] However, this is partly because annual stock market returns by their nature vary significantly between positive and negative values, which contribute to wide confidence intervals around mean excess return estimates (see figure A.1 above). Although there are wide confidence intervals around excess return estimates, the point estimates calculated on both an arithmetic and a geometric mean basis[90] are still relevant and should inform the best estimate of the MRP.

SFG noted that the CAPM can be applied assuming a one year investment horizon or a 10 year investment horizon, but that estimating excess returns for non-overlapping 10 year periods is precluded by the available data.[91] For the reasons outlined above, the AER considers that an assumption of a 10 year time horizon is appropriate to maintain consistency with the term of the risk free rate proxy used in the CAPM. As noted in the draft decision, the AER recognises that it is difficult to estimate excess returns over a 10 year time horizon due to the limited availability of data.[92] However, arithmetic mean estimates of realised annual excess returns are likely to overstate realised excess returns over a 10 year time horizon because they do not take account of the cumulative effect of returns over a 10 year time horizon.[93]

---

86 The confidence intervals are reported by Handley as 95 per cent confidence intervals. Handley, *Memorandum: Equity Risk Premium 1883 to 2010*, May 2011, p. 1.

87 Confidence intervals take account of variability of observations in a set of data away from the average and provide statistical bounds on the likely true value for an estimated value based on the particular data set.

88 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 13–14.

89 Specifically, based on the data neither 6 per cent, nor 6.5 per cent can be rejected as the true value for the mean of excess returns within the 95 per cent confidence intervals reported by Handley. This confidence interval assumes a normal probability distribution. For example, the 95 per cent confidence interval for the annual historical excess return estimate for 1958–2010(calculated as an arithmetic mean) is 0.2 – 12.7 per cent. Handley, *Memorandum: Equity Risk Premium 1883 to 2010*, May 2011, p. 1

90 An arithmetic mean simply sums all return observations and divides by the number of observations. A geometric mean multiplies a return observation by one plus the next years return cumulatively across the period, and then takes the nth root of the cumulative product of returns where n is the number of observations. See AER, *Draft decision*, February 2011, pp. 194–195.

91 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 17–18.

92 AER, *Draft decision*, February 2011, p. 195.

93 The cumulative return across a 10 year period will be less than the average of yearly returns because a negative return in later years will reduce the value of gains in previous years as well as the value of the initial portfolio. This is not reflected in arithmetic means of yearly returns. The geometric mean across the entire time periods considered by the AER are significantly less than the arithmetic means across the same period, which reflects the cumulative effect of negative returns on the previous years' returns.

SFG noted that using a geometric mean for the period 1883–2008 is equivalent to assuming a 128 year investment horizon.[94] The AER acknowledges that geometric averages estimate a cumulative return over the relevant sample period, which would be 53, 74 and 128 years for the different sample periods considered by the AER. However, in the draft decision the AER did not propose to adopt a geometric mean estimate as the best estimate of the MRP and it has not decided to do so in this final decision. Consistent with the draft decision the AER notes that the arithmetic means of historical excess returns are likely to be overstated to some degree. The best estimate of historical excess returns over a 10 year period is likely to be somewhere between the geometric mean and the arithmetic mean of annual excess returns. The imprecise nature of historical excess returns estimates, as well as other indicators of the expected MRP, means a significant degree of judgment is required when interpreting the available evidence to inform the best estimate of the expected MRP.

The consideration of imputation credits in historical excess returns

SFG submitted that changes in the assumed value for the imputation credit utilisation rate (theta) only have a minor impact on historical estimates of the MRP. It submitted that, by itself, a change in theta would not justify departing from an MRP of 6.5 per cent to 6 per cent.[95] SFG also stated that changing the sample periods over which the MRP is calculated has a more significant impact than changing the assumed value of theta on historical estimates of excess returns.[96]

The AER acknowledges that, by itself, a change in theta would not justify departing from an MRP of 6.5 per cent to 6 per cent. It recognises that the estimation of the MRP is imprecise and requires consideration of a range of evidence. The AER also notes that it was primarily the uncertainty arising from the impact of the GFC at the time of the WACC review that prompted it to depart from previous regulatory practice and increase the MRP from 6 per cent to 6.5 per cent.[97] It was not the assumed value of theta that prompted the AER to increase the MRP from 6 per cent to 6.5 per cent.

The AER has considered estimates of historical excess returns that have been explicitly 'grossed-up' for an assumed value of theta of 0.35. That is, the historical excess return estimates considered by the AER were first estimated using data on dividends and capital gains from accumulation indices, and observations of yields on 10 year CGS. These estimates were then adjusted for an assumed theta value.[98] It would be internally inconsistent within the building blocks framework to consider historical excess return estimates that have been adjusted for an assumed value of theta different from that adopted by the AER to estimate the cost of corporate income tax.

---

94 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 17–18.
95 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 5–7.
96 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 5–7. As noted in the draft decision the sample periods used for estimating historical excess returns were chosen based on data quality considerations, not to intentionally bias estimates of historical excess returns as was suggested by SFG. See AER, *Draft decision*, February 2011, pp. 193–194.
97 AER, Final decision, *WACC review*, May 2009, p. 238.
98 Handley, *An Estimate of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 January 2011, pp. 3–4.

At the time of the draft decision, the AER determined that the best estimate of theta was 0.65. It therefore considered historical excess return estimates that were explicitly grossed-up using an assumed value of theta of 0.65. In this final decision, the AER has adopted a theta estimate of 0.35. Therefore it has considered historical estimates of excess market returns that have been grossed-up for a theta estimate of 0.35. Historical excess return estimates grossed-up for a theta estimate of 0.35 over different periods and calculated as arithmetic means are 5.9–6.4 per cent.

Due to the imprecise nature of historical excess return estimates as outlined above, it may be inappropriate to adjust estimates when the assumed value of theta is very small. However, consistent with the draft decision[99] and previous regulatory practice[100], the AER has taken a conservative approach and considered estimates that have been explicitly grossed-up to take into account the value of distributed imputation credits.

VAA statement on imputation credits and the MRP

VAA stated that, in the draft decision, the AER misquoted VAA's view.[101] The AER does not consider it has misquoted the position stated in VAA's August 2008 report. In the draft decision, the AER referred to the main conclusion in the August 2008 report by VAA, which stated the following:[102]

> We recognise that precise estimation of both the MRP without imputation tax benefits and the estimation of imputation tax benefits is a challenge due to 'noise' in historical data. An overlay of the need for regulatory certainty encourages us to recommend that there be no change in the widely used 6% under a view that imputation tax benefits have no value but it this is not enough to prevent our recommendation of 7% when imputation benefits are included. While we have not focused on estimating an explicit value of gamma or the value of imputation tax credits once distributed in this paper, regulatory practice places a value on gamma of 0.3 and greater. Under these circumstances we recommend the MRP be 7%.

However, in its March 2011 report, VAA has referred to its discussion in a January 2009 report about whether regulatory decisions prior to the WACC review had regard to the value of imputation credits. The January 2009 report stated that historical estimates of the MRP considered by regulators prior to the WACC review had not been explicitly grossed-up to incorporate a specific value for imputation credits.[103]

In the WACC review explanatory statement, the AER did not dispute that the historical estimates of the MRP considered by regulators prior to the WACC review had not been explicitly grossed-up to incorporate a specific value for imputation credits. However, the AER noted that regulators had previously had regard to the

---

99 AER, *Draft decision*, February 2011 pp. 53–55.

100 See for example, AER, *Final decision, Victorian electricity distribution network service providers*, October 2010, p. 488.

101 VAA, *Comments on the market risk premium*, March 2011, Appendix 1.

102 VAA, *Market risk premium, a review paper*, August 2008. Note the conclusion is outlined before the introduction section. This position was also repeated in a later report, see VAA, *Market risk premium, further comments*, January 2009, p. 1.

103 VAA, *Comments on the market risk premium*, March 2011, Appendix 1.

value of imputation credits when setting the MRP. Specifically, forward looking estimates of the MRP were explicitly grossed-up to incorporate a value for imputation credits, but that historical estimates of the MRP were not explicitly grossed-up to reflect the value of imputation credits.[104]

Furthermore, the AER considered it appropriate to gross-up historical estimates of the MRP to incorporate the assumed value of imputation credits for the excess returns following the introduction of the imputation tax system in 1987. This was noted in the WACC review final decision.[105]

A.3.2 DGM based estimates of the MRP

As discussed below, DGM based estimates of the return on equity and inferred estimates of the MRP are highly sensitive to the assumptions made. It is necessary that all assumptions made have a sound basis, otherwise estimated results from DGM analysis may be inaccurate and lead analysts into error.[106] The AER considers that DGM based analysis should not be used as the principal basis for estimating the return on equity, and at best can be used as a check on the reasonableness of the estimated return on equity.

CEG submitted analysis, which suggested that an MRP of 7.4 per cent combined with an equity beta of 1.0 and a growth rate of zero would equate current dividend forecasts to the current share prices of six energy network businesses. However, its analysis is highly sensitive to the assumptions made. For example, CEG has grossed up its estimates for an assumed value for theta of 0.5. However, if the model was adjusted to incorporate a theta estimate of 0.35,[107] CEG's suggested estimate of the MRP (combined with an equity beta of 1) would change from 7.4 to 6.7 per cent.

CEG's analysis is also dependent on the current dividend yields (approximately 7–10 per cent) for the six energy network businesses analysed being maintained into perpetuity. However, these yields are very high compared to the market average, which was estimated to be approximately 4 per cent in April 2011.[108] If the analysis was changed to incorporate an assumed dividend yield of 4 per cent, a theta value of 0.35 and a zero growth rate across all six businesses, the MRP estimated from CEG's analysis would change from 7.4 per cent to –0.9 per cent.[109] This illustrates the high sensitivity of DGM analysis to the assumptions made.

---

104 AER, *Explanatory statement, Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, December 2008, pp. 144–146 (AER, *Explanatory statement, WACC review*, December 2008).

105 See AER, *Explanatory statement, WACC review*, December 2008, pp. 161–166; AER, *Final decision, WACC review*, May 2009, p. 209.

106 For example corporate finance texts have noted "The simple constant-growth DCF [discounted cash flows] formula is an extremely useful rule of thumb" but "Naive trust in the formula has led many financial analysts to silly conclusions." Richard Brealey, Stewart Myers and Franklin Allen, *Principles of Corporate Finance: International Edition*, 9th Edition, Boston: McGraw-Hill, 2008, p.95.

107 The value of theta of 0.35 is applied by the AER for the purposes of estimating the cost of corporate income tax, which is discussed in chapter 6.

108 This is based on the MSCI Australia index. See RBA statistical tables, Table F.7 – share market, available at http://www.rba.gov.au/statistics/tables/pdf/f07.pdf, viewed 13 May 2011.

109 This is based on AER analysis using CEG's DGM analysis.

The basis for the AER's beta estimate of 0.8 is outlined in chapter 5. To separately estimate the MRP using DGM analysis, dividend yields and growth forecasts would need to be estimated for the market as a whole.[110] The MRP estimated using CEG's DGM analysis and adjusted to incorporate market wide assumptions is approximately 4.5–5.6 per cent over a notional 10 year horizon.[111] This estimate is based on the following assumptions:

- a theta value of 0.35, consistent with the value applied in estimating the cost of corporate income tax in this decision
- a dividend yield of approximately 4–5 per cent, consistent with average dividend yields on the ASX 200 index[112]
- an assumed dividend growth rate of 6 per cent, consistent with long-term GDP growth estimates from the Reserve Bank of Australia (RBA) of approximately 3.5 per cent [113] and an assumed inflation rate of approximately 2.5 per cent, consistent with long-term inflation forecasts.

Table A.4 MRP estimates with different growth assumptions

Growth rate	Theta value	Dividend yield	Estimated MRP
0%	0.35	4 – 5 %	–0.9 – 0.4 %
3.5%	0.35	4 – 5 %	2.3 – 3.4 %
6.0%	0.35	4 – 5 %	4.5 – 5.6 %

Source: AER analysis.

Table A.4 illustrates that forward looking MRP estimates based on DGM analysis are significantly lower than APT Allgas' proposed MRP of 6.5 per cent.

SP AusNet and Multinet also provided a submission that attached a report from Capital Research (CR). CR conducted its own DGM analysis to estimate an implied MRP. CR submitted that a reasonable range for the MRP is 6.6–7.5 per cent. In estimating this range, CR assumed a long-term dividend growth rate of 8.12 per cent, dividend yield forecasts in the range 2.5–6.5 per cent, and a theta value of between 0 and 0.5. As outlined above, the AER notes that DGM analysis is very sensitive to the

---

[110] This is because the MRP is a market-wide parameter and is not specific to a particular firm or industry

[111] These figures are the estimated premium in excess of the 10-year CGS yield, which implies a notional 10-year investment horizon.

[112] Average dividend yields estimated from the MSCI Australia index for 2005–2011 as reported in RBA statistical tables, Table F.7 – share market, available at http://www.rba.gov.au/statistics/tables/pdf/f07.pdf, viewed 13 May 2011. This is also reflected in Capital Research's DGM analysis, which illustrates that most analysts' forecasts of dividend yields since 1999 have been around 4–5 per cent; see CR, *Forward estimates of market risk premium*, April 2011, p. 15. SFG has suggested that the current dividend yield of approximately 4 per cent is higher than much of the past decade; see SFG, *Issues affecting the estimation of MRP*, 21 March 2011, p. 11.

[113] RBA, *Statement on monetary policy*, May 2011, p. 63.

assumptions made. The AER has the following concerns about the dividend growth assumption made by CR in its analysis:

- The assumed growth rate of 8.12 per cent appears to be based on analysts' estimates of the long-term growth in earnings per share (8.18 per cent). CR noted that analysts' estimates of long-term growth typically translate to a period of 3–5 years. However, the DGM assumes growth at a constant rate in perpetuity. Logically, growth in dividends paid by the market portfolio cannot exceed economic growth because dividends comprise only part of the economy.[114]

- This growth rate also appears to be principally based on analysts' forecasts of growth in earnings per share, not growth in dividends per share. CR inferred an estimate of the growth in dividends per share of 8.91 per cent based on analysts' 12-month forecasts of dividends per share and how they change over time. However, this may not necessarily reflect analysts' actual estimates of growth in dividends per share across the market, which is what is required when estimating the MRP using DGM analysis.

- If the assumed growth rate was more consistent with long-term economic growth forecasts of around 3.5 per cent and an inflation rate of 2.5 per cent as noted above, the MRP estimated through CR's method would be less than the estimated range of 6.6–7.5 per cent.[115]

CR's assumed growth rate of 8.12 per cent also varies significantly from CEG's assumed growth rate of –3.5 to 5.5 per cent. The sensitivity of results when using varied assumptions in DGM analysis highlights the need for the assumptions used in DGM analysis to have a sound basis.

A.3.3 Implied volatility from option prices

VAA stated that it estimated a forward view of the MRP over time.[116] The AER accepts that the MRP is a forward looking value and that it is likely to revert to a mean value over time. However, the AER does not consider that VAA's implied volatility and 'glide path' approach provides the best estimate of a long-term MRP for the purposes of this decision. In the draft decision the AER outlined its concerns about the use of a constant market risk per unit of implied volatility from option prices in providing a one year MRP estimate.[117]

---

[114] If the perpetual dividend growth rate was greater than economic growth, dividend payments would eventually exceed the size of the economy, which is impossible. See Lally, *The cost of capital under dividend imputation, report prepared for the ACCC*, June 2002, p. 31. See also Richard Brealey, Stewart Myers and Franklin Allen, *Principles of Corporate Finance: International Edition*, 9th Edition, Boston: McGraw-Hill, 2008, p.95, which states "Naive trust in the [constant growth discounted cash flow model, or DGM] formula has led many financial analysts to silly conclusions… resist the temptation to apply the formula to firms having high current rates of growth. Such growth can rarely be sustained indefinitely, but the constant-growth DCF formula assumes it can."

[115] Due to the late submission of CR's analysis, the AER has not been able to fully analyse CR's data and estimate alternative DGM based estimates with different growth assumptions.

[116] VAA, *Comments on market risk premium*, March 2011, p. 8.

[117] AER, *Draft decision*, February 2011, pp. 195–198.

In the draft decision, the AER noted that Chernov (2007) explained why at the money option implied volatility is a biased and inefficient forecast of future realised volatility.[118] In response to this, NERA noted that Chernov (2007) also stated the following:[119]

> A number of robust conclusions have emerged: ATM implied volatility is (1) informative about future volatility, (2) superior to other measures of volatility and (3) an upwards-biased predictor.

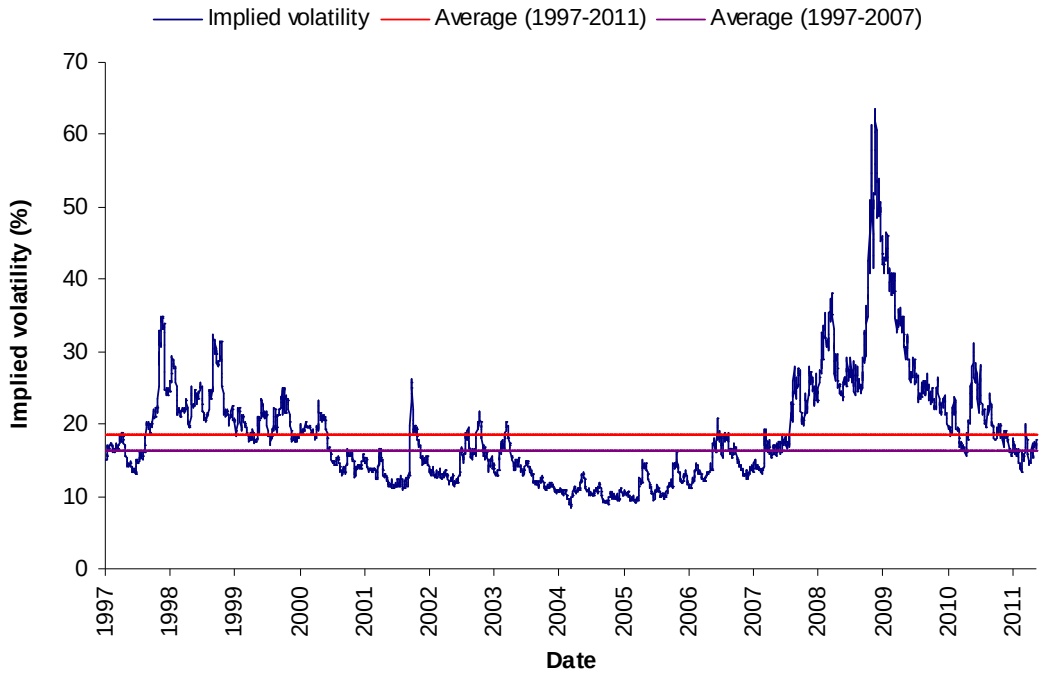
NERA also outlined two other US reports that supported the use of implied volatility as a predictor of realised volatility.[120] However, it is clear from the analysis and conclusions of Chernov (2007), as well as the two US studies cited by NERA, the relationship between implied volatility and realised volatility is not straight forward.[121] More importantly the exact relationship between volatility and the MRP is not straight forward, nor is option implied volatility commonly used to directly estimate the MRP over a long-term horizon.[122]

NERA outlined a number of academic reports from the US that provided some support for a link between the MRP and a measure of implied volatility.[123] NERA did not provide a reliable method for directly estimating the MRP over a long-term horizon using the implied volatility from option prices at a particular point in time.[124] The AER is not aware of a reliable way of directly estimating the MRP over a one year period (let alone for a 10 year time horizon) using implied volatility from option prices. In addition, figure A.3 illustrates the high variability of option implied volatility over time. As a result, the AER considers that option implied volatility is at best a qualitative indicator of the expected MRP.

---

118 AER, *Draft decision,* February 2011, p. 198.
119 NERA, *Market risk premium,* April 2011, pp. 17–19.
120 NERA, *Market risk premium,* April 2011, pp. 17–19.
121 See quotes in NERA, *Market risk premium,* April 2011, pp. 17–19.
122 See quotes in NERA, *Market risk premium,* April 2011, p. 19.
123 NERA, *Market risk premium,* April 2011, p. 19.
124 NERA noted that there are prolonged swings in the implied volatility series away from its mean, but that the volatility is mean reverting. NERA, *Market risk premium*, April 2011, p. 21.

Figure A.3 Implied volatility from prices of 3 month options on the ASX200 index



Source: AER analysis

VAA, SFG and NERA stated that implied volatility from option prices increased significantly at the time of the GFC. They stated that implied volatility has reduced since the height of the GFC, but currently remains above pre-GFC levels.[125] VAA previously stated that where there are abnormal levels of volatility it is appropriate to use an alternative approach (such as its suggested implied volatility and 'glide path' approach) to adopting a long-term estimate.[126] However, implied volatility appears to have reduced significantly since the height of the GFC and is currently consistent with levels experienced prior to the GFC, which can be seen from figure A.3. Figure A.3 shows the average implied volatility indicated by 3 month options since 1997, both prior to the GFC and the average across the entire period. Current levels of implied volatility are consistent with both of these averages. In this context, the AER considers that it unreasonable to accept VAA's suggested implied volatility and 'glide path' approach, which was initially proposed as an alternative to long term estimates based on prevailing conditions characterised by very high levels of implied volatility.

A.3.4 Current market conditions

VAA presented a graph showing time to recovery after previous stock market crashes. It stated that the graph shows that there is still some time to pass before the market recovers to pre-GFC levels. The AER notes that VAA's graph shows that the path of recovery following previous stock market crashes varies significantly—for example, between approximately 3 and 8 years.[127] VAA has not provided a framework for

---

125 VAA, *Comments on market risk premium*, March 2011, pp. 4–5; SFG, *Issues affecting the estimation of MRP*, 21 March 2011, p. 10; NERA, *Market risk premium*, April 2011, p. 20.
126 VAA, *Market risk premium, estimate for January 2010–June 2014*, December 2009, p. 1.
127 VAA, *Comments on market risk premium*, March 2011, pp. 5–6.

assessing the time to recovery since the 2007 crash. As a result it is not possible to draw conclusions about when the market will return to pre-2007 levels.

The latest evidence provided by VAA suggests that implied volatility derived from the prices of three month and one year options on the ASX200 index appears to have significantly reduced since the height of the GFC. Furthermore, figure A.3 indicates that implied volatility has returned to pre-GFC levels.

Recent statements from the RBA, the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF) continue to indicate a robust economic outlook. In the May 2011 Statement on Monetary Policy the RBA stated:

> The Bank's medium-term central scenario for the economy remains similar to that discussed over the past year or so. For most of the forecast horizon, growth is expected to be at, or above, trend and the unemployment rate is expected to decline gradually. Compared with three months ago, the forecasts for growth in 2012 and into 2013 have been lowered a little, largely reflecting the recent appreciation of the exchange rate. In the short term, the quarterly profile for GDP will be significantly affected by the floods; as noted above, aggregate output is likely to have declined in the March quarter, but a bounce-back is expected in the June and September quarters.[128]

In its May 2011 economic outlook summary for Australia, the OECD continued to forecast robust economic growth in Australia. The OECD stated:

> The Australian economy is set to rebound after the disruptions caused by major natural disasters in early 2011. Growth, driven by historically high terms-of-trade, should accelerate from 3% in 2011 to 4½ per cent in 2012. Unemployment is projected to fall, although the remaining slack in the economy will mute the risk of inflation pressures.[129]

In an October 2010 staff report and public information notice, the IMF stated that the economic outlook for Australia remains favourable. It forecast economic growth of 3 to 3.5 per cent over 2010 and 2011.[130]

VAA noted that there may be times where market risk is substantially below long-term estimates. VAA noted that in such a scenario it would advocate using a 'glide-path' approach to estimating an MRP that reverts to a long-term estimate. Such an approach would set an MRP below long-term estimates. In the draft decision the AER noted that forward looking estimates of the MRP have previously been lower than long-term historical excess return estimates. However, the ACCC and state regulators have consistently adopted a long-term MRP estimate of 6 per cent when this was the case.[131]

---

128 RBA, *Statement on monetary policy*, May 2011, p. 3.

129 OECD, Australia economic outlook 89—country summary, May 2011, http://www.oecd.org/document/15/0,3746,en_2649_33733_45268687_1_1_1_1,00.html, viewed 7 June 2011.

130 IMF, *Australia: 2010 Article IV Consultation—Staff Report; and Public Information Notice on the Executive Board Discussion*, October 2010, p. 10. available at http://www.imf.org/external/pubs/ft/scr/2010/cr10331.pdf.

131 AER, *Draft decision*, February 2011, pp, 51–52.

There is significant difficulty in calculating the MRP on a time varying basis. For this reason the AER considers a long-term MRP estimate is likely to provide the best estimate in the absence of a structural break.[132] At the time of the GFC, the AER increased its long-term MRP best estimate of 6 per cent to 6.5 per cent to take into account the uncertainty associated with the effects of the GFC on future market conditions. As discussed above, market conditions since the GFC have significantly improved and reflect reduced concern about the potential ongoing impact of the GFC. There is also a much more robust long-term economic and financial markets outlook for Australia than was the case at the height of the GFC.

A.3.5 Survey evidence

In the draft decision, the AER noted that survey evidence both prior to and following the GFC supported an MRP of 6 per cent. Survey evidence prior to the GFC included the following:

- Truong, Partington and Peat (2008) found that the MRP adopted by Australian firms in capital budgeting ranged from 3–8 per cent, with an average of 5.94 per cent. The most commonly adopted MRP was 6 per cent.

- Capital Research (2006) found that the average MRP adopted across a number of brokers was 5.09 per cent.

- KPMG (2005) found that the MRP adopted in independent expert valuation reports ranged from 6–8 per cent. KPMG's report showed that 76 per cent of survey respondents adopted an MRP of 6 per cent.[133]

The latest survey evidence, conducted following the GFC included the following:

- Fernandez (2009) found that the MRP used by Australian academics in 2008 ranged from 2–7.5 per cent with an average of 5.9 per cent.[134]

- Fernandez and Del Campo (2010) found that the MRP used by Australian analysts in 2010 ranged from 4.1–6 per cent with an average of 5.4 per cent.[135]

NERA noted some shortcomings of survey based evidence on the MRP and suggested that survey respondents may not provide serious responses. However, the AER does not consider there is any reason to suspect that survey respondents are biased or that they do not provide serious responses. As noted in the draft decision, survey results are subjective because different market practitioners may look at a range of different time horizons and they are likely to have differing views on market risk. However, survey based estimates of the MRP are forward looking, reflect actual market practice, and are unlikely to be biased.

---

[132] See also AER, *Final decision, WACC review*, 1 May 2009, pp. 190–191.
[133] AER, *Final decision, WACC review*, May 2009, pp. 221–225.
[134] Fernandez and Del Campo, *Market Risk Premium used by Professors in 2008: A Survey with 1400 Answers*, IESE Business School Working Paper, WP-796, May 2009, p. 7.
[135] Fernandez and Del Campo, *Market Risk Premium Used in 2010 by Analysts and Companies: A Survey with 2400 Answers*, IESE Business School, May 21 2010, p. 4.

NERA also noted that the latest surveys following the GFC are based on a limited sample of respondents and suggested that the MRP indicated by respondents are not adjusted for imputation credits. The AER recognises that the latest survey based evidence from 2009 and 2010 incorporates a limited sample of respondents. However, the AER notes that there was a significant amount of survey evidence preceding the GFC, which supported an MRP of 6 per cent. The latest survey evidence, although limited, indicates that the MRP applied by market practitioners is unlikely to have changed as a result of the GFC.

With regard to the value of imputation credits being explicitly incorporated in survey based evidence, Truong, Partington and Peat (2008) noted that in their survey 15 per cent of respondents stated their MRP was adjusted to incorporate imputation credits. They noted that the remaining 85 per cent of respondents did not adjust for imputation credits because it was either too difficult, should have a very small impact, or was unnecessary as the market already adjusts stock prices to incorporate the value of imputation credits and so this will already be reflected in the cost of capital estimate.[136] NERA suggested that an imputation adjusted MRP from Fernandez (2009) and Fernandez and Del Campo (2010) is 6.6 per cent based on an assumed theta value of 0.65.[137] The AER does not consider it appropriate to adjust the overall estimates of Fernandez and Del Campo based on one survey respondent, who noted that they were uncertain about how to interpret historical estimates with wide confidence intervals and did not outline how to adjust an MRP estimate to include value arising from imputation credits. Furthermore the estimation of MRP is imprecise and it may not be appropriate to explicitly adjust survey based estimates of the MRP for an assumed theta value that is as low as 0.35.

Due to the subjective nature of survey based estimates, uncertainty about the term over which the MRP is estimated by different respondents and the differing views of respondents about market risk, the AER has not relied exclusively on survey based estimates of the MRP. Nonetheless, survey based estimates of the MRP are relevant for consideration along with the range of other evidence on the MRP.

A.3.6 Market practice

The AER notes that the range of MRP estimates used in broker reports was 5–6.5 per cent, with an average of approximately 5.9 per cent. In addition to this, recent research completed by Shane Oliver, Head of Investment Strategy and Chief Economist at AMP Capital Investors, suggested that the likely equity risk premium for a 5 to 10 year period is 5.9 per cent based on historical data.[138] However, he noted that this realised equity risk premium is probably exaggerated by a low starting point for the price to earnings ratio, making it easier for shares to provide decent returns. He

---

136 Truong, Partington and Peat, 'Cost of capital estimation and capital budgeting practice in Australia,' *Australian Journal of Management*, vol. 33, no. 1, June 2008, p. 115.

137 NERA has assumed a value for distributed imputation credits (theta) of 0.65 whereas APT Allgas has proposed a value for theta of 0.35. If the assumed value for theta is 0.35, NERA's analysis would provide a weighted imputation adjusted MRP estimate of 6.2 per cent. See NERA, *Market risk premium*, April 2011, pp. 13–15.

138 This value also incorporates the imputation credit value.

stated that AMP Capital Investors' estimate of the prospective required equity risk premium for shares is around 3.5 per cent. [139]

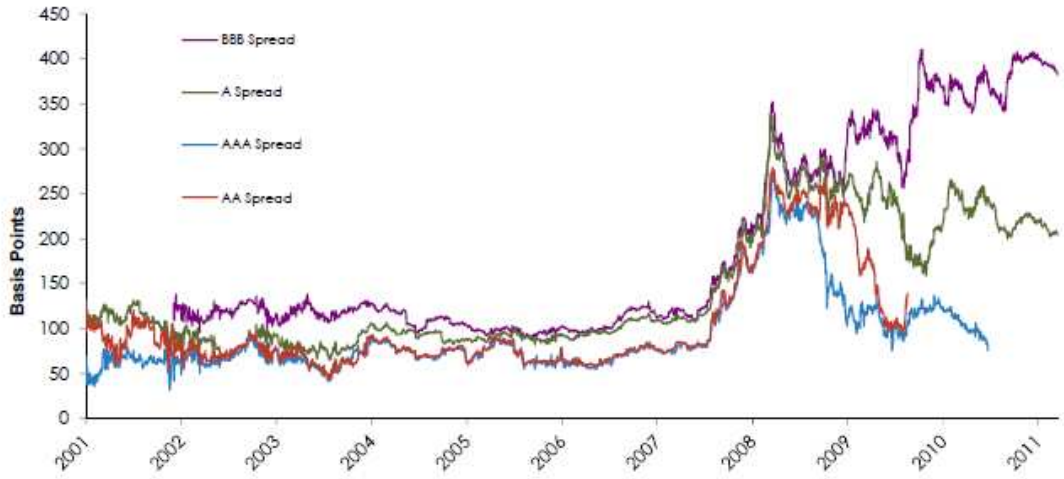
A.3.7 Difference between cost of equity and cost of debt

SFG and VAA submitted that the spread between AAA and BBB bonds increased significantly at the time of the GFC and still remains above pre-GFC levels. They stated that this indicates that market conditions have not returned to normal.[140] However, the AER considers that data on the spread between AAA and BBB bonds is unlikely to be reliable. As discussed in greater detail in section A.5, there is a significant paucity of data on long-term bonds with credit ratings close to BBB.[141] This is likely to reduce the accuracy of yield forecasts for long-term BBB rated corporate bonds, such as those referred to by SFG and VAA. This is demonstrated by the following factors:

- Forecast yields on BBB rated corporate bonds from data providers such as Bloomberg have increased to levels in excess of forecast yields during the GFC, which can be seen in figure A.4. However, this is contrary to statements from the RBA, IMF and OECD, which indicate that debt market conditions have significantly improved since the height of the GFC.

- Recent observations of bond yields with similar characteristics to the 10 year BBB+ benchmark bond applied by the AER indicate observed yields on actual corporate bonds are significantly below forecasts from fair value estimates.

Figure A.4 Debt spreads on 7 year corporate bonds over 10 year Commonwealth bonds



Source: VAA, *Comments on market risk premium in draft decision by AER for Envestra February 2011*, March 2011, p. 2.

---

139 AMP Capital Investors, 'Are shares good value and what about bank deposits?', *Oliver's insights*, 16 September 2010.

140 SFG, *Issues affecting the estimation of MRP*, 21 March 201, p 12 and VAA, *Comments on market risk premium*, March 2011, p. 2.

141 This is reflective of an illiquid Australian corporate bond market in Australia relative to a more liquid Australian equity market.

VAA submitted that there has been a narrowing of the risk premium on equity relative to the risk premium on debt. VAA noted its expectation would be that the equity risk premium would at least rise consistent with the DRP.[142] VAA also noted a report by Professor Grundy to support its expectation that the equity risk premium would rise consistent with the DRP. As noted above, the current difference between BBB and AAA rated bonds as indicated by figure A.4 is likely to be overstated. Moreover, the use of the spread between long-term BBB rated bonds and AAA rated bonds is limited by the paucity of data on long-term bonds with a credit rating close to BBB in the Australian market. It is also not unreasonable for conditions in debt and equity markets to differ from each other over time.

A.3.8 Conclusion

Based on the considerations outlined above the AER considers an MRP of 6 per cent is the best estimate in the circumstances and is commensurate with prevailing conditions in the market for funds.[143]

The AER also considers that an MRP of 6 per cent is consistent with the revenue and pricing principles set out in section 24(2)(a) of the NGL, which states that the service provider should be provided with a reasonable opportunity to recover at least its efficient costs. The MRP of 6 per cent best meets the NGO, which is to promote efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

A.4 Debt risk premium

This section sets out the AER's consideration of matters raised in the revised proposal regarding the AER's approach to determine the DRP in the draft decision. It also considers submissions from APT Allgas in response to a request by the AER for further information.[144]

The AER considers that the benchmark DRP should be based on an Australian corporate fixed rate bond issuance with a term to maturity of 10 years and a BBB+ credit rating.[145] Accordingly, the AER has compared all bonds with these characteristics, including floating rate bonds, as reported by Bloomberg and UBS.[146]

---

142 VAA, *Comments on market risk premium*, March 2011, pp. 3–4.

143 NGR, r. 87(1).

144 The AER undertook this process to provide APT Allgas the opportunity to comment on the AER's consideration of additional longer term observed bond yields which have become available since the release of the draft decision.

145 The 10 year benchmark reflects consistency with the term of the risk free rate, while the BBB+ credit rating reflects what the AER determined during the WACC review following consideration of comparable energy businesses. Although the SORI has no status under the NGR, it was intended to provide guidance to the gas sector. AER, *Review of the weighted average cost of capital (WACC) parameters, Statement of regulatory intent*, 1 May 2009.

146 CBASpectrum also publish observed yields for Australian corporate bonds. However, CBASpectrum no longer provide accompanying credit rating details for these issuances. It is therefore difficult to reconcile the observed bonds with their credit rating. Additionally, the sample of bonds provided by CBASpectrum is not comprehensive compared with Bloomberg and UBS. In combination, these restrictions do not allow CBASpectrum data to be used independently—that is, without cross referencing bond yields with other data service providers such as Bloomberg and

In particular, the AER has considered the relevance of the following corporate bonds as possible sources of information when setting the benchmark cost of debt:

- APA Group (BBB rating, maturing in July 2020)
- Brisbane Airport (BBB rating, maturing in July 2019)
- Dalrymple Bay Coal Terminal (DBCT) (BBB+ rating, maturing in June 2021)[147]
- SP AusNet (A– rating, maturing in April 2021)
- Stockland (A– rating, maturing in November 2020)
- Sydney Airport floating rate bonds (BBB rating, maturing in November 2021 and October 2022).

The AER has also considered the relevance of Bloomberg's fair value estimates for setting the benchmark cost of debt, as proposed by APT Allgas.[148] Figure A.5 plots the corporate bonds considered by the AER, along with Bloomberg's fair value estimates for five and seven years, and extrapolated to 10 years using the AER's extrapolation method.[149]

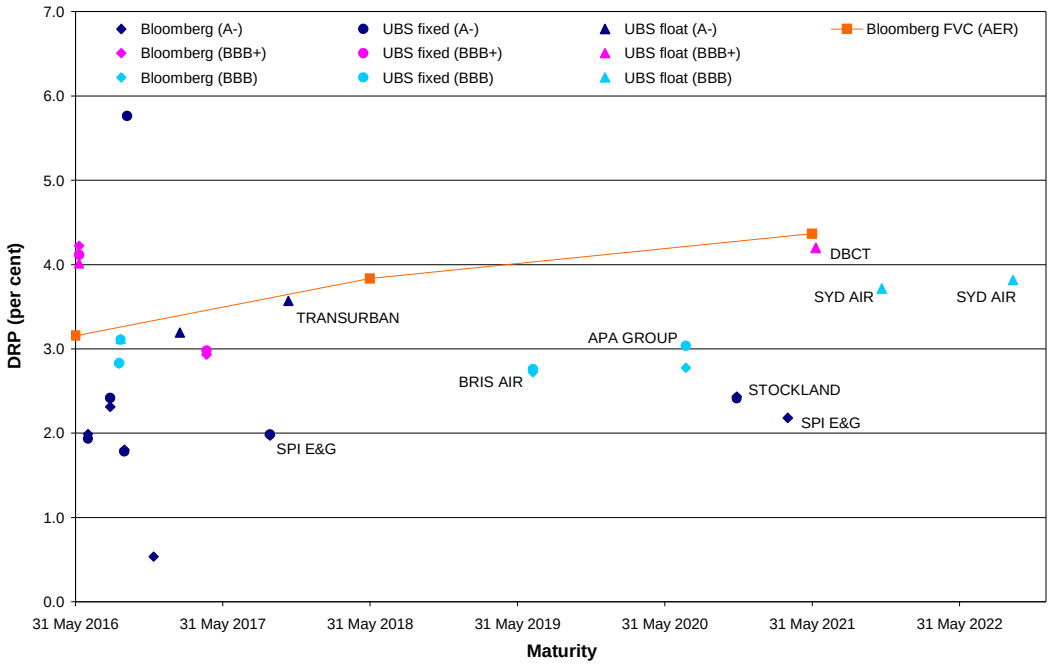
UBS. Given these practical limitations, the AER has not relied upon CBASpectrum's observed yields for the purposes of this decision.

147 The DBCT bond was originally issued by Babcock and Brown Infrastructure (BBI). In December 2009, however, BBI underwent a recapitalisation process and was renamed as the Prime Infrastructure Group.

148 Bloomberg does not publish separate fair value estimates for BBB–, BBB and BBB+ rated debt. Instead, bonds with ratings in the generic BBB category are included in a single sample. References within this chapter to Bloomberg's BBB fair value estimates encompass bonds with a credit rating of BBB–, BBB or BBB+.

149 The AER's extrapolation approach is detailed in the draft decision. AER, *Draft decision*, February 2011, pp. 190–192.

Figure A.5 Australian corporate bonds with maturities greater than five years and credit ratings ranging from BBB to A–



Source: Bloomberg, UBS, AER analysis.

Note: Yields have been annualised, and the floating rate bonds have been converted to fixed rate equivalents. While no other adjustments have been made, the AER recognises that the SP AusNet bonds include resettable coupons (that adjust the coupon rate upon a credit rating downgrade) and the DBCT bond is callable. As noted by Oakvale Capital the likely yield impact of resettable coupons is expected to be small (25 basis points).[150] Additionally, the make whole nature of the DBCT bond largely removes the yield impact of the call feature.[151]

A.4.1 Bloomberg fair value estimates

The AER maintains its view that a range of evidence suggests that the behaviour of Bloomberg's fair value estimates since the onset of the GFC is somewhat counterintuitive. Specifically, Bloomberg's seven year, BBB rated fair value estimates and the spread between Bloomberg's seven and 10 year, AAA rated fair value estimates remain at near historical highs.[152]

Moreover, the AER considers that CBASpectrum's decision to cease publication of its fair value curves raises questions about the validity of using Bloomberg's fair value estimates as the only source of information when setting the DRP. In particular, the AER understands that one factor in CBASpectrum's decision was concerns about reliability, and Bloomberg's and CBASpectrum's fair value estimates rely on similar input data.[153] The fact that Bloomberg has progressively reduced the term of its BBB

---

150 Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 8–9.

151 CEG, *Estimating the 10 year BBB+ cost of debt, A report for JGN*, December 2010.

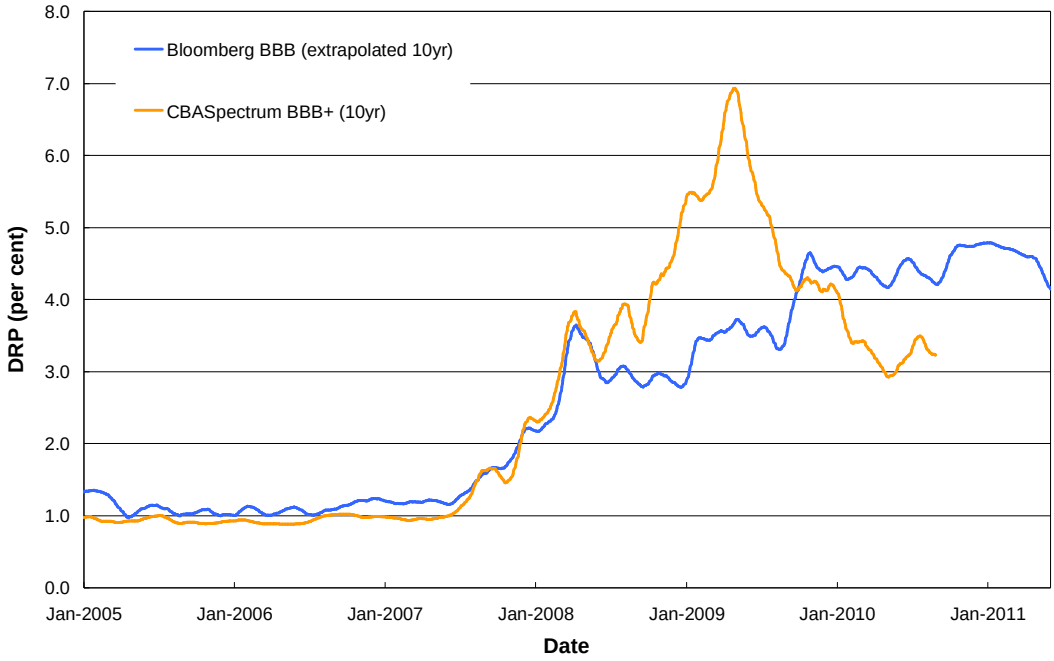
152 The spread between Bloomberg's seven and 10 year, AAA rated fair value estimates are used by the AER to extrapolate Bloomberg's seven year, BBB rated fair value estimates.

153 CBASpectrum website <https://www.cbaspectrum.com/Html/NewAboutSpectrum.html>.

fair value estimates further highlights the paucity of long-term bonds in the Australian market.

In this context, figure A.6 compares the historical DRP estimates for both Bloomberg and CBASpectrum. Notably, Bloomberg's fair value estimates imply that prevailing conditions in debt markets are more risky now than during the GFC, despite substantial evidence indicating that debt market conditions have improved.[154]

Figure A.6 Comparison of debt risk premia—Bloomberg and CBASpectrum



Source: Bloomberg, CBASpectrum, AER analysis.

Envestra stated that the historically high debt margins implied by Bloomberg's fair value estimates are expected, and provided a report by McKinsey Global to support these views. In particular, Envestra stated that investor views about the appropriate level of compensation for risk have changed, and that the regulatory environment—particularly Basel III requirements—are expected to increase future costs of capital.[155] Australia Ratings also stated that a general and significant repricing of credit risk has occurred, with a resultant impact on the composition of ratings defined indices.[156]

The McKinsey Global report, however, provided a broad economic outlook for global capital markets. It has minimal reference to Australian economic conditions, and more importantly, Australian corporate debt markets. In this context, the AER considers it is of limited relevance to the analysis of the benchmark DRP for the purposes of this decision.

---

154 The AER accepts that movements in equity markets are only one factor affecting debt risk premiums. Other factors, such as default and liquidity risks, are also important considerations when assessing bond yields. These factors are discussed in greater detail throughout this appendix.

155 Envestra, *Revised access arrangement information, Attachment 9-7 – Response to AER draft decision on debt risk premium*, March 2011, p. 4.

156 Australia Ratings, *Estimating the debt risk premium*, March 2011, p. 13.

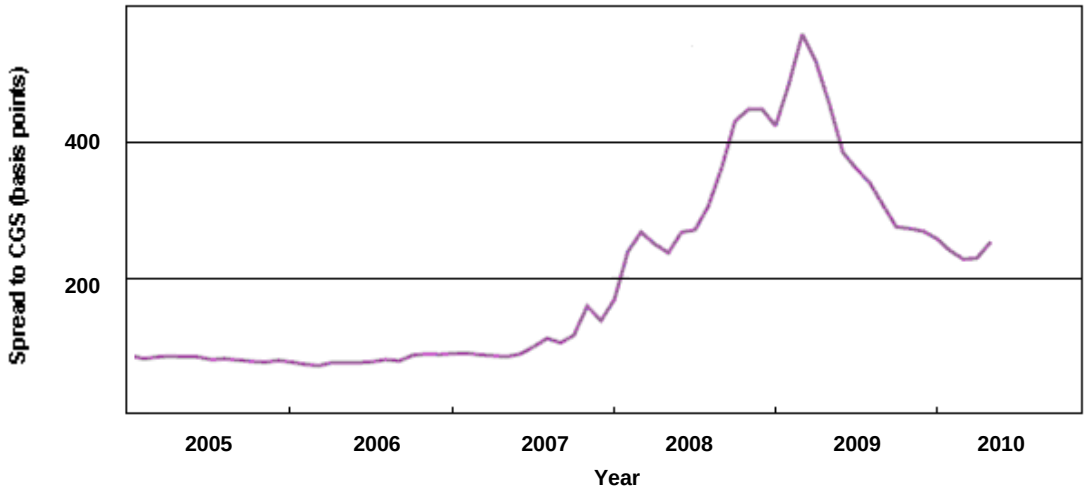
That said, the AER accepts that debt margins have increased in comparison to pre-GFC levels. However, independent evidence such as the RBA's March 2011 and June 2010 bulletins, indicate that spreads have subsided markedly since peaking during the height of the GFC.

In relation to bank funding costs, the RBA's March 2011 bulletin stated that while spreads (relative to CGS) increased significantly during the crisis—from around 50 basis points to around 220 basis points for 3 year bonds—improved capital market conditions have seen the cost of issuing new debt fall to around 100 basis points (relative to CGS).[157]

In relation to lower rated debt, the RBA's June 2010 bulletin stated that as risk aversion increased during the financial crisis, spreads (relative to CGS) for BBB rated corporate bonds widened to historical highs, peaking in March 2009.[158] Consistent with its analysis of bank debt, the RBA added that spreads across all bond classes have since narrowed, though remain above the unusually low levels observed prior to the financial crisis.

The RBA's analysis is based on a weighted average of spreads on corporate bonds with remaining terms to maturity of between one and five years. However, the AER considers that for similar reasons the spreads would likely have also narrowed for longer rated bonds. The widening and subsequent contraction of corporate bond spreads, as provided by the RBA, is shown in figure A.7.

Figure A.7 BBB rated corporate bond spreads (term to maturity of five years)



Source: RBA, *Bulletin: June quarter 2010*, June 2010, p. 58.

Further, as noted in section A.3, recent IMF and OECD reports indicated that the market outlook for Australia has improved considerably since the onset of the GFC.[159] Moody's Investors Service also stated its expectation that default rates for speculative,

---

157 RBA, *Bulletin: March quarter 2011*, March 2011, p. 37.

158 RBA, *Bulletin: June quarter 2010*, June 2010, pp. 58–59.

159 Yan Sun, *Potential Growth of Australia and New Zealand in the Aftermath of the Global Crisis*, IMF Working Paper, WP/10/27, May 2010; OECD, *Australia economic outlook 88—country summary*, November 2010.

Asia Pacific (excluding Japan) non-financial corporate debt will continue to decline in 2011.[160] The AER considers that these expectations, including those of the RBA, are all consistent with improving debt market conditions. On this basis, it is unreasonable to expect, as implied by the fair value estimates proposed by APT Allgas, that debt markets are more risky now than during the GFC.

Additionally, the proprietary nature of Bloomberg's fair value modelling limits the AER's ability to assess the factors driving Bloomberg's implied fair value curve. As noted in previous regulatory decisions, without an in depth understanding of Bloomberg's methodology, analysis can only be based on conjecture about how its fair value estimates are derived.[161] Given the limited ability to assess Bloomberg's fair value methodology, coupled with the contrary behaviour of Bloomberg's BBB rated fair value estimates (in comparison to independent market commentary), the AER maintains its position that it should remain cautious of relying solely on Bloomberg's fair value estimates to establish the benchmark DRP.

The market data that has recently become available—including bond issuances by the APA Group, Brisbane Airport, SP AusNet, Stockland and Sydney Airport, and the fall in observed yields for the DBCT bond—also suggests that Bloomberg's fair value estimates may not be representative of prevailing conditions in the market for funds in respect of the AER's notional benchmark service provider.[162] As figure A.8 demonstrates, all comparable, longer term observed bond yields now plot significantly below Bloomberg's implied fair value curve.[163]

---

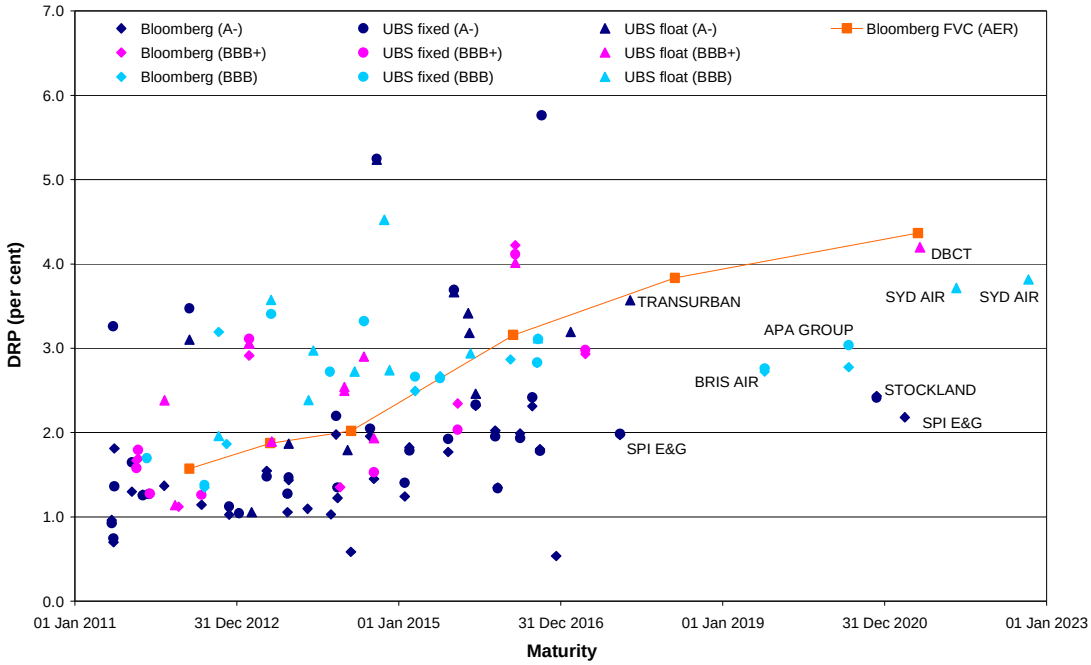
160 Moody's Investors Service, *Moody's: Asia Pacific corporate default rates will keep declining*, April 2011.

161 AER, *ActewAGL, Access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network*, Draft decision, November 2009, pp. 67, 218–219.

162 As discussed in previous AER decisions and in the WACC review (in the context of electricity network service providers), the benchmark service provider being considered under r. 87 is a stand alone 'pure play' service provider, operating in Australia without parent ownership and the relevant market for funds is Australia. AER, *Final decision, Jemena Gas Networks, Access arrangement proposal for the NSW gas networks, 1 July 2010–30 June 2015*, June 2010, p. 113; AER, *Final decision, WACC review*, May 2009, p. 109.

163 In the AER's draft decision for APT Allgas, the observed yield on the DBCT bond was above Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate. As discussed in section A.4.4, observed yields for the DBCT bond have since fallen.

Figure A.8 Australian corporate bonds with credit ratings ranging from BBB to A–



Source: Bloomberg, UBS, AER analysis.
Note: Yields are annualised, and floating bonds have been converted to fixed rate equivalents. No other adjustments have been made.

In this context, CEG stated that observed yields for an additional seven bonds with maturities greater than seven years are available (three from Suncorp Insurance, and two each from DBCT and Vero Insurance), and should be considered by the AER.[164] The Bank of Queensland also recently issued longer term floating rate notes with a BBB credit rating. The Suncorp, Vero and Bank of Queensland bonds, however, are all callable. Therefore, consistent with the approach previously supported by CEG, the maturity dates for these bonds was considered to be the date of the first call option. For the bonds in question, this results in implied maturity dates of between three and six years. The most recent CEG report, however, stated that this approach is no longer correct. Specifically, CEG stated that these bonds should now be assessed at their final maturity date.[165]

In the limited timeframe available to assess CEG's proposal, the AER has been unable to adequately verify the reasonableness of CEG's changed methodology. Regardless, the AER considers that the additional bonds noted by CEG are immaterial for this final decision.

Specifically, Oakvale demonstrated that observed yields for debt issued by financial institutions and insurance firms are typically higher than for debt issued by infrastructure firms.[166] CEG implicitly agreed with this analysis, such that it referred to the Oakvale report when stating that the mixture of infrastructure and non-infrastructure related operations may be relevant to the observed yields of the

164 CEG, *Response to AER letter dated 23 May 2011*, June 2011, pp. 8–9.
165 CEG, *Response to AER letter dated 23 May 2011*, June 2011, pp. 10–11.
166 Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 17–19.

Brisbane and Sydney Airport bonds.[167] The AER considers that this significantly limits the comparability of the observed yields for the Suncorp, Vero and Bank of Queensland bonds with the AER's notional benchmark service provider.

Additionally, the Suncorp, Vero and Bank of Queensland bonds are all subordinated debt. That is, in the event of default, these bonds would have secondary claims to any outstanding senior debt. Given the likelihood of investors in subordinated debt fully recovering their initial investment (in the event of default) is substantially reduced, the yields on subordinated bonds are typically much more volatile than otherwise equivalent standard debt.[168] For this reason, the AER considers that the potential bias inherent in subordinated bonds also significantly limits the comparability of the observed yields of the Suncorp, Vero and Bank of Queensland bonds with the AER's notional benchmark service provider.

Based on the empirical market evidence discussed above, the statement that Bloomberg's fair value curve provides estimates of what it would cost to issue or trade a corporate bond with the characteristics of the AER's notional benchmark service provider appears unfounded.[169]

In relation to the statement that Bloomberg provides independent and fair value estimates, the AER considers that independence is but one factor in setting the DRP. Importantly, the AER must also have regard to the economic costs and risks of the potential for under and over investment, and the requirement to set the best estimate possible in the circumstances.[170]

A.4.2 APA Group bond

The AER considers that the characteristics of the APA Group bond—specifically, its BBB credit rating and near 10 year term to maturity—provide a close match to those of the benchmark corporate bond. Additionally, the AER does not agree that the observed yields on the APA Group bond are unusually low with respect to its credit rating or other benchmark characteristics.[171]

That said, the AER maintains its position that credit ratings are not a perfect indicator of the risks involved in investment for the provision of reference services.[172] As noted by Oakvale Capital, bond yields are determined by many factors, including:

- term to maturity
- credit rating

---

167 CEG, *Response to AER letter dated 23 May 2011*, June 2011, p. 14.

168 For example, an increase in the risk profile for a given business would be expected to result in a greater increase in the yield of that businesses subordinated debt in comparison to that businesses standard debt.

169 Envestra, *Revised access arrangement information, Attachment 9-7 – Response to AER draft decision on debt risk premium*, March 2011, p. 4.

170 Consistent with s. 24(6) of the NGL, and r. 74(2)(b) of the NGR.

171 Envestra, *Revised access arrangement information, Attachment 9-7 – Response to AER draft decision on debt risk premium*, March 2011, p. 3.

172 AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, p. 272.

- credit margin
- bond size
- credit wrap features
- comparable bond issuances
- market sentiment
- scarcity and desirability of issuer
- industry prospects
- financial status of issuer
- abnormal features.[173]

Synergies, in a report prepared for APT Allgas, specifically noted the importance of liquidity in pricing bonds. Synergies stated that liquidity is a critical factor in establishing the extent to which the price of a debt instrument fully reflects current information. In this regard, Synergies proposed that the APA Group bond is illiquid, and that its lack of turnover implied that the yields on the APA Group bond were not reflective of prevailing market conditions.[174]

CEG also stated that the observed yields reported by Bloomberg for the APA Group bond are of low quality, based on the confidence scores assigned by Bloomberg.[175] Observed yields for the APA Group bond, however, are published by two independent data providers—Bloomberg and UBS.[176] Moreover, these yield estimates are broadly consistent (differing by up to 18 basis points). This provides the AER with some confidence as to the robustness of the observed yields.

The yield estimates published by Bloomberg and UBS are also broadly consistent with the observed yields at issuance of the APA Group bond in July 2010. Given market conditions since July 2010 have remained relatively stable, the AER considers that in the current circumstances, Bloomberg's BVAL and UBS's published yields represent reasonable estimates of the expected yields on the APA Group bond. The relative consistency of the observed yield estimates in comparison to other comparable bonds, as shown in figure A.9, further supports the reliability of the APA Group bond yields.

---

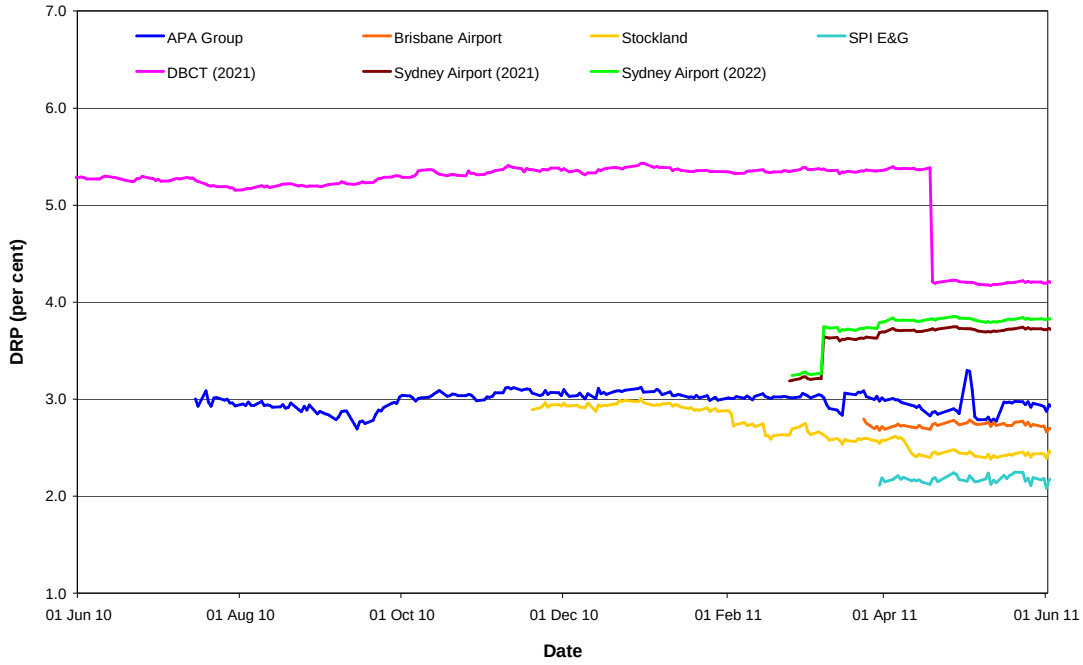
173 Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 2–3.

174 APT Allgas, *Revised access arrangement submission*, March 2011, p. 39.

175 CEG, *Response to AER letter dated 23 May 2011*, June 2011, pp. 22–24.

176 The APA Group bond yields observed from Bloomberg reflect the Bloomberg Evaluated Prices (BVAL). The AER considers that while BVAL may not be the most preferred measure of bond yields published by Bloomberg—in comparison to Bloomberg Generic Prices and Bloomberg Composite Market Prices—they still reflect yields published by an experienced third party data service provider based on prevailing market conditions.

Figure A.9 Comparator bond spreads from issuance



Source: Bloomberg, UBS, AER analysis.
Note: Observed yields from both Bloomberg and UBS were available for the APA Group, Brisbane Airport and Stockland bonds. As such, the spreads for these bonds reflect simple averages of the two data sources.

Additionally, the AER rejects CEG's inference that the BVAL yields of the APA Group bond are unreliable based on Bloomberg's confidence measure. Critically, the confidence scores provided by Bloomberg are a relative measure. In this context, Bloomberg will not publish observed yields when it considers such estimates do not have a sufficient basis. Accordingly, in the current circumstances the AER considers Bloomberg's BVAL estimates and UBS's published yields, provides a robust measure of observed yields that could be relied upon.[177]

In regard to factors other than those reflected in credit ratings, the AER considers the factors specific to regulated energy networks affecting the APA Group bond to be relevant considerations in setting the benchmark cost of debt. In particular, the default risk of the APA Group's operations reflect its large, fixed investments whose returns are set in part under the regimes administered by the AER under the NGR and NER. The key features of these regimes—in contrast to investment risks in unregulated sectors—include "locked in" asset values and periodic resets of prices with respect to updated sales forecasts. Hence, to the extent that investors consider industry specific characteristics in addition to the assigned credit rating, the relatively lower risk profile of the APA Group bond should be given weight in determining a rate of return that is commensurate with the risks involved in providing reference services.

[177] While the AER currently does not question the reliability of Bloomberg's individual bond yield estimates, as discussed in section A.4.1, it has concerns regarding the methodology used by Bloomberg to derive its fair value estimates (for which the individual bond yields estimates are inputs).

The AER also rejects Synergies' proposal that the yield on the APA Group bond is mispriced as it is below Bloomberg's seven year, BBB rated fair value estimates.[178] Bloomberg's fair value estimates rely upon a sample of bonds, some of which would lie above the implied fair value curve, and others below. In isolation, the extent that the yield on the APA Group bond lies below Bloomberg's seven year estimate implies nothing regarding the reasonableness of the observed yield, nor the expected term structure of interest rates. Synergies also assumed that Bloomberg's longer term fair value estimates are reasonable. The AER has already noted its concerns with this view, particularly in reference to the validity of Bloomberg's BBB rated fair value curve as a measure of prevailing conditions in the market for funds for the AER's notional benchmark service provider.

Given that the maturity of the APA Group bond is over two years longer than the seven year, BBB rated fair value estimates published by Bloomberg it would appear that Bloomberg may not yet take into account this bond in its fair value estimates.[179] The AER does not consider that, as proposed by APT Allgas, the exclusion of the APA Group bond from Bloomberg's seven year, BBB rated fair value estimates necessarily infer any substantive issues with the APA Group bond yields.[180] However, as discussed previously, Bloomberg's methodology regarding the derivation of their fair value estimates is proprietary. This limits the AER's ability to assess the reasonableness of the bonds included or excluded from Bloomberg's sample for the purposes of deriving its fair value estimates.

Similarly, the AER considers the analysis proposed by CEG—that the yield on the APA Group bond was unreasonable based on a parallel downward shift in Bloomberg's fair value estimate until it passes through the APA Group bond yield—to be irrelevant.[181] The analysis is flawed because the AER is not questioning the reliability of Bloomberg's fair value estimates for shorter maturities, where there exists a much greater sample of comparable bonds.

APT Allgas also proposed that it would be difficult to replicate the terms of the APA Group bond, as evidenced by the bond being awarded the KangaNews Australian domestic corporate market deal of the year, and Finance Asia magazine's best local bond deal. APT Allgas proposed, therefore, that the APA Group bond was not a suitable comparator for assessing the DRP.

The APA Group bond, however, was negotiated in the period directly following the GFC. The AER considers this period represented a relatively uncertain environment for domestic corporate issuers. Accordingly, to the extent that market conditions have subsequently improved—and evidence presented previously suggests conditions have moved—the AER considers that the difficulties in replicating a similar deal are likely

---

178 APT Allgas, *Revised access arrangement submission*, March 2011, p. 30.

179 On 17 May 2011, the maturity of the longest term bond included in Bloomberg's seven year, BBB rated fair value estimate was 20 September 2016. That is, a remaining maturity of approximately five and a half years. This is considerably shorter than the benchmark 10 year term, and further supports the AER's concerns regarding the validity of Bloomberg's BBB rated fair value curve as a measure of prevailing conditions in the market for funds for the AER's notional benchmark service provider.

180 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 34–36.

181 CEG, *WACC estimation, A report for Envestra*, March 2011, pp. 37–38.

to be overstated. The recent issuance by SP AusNet of a 10 year corporate bond—albeit, with a higher credit rating—supports this position. Similarly, the recent eight year, BBB rated bond issued by Brisbane Airport suggests that APT Allgas' concerns are unfounded.

A.4.3 Brisbane Airport, Sydney Airport, SP AusNet and Stockland bonds

Since November 2010, SP AusNet and Stockland have issued A– rated, 10 year bonds, and Brisbane Airport has issued BBB rated, eight year bonds. More recently, observed yields for two BBB rated Sydney Airport floating rate notes (maturing in 2021 and 2022) have become available.[182]

The characteristics of all these bonds—that is, their term to maturity and credit rating—are comparable to the APA Group bond, as well as the AER's benchmark bond for the purposes of setting the DRP. Moreover, as SP AusNet owns and operates network gas and electricity assets, its operations resemble those of the AER's notional benchmark service provider.

However, the ownership structure of SP AusNet—specifically, its ownership by the Singaporean Government—differs markedly from the APA Group, and from the AER's benchmark service provider. Additionally, the nature of Stockland's assets and the industry in which it operates differ to that of APT Allgas.[183] Brisbane and Sydney Airport's operations also differ from the AER's assumption of the benchmark service provider, although they still reflect the characteristics of a monopoly infrastructure firm.

These issues notwithstanding, and in the circumstances of paucity of data, the AER considers that the yields on the Brisbane Airport, Sydney Airport and SP AusNet bonds all provide relevant points of reference to assess the reasonableness of both Bloomberg's BBB rated fair value estimates and the APA Group bond yield. The AER also considers that the Stockland bond is a relevant reference point, albeit to a lesser extent (given the nature of its operations differ from the AER's notional benchmark service provider). In this regard, the AER considers that many factors are likely to contribute to the divergent bond yields. The magnitude of these differences, however, is significant. These yield comparisons are discussed below.

Brisbane Airport bond

The yield on the Brisbane Airport bond is 167 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate. The AER considers that this yield differential is likely to be substantially driven by the bond's shorter term to maturity, and to a lesser extent, its credit rating. That is, the Brisbane Airport bond has a remaining term to maturity of approximately eight years (as distinct from the

---

[182] These bonds were originally issued in December 2006. Recently, observed yields have been published more frequently, including from 24 February 2011 onwards.

[183] Oakvale has demonstrated that the observed yields on infrastructure bonds are typically higher than the observed yields on the otherwise comparable corporate debt of well known Australian corporations. Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 17–19.

extrapolated, 10 year estimate for Bloomberg), and a credit rating of BBB (as distinct from the Bloomberg compilation of all BBB–, BBB and BBB+ rated bonds).

The magnitude of this difference, however, is unexpected. Given the observed yields of other comparable bonds (as highlighted throughout this section) support the reasonableness of the Brisbane Airport bond yields, the magnitude of the difference suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.

The small yield differential between the Brisbane Airport and APA Group bonds (19 basis points) is reasonably expected, given their identical credit ratings and minimal difference in their terms to maturity.

Sydney Airport bonds

The yield on the two Sydney Airport floating rate notes (converted to fixed rate equivalents) are 63 and 50 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate.

Given the observed yields of other comparable bonds support the reasonableness of the Sydney Airport bond yields, the direction of this difference is unexpected. That is, the Sydney Airport bonds have remaining terms to maturity of approximately six and 16 months beyond the extrapolated, 10 year estimate for Bloomberg. All things being equal, a longer term to maturity is typically associated with a higher DRP. As such, this suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.[184]

The higher yield of the Sydney Airport bonds in comparison to the APA Group bond (85 and 98 basis points) is reasonably expected, given their identical credit ratings but longer term to maturity of the Sydney Airport bonds.

Similarly, the higher yield on the Sydney Airport bonds in comparison to the Brisbane Airport bond—approximately 104 and 117 basis points respectively—is expected given their identical credit ratings but longer term to maturity of the Sydney Airport bonds.

Stockland bond

The yield on the Stockland bond is 196 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate. The AER considers that this yield differential is likely to be substantially driven by the bond's higher credit rating (as the term to maturity for the Stockland bond closely matches the 10 year term of the extrapolated Bloomberg BBB rated fair value estimate). That is, the Stockland bond

[184] APT Allgas stated that, similar to the DBCT bonds, the credit wrapper for the Sydney Airport bonds also collapsed during the GFC. In contrast to the DBCT bonds, however, the observed yields of the Sydney Airport bonds are consistent with other comparable bonds. The AER considers that this likely indicates that investor concerns regarding the collapse of the Sydney Airport bond's credit wrapper have since subsided. APT Allgas, *Response to AER's preliminary view on DRP*, June 2011, pp. 26–27.

has a credit rating of A– (as distinct from the Bloomberg compilation of all BBB–, BBB and BBB+ rated bonds).

The magnitude of this difference, however, is unexpected. Given the observed yields of other comparable bonds support the reasonableness of the Stockland bond yields, the magnitude of the difference suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.

The lower, but consistent yield of the Stockland bond in comparison to the APA Group bond (47 basis points) is reasonably expected, given the counterbalancing effects of the different credit ratings and terms to maturity. For example, all things being equal, Stockland's higher credit rating should be reflected in a lower yield than the APA Group bond. In contrast, Stockland's longer term should be reflected in a higher yield. As the yield on the Stockland bond is lower than the APA Group, it would appear that the credit rating (or some other factor) is the net driver for the Stockland bond yield being lower than the APA Group bond yield.

SP AusNet bond

The yield on the SP AusNet bond is 219 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate. The AER considers that this yield differential is likely to be substantially driven by the bond's higher credit rating (as the term to maturity for the SP AusNet bond closely matches the 10 year term of the extrapolated Bloomberg BBB rated fair value estimate). That is, the SP AusNet bond has a credit rating of A– (as distinct from the Bloomberg compilation of all BBB–, BBB and BBB+ rated bonds).

The magnitude of this difference, however, is unexpected. Given the observed yields of other comparable bonds support the reasonableness of the SP AusNet bond yields, the magnitude of the difference suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.[185]

The lower yield of the SP AusNet bond in comparison to the APA Group bond (70 basis points) is reasonably expected, given the counterbalancing effects of the different credit ratings and terms to maturity. For example, all things being equal, SP AusNet's higher credit rating should be reflected in a lower yield than the APA Group bond. In contrast, SP AusNet's longer term should be reflected in a higher yield. As the yield on the SP AusNet bond is lower than the APA Group, it would appear that the credit rating (or some other factor) is the net driver for the SP AusNet bond yield being lower than the APA Group bond yield.

Overall, while the APA Group, Brisbane Airport, SP AusNet, Stockland and Sydney Airport (two issues) bonds provide only six points of reference, they all consistently

[185] The SP AusNet bond includes a resettable coupon feature that adjusts the yield upwards if a credit downgrade event occurs. As noted by Oakvale Capital, however, the likely impact on observed yields of resettable coupons is expected to be small, particularly when such a feature is unlikely to be required (as is the case of the SP AusNet bond). Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 8–9.

indicate that the extrapolated Bloomberg fair value estimates may not be representative of longer dated, lower rated bonds. In particular, the observed yields of the APA Group, Brisbane Airport, SP AusNet, and Sydney Airport bonds support the AER's consideration that Bloomberg's BBB rated fair value curve may not be representative of prevailing conditions in the market for funds for the AER's notional benchmark service provider.

Further, the observed yields of the Brisbane Airport, SP AusNet, Stockland and Sydney Airport bonds support the reasonableness of the observed yields on the APA Group bond.

A.4.4 Dalrymple Bay Coal Terminal (DBCT) bond

The AER has previously expressed concerns over the reliability of the DBCT bonds in comparative analysis, most recently in its draft decision for NT Gas. Notably, in its draft decision the AER considered that the observed yields on the DBCT bonds (in particular, the DBCT bond maturing in June 2021) were driven primarily by factors other than its credit rating.[186]

Since the draft decision, however, the trading margins applied to the DBCT bonds by UBS have fallen significantly.[187] In particular, the trading margin on the DBCT bond maturing in 2021 has fallen by 110 basis points. Subsequently, the observed yields on the DBCT bond are now more consistent with other comparable bonds. The AER considers that one possible reason for this change is that greater certainty may now exist surrounding the issuer and the future status of the issue (following previous restructuring and ownership changes).[188]

The AER also considers that the significant reduction to the trading margin supports its previous decisions to exclude the DBCT bonds from its comparative analysis. That is, the magnitude of the change strongly suggests that the observed yields on the DBCT bonds were driven primarily by factors other than its credit rating.

Given the recent nature of the change, however, the AER considers that a longer period is required to properly assess the robustness of the recent observations of the DBCT bond yields. On this basis, the AER remains cautious of the reliability of the observed DBCT bond yields.

In these circumstances, the AER does not consider that excluding the DBCT bond from its analysis artificially biases the level of compensation for default risk inherent in the DRP.[189] To the contrary, given there remains uncertainty regarding the DBCT debt, the AER considers that relying on the DBCT bond would price default risk

---

186 AER, *N.T. Gas, Access arrangement proposal for the Amadeus Gas Pipeline*, Draft decision, April 2011, p. 207.

187 The trading margin is the spread above the swap rate that equates the yield on a floating rate bond to its fixed rate equivalent.

188 DBCT Finance Pty Ltd has recently proposed US$600 million of senior secured medium term notes, due in 2020 and 2023 respectively, for which Standard and Poor's have assigned a BBB+ credit rating. As this debt is denominated in US dollars, however, the AER is limited in its ability to make any reasonable inferences from this issuance.

189 Envestra, *Revised access arrangement information, Attachment 9-7 – Response to AER draft decision on debt risk premium*, March 2011, p. 3.

above that reasonably expected in the AER's notional benchmark service provider. This notwithstanding, default risk is implicitly priced in Bloomberg's fair value estimates, as well in the APA Group bond yield, for which the AER has used to set the benchmark DRP.

A.4.5 AER's method for setting the DRP

The AER considers that the evidence in support of the observed yields of the APA Group bond has strengthened significantly since the draft decision. As discussed above, observed yields for an additional four bonds with similar terms to maturity and credit ratings as the benchmark corporate bond have become available. These observed yields all support the AER's consideration that the observed yields of the APA Group bond are more reflective of prevailing conditions in the market for funds for the AER's notional benchmark service provider than Bloomberg's (extrapolated) 10 year, BBB fair value estimates. Further, as figure A.5 demonstrates, the additional empirical evidence also suggests that Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate is likely to overstate the costs of debt, particularly for regulated network service providers.

On this basis, the AER does not consider it appropriate to set the DRP based solely on the (extrapolated) Bloomberg fair value estimate. The AER considers that greater reliance could reasonably be placed on the APA Group bond to determine the DRP. However, in the current circumstances, the AER considers that some uncertainty exists regarding the appropriateness of setting the DRP based upon a single bond yield. Accordingly, the AER has exercised its judgment to determine the proportion to apply to both data sources.

The proportion to apply to each data source should reflect their relative suitability for the purposes of establishing a benchmark DRP. The AER considered increasing the emphasis on the APA Group bond relative to the Bloomberg fair value curve, in view of the increased support for the APA Group bond since the draft decision. However, after careful evaluation, the AER considers there are currently insufficient grounds to justify departure from the position in the draft decision. The AER considers that a DRP based equally on the observed yields of the APA Group bond and Bloomberg's fair value estimates would satisfy the requirements of the NGR.[190]

In contrast, CEG stated that relying so heavily upon a small and selective sample of bonds—that is, bonds with BBB+ credit ratings (or similar) and remaining maturities in excess of five years—is likely to lead the AER into error.[191] CEG added that the AER's methodology placed extreme weight on bonds from two issuers above the guidance provided by a wider population of 49 issuers, and that this approach is

---

[190] This decision contrasts from the most recent final decision of the AER. That decision—for the Victorian electricity distribution businesses—determined the DRP based on a 75 per cent weighting to estimates from Bloomberg and a 25 per cent weighting to estimates from the APA Group bond. The AER also notes that the Victorian final decision is currently the subject of a merits review before the Australian Competition Tribunal.

[191] CEG, *WACC estimation, A report for Envestra*, March 2011, p. 34.

unreasonable.[192] APT Allgas also proposed that there is a basic statistical issue in placing reliance upon a sample size of one.[193]

The AER acknowledges the concerns of both CEG and APT Allgas. However, having no regard to the available longer term data (as discussed above) is equally likely to lead to error in setting the benchmark DRP, particularly with respect to section 24(6) of the NGL. That is, the wider population (from which Bloomberg uses to determine its fair value estimates) is dominated by bonds with term to maturities significantly less than the 10 year benchmark considered by the AER.[194]

Further, the AER acknowledges Australia Ratings' statement that weighting the DRP with selected individual bonds could distort the benchmark DRP. Specifically, Australia Ratings stated that weighting the index with selected individual bonds introduces the idiosyncratic risk factors of those bonds. In contrast, an index relying on many bonds would diversify such systematic risk factors.[195] The AER, however, considers that as the operations of the APA Group bond reasonably reflect those of the benchmark service provider, any additional risk incorporated into the DRP would also reasonably reflect the risks faced by gas network service providers.

As part of its review, the AER also requested and received actual costs of debt information from APT Allgas.[196] The AER considers that this information supports that its estimate of the DRP provides a reasonable opportunity for APT Allgas to recover at least its efficient costs.[197] More generally, market analyst reports have consistently indicated that the actual debt risk premiums incurred by network service providers are significantly lower than the benchmark set by the AER.[198] As such, the AER does not accept that the DRP established by reference to the APA Group bond removes any incentive for efficient financing by APT Allgas.

Additionally, IPART recently published its final decision for a discussion paper to develop an approach to setting the debt margin.[199] The indicative debt margin was more than 170 basis points below APT Allgas's proposal. Although the methods used by IPART and the AER differ—notably, IPART has considered shorter term debt—the outcome of IPART's decision suggests that APT Allgas's proposed DRP is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.[200] The Economic Regulation

---

192 CEG, *WACC estimation, A report for Envestra*, March 2011, p. 2.
193 APT Allgas, *Revised access arrangement submission*, March 2011, p. 40.
194 See figure A.5.
195 Australia Ratings, *Estimating the debt risk premium*, March 2011, p. 15.
196 AER, *Draft decision*, February 2011, Appendix B.
197 NGL, s. 24(2).
198 Bank of America, Merrill Lynch, *DUET Group*, 26 May 2011; Macquarie Equities Research, *Spark Infrastructure Group*, 23 March 2011; Macquarie Equities Research, *DUET Group*, 1 March 2011; Macquarie Equities Research, *Envestra*, 17 February 2011; Macquarie Equities Research, *A Regulated Corner - A little gem from IPART*, 14 Februrary 2011.
199 IPART, *Developing the approach to estimating the debt margin, Other industries*, Final decision April 2011.
200 NGR, r. 87(1).

Authority (ERA) has also recently published a draft decision with indicative debt margins more than 150 basis points below APT Allgas's proposal.[201]

A.4.6 Extrapolation of Bloomberg fair value estimates

The AER's draft decision rejected APT Allgas's proposed approach to linearly extrapolate Bloomberg's seven year fair value estimates to a 10 year term. The AER determined that extrapolation based on the spread between Bloomberg's seven and 10 year, AAA rated fair value estimates provides a better estimate of the 10 year, BBB rated yields.

APT Allgas's revised proposal reflected the AER's approach.[202]

A.4.7 Conclusion

The AER considers that the DRP proposed by APT Allgas is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.[203]

Moreover, based on the above analysis, the AER considers that greater reliance could reasonably be placed on the APA Group bond to determine the DRP. However, in the current circumstances, the AER considers that some uncertainty exists regarding the appropriateness of setting the DRP based upon a single bond yield. Accordingly, the AER has exercised its judgment to determine the proportion to apply to both data sources. After careful evaluation, the AER considers there are currently insufficient grounds to justify departure from the position in the draft decision. The AER considers that a DRP based equally on the observed yields of the APA Group bond and Bloomberg's fair value estimates would satisfy the requirements of the NGR. This results in a DRP of 3.64 per cent.[204]

---

201 ERA, *Draft decision on proposed revisions to the access arrangement for the Dampier to Bunbury natural gas pipeline*, March 2011, p. 168.

202 APT Allgas, *Revised access arrangement submission*, March 2011, p. 30.

203 NGR, r. 87(1).

204 Based on a 20 day averaging period ending 31 May 2011.

B Real cost escalators

In its draft decision, the AER did not accept aspects of APT Allgas's proposed forecast real cost escalators. In particular, the AER did not accept APT Allgas's proposed:

- general cost escalators, as APT Allgas had proposed to apply EGW labour cost escalators (without productivity adjustments) to labour and materials expenditure
- proposed inclusion of a UAG cost escalator, as this was more transparently assessed as part of the total UAG opex proposal
- forecast regulatory cost escalators, as APT Allgas had not demonstrated the magnitude of the proposed increase was appropriate.[1]

APT Allgas accepted the AER's draft decision that all materials costs should be escalated by CPI, and the AER's required treatment of UAG costs. However, APT Allgas did not accept the draft decision amendments to the forecast real labour and regulatory cost escalators, and made further revisions in relation to:

- removal of productivity adjustments from wage forecasts
- proposed application rates for the labour cost escalators
- forecast regulatory cost escalators.[2]

APT Allgas accepted the AER's draft decision amendments to the capital base, including the escalators that were applied to determine forecast capex.[3]

The AER accepts APT Allgas's revised application rates for real cost escalators to opex categories. However, the AER considers APT Allgas's proposed labour and regulatory cost escalators are neither made on a reasonable basis, nor the best forecasts possible in the circumstances. As a result, the forecasts do not contribute to forecasts of operating expenditure that are consistent with r. 91 of the NGR.

B.1 Labour cost escalators

APT Allgas did not incorporate a number of the AER's draft decision amendments to the forecast real cost escalators applying to operating expenditure, specifically in relation to:

- forecast real labour cost escalators including productivity adjustments to transform wage forecasts to labour cost forecasts
- application rates for EGW labour and administrative services labour to forecast operating expenditure.

---

1 AER, *Draft decision*, February 2011, pp. 91–92.
2 APT Allgas, *Revised access arrangement submission*, March 2011, pp. 53–54.
3 APT Allgas, *Revised access arrangement submission*, March 2011, p. 4.

APT Allgas accepted the AER's disaggregation of labour costs into EGW labour, administrative services labour and construction labour[4], and proposed application rates specifically for these labour sectors.

B.1.1 Productivity adjustments

The AER considers that specific productivity adjustments are necessary to transform wage forecasts into forecasts of real labour costs. Specifically:

- while pure wage forecasts (generated by productivity unadjusted LPI) are of concern to individual workers, labour costs per unit of output are relevant for the purpose of forecasting labour costs
- in order to transform pure wage forecasts into labour costs per unit of output, productivity adjustments are applied to the pure wage forecasts
- the productivity adjusted labour cost forecasts prepared by Deloitte Access Economics (DAE)[5] are arrived at on a reasonable basis, and represent the best forecast possible in the circumstances.

APT Allgas did not accept the AER's draft decision amendment applying productivity adjusted forecasts of growth in real labour price index (LPI) growth, and has proposed to apply productivity unadjusted forecasts taken from an Access Economics report.[6] The AER maintains its position from its draft decision, and does not accept APT Allgas's proposed labour cost escalators, that do not include specific productivity adjustments.

It is widely accepted that productivity is a key driver of movements in relative wages. DAE accounts for the effect of productivity in its wage forecasting model by assuming that more productive workers will be compensated with higher wages.[7] It subsequently adjusts for productivity effects on the cost of labour per unit of output by applying post-forecast adjustments, to reflect the assumption that a more productive workforce will produce the same unit of output of labour at a lower cost.

In effect:

- positive productivity growth will typically result in higher wages for individual workers. However, there will also be an offsetting reduction in the labour costs per unit of output, as less labour is needed to produce a given level of output.
- negative productivity growth will tend to slow wage growth, but will also lead to a corresponding increase in unit labour costs as the labour requirement to produce a given level of output increases.

---

4 Construction labour escalators were only applied to capital expenditure.

5 For the draft decision, the AER engaged Access Economics to provide alternative forecasts of real labour cost escalators. Since the draft decision, Access Economics was acquired by Deloitte Touche Tomahatsu, and has continued to provide analysis to the AER under the name Deloitte Access Economics. All references in the text are made to Deloitte Access Economics, but some footnoted references to previous work are made to Access Economics, as it was at the time.

6 APT Allgas, *Revised access arrangement submission*, March 2011, p. 54.

7 Access Economics, *Forecast growth in labour costs (Qld & SA)*, November 2010, p. 103.

The AER does not accept APT Allgas's assertion that application of the productivity adjustment results in a 'double counting' of productivity effects.[8] The specific productivity adjustment is necessary to forecast labour cost escalation, because APT Allgas's required units of labour are a function of the work APT Allgas undertakes. The AER considers it reasonable to assume that APT Allgas targets a particular level of labour output, as opposed to choosing a desired number of employees and planning work output accordingly. Under the national gas objective, the guiding principles of gas regulation promote the efficient investment in, and operation of natural gas services.[9] The AER considers this directly supports an assumption that the level of opex and capex output to efficiently invest in and operate APT Allgas's network would guide business planning. This in turn is consistent with escalating real labour cost per unit of output, as opposed to real wages.

B.1.2 Deloitte Access Economics forecast labour costs

In its draft decision, the AER did not accept APT Allgas's proposed general cost escalators, and amended the real cost escalation rates to reflect DAE's forecasts of real productivity-adjusted LPI growth. In its revised access arrangement proposal, APT Allgas proposed real cost escalation forecasts based on the productivity unadjusted LPI forecasts from the December 2010 DAE report.

Having rejected APT Allgas's proposed labour cost escalators for the reasons set out in B.1.1, the AER considers DAE's updated forecasts of productivity adjusted real growth in LPI are made on a reasonable basis, and are the best forecasts possible in the circumstances.

The AER further considers that DAE's forecasts of productivity over the period are consistent with DAE's forecasts of a recovering economy, in which productivity is expected to improve. DAE forecasts long term wage outcomes by taking into account macroeconomic conditions impact on labour productivity and inflation. The current forecasts of wage and productivity growth are broadly influenced by the following factors:[10]

- expected recovery in global economic growth
- forecast increases in industrial commodity prices and national income
- expected increases in real business investment and capital utilisation, particularly in the utilities sector
- growth in employment is expected to be offset by reductions in working age Australian population growth

In addition, DAE's forecasts incorporate the effects of recent natural disaster events in Queensland and Victoria.[11] While these events are expected to drive up the demand

---

8 APT Allgas, *Revised access arrangement submission*, March 2011, p. 54.
9 NGL s. 23.
10 Access Economics, *Response to the Economic Insight Report of March 2011*, 24 April 2010, pp. 2–5.
11 Access Economics, *Response to the Economic Insight Report of March 2011*, 24 April 2010, p.6-8.

for labour, these effects are likely to be temporary. Numerous other economic factors, such as expected increases in interest rates, and decreases in finance and building approvals, are expected to constrain the growth in the construction sector.

The effect of forecast productivity adjustments on the AER's revised labour cost escalators is set out in table B. 1.

Table B.1: Effects of productivity adjustments on Queensland real LPI forecasts (per cent)

	2010–11 (opex roll-forward)	2011–12	2012–13	2013–14	2014–15	2015–16
	Labour costs (Productivity adjusted real LPI)					
EGW labour	3.2	1.4	0.9	0.0	-0.6	-1.6
Administrative services labour	1.4	0.4	0.2	-0.3	-0.6	-1.5
	Wages (Productivity unadjusted real LPI)					
EGW labour	1.7	4.0	3.7	2.9	2.0	1.2
Administrative services labour	0.6	3.0	3.0	2.6	2.1	1.4

B.2 Regulatory cost escalator

The AER does not accept APT Allgas's forecast regulatory cost escalator, as it is not made on a reasonable basis, and is not the best forecast possible in the circumstances.

APT Allgas did not incorporate the AER's amended regulatory cost escalator from its draft decision, and proposed an updated regulatory cost escalator,[12] based on a 'proposed audit and inspection fee review summary' from the Department of Employment, Economic Development and Innovation (DEEDI).[13] APT Allgas indicated that the forecast escalator in the initial proposal was based on a misunderstanding about the nature of DEEDI's billing of regulatory costs. Specifically, APT Allgas was not aware that the relevant billing was changed from retrospective billing, to prospective billing for the year ahead.

In reviewing APT Allgas's revised proposal, the AER considers the following:

- the 2009–10 escalator should reflect the increase in budget between the 2009–10 and 2010–11 regulatory years, and APT Allgas has not provided details of the budget for 2009–10. As a consequence, it has not demonstrated the efficiency of its forecast escalator for 2009–10.

- if billing is prospective rather than retrospective, as indicated by APT Allgas, the 30 per cent increase confirmed by DEEDI for 2009–10 would have been charged

[12] APT Allgas, *Revised access arrangement submission*, March 2011, p. 54.
[13] DEEDI, *Proposed audit and inspection fee review summary*, March 2010.

in 2008–09. These costs are therefore already included in the base year, so no real cost escalation is justified.

- APT Allgas's assumption that regulatory costs will increase in direct proportion to the 'Petroleum and Gas Inspectorate budget' is directly refuted in the evidence provided to the AER, which states that 'the percentages to be paid by the pipelines, distribution and LPG sectors have reduced…' APT Allgas has not identified to what extent these percentages have reduced, and has assumed no reduction in its calculations.

- APT Allgas has not demonstrated any basis to expect the budget will continue to increase in line with utilities sector labour costs from 2012–13 onwards.

- APT Allgas has not converted the total cost increases (nominal) into real cost escalation rates by subtracting forecast CPI.

The AER accepts that there is a basis to expect real cost escalation of regulatory costs in 2010–11, which will determine the level of opex that is rolled forward into the first year of the access arrangement period. However, APT Allgas has not justified the magnitude of the increase, and has not provided sufficient evidence for the AER to determine the appropriate rate. Therefore, APT Allgas's proposed regulatory cost escalator is neither made on a reasonable basis, nor the best forecast possible in the circumstances.

As such, the AER will accept real cost escalation of 8.3 per cent in 2010–11, in line with its draft decision. The AER considers this will result in a forecast opex allowance that is consistent with r. 91(1) of the NGR. The AER considers that, without being able to robustly forecast the magnitude of cost increases on a reasonable basis, it cannot accept further real cost escalation.

B.3 Application of real cost escalators

The AER accepts APT Allgas's revised application rates for real cost escalators. In its draft decision, the AER did not accept APT Allgas's proposed application of EGW labour forecasts to all labour and materials costs. The AER determined application rates for separate labour sector components of total opex and capex, based on Envestra's escalator application rates for its Queensland business. APT Allgas incorporated the AER's revised labour cost disaggregation, but proposed revised application rates for labour cost escalation of opex. These rates were not included in the revised proposal, and the AER subsequently confirmed them with APT Allgas.[14]

The AER accepts this revision, on the basis that real cost escalation forecasts are based on estimates of annual percentage changes in labour costs. To correctly apply these estimates to the overall labour costs, the AER considers they must be compounded from a base year.[15] The base year for roll-forward opex is 2009–10. The AER considers that real input costs should be updated annually in line with the approved forecast real cost escalators, and compounded from a base year.

---

[14] APT Allgas, *Response to AER.APT.RP.10*, April 2011.

[15] For example, if costs increase by 10% in 2011–12 and 10% in 2012–13, costs have increased by 21% relative to the base year: (1+0.1) x (1+0.1).

B.4 Conclusion

The AER accepts APT Allgas revised application rates for real labour cost escalators to opex categories. However, the AER does not accept APT Allgas's:

- proposed labour cost escalators without specific productivity adjustments
- regulatory cost escalators

The AER considers the forecasts are not made on a reasonable basis, nor the best forecasts possible in the circumstances, and therefore do not comply with r. 74 of the NGR. As a result, the proposed escalators do not contribute to forecasts of operating that are consistent with r. 91(1) of the NGR.

The AER requires APT Allgas to apply the escalators set out in table B.2.

Table B.2: AER conclusion on APT Allgas's real cost escalators (per cent)

	2010–11 (opex roll-forward)	2011–12	2012–13	2013–14	2014–15	2015–16
EGW labour	3.2	1.4	0.9	0.0	-0.6	-1.6
General labour	1.4	0.4	0.2	-0.3	-0.6	-1.5
Regulatory escalator	8.3	0	0	0	0	0

C. Annual reporting requirements

In the draft decision and this final decision, the AER has indicated that APT Allgas will have to report certain information on an annual basis. This information is generally required to ensure compliance with an approved tariff variation mechanism, or to otherwise monitor APT Allgas's performance and compliance with this decision.

This appendix provides a summary of the information APT Allgas must report to the AER during the access arrangement period. The AER anticipates that this information would be reported annually, as part of an annual tariff variation proposal. During the access arrangement period, the AER may also require information to be provided in response to a regulatory information instrument. This appendix is not exhaustive of the information the AER may seek through any regulatory information instrument.

Information contained in the table below has been drawn from the chapters in the draft decision and this final decision.

Table C.1: Annual reporting requirements

Reference	Reporting requirement	Purpose
Annual reference tariff variations – chapter 11	For each year, on or around 15 April, notify the AER in respect of any reference tariff variations such that variations occur on 1 July, and include: ▪ the proposed variation to reference tariffs ▪ an explanation and details of how the proposed variations have been calculated ▪ an independent statement to support the gas quantity inputs in the tariff variation formula. The statement should be independently audited or verified and the quantity input will reflect the most recent actual annual quantities available at the time of tariff variation assessment.	Annual tariff variation approval.

D. AER's consideration of proposed non-tariff terms and conditions and issues raised in submissions

Matter	Amendments required as per AER draft decision	APT Allgas's response as per revised proposal	AER's proposed amendments, APT Allgas's response and AER's consideration	Proposed Revisions
Delivery point pressures: APT Allgas's obligation (clause 5.2.1) Failure to comply (5.2.2)	Amendment 12.6 and 12.7.	Amendment 12.7 partly accepted	Amendment 12.7 required APT Allgas to amend the terms and conditions of the access arrangement proposal by inserting the words 'and the failure is not due to the negligent act or omission on the part of APT Allgas (or any officer, servant, agent, contractor or other person for whom APT Allgas is liable)' at the end of clause 5.2.2. APT Allgas's response APT Allgas has accepted the amendment in part and amended clause 5.2.2 by adding words at the end of sub-clause (a) instead of the end of clause 5.2.2 as proposed by the AER. APT Allgas amended clause states:[1] 5.2.2 Failure to Comply APT Allgas will not breach its obligations under clause 5.2.1 where its failure to comply with that clause is due to: (a) the technical, physical or other limitations of the Network, not otherwise due to the negligent act or omission of APT Allgas; (b) insufficient Natural Gas being delivered into the Network; or (c) delivery of Natural Gas into the Network at pressures outside the limits specified from time to time	

1 APT Allgas, *Revised access arrangement proposal – terms and conditions*, March 2011, p.11.
2 APT Allgas, *Revised access arrangement submission*, March 2011, p. 101.

			by APT Allgas, whether or not APT Allgas knew, or ought to have known, of those facts or matters at any time. APT Allgas has submitted that as the events set out in clauses 5.2.2(b) and 5.2.2(c) are wholly outside the control of APT Allgas, APT Allgas's acts or omissions are irrelevant. APT Allgas's negligence is only relevant in circumstances where APT Allgas may have some control, such as in clause 5.2.2(a). For this reason, the AER's suggested amendment has been limited to apply to clause 5.2.2(a) only. [2] AER's consideration In the draft decision, the AER considered that clause 5.2.2 reflects matters that are outside APT Allgas's control. However, the AER required an amendment to clarify that APT Allgas is not relieved of its obligations if the failure to deliver gas within the range of pressures is due to its negligence. APT Allgas has partly accepted the AER proposed amendment 12.7 and amended clause 5.2.2(a) accordingly. The AER accepts the amended clause on the basis that the events set out in clauses 5.2.2(b) and 5.2.2(c) are wholly outside the control of APT Allgas.	None
Cost pass through (clause 9)	Amendments 12.9 and 12.10.	Amendments 12.9 and 12.10 not accepted	Amendment 12.9 required APT Allgas to amend the terms and conditions of the access arrangement proposal by deleting clause 9.1 and replacing it with the following: 'If a Cost Pass-through Event occurs that increases APT Allgas's costs, APT Allgas is entitled to recover an amount from the User, according to a mechanism reasonably determined by APT Allgas and approved by the AER which is equitable and is designed to ensure APT Allgas will not enjoy a windfall benefit. Any proposed increase must be material and must be approved by the AER in accordance with clause 4.5.3 of the Access Arrangement.' Amendment 12.10 required APT Allgas to amend the terms and conditions of the access arrangement proposal by deleting clause 9.2 and replacing it with the following: 'If a Cost Pass-through Event occurs that decreases APT Allgas's costs, APT Allgas shall pay the User an amount, according to a mechanism reasonably determined by APT Allgas and approved by the AER which is equitable and is designed to ensure APT Allgas will not enjoy a windfall benefit. Any proposed decrease must be material and must be approved by the AER in accordance with clause 4.5.3	

			of the Access Arrangement.' APT Allgas's response APT Allgas has not accepted the AER proposed amendments. APT Allgas has submitted that the terms and conditions apply to all pipeline services, not just reference services. It is therefore important for this clause to allow for the variation of all tariffs, not just in accordance with the reference tariff variation mechanism approved by the AER. APT Allgas has revised Part 9 of the terms and conditions to clarify that reference tariffs will be varied in accordance with the tariff variation mechanism, which is set out in clause 4.5 of the access arrangement. APT Allgas has also included a mechanism for variation of all other tariffs that addresses the imposition of new imposts, as well as the potential application of a carbon pricing scheme. APT Allgas also escalate non-reference tariffs annually by CPI. AER's consideration The AER accepts the amendment proposed by the AER in clause 9.1 of the revised terms and conditions regarding the variation of reference tariffs. Clause 9.2 concerns the variation of charges for non-reference services. The AER considers that non-reference services are services other than reference services. The NGR and NGL do not provide specific guidelines for variation of non-reference tariffs. The AER considers that it is open for APT Allgas to negotiate charges for non-reference services with the users directly.	None
Information and assistance (clause 10)	Amendment 12.11.	Amendment 12.11 partly accepted	Amendment 12.11 required APT Allgas to amend the terms and conditions of the access arrangement proposal by deleting clause 10 and replacing it with the following: 'Each party will provide to the other party at no cost and in a timely manner whatever information, assistance and co-operation the other party might reasonably require from time to time in connection with this Access Agreement. The User will procure the User's End Users, or Transmission Pipeline Operator, to provide to APT Allgas at no cost and in a timely manner whatever information, assistance and co-operation APT Allgas might reasonably require from time to time in connection with this Access Agreement.'	

			APT Allgas's response APT Allgas has partly accepted the above amendment. APT Allgas has submitted that some information requests may be onerous and costly to meet. It has therefore removed the requirement that information provided between the parties will be provided at no charge, and included a provision that any fee be cost reflective and reasonable. APT Allgas amended clause states: 'Each party will provide to the other party in a timely manner whatever information, assistance and co-operation the other party might reasonably require from time to time in connection with this Access Agreement. Each party may charge a fee to cover costs reasonably incurred in connection with the provision of the information. The User will procure the User's End Users, or Transmission Pipeline Operator, to provide to APT Allgas at no cost and in a timely manner whatever information, assistance and co-operation APT Allgas might reasonably require from time to time in connection with this Access agreement.' AER's consideration The AER accepts the APT proposed amendment. The AER considers that it is reasonable for each party to charge a fee to cover costs reasonably incurred in connection with provision of the information on a reciprocal basis.	None
Warranties, indemnities and limitation of liability Limit of	Amendment 12.15	Amendment 12.15 not accepted	Amendment 12.15 required APT Allgas to amend the terms and conditions of the access arrangement proposal by deleting clause 14.3 and replacing it with the following: 'Notwithstanding any other provision of this Access Agreement, any claim or claims by one party against the other party arising out of or in connection with this Access Agreement shall be limited to	

[3] APT Allgas, *Revised access arrangement submission*, March 2011, pp. 103–104 and APT Allgas's email AER.APT.RP.12, dated 19 May 2011.

[4] AER, *Draft Decision, Envestra access arrangement proposal for the Qld gas network*, February 2011, s. 13.2.4.2; AER, *Draft Decision, Envestra access arrangement proposal for the SA gas network*, February 2011, s. 13.2.4.2.

liability (clause 14.3)			$100 000 in total in any one calendar Year during the Term.' APT Allgas's response APT Allgas has partly accepted the above amendment and submitted that while its strong preference would be that the liability cap not be reciprocal, if the AER insists, then the following revised clause may be acceptable:[3] 'Notwithstanding any other provision of this Access Agreement, any claim or claims by one party against the other party arising out of or in connection with this Access Agreement shall except for the matters noted in paragraphs (a) to (c) be limited to $100 000 in total in any one calendar Year during the Term: a) obligations to pay money in respect of services provided under or in connection with the Access Arrangement b) the User's obligation to provide gas to the specification, pressure and quality required under the Access Arrangement; and c) the indemnity set out in clause 14.5 of these terms and conditions.' AER's consideration The AER accepts APT Allgas's proposed modifications in clause 14.3. As set out in the draft decision, the AER considers that it is appropriate for the liability cap to be reciprocal and any claim by APT Allgas against a user should also be limited. The AER requires amendments to similar arrangements for Envestra's Queensland and South Australian networks, in response to a submission from Origin.[4] APT Allgas is required to amend clause 14.3 as set out in the proposed revision 12.1.	Revision 12.1

E. Submissions

The AER received submissions on its draft decision and APT Allgas's revised access arrangement proposal from the following entities:

- AGL Energy Limited
- APT Allgas

Glossary

AAG	access arrangement guideline
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACIL Tasman	ACIL Tasman Pty Ltd
AEMO	Australian Energy Market Operator
AGL	AGL Energy Ltd
APT Allgas	APT Allgas Energy Pty Limited
ASX	Australian Stock Exchange
BOM	Bureau of Meteorology
bppa	basis points per annum
CAPM	Capital Asset Pricing Model
CDI	CHESS Depository Interest
CEG	Competition Economists Group
CFC	Construction Forecasting Council
CGS	Commonwealth Government Securities
CPRS	carbon pollution reduction scheme
DBCT	Dalrymple Bay Coal Terminal
DEEDI	Department of Economic Development and Innovation
DNSP	distribution network service provider
DRP	debt risk premium
EBA	enterprise bargaining agreement
EBSS	efficiency benefit sharing scheme

EGW	electricity, gas and water
EMRF	Energy Market Reform Forum
Envestra	Envestra Ltd
FFM	Fama–French three factor model
FRC	full retail contestability
FTE	full time employee
GDP	gross domestic product
GFC	global financial crisis
GJ	gigajoule (1 000 000 000 joules)
HDD	heating degree day
HIA	Housing Industry Association
IRR	internal rate of return
IT	information technology
KPI	key performance indicator
LME	London Metal Exchange
LRMC	long run marginal cost
MDQ	maximum daily quantity
MHQ	maximum hourly quantity
MRP	market risk premium
NECF	National Energy Customer Framework
NERA	NERA Economic Consulting
NIEIR	National Institute of Economic and Industry Research
NPV	net present value
NYMEX	New York Mercantile Exchange

OESR	Office of Economic and Statistical Research
Origin	Origin Energy Retail Ltd
O&M	operating and maintenance
ORER	Office of the Renewable Energy Regulator
PJ	petajoules (equal to 1000 terajoules)
PTRM	post-taxation revenue model
QLD	Queensland
RBA	Reserve Bank of Australia
REES	Residential Energy Efficiency Scheme
RFM	roll forward model
RIN	regulatory information notice
ROLR	retailer of last resort
SA	South Australia
SEO	seasoned equity offering
SFG	Strategic Finance Group Consulting
STTM	short-term trading market
TJ	terajoules (equal to 1000 gigajoules)
Tribunal	Australian Competition Tribunal
UAG	unaccounted for gas
WACC	weighted average cost of capital
WAPC	weighted average price cap
Wilson Cook	Wilson Cook & Co Limited