



APT Petroleum Pipeline Pty Ltd
Access arrangement draft decision
Roma to Brisbane Pipeline
2012–13 to 2016–17

April 2012

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Submissions

This document sets out the Australian Energy Regulator's (AER) draft decision in response to the Roma to Brisbane Pipeline (RBP) access arrangement proposal from APT Petroleum Pipelines Pty Limited ACN 009 737 393 (APTPPL). On 12 October 2011, APTPPL, as service provider of the RBP, submitted its access arrangement revision proposal for the period 12 April 2012 to 30 June 2017.

APTPPL may submit a revised access arrangement revision proposal responding to the AER's draft decision by 25 May 2012.

Interested parties are invited to make written submissions on the draft decision by 25 June 2012. The AER will consider all information it receives in the access arrangement review process, including submissions on the draft decision. Submissions can be sent electronically to rbp@aer.gov.au, or mailed to:

Mr Warwick Anderson
General Manager
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

The AER prefers all submissions to be publicly available to facilitate an informed and transparent consultative process. The AER will treat submissions as public documents unless otherwise requested. Parties wishing to submit confidential information must:

- clearly identify the information that is the subject of the confidentiality claim
- provide a non-confidential version of the submission.

The AER will publish all non-confidential submissions on its website (www.aer.gov.au).

Please direct enquiries about the AER's draft decision, or about lodging submissions, to the Network Regulation branch on (02) 6243 1233 or by email to rbp@aer.gov.au.

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Shortened forms

Shortened form	Full title
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
APTPPL	APT Petroleum Pipelines Pty Limited (ACN 009 737 393)
access arrangement information	APT Petroleum Pipelines Pty Limited, Access arrangement information, 12 October 2011
access arrangement period	1 July 2012 to 30 June 2017
access arrangement proposal	APT Petroleum Pipelines Pty Limited, Access arrangement revision proposal, 12 October 2011
access arrangement submission	APT Petroleum Pipelines Pty Limited, Access arrangement revision proposal–submission, 12 October 2011
capex	capital expenditure
CPI	consumer price index
Code	National Third Party Access Code for Natural Gas Pipeline Systems
earlier access arrangement	Access arrangement for the Roma to Brisbane Pipeline effective from 12 April 2007 to 11 April 2012 inclusive
earlier access arrangement period	12 April 2007 to 11 April 2012 inclusive
DNSP	distribution network service provider
DRP	debt risk premium
MRP	market risk premium
NGL	National Gas Law
NGR	National Gas Rules
opex	operating expenditure
RBP	Roma to Brisbane Pipeline
PTRM	post tax revenue model
RAB	regulatory asset base
RFM	roll forward model
WACC	weighted average cost of capital

Background

The AER is responsible for the economic regulation of covered natural gas distribution and transmission pipelines in all states and territories except Western Australia. The AER's functions and powers are set out in the National Gas Law (NGL) and the National Gas Rules (NGR).

The Roma to Brisbane Pipeline (RBP) is both owned and operated by APT Petroleum Pipelines Pty Limited ACN 009 737 393 (APTPPL). The RBP is a covered gas transmission pipeline, in accordance with the NGL. The RBP consists of a mainline approximately 440 km long, which is both compressed and looped, and three lateral pipelines. The main pipeline runs from Wallumbilla, near Roma, to Brisbane. The RBP also connects with the Queensland Gas Pipeline which runs from Wallumbilla to Rockhampton via Gladstone.¹

Upon receipt of an access arrangement proposal, the NGR requires the AER to make an access arrangement draft decision, including a statement of the reasons for the decision.² The draft decision must indicate whether the AER is prepared to approve the access arrangement proposal as submitted and, if not, the nature of the amendments required to make the proposal acceptable to the AER.³

The AER has changed the format in which it presents its gas decisions. The AER's consideration of the access arrangement proposal and accompanying access arrangement information is set out as follows:

- Part A is an overview of the draft decision.
- Part B comprises of attachments which present the AER's analysis of the access arrangement proposal.

The NGL provides that when performing or exercising an economic regulatory function or power, the AER must do so in a manner that will or is likely to contribute to the achievement of the national gas objective (NGO).⁴ The NGO is:⁵

... 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.

The AER must take into account the revenue and pricing principles when exercising its discretion in approving or making those parts of an access arrangement relating to a reference tariff. The AER may also take the revenue and pricing principles into consideration in its performance or exercise of any other AER economic regulatory function or power where it considers this appropriate.⁶

¹ APTPPL, *Access arrangement submission 2012–2017*, October 2011, pp. 4–5 (APTPPL, *Access arrangement submission*, October 2011).

² NGR, r. 59(4).

³ NGR, r. 59(2).

⁴ NGL, s. 28.

⁵ NGL, s. 23.

⁶ NGL, s. 28. The revenue and pricing principles are set out in NGL, s. 24.

This is the first gas transmission decision made by the AER that will apply to the RBP. The ACCC made the previous decision, which applied for the period 12 April 2007 to 11 April 2012. The previous decision was the first full assessment by the ACCC of the access arrangement for the RBP under the National Third Party Access Code for Natural Gas Pipeline Systems (the Code).⁷ This decision is the first full assessment by the AER of the access arrangement for the RBP under the NGL and the NGR.⁸

In making this draft decision, the AER has reviewed APTPPL's access arrangement proposal and submissions received in accordance with the process outlined in part 8 of the NGR. This process involved:

- pre-decision consultation—the AER consulted with APTPPL in developing the regulatory information notice (RIN) and regulatory templates. The purpose of the RIN was to obtain supporting information from APTPPL to help the AER assess the access arrangement proposal against the requirements of the NGR.
- APTPPL's access arrangement proposal—APTPPL submitted its access arrangement proposal and supporting documents to the AER on 12 October 2011.
- public consultation—the AER published APTPPL's access arrangement proposal and supporting documents on 16 November 2011 and called for submissions from interested parties. The AER held a public forum on APTPPL's access arrangement proposal in Brisbane on 30 November 2011. The AER also held an industry workshop on APTPPL's proposed queuing requirements in Melbourne on 12 January 2012. The AER considered submissions on APTPPL's access arrangement proposal as part of this draft decision.
- specialist advice—the AER engaged engineering, financial and economic experts to advise on key aspects of the access arrangement proposal. The AER has considered this advice in making the draft decision.

⁷ The earlier access arrangement for the RBP for the period 12 April 2007 to 11 April 2012 is a transitional access arrangement in accordance with schedule 1 of the NGR.

⁸ The transitional arrangements set out in clause 5 of schedule 1 of the NGR apply to the review of the RBP access arrangement proposal for the period 12 April 2012 to 30 June 2017.

Summary

The AER's draft decision sets reference tariffs for the transmission component of gas prices for users of the RBP. This will affect the majority of gas users in the south-east Queensland region.

The AER's draft decision and indicative price impacts

For the access arrangement period 12 April 2012 to 30 June 2017, APTPPL proposed total (unsmoothed) revenue of \$296.4 million (\$nominal) excluding the Lytton Lateral and RBP8 expansion project.⁹ This represents an increase of 73.4 per cent over approved revenue in the earlier access arrangement period.¹⁰

The AER accepts elements of APTPPL's revenue proposal as being consistent with the NGL and the NGR. However, the AER does not approve some elements, with significant impacts on forecast revenues. The AER's draft decision is for total (smoothed) revenue of \$263.4 million (\$nominal) over the access arrangement period and includes the Lytton Lateral and RBP8 expansion project. The AER's adjustment of \$75.8 million (\$nominal) is 22.4 per cent below APTPPL's proposed total (smoothed) revenue including the Lytton Lateral and RBP8 expansion project of \$339.3 million (\$nominal). The AER's draft decision is expected to increase a typical residential customer's bill by around \$2 in the first year.¹¹

Differences between the AER's draft decision and APTPPL's access arrangement proposal

Differences between the AER's draft decision and APTPPL's access arrangement proposal are principally driven by the weighted average cost of capital (WACC), capital expenditure (capex) and operating expenditure (opex). These are influenced by different approaches to pipeline coverage, forecast capacity utilisation, and extension and expansion requirements.

Some differences relate to alternative available metrics or forecasting methodologies. However, in the case of elements such as pipeline coverage and queuing requirements, differences between the AER's draft decision and APTPPL's access arrangement proposal relate to high level interpretations of the intent of the regulatory framework. If the AER were to approve APTPPL's proposed pipeline coverage and queuing requirements, over time the majority of RBP capacity, if not all capacity, would not be subject to reference tariffs. The AER considers this outcome would circumvent the role of the National Competition Council in determining the coverage of gas pipelines.

Rate of return

The WACC is the most significant driver of the AER's lower revenue allowance. For this draft decision, the AER adopts an indicative WACC of 8.55 per cent. If the AER were to accept

⁹ APTPPL submitted its revenue proposal with the AER on 12 October 2011.

¹⁰ The current total (unsmoothed) revenue allowance for 1 July 2006 to 30 June 2011 is \$170.9 million (\$nominal). (2007 final RBP revenue model agreed between ACCC and APTPPL.).

¹¹ Based on an average residential customer's gas bill of \$505 (for details, see Total Revenue section of the Overview).

APTPPL's proposed WACC of 9.63 per cent, the draft decision would have resulted in total revenue increasing by a further \$26.6 million (\$nominal) over the access arrangement period.

APTPPL agreed to propose an averaging period that commenced after the expected draft decision publication date and not later than 15 business days before the expected final decision publication date. The AER will update its final decision accordingly. For the purposes of this draft decision, the AER includes an indicative risk free rate of 4.21 per cent, compared to the indicative 4.25 per cent indicated in the APTPPL access arrangement proposal.

The AER considers APTPPL's proposed equity beta of 1.0, market risk premium (MRP) of 7 percent, and debt risk premium (DRP) of 4.31 per cent are too high. The AER adopted an equity beta of 0.8, and an MRP of 6 per cent. For the purposes of this draft decision the AER adopts an indicative DRP of 4.03 per cent. This will be updated for the final decision based on the same averaging period used to estimate the risk free rate.

Capital expenditure

APTPPL proposed capex of \$94.1 million (\$nominal) over the earlier access arrangement. It did not propose any growth capex over the access arrangement period.

The AER approves the historical growth capex on the Lytton Lateral and RBP8 expansion project but does not approve expenditure on the 2007 buyout of the Pipeline Management Agreement (PMA). The AER is not satisfied that the PMA expenditure meets the definition of capex in r. 69 of the NGR because APTPPL has not substantiated that the expenditure was incurred to provide or in providing pipeline services. The AER also considers that the proposed expenditure is not conforming capex for the purposes of r. 79 of the NGR. The AER adjusted APTPPL's proposed capex in the earlier access arrangement period to reflect these decisions.

If the AER were to accept APTPPL's proposed capex, the draft decision would have resulted in total (unsmoothed) revenue increasing by \$34.7 million (\$nominal) over the access arrangement period.

Operating expenditure

APTPPL proposed total opex of \$74.0 million (\$nominal) over the access arrangement period. The AER's draft decision is for total opex of \$65.9 million (\$nominal) over the access arrangement period.

The AER's opex forecast differs from APTPPL's principally due to different labour cost forecasts. The AER approves APTPPL's methodology for allocating APA Group (APA) corporate costs to the RBP, but has updated its corporate cost escalator for consistency with the AER's labour cost escalator. The AER also does not approve APTPPL's forecast opex for capacity expansions. The AER has updated APTPPL's forecast for debt raising costs.

If the AER were to approve APTPPL's opex forecast, the draft decision would have resulted in total revenue increasing by around \$8 million (\$nominal) over the forthcoming access arrangement period.

Capacity utilisation

The AER accepts APTPPL's forecasts that RBP capacity will be 232 TJ/day during the access arrangement period. The AER also accepts APTPPL's forecasts that RBP capacity will be fully utilised from 2012–13 to 2015–16.

However, the AER does not accept APTPPL's forecast that only 93 per cent of the RBP's capacity will be utilised in 2016–17 due to the expiry of a user's contract. The AER considers that there is currently, and will continue to be, strong demand for RBP capacity. This view is supported by existing queues for spare and additional capacity, and by APTPPL's proposal in respect of auction-based queuing requirements. The AER therefore forecasts 100 per cent capacity utilisation throughout the access arrangement period.

If the AER were to accept APTPPL's capacity utilisation forecasts, the draft decision would have resulted in higher reference tariffs (which includes capacity and throughput tariffs) of 5.1 per cent per annum on average over the access arrangement period.

Extension and expansion requirements

The AER does not accept APTPPL's proposal that extensions and expansions be excluded from regulatory coverage through the application of a fixed principle. Allowing developed capacity to be offered as a negotiated service during the access arrangement period is sufficient to support APTPPL's investment. Contracts entered into to underpin the viability of commencing an extension or expansion will not be affected by future access arrangement decisions. Further, APTPPL may establish a speculative capital expenditure account for non-conforming capital expenditure to cover expenditure incurred but not recoverable through a surcharge on users or by capital contribution.¹²

Pipeline services

The AER is of the view that a full access arrangement applies to a covered pipeline in its entirety, not to a portion of the capacity, or a portion of the geographic reach of the covered pipeline. The AER therefore does not accept APTPPL's proposal to restrict the capacity and geographic reach of the covered pipeline to which the access arrangement applies to 2006 levels.

Queuing requirements

The AER does not approve APTPPL's proposed auction-based queuing requirements as the AER is of the view that the proposed queuing requirements do not comply with the requirements of the NGR. Were the AER to accept APTPPL's queuing proposal, successive lots of spare capacity and all new capacity would no longer be subject to reference tariffs and may not be subject to the access dispute mechanism provided by the NGL and NGR.

The AER requires APTPPL to amend its queuing requirements to the first-come-first-served approach consistent with the earlier access arrangement, with minor amendments required to reflect the access arrangement period.

¹² NGR, r. 84(1).

Overview

1 Total revenue

The total revenue forecast is a forecast of the efficient cost of providing the RBP transmission pipeline reference service.

Total revenue therefore reflects a majority of the component elements of APTPPL's access arrangement proposal and of the AER's considerations of those elements. These elements are discussed in the remainder of the overview, as well as in the attachments.

1.1 Determining total revenue

APTPL lodged its revenue proposal for reference services offered on the RBP for the access arrangement period 2012-13 to 2016-17, proposing total (unsmoothed) expected revenue of \$296.4 million (\$nominal). This equates to a total (smoothed) expected revenue of \$301.8 million (\$nominal),¹³ as detailed in table 1.1.

Over the access arrangement period, APTPL will also offer negotiated services on parts of the RBP associated with the asset classes of 'Lytton Lateral' and 'RBP8 expansion' project.

APTPL's revenue proposal for reference services excludes the asset classes of 'Lytton Lateral' and 'RBP expansion 8' from the capital base, and removes any costs associated with these two projects from the return on capital, regulatory depreciation and forecast opex. The stay in business (SIB) capex associated with these projects has also been removed to reflect this.

The AER has calculated the total (smoothed) expected revenue derived from all pipeline services offered on the RBP, which includes the asset classes of 'Lytton Lateral' and 'RBP8 expansion'. The total (smoothed) expected revenue including Lytton and RBP8 expansion project is \$339.3 million (\$nominal).

Figure 1.1 allows for a comparison of APTPL's revenue proposal for reference services with its revenue proposal for all of the pipeline services.

Table 1.1 APTPL's proposed revenue requirements (smoothed) (\$million, nominal)

	2012-13	2013-14	2014-15	2015-16	2016-17	Total
APTPL's proposal (including Lytton Lateral and RBP8 expansion project)	50.2	58.3	67.6	78.4	84.7	339.3
APTPL's proposal (excluding Lytton Lateral and RBP8 expansion project)	44.8	52.0	60.3	70.0	74.7	301.8

Source: APTPL's PTRM, submitted October 2011.

¹³ APTPL submitted its revenue proposal with the AER on 12 October 2011.

The AER accepts that several aspects of APTPPL's access arrangement proposal are consistent with the requirements of the NGR. However, the AER has not approved all elements. The key elements of the AER's decision which affect APTPPL's revenue proposal are:

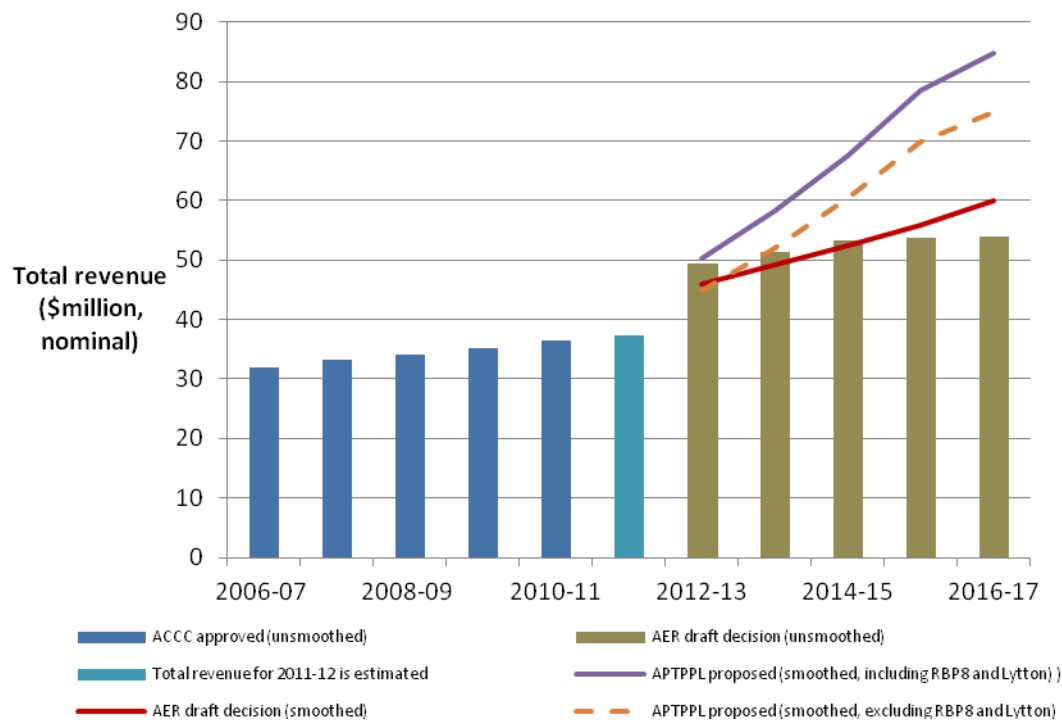
- the AER has included the Lytton Lateral and RBP8 expansion project as part of the covered pipeline and included them in the calculation of reference tariffs —this increases the proposed revenue for reference services.
- the AER has not approved APTPPL's proposal for the PMA capex to be included in its opening capital base —this reduces the proposed revenue for reference services
- the AER's draft decision WACC is lower than APTPPL's proposed WACC primarily due to adopting lower parameter values in relation to the MRP, equity beta and DRP —this reduces the proposed revenue for reference services
- the AER identified issues with APTPPL's forecast of labour, contractors, capacity expansions, corporate costs and debt raising costs —this reduces the proposed revenue for reference services.

The net impact of these aspects of the AER's draft decision is that the AER approves total (smoothed) revenue of \$263.4 million (\$nominal) for reference services on the RBP over the access arrangement period 2012–17.

As noted above, the AER's decision results in both upward and downward adjustments to components of APTPPL's proposed revenue for reference services. However, the overall impact of these adjustments is that the AER's approved total revenue is lower than APTPPL's revenue proposal excluding Lytton Lateral and RBP8 expansion.

As illustrated by figure 1.1, even though the AER's approved revenue includes costs associated with the asset classes of Lytton Lateral and RBP8 expansion, it is still lower than APTPPL's reference service revenue proposal which excludes the asset classes of 'Lytton Lateral' and 'RBP expansion 8' from regulation. That is, the AER's approved revenue results in an adjustment of \$38.4 million (\$nominal) (or 12.7 per cent) below APTPPL's proposed total (smoothed) revenue of \$301.8 million (\$nominal), excluding the RBP8 expansion project and Lytton Lateral. Further, when compared to APTPPL's proposed total (smoothed) revenue of \$339.3 million (\$nominal), which includes the RBP8 expansion project and Lytton Lateral, the AER's approved revenue leads to an adjustment of \$75.8 million (\$nominal), which is 22.4 per cent below APTPPL's proposal.

Figure 1.1 AER’s adjustments to APTPPL’s proposed revenue requirements (\$million, nominal)



Source: APTPPL's PTRM, submitted October 2011; AER analysis.

Figure 1.1 also allows for a comparison between APTPPL’s proposed revenue and the revenue approved by the ACCC over the earlier access arrangement period. Excluding the negotiated services associated with the RBP8 expansion project and Lytton Lateral, APTPPL’s proposed revenues for 2012-17 are 73.4 per cent higher than the ACCC allowed revenue for 2007-11. Including the negotiated services reveals that APTPPL’s proposed revenue for 2012–17 represents an increase of 94.8 per cent from the ACCC allowed revenue for 2007–11.

The increase in APTPPL's proposed revenue is driven by a higher return on capital (due to higher actual capex over the earlier access arrangement period and the proposed higher WACC), higher opex and regulatory depreciation. A significant proportion of capex was spent over the earlier access arrangement period on the Lytton Lateral and RBP8 expansion project.

The AER’s draft decision on APTPPL’s total revenue proposal is arrived at by summing a set of ‘building blocks’. These building blocks are displayed in table 1.2 and are discussed throughout this document.

Table 1.2 AER’s draft decision on APTPPL’s revenue requirements for the RBP (\$million, nominal)

	2012-13	2013-14	2014-15	2015-16	2016-17	Total
Return on capital	33.5	33.7	33.8	33.7	33.7	168.4
Regulatory depreciation	2.3	3.5	4.8	4.7	3.9	19.2
Tax allowance	1.4	1.6	1.7	1.7	1.7	8.1
Incentive mechanisms	-	-	-	-	-	-
Operating expenditure	12.2	12.6	13.0	13.5	14.6	65.9
Total revenue requirement	49.5	51.3	53.3	53.6	53.8	261.5
X-factor (%)	-5.82	-4.00	-4.00	-4.00	-4.00	
Smoothed revenue requirement	46.0	49.1	52.4	56.0	59.9	263.4

Source: AER analysis.

The most significant change in the AER’s draft decision to APTPPL’s proposed revenue for reference services is the reduction in the return on capital building block. This is due to the AER’s draft decision to reduce the two components which make up the return on capital, namely the WACC and the opening capital base.

The AER’s draft decision WACC is lower than APTPPL’s proposed WACC primarily due to adopting lower parameter values in relation to the MRP, equity beta and DRP.

For the purposes of this draft decision, the AER has determined an indicative risk free rate of 4.21 per cent. The AER will update the WACC for the nominal risk free rate based on the agreed averaging period at the time of the final decision.

The AER does not agree with APTPPL’s proposed equity beta of 1.0 and adopts an equity beta of 0.8. The AER also rejected APTPPL’s proposed MRP of 7 per cent and will instead apply a 6 per cent MRP. The AER has taken into account a range of evidence in determining the MRP and considers that the weight of evidence supports the adoption of a 10 year MRP estimate of 6 per cent.

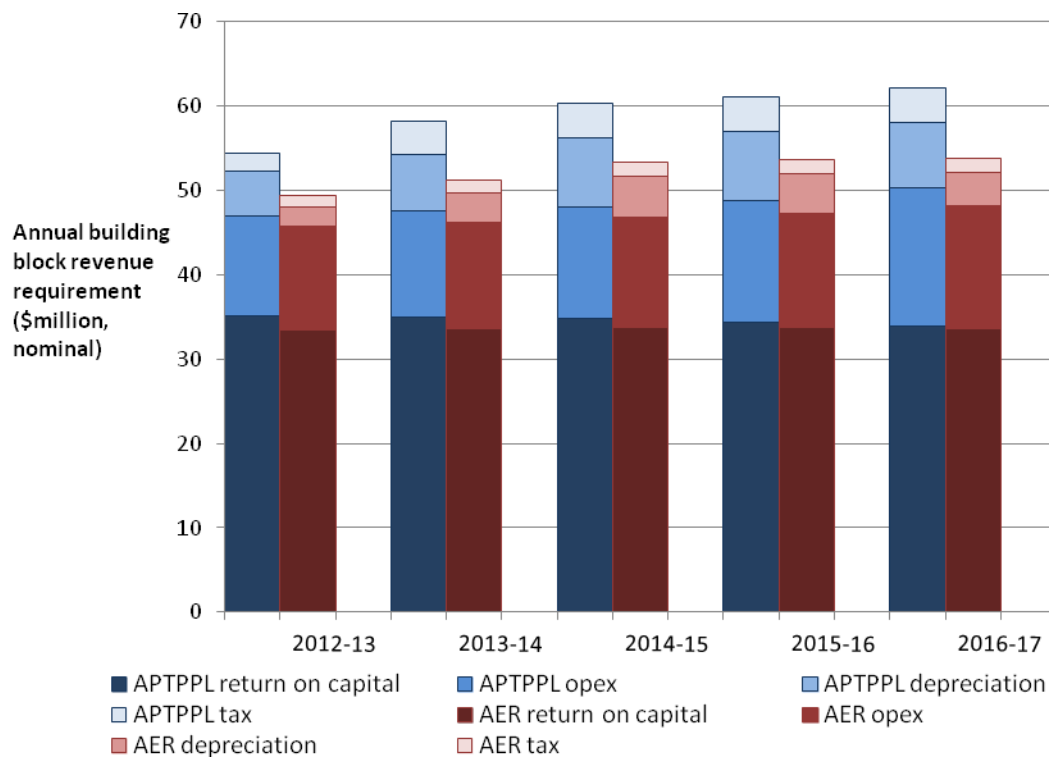
The AER accepts APTPPL’s proposed approach for estimating the DRP. For the purposes of this draft decision the AER estimated an indicative DRP of 4.03 per cent. This is lower than APTPPL’s proposed DRP because it was based on an earlier averaging period. The DRP will be updated for the final decision based on the same averaging period used to estimate the risk free rate.

Other key decisions affecting APTPPL’s proposed reference service revenue building blocks include:

- the AER's decision reduces the opening capital base to \$392.3 million (nominal) (from APTPPL's proposal of \$427.7 million (nominal)). This adjustment reflects the exclusion of the PMA contract goodwill, and includes the RBP8 expansion project and Lytton Lateral in the calculation of the reference tariff
- the AER has approved a total opex forecast of \$65.9 million (nominal), compared to APTPPL's proposed opex forecast of \$73.9 million (nominal). The AER identified issues with APTPPL's forecast of labour, contractors, capacity expansions, corporate costs and debt raising costs. The AER is not satisfied APTPPL's forecasts for these elements comply with the criteria governing opex.

The effect of the AER's adjustments to APTPPL's proposed (unsmoothed) annual building block revenue requirement for reference services (that is, excluding the RBP8 expansion project and Lytton Lateral) is displayed in figure 1.2. This figure shows that the AER's draft decision will reduce APTPPL's proposed return on capital, opex, depreciation and tax.

Figure 1.2 AER's adjustments to APTPPL's proposed revenue requirements (\$million, nominal)



Source: AER analysis.

1.1.1 Sensitivity analysis

The AER has conducted analyses of changes to AER's draft decision over the access arrangement period, if APTPPL's cost of capital parameters, capex and opex¹⁴ were adopted. Table 1.3 and table 1.4 present this analysis.

Table 1.3 shows that if APTPPL's proposed WACC was adopted, the total revenue would be \$26.6million (\$nominal) higher than the AER's total revenue. Table 1.4 shows that if APTPPL's proposed capex was adopted, the resultant opening capital base would lead to the total revenue being \$34.7 (\$nominal) higher than the AER's total revenue. This table also shows that if APTPPL's proposed opex was adopted, the total revenue would be around \$8 million (\$nominal) higher than the AER's total revenue.

Table 1.3 Changes to AER's draft decision in total over 5 years, if APTPPL's cost of capital parameters were adopted

	AER's draft decision	APTPPL	Increased revenue (\$m, nominal)	Increased revenues (per cent)
Risk free rate (Rf)	4.21%	4.25%	0.8	0.31%
Debt risk premium (DRP)	4.03%	4.31%	3.4	1.29%
MRP	6.00%	7.00%	8.2	3.12%
Beta	0.80	1.00	12.2	4.68%
WACC	8.55	9.63	26.6	10.18%

Source: AER analysis.

Table 1.4 Changes to AER's draft decision in total over 5 years, if APTPPL's capex and opex forecasts were adopted

	APTPPL's proposal (\$nominal)	AER's draft decision (\$nominal)	Increased revenues (\$million, nominal)	Increased revenues (%)
Opening capital base	427.7	392.3	34.7	13.3%
Opex	74.0	65.9	8.0	3.1%

Source: AER analysis.

1.1.2 Adjustments

The AER has estimated APTPPL's P₀ adjustment and X factors based on its analysis and consideration of the building block components discussed in the attachments. These estimations are also summarised in table 1.5.

¹⁴ These are cost of capital parameters, capex and opex associated with APTPPL's proposed revenue for reference services.

The P_0 adjustment indicates the increase in the total revenue requirement in the first year of the access arrangement period. The X factors indicate subsequent movements in tariffs. The X factors are the smoothing adjustment to subsequent years and are required to maintain the present value of revenues.

Table 1.5 AER's draft decision on APTPPL's P_0 and X factors

	2012–13	2013–14	2014–15	2015–16	2016–17
APTPPL's proposal (x factors)	-17.8%	-13.0%	-13.0%	-13.0%	-13.0%
AER's draft decision	-5.8%	-4.0%	-4.0%	-4.0%	-4.0%
APTPPL's proposal (\$m nominal)	44.8	52.0	60.3	70.0	74.7
AER Expected revenue (smoothed)(\$m, nominal)	46.0	49.1	52.4	56.0	59.9

Source: APTPPL's access arrangement proposal,¹⁵ AER analysis.

1.2 Impact on prices

1.2.1 Reference tariffs

The effect of the AER's draft decision on APTPPL's forecast reference tariffs for RBP reference services can be estimated by comparing APTPPL's forecast reference tariffs against the reference tariff derived from the AER's draft decision. Using this approach the AER estimates that this draft decision will result in reference tariffs 21.9 per cent lower on average over the access arrangement period in nominal terms than APTPPL's proposal from 2012–13 to 2016–17.

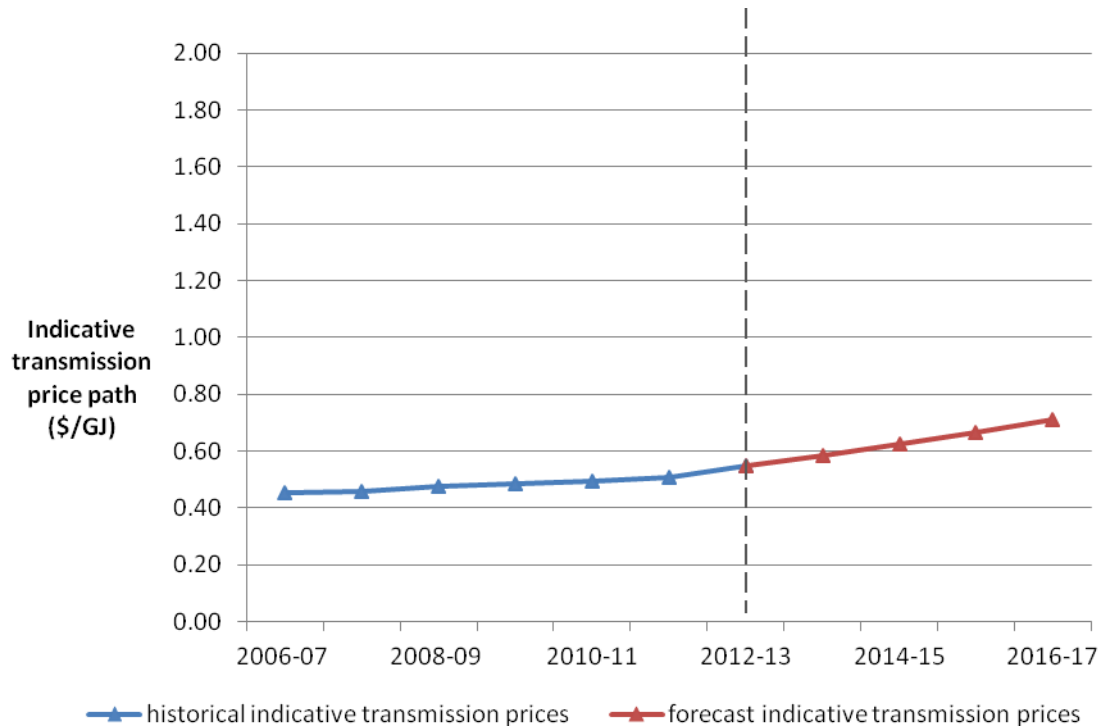
These lower reference tariffs are driven by the AER's decision on a lower WACC, and its decisions relating to the capital base, capex and opex. The average increase in the AER approved total unsmoothed revenue is 1.2 per cent per annum, while the average increase in APTPPL's forecast unsmoothed total revenue is 3.4 per cent per annum for the access arrangement period. The AER's draft decision on the total revenue includes forecasts for the RBP8 expansion project and Lytton Lateral. The impact of the AER's revenue decision on the reference tariff is offset by its decision for higher demand (capacity utilisation) associated with RBP8 expansion project and Lytton Lateral. Compared to APTPPL's tariff proposal for reference services (which excludes the RBP8 expansion project and Lytton Lateral from their forecast), the AER's decision results in a reduction of tariffs of approximately 5 per cent per annum on average over the access arrangement period. This is also reflected in the lower x factors (or real price increases).

¹⁵ APTPPL, *Access arrangement proposal 2012–2017*, October 2011 (APTPPL, *Access arrangement proposal*, October 2011).

1.2.2 Transmission charges

Transmission charges represent approximately 3 per cent, on average, of small end user gas charges in Queensland.¹⁶ As set out in figure 1.3 the AER estimates that the increase in average transmission charges under this draft decision will add approximately \$2 in the first year of the access arrangement period to a typical residential customer's annual gas bill of \$505.¹⁷

Figure 1.3 Indicative reference tariff path for the RBP's reference services from 2012–13 to 2016–17 (\$/GJ, nominal)



Source: AER analysis.

¹⁶ Queensland Competition Authority (QCA), *Final Report: Review of small customer gas pricing and competition in Queensland*, November 2008, p. 64.

¹⁷ The average residential customer's annual gas bill was calculated by using the QCA price comparison website and an average household gas consumption of 9.36 GJ per year. QCA's price comparison service accessed on 16 February 2011 at: <http://www.qca.org.au/comparator/>.

2 Pipeline overview

2.1 History

The RBP was commissioned in 1969 to transport gas from Wallumbilla (near Roma) to industrial gas users in Brisbane. Since then the capacity of RBP has been expanded through compression and looping, and now also consists of several lateral pipelines.¹⁸ This occurred in response to market growth, and was underpinned by contracts negotiated with third parties such as producers, power stations, gas utilities and major industrial customers.

The RBP was originally owned and operated by Associated Pipelines Limited (APL). In 1987 a joint venture was established between APL (85 per cent) and IOL Petroleum Limited (IOL) (15 per cent). In 1988 APL changed its name to CSR Petroleum Pipelines Limited (CSR) and was acquired by Australian Gas Light Company (AGL Company) as part of a larger acquisition of CSR's oil and gas production and transportation businesses. The business was then renamed AGL Petroleum Pipelines Limited. In 2000 AGL Company's divestment of its pipelines group via the float of Australian Pipeline Trust (APT) meant AGL Petroleum Pipelines Limited changed its name to APT Petroleum Pipelines Limited (ACN 009 737 393).¹⁹ In 2001 APTPPL purchased the 15 per cent ownership stake from Interstate Pipelines Limited (formerly IOL). The RBP is now wholly owned and operated by APTPPL.²⁰

2.2 Network

The RBP was commissioned in its original configuration in 1969. The mainline is approximately 440 km long with about 30 km of its length running through Brisbane to Gibson Island. The original 410 km section from Wallumbilla to Ellen Grove is 273 mm in diameter. This section is looped with a 406 mm diameter pipeline. The looping was carried out in several stages, between 1988 and 2002, after the original line had been fully compressed. The RBP also connects with the Queensland Gas Pipeline (QGP), which runs from Wallumbilla to Rockhampton (via Gladstone).²¹

The RBP consists of the mainline and three lateral pipelines:

- Peat Lateral—connecting to coal seam methane (CSM) gas sources near Peat and Scotia. It was completed in 2001 (the Scotia extension was completed in 2003) and is 121 km long with a current nominal capacity of 74 TJ/day. The Peat Lateral became part of the covered pipeline on 1 January 2006.
- Swanbank Lateral—feeding into Swanbank Power Station. It was completed in 2001 and is 38 km long with a current capacity of 52TJ/day.
- Lytton Lateral—supplying the Caltex Refinery. It is 6 km long, was completed in 2010 and is also part of the covered pipeline.

¹⁸ APTPPL, *Access arrangement information 2006–2011*, 31 January 2006, pp. 1–2.

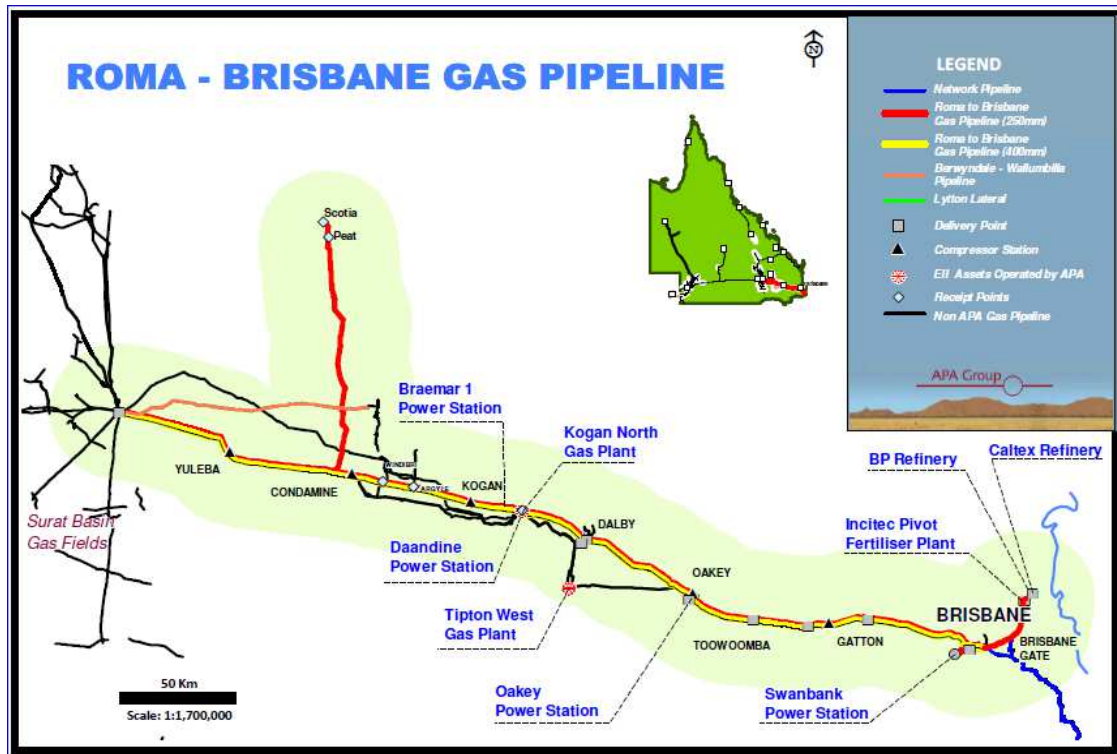
¹⁹ In December 2006, this company was converted from a public company to a proprietary limited company and became APT Petroleum Pipelines Pty Limited.

²⁰ APTPPL, *Access arrangement submission*, October 2011, pp. 3–7.

²¹ APTPPL, *Access arrangement submission*, October 2011, pp. 4–5.

The capacity of the covered pipeline as configured at April 2012, including the location of receipt points and loads, is approximately 219 TJ/day. The current nominal licensed capacity of the pipeline is 300 TJ/day. Volumes during the access arrangement period are expected to grow in line with the RBP8 expansion to 232 TJ/day.

Figure 2.1 Roma to Brisbane Pipeline networks



Source: APTPPL's access arrangement information.²²

There are six compressor stations along the length of the pipeline. Those at Yuleba, Kogan and Oakey serve the original pipeline while those at Condamine, Dalby and Gatton serve the looped pipeline. The RBP currently receives gas from numerous receipt points and delivers gas to numerous delivery points. Additional receipt and delivery points have been added from time to time.²³

²² APTPPL, *Access arrangement information 2012–2017*, October 2011, p. 1 (APTPL, *Access arrangement information*, October 2011).

²³ APTPPL, *Access arrangement submission*, October 2011, pp. 4–5.

3 Pipeline services

In considering a full access arrangement the first step is to identify the covered pipeline that will be regulated through the access arrangement. This involves identifying:

- the covered pipeline under the earlier access arrangement
- any extensions or expansions that were completed during the earlier access arrangement and which are taken to be 'covered' under that access arrangement's extension and expansion requirements.

After identifying the covered pipeline the next step is to describe the pipeline services and reference service that will be regulated through the access arrangement. It is then possible to:

- calculate the reference tariff
- determine the other non-tariff terms and conditions which will form part of the access arrangement.²⁴

APTPPL's access arrangement proposal describes the type and nature of pipeline services to be provided by the RBP. This includes those services APTPPL considers are likely to be sought by a significant part of the market (reference services) and non-reference services (referred to by APTPPL as negotiated services). APTPPL's access arrangement proposal sets out two services that are offered under the access arrangement proposal: a firm service and a negotiated service.²⁵

The AER's detailed reasons for its decision on pipeline services are provided in attachment 3.

3.1 Draft decision

The AER is of the view that a full access arrangement applies to a covered pipeline in its entirety, not to a portion of the capacity, or a portion of the geographic reach, of the covered pipeline. The AER does not approve APTPPL's proposal to restrict the capacity and geographic reach of the covered pipeline to which the access arrangement applies.

To address these issues, the AER requires APTPPL to:

- amend clause 1.3 of the access arrangement proposal to change the definition of Existing Capacity so that it refers to the capacity of the covered pipeline as at the commencement of the access arrangement for the term 2012–2017
- amend clause 2.2.1 of the access arrangement proposal by inserting the word 'Covered' before the word 'Pipeline'.

At present, the AER considers there is insufficient evidence to support the view that intra-day renomination or any other services should be defined as part of the reference service, or as

²⁴ Such as queuing requirements, extension and expansion requirements, and capacity trading requirements.

²⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 4.

additional reference services in accordance with r. 101(2) of the NGR. The AER will continue to monitor these negotiated services, the associated revenues, and demand, during the access arrangement period.

3.2 Summary of analysis and reasons

3.2.1 Identification of the pipeline

The AER assessed whether APTPPL appropriately identified the pipeline to which the access arrangement relates.²⁶ APTPPL identified the pipeline in clauses 1.3 and 1.4 of the access arrangement proposal.²⁷

Clauses 1.3 and 1.4 have the effect of restricting the application of the access arrangement. This is because the term 'Existing Capacity' is defined in clause 1.3 to mean the capacity of the pipeline as at 1 January 2006 (rather than the capacity of the pipeline as at the start of the access arrangement period).²⁸

The effect of this definition is that extensions and expansions undertaken between 1 January 2006 and the commencement of the access arrangement would be excluded from the application of the access arrangement. The AER considers that this approach would be inconsistent with the legislature's intention to regulate covered pipelines through the NGL/NGR framework.

The AER takes the view that APTPPL is not able to exclude extensions and expansions undertaken between 1 January 2006 and the commencement of the access arrangement from the access arrangement's application. The AER considers the covered pipeline to which this access arrangement applies consists of:

- the covered pipeline at the start of the earlier access arrangement which was the entire capacity of the pipeline as at January 2006
- extensions and expansions undertaken during the earlier access arrangement which are taken to be a part of the covered pipeline. This includes the completed Lytton Lateral extension and the RBP8 expansion (if in operation before this access arrangement commences). Both of these augmentations are taken to be 'covered' under the extensions/expansions policy in the earlier access arrangement.

Therefore, the AER is of the view that for APTPPL to adequately identify the pipeline and appropriately state the scope of the access arrangement, clause 1.3 of the access arrangement proposal should be amended so that the definition of 'Existing Capacity' refers to the capacity of the covered pipeline as at the commencement of the access arrangement.

²⁶ NGR, r. 48(1)(a).

²⁷ APTPPL, *Access arrangement proposal*, October 2011, pp. 1–2.

²⁸ Existing Capacity is referred to in clause 1.4 of APTPPL's access arrangement proposal, is defined in clause 1.3 of APTPPL's access arrangement proposal.

3.2.2 Description of the pipeline services

APTPPL has described the pipeline services offered over the covered pipeline as being a 'firm service' and a 'negotiated service'. The AER accepts that if the amendments referred to in this draft decision are made, the pipeline services offered on the entire covered pipeline subject to the access arrangement as configured as at 1 July 2012 are adequately described.²⁹

3.2.3 Specification of the reference service

The AER considers that the pipeline service for the receipt, transportation and delivery of gas through any length of the covered pipeline in the direction from Wallumbilla or Peat to Brisbane is likely to be sought by a significant part of the market and should therefore be specified as the reference service.³⁰ This is demonstrated as the RBP is currently capacity constrained, with a queue in operation for spare and developable capacity.³¹ Further, the Lytton Lateral opens access to new industrial sites in the Lytton region.

APTPPL's access arrangement proposal defines the firm service in clause 2.2.1 as 'a service for the receipt, transportation and delivery of Gas through any length of the Pipeline in the direction from Wallumbilla or Peat to Brisbane'. The AER considers the preferable way of specifying the reference service is to clarify that the definition of the firm service in clause 2.2.1 applies to the covered pipeline.

3.2.4 Inclusion of additional reference services

The AER has examined the reference service in the access arrangement. It considered submissions by BP Australia Ltd (BP), Australian Power and Gas Pty Limited (APG) and TRUenergy that additional services, such as intra-day renomination, as available, and backhaul services, be included in the reference service. These services are currently negotiated between APTPPL and users. At present, the AER considers there is insufficient evidence to support the view that these negotiated services should be defined as part of the reference service, or as additional reference services.³²

The AER will continue to monitor these negotiated services, the associated revenues, and demand during the access arrangement period. The AER will reconsider whether such services should be part of the reference service, or additional reference services, at the next access arrangement review.

²⁹ NGR, r. 48(1)(b).

³⁰ NGR, r. 48(1)(c).

³¹ APTPPL, *Access arrangement submission*, October 2011, pp. 37–38.

³² BP Australia Limited, *Submission on the APT Petroleum Pipelines Limited access arrangement 2012–2017*, 16 December 2011, pp. 2–4 (BP, *Submission to the AER*, December 2011); Australian Power and Gas Pty Limited, *Submission on the APT Petroleum Pipelines Limited access arrangement 2012–2017*, 19 December 2011, pp. 1–2 (APG, *Submission to the AER*, December 2011); TRUenergy, *Submission on the APT Petroleum Pipelines Limited access arrangement 2012–2017*, 8 December 2011, p. 5 (TRUenergy, *Submission to the AER*, December 2011); NGR, r. 101(2).

4 Capacity utilisation forecasts

Demand forecasts refer to the forecast amount of gas sought by the market. Demand forecasts can therefore be greater than pipeline capacity. Capacity utilisation forecasts should be arrived at independently of pipeline capacity forecasts, as they are used to gauge whether or not demand forecasts will be met by pipeline capacity. The capacity utilisation and demand forecasts the AER considers to be acceptable³³ are in turn used to calculate the reference tariffs for reference services provided on the RBP.

In its access arrangement proposal, APTPPL must provide forecasts of RBP capacity over the access arrangement period and utilisation of this capacity.³⁴ APTPPL also provided demand forecasts for the RBP over the access arrangement period.³⁵

The AER assesses whether or not APTPPL's capacity and capacity utilisation forecasts are arrived at on a reasonable basis, and represent the best forecasts possible in the circumstances. The AER may also consider other elements of APTPPL's proposal which it considers to be relevant, such as RBP demand forecasts. The AER will set out alternative forecasts for those elements of APTPPL's forecasts it does not approve.

The AER's detailed reasons for the draft decision on APTPPL's capacity and capacity utilisation forecasts are provided in attachment 4.

4.1 Draft decision

The AER approves APTPPL's estimate (for 2011–12) and forecasts of RBP capacity over the access arrangement period. The AER considers that the methodology and assumptions APTPPL used to arrive at these forecasts and estimate are reasonable and therefore meet the requirements of r. 74(1) and 74(2) of the NGR.

For the same reason, the AER approves APTPPL's capacity utilisation forecasts and estimate for the RBP from 2011–12 to 2015–16.³⁶

However, the AER does not approve APTPPL's capacity utilisation forecast for the RBP for 2016–17. The AER considers that APTPPL's forecast does not take into account a number of factors which suggest that any capacity to be freed on the RBP is likely to be acquired by the market in 2016–17. Therefore, the AER considers that APTPPL's capacity utilisation forecast for the RBP for 2016–17 is not arrived on a reasonable basis and does not represent the best forecast possible in the circumstances.

Tables 4.1, 4.2 and 4.3 set out the AER's alternative capacity utilisation and demand forecasts which make this element of the proposal acceptable to the AER.³⁷ These forecasts will be used to determine the reference tariffs for reference services provided on the RBP.

³³ NGR, r. 74(2).

³⁴ NGR, r. 72(d).

³⁵ APTPPL, *Access arrangement submission*, October 2011, pp. 24–33.

³⁶ NGR, rr. 74(1) and 74(2).

³⁷ NGR, r. 59(2).

Table 4.1 AER draft decision on APTPPL's capacity utilisation forecasts

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Pipeline capacity (TJ/day)	219	232	232	232	232	232
Utilisation of pipeline capacity (%)						
APTPL's proposal	100	100	100	100	100	93
AER's draft decision	100	100	100	100	100	100

Source: APTPL, *Access arrangement information*, October 2011, p. 11; APTPL's RIN submission;³⁸ AER analysis.

Table 4.2 AER draft decision on APTPL's capacity requirement forecasts (TJ/day)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
APTPL's proposal	219	232	232	232	232	216
AER's draft decision	219	232	232	232	232	233

Source: APTPL, *Access arrangement submission*, October 2011, pp. 25, 28; AER's decision.

APTPL has provided a confidential breakdown of forecast daily capacity utilisation by Gas-fired Power Generation (GPG) users and non-GPG users³⁹ (that is, domestic, commercial and industrial users). This breakdown is contained at confidential appendix F to the AER's draft decision attachments.

Table 4.3 AER draft decision on APTPL's throughput forecasts (TJ)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
APTPL's proposal	62, 833	70, 375	70, 903	71, 052	71, 909	67, 133
AER's draft decision	62, 833	70, 375	70, 903	71, 052	71, 909	70,346

Source: APTPL, *Access arrangement submission*, October 2011, pp. 25, 29; AER's decision.

APTPL has provided a confidential breakdown of forecast annual throughput by GPG and non-GPG users. This breakdown is contained at confidential appendix F to the AER's draft decision attachments.

³⁸ APTPL, *Gas transmission regulatory information notice: Regulatory templates for access arrangement period 2012–13 to 2016–17*, October 2011 (APTPL, RIN submission, October 2011).

³⁹ APTPL, *Access arrangement submission*, October 2011, p. 26.

4.2 Summary of analysis and reasons

The AER considers that the basis of APTPPL's methodology and assumptions used to arrive at its forecasts of RBP's capacity over the access arrangement period and capacity utilisation from 2012–13 to 2016–17 are reasonable.⁴⁰

The AER does not accept APTPPL's capacity utilisation forecast for the RBP for 2016–17 because APTPPL's forecast does not take into account the following factors which suggest that the capacity to be freed is likely to be acquired by the market in 2016–17.

- APTPPL's proposed queuing requirements aim to subscribe the demand for the capacity to be spared on the RBP in 2016–17.⁴¹ This suggests that the demand for RBP capacity will exceed the capacity available for uptake. Therefore, the capacity to be freed in 2016 is likely to be fully acquired by the market in 2016–17. APTPPL's submission that a queue is currently in place for RBP spare capacity further supports this view⁴²
- the capacity to be freed on the RBP in 2016 may be ideal for small volume customers who are currently denied access to RBP capacity because the pipeline is fully contracted, and therefore have to wait to piggyback on future large capacity expansions⁴³
- recent reports indicate increased gas use in Queensland in the medium to long term. This suggests that demand for pipeline services in Queensland will also rise.⁴⁴

The AER considered the possibility that the capacity to become available for uptake may be different to 16 TJ/day if gas is to be withdrawn/injected at a receipt/delivery point different to that used by the shipper whose contract will expire in 2016.

Submissions received from AGL Energy Limited (AGL), BP and APG also questioned APTPPL's demand forecasts for 2016–17, and support the view that any capacity to be freed on the RBP is likely to be taken up by other users.⁴⁵

SKM MMA's consideration of APTPPL's demand forecasts further supports the AER's views. SKM MMA considered that APTPPL's forecasts for 2016–17 are not arrived at on a reasonable basis because the range of alternative uses of capacity has not been fully taken into account. Nor do they represent the best forecast or estimate possible in the circumstances as there is a reasonable likelihood that some or all of the capacity will be taken

⁴⁰ NGR, r. 74(2).(a)

⁴¹ APTPPL, *Access arrangement submission*, October 2011, p. 29.

⁴² APTPPL, *Access arrangement submission*, October 2011, p. 109–110.

⁴³ APTPPL, *Access arrangement submission*, October 2011: *Attachment 3.1 2011 Gas Market Review Queensland (Queensland Government)*, p. 52.

⁴⁴ The reports cited by the AER include the 2010 Gas Statement of Opportunities for Eastern and South Eastern Australia (2010 GSOO) and a 2010 report published by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES).

⁴⁵ APG, *Submission to the AER*, December 2011, p. 1; BP, *Submission to the AER*, December 2011, pp. 6–7; AGL Energy Limited, *Submission on the APT Petroleum Pipelines Limited access arrangement 2012–2017*, 19 December 2011, p. 2 (AGL, *Submission to the AER*, December 2011).

up.⁴⁶ SKM MMA noted the strong likelihood that the user whose contract will expire in 2016, will want to retain the point on its transmission system.

The AER has taken into account a recent announcement by Caltex Australia Limited (Caltex Australia) to conduct a half-year review into its Lytton Refinery, currently connected to the RBP. The AER considers there to be insufficient information to gauge the impact of this review on APTPPL's capacity utilisation forecasts. However, APTPPL will have the opportunity to revise its capacity utilisation forecasts when it submits a revised access arrangement revision proposal for the RBP. The AER will assess the revised access arrangement revision proposal prior to making a final decision.

⁴⁶ SKM MMA, *Roma to Brisbane Pipeline Review of demand forecasts*, 19 December 2011 p. 28 (SKM MMA, *Report: RBP*, December 2011).

5 Regulatory depreciation

Regulatory depreciation is used to model the nominal asset values over the access arrangement period and the depreciation allowance in the total revenue requirement.

APTPPL's annual regulatory depreciation allowance is the sum of the straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base. APTPPL proposed a straight-line method for calculating depreciation on the projected capital base, and a forecast regulatory depreciation allowance of \$36.9 million (\$nominal) for the access arrangement period.

When determining the total revenue for APTPPL, the AER must decide on the depreciation for the projected capital base (or return of capital).⁴⁷

The AER's detailed reasons for its decision on regulatory depreciation are provided in attachment 5.

5.1 Draft decision

The AER approves APTPPL's proposed straight-line method for calculating depreciation on the projected capital base. The AER does not approve APTPPL's proposed forecast regulatory depreciation allowance of \$36.9 million (\$nominal)⁴⁸ for the access arrangement period. The AER does not approve APTPPL's proposed depreciation schedule for:

- the 'Easements' asset class. The AER considers that easements are non-depreciating assets and therefore should not be subject to the calculation of depreciation in the revenue model. For modelling purposes, the AER has changed the remaining and standard economic life inputs for the 'Easements' asset class in APTPPL's revenue model to 'n/a'
- the 'RBP expansion 8' asset class. The AER considers that the standard/remaining economic life for the 'RBP expansion 8' asset class should be increased to 46 years from the proposed 35 years. This reflects the weighted average of the standard economic lives for the group of asset types within that asset class.⁴⁹

The AER's determinations regarding other components of APTPPL's proposal also affect the regulatory depreciation allowance. These are discussed in other attachments and include:

- the opening capital base (attachment 7)

⁴⁷ NGR, r. 76(b).

⁴⁸ All dollar amounts are in nominal terms in this attachment because regulatory depreciation is an output of the PTRM. The output of the PTRM such as the tax allowance and regulatory depreciation are expressed in nominal terms, whereas the inputs of the PTRM such as forecast opex and capex are expressed in real terms.

⁴⁹ 'RBP expansion 8' is a new asset class for the access arrangement period. The asset has not been depreciated in the earlier access arrangement period. Therefore, the remaining economic life of the 'RBP expansion 8' asset class as at 1 July 2012 will be the same as its standard economic life to reflect that it is a new asset. The PTRM uses the remaining economic life to calculate the straight-line depreciation of the opening capital base as at 1 July 2012.

- forecast capex (attachment 7)
- forecast inflation (attachment 7).

The AER's draft decision on APTPPL's total regulatory depreciation allowance over the access arrangement period is \$19.2 million (\$nominal). This represents a reduction of \$17.7 million (nominal) or 48.0 per cent of APTPPL's proposed total regulatory depreciation allowance.⁵⁰ Table 5.1 sets out the AER's draft decision on APTPPL's annual regulatory depreciation allowance for the access arrangement period.

Table 5.1 AER's draft decision on APTPPL's depreciation for the access arrangement period (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Straight-line depreciation	12.5	13.7	15.1	14.9	14.2	70.5
Less: inflation indexation on opening capital base	10.2	10.2	10.3	10.3	10.2	51.2
Regulatory depreciation	2.3	3.5	4.8	4.7	3.9	19.2

Source: AER analysis.

5.2 Summary of analysis and reasons

The AER approves APTPPL's proposed standard and remaining economic lives for most of APTPPL's asset classes. However, the AER does not approve APTPPL's proposed standard and remaining economic lives for the following asset classes:

- the 'Easements' asset class—the AER considers that easements are rights acquired over land use and therefore should not have a standard/remaining economic life for the calculation of depreciation in the revenue model. For modelling purposes, the AER has changed the remaining and standard economic life inputs for the 'Easements' asset class in APTPPL's revenue model to 'n/a'.
- the 'RBP expansion 8' asset class—the AER considers that the standard/remaining economic life for the 'RBP expansion 8' asset class should be increased to 46 years from the proposed 35 years. This is because the main asset types under this asset class are compressors, pipelines, and regulators and meters. The standard economic life for compressors is 35 years, pipelines are 80 years, and regulators and meters are 40 years. The AER therefore calculated a weighted average of the standard economic life for this asset class using the proportion of the RBP8 expansion capex for each asset type as weights.⁵¹

⁵⁰ APTPPL's proposed regulatory depreciation allowance is \$36.9 million (\$nominal). This proposed amount includes the depreciation schedule for the 'RBP8' and 'Lytton Lateral' asset classes. APTPPL proposed to classify these two asset classes as negotiated services. The AER has decided that RBP8 and Lytton Lateral should be classified to provide reference services for the purpose of determining a reference tariff (see attachment 1).

⁵¹ 'RBP expansion 8' is a new asset class for the access arrangement period. The asset has not been depreciated in the earlier access arrangement period. Therefore, the remaining economic life of the 'RBP expansion 8' asset class as at 1 July 2012 will be the same as its standard economic life to reflect that it is a

- the 'PMA' asset class—the AER did not approve APTPPL's proposed PMA capex. Therefore, there is no expenditure amount to be depreciated for this asset class. For modelling purposes, the AER has changed the remaining and standard economic life inputs for the 'PMA' asset class in APTPPL's revenue model to 'n/a'.

The AER has updated the remaining economic lives for the 'Group IT' asset class to reflect the AER's decision on APTPPL's proposed Group IT capex.⁵²

new asset. The PTRM uses the remaining economic life to calculate the straight-line depreciation of the opening capital base as at 1 July 2012.

⁵² See the discussion in attachment 8 for further details. At the time of this draft decision the roll forward of APTPPL's capital base includes forecast capex for 2011–12. The AER may update this capex figure for its final decision. These capex figures are used to calculate the weighted average remaining lives of the assets. Therefore, the AER may recalculate APTPPL's remaining asset lives using the method approved in this draft decision to reflect the updated 2011–12 capex for the final decision.

6 Corporate income tax

Under the post-tax framework, a separate corporate income tax allowance is calculated as part of the building blocks assessment.

APTPL has adopted the post-tax framework to derive its revenue requirement for the access arrangement period.⁵³

When determining the total revenue for APTPL, the AER must estimate APTPL's cost of corporate income tax.⁵⁴

The AER's detailed reasons for its decision on corporate income tax are provided in attachment 6.

6.1 Draft decision

The AER approves APTPL's proposal to use the AER's post tax revenue model (PTRM) to estimate the forecast corporate income tax allowance. However, the AER does not approve APTPL's proposed forecast corporate income tax allowance of \$18.5 million (\$nominal)⁵⁵ for the access arrangement period. This is mainly because of the AER's adjustments to APTPL's proposed opening tax asset base as at 1 July 2012 (section 6.4.1 in attachment 6), return on capital (attachment 7) and forecast opex (attachment 9).

The AER accepts APTPL's proposed method to establish the opening tax asset base as at 1 July 2012. However, the AER rejects APTPL's proposed opening tax asset base of \$134.7 million (\$nominal) as at 1 July 2012. The AER's draft decision on APTPL's proposed capex in the earlier access arrangement period reduces APTPL's proposed opening tax asset base as at 1 July 2012 by about \$6.3 million (nominal) or 4.7 per cent. Based on this adjustment, the AER determines APTPL's opening tax asset base as at 1 July 2012 is \$128.4 million (\$nominal).

The AER approves APTPL's proposed standard tax asset lives with the exception of the standard tax asset life for the 'Easements' asset class. The AER considers that easements are non-depreciating assets and therefore should not be subject to the calculation of tax depreciation in the revenue model. For modelling purposes, the AER has changed the standard tax asset life input for the 'Easements' asset class in APTPL's PTRM to 'n/a'.⁵⁶

The AER also approves APTPL's proposed weighted average method to calculate the remaining tax asset lives as at 1 July 2012. In accepting APTPL's proposed weighted average method, the AER has updated the tax remaining lives to reflect the required changes

⁵³ APTPL, *Access arrangement information*, October 2011, p. 17.

⁵⁴ NGR, r. 76(c).

⁵⁵ All dollar amounts are in nominal terms in this attachment because corporate income tax is an output of the PTRM. The output of the PTRM such as the tax allowance and regulatory depreciation are expressed in nominal terms, whereas the inputs of the PTRM such as forecast opex and capex are expressed in real terms.

⁵⁶ The remaining tax asset life for the 'Easements' asset class is already shown as 'n/a' in APTPL's proposed PTRM. Therefore, no change is needed for the remaining tax asset life for this asset class.

to APTPPL's proposed capex in the earlier access arrangement period as discussed in attachment 8.

The AER's adjustments result in an estimated cost of corporate income tax allowance of \$8.1 million (\$nominal) as shown in table 6.1. Based on the approach to modelling the cash flows in the PTRM, the AER has derived an effective tax rate of 19.1 per cent for this draft decision.

Table 6.1 AER's draft decision on corporate income tax allowance for APTPPL (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Tax payable	1.9	2.1	2.2	2.3	2.2	10.7
Less: value of imputation credits	-0.5	-0.5	-0.6	-0.6	-0.6	-2.7
Net corporate income tax allowance	1.4	1.6	1.7	1.7	1.7	8.1

Source: AER analysis.

6.2 Summary of analysis and reasons

The AER approves APTPPL's proposed method to establish the opening tax asset base as at 1 July 2012. The AER does not approve APTPPL's proposed opening tax asset base of \$134.7 million (\$nominal) as at 1 July 2012. The AER determines APTPPL's opening tax asset base is \$128.40 million (\$nominal). The AER's draft decision on APTPPL's proposed capex in the earlier access arrangement period reduces the proposed opening tax asset base by about \$6.3 million (nominal) or 4.7 per cent.

The AER approves APTPPL's proposed standard tax asset lives, apart from the standard tax asset life for the 'Easements' and 'PMA' asset classes. The AER considers that easements are rights acquired over land use and therefore should not be subject to the calculation of tax depreciation in the revenue model. For modelling purposes, the AER has changed the standard tax asset life input for the 'Easements' asset class in APTPPL's PTRM to 'n/a',⁵⁷ and the tax standard life for the 'PMA' asset class in APTPPL's PTRM to 'n/a'.⁵⁸

The AER approves APTPPL's proposed weighted average method to calculate the remaining tax asset lives as at 1 July 2012. The AER has updated the tax remaining lives to reflect the required changes to APTPPL's proposed capex in the earlier access arrangement period.⁵⁹

The AER approves APTPPL's proposal to adopt the value of 0.25 for gamma. This value is consistent with the Australian Competition Tribunal's (Tribunal) findings in its review of the

⁵⁷ The remaining tax asset life for the 'Easements' asset class is already shown as 'n/a' in APTPPL's proposed PTRM. Therefore, no change is needed for the remaining tax asset life for this asset class.

⁵⁸ This is because the AER did not approve APTPPL's proposed PMA capex. See attachment 8 for further details.

⁵⁹ Discussed in attachment 8.

AER's 2010 distribution determinations for Energex, Ergon Energy and ETSA Utilities.⁶⁰ The AER also adopted this value in the recent Aurora draft distribution determination.⁶¹ There is no new evidence before the AER to cause it to vary from the findings of the Tribunal.

⁶⁰ Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No. 5)[2011] ACompT 9*, 12 May 2011, paragraph 42.

⁶¹ AER, *Draft decision: Aurora Energy Pty Ltd: Distribution determination 2012–2017*, November 2011, p. 27 (AER, *Draft decision: Aurora distribution determination*, November 2011).

7 Rate of return

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.

APTPPL's return on capital building block is calculated by multiplying the rate of return with the value of APTPPL's capital base. Consistent with previous AER gas decisions and APTPPL's proposal, the rate of return adopted by the AER is the nominal 'vanilla' post-tax WACC formulation.

APTPPL proposed an indicative rate of return of 9.63 per cent.

The AER's detailed reasons for its decision on the rate of return on APTPPL's capital base over the forthcoming access arrangement period are provided in attachment 7 and appendix C

7.1 Draft decision

The AER's draft decision does not approve APTPPL's proposed (indicative) rate of return of 9.63 per cent. The AER withholds its approval as, in the AER's opinion, 8.55 per cent (subject to updating) is a preferable alternative that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.⁶² The AER considers this rate (subject to updating) provides APTPPL with a reasonable opportunity to recover at least the efficient costs of capital financing. Consequently, the AER expects APTPPL will be able to attract funds in order to invest in its pipeline in the long run interests of both APTPPL and consumers.

The AER agrees with a number of aspects of APTPPL's proposed rate of return. Specifically, the AER agrees with:

- adopting the capital asset pricing model (CAPM) to calculate the cost of equity
- adopting the yield on 10 year Commonwealth Government Securities (CGS) as the proxy for the risk free rate
- adopting a 60 per cent gearing ratio
- specifying the cost of debt as the debt risk premium (DRP) over the risk free rate
- determining the DRP by defining the benchmark as a 10 year corporate bond with a BBB+ credit rating and measuring the benchmark bond rate using the Bloomberg BBB rated 7 year fair value curve (FVC)
- the method of extrapolating the Bloomberg BBB rated 7 year FVC out to a 10 year maturity (consistent with the definition of the benchmark bond) using historical Bloomberg FVCs

⁶² The AER's adoption of this rate is subject to the risk free rate and DRP parameters being updated closer to the date of the final decision.

- adopting the inflation forecasting method proposed by APTPPL.

The AER does not agree with the following aspects of APTPPL's proposal:

- the value for the equity beta—the AER adopts a 0.8 equity beta instead of APTPPL's proposal of 1.0
- the value for the MRP—the AER adopts a 6 per cent MRP instead of APTPPL's proposal of 7 per cent.

The main reasons for these differences are summarised in the next section.

The individual WACC parameters and consequent overall rate of return determined by the AER is set out in table 7.1.

The AER's draft decision on the rate of return is comparable to that determined by the ACCC for the RBP in 2007, however some of the components have changed. The cost of equity is lower due to the lower prevailing risk free rate and the AER's determination that the pipeline's exposure to market wide systematic risk is lower than that determined by the ACCC. The cost of debt is higher due to the materially higher DRP which has more than offset the decrease in the risk free rate.

Table 7.1 AER's draft decision on APTPPL's rate of return (per cent, nominal)

Parameter	Previous ACCC decision	APTPPL proposal	AER draft decision
Nominal risk free rate	5.70%	4.25% ^a	4.21% ^a
Equity beta	1.0	1.0	0.8
Market risk premium	6.0%	7.0%	6.0%
Debt risk premium	1.14%	4.31% ^a	4.03% ^a
Gearing level	60%	60%	60%
Inflation forecast	3.21%	2.62% ^a	2.60% ^a
Gamma	0.5	0.25	0.25
Nominal post-tax cost of equity	11.70%	11.25% ^a	9.01% ^a
Nominal pre-tax cost of debt	6.84%	8.56% ^a	8.24% ^a
Nominal vanilla WACC	8.78%	9.63% ^a	8.55% ^a

Source: ACCC decision; APTPPL, *Access arrangement proposal*, October 2011; AER analysis.
(a) Indicative only. The risk free rate, debt risk premium and inflation forecast will be updated closer to the date of the final decision.

7.2 Summary of analysis and reasons

This section summarises the AER's reasoning in respect of the risk free rate, MRP, equity beta and DRP. The AER's detailed reasoning on these and the other WACC parameters is set out in attachment 7 and appendix C

7.2.1 Risk free rate

The AER agrees with APTPPL's proposed proxy for the risk free rate being the annualised yield on 10 year CGS.

In its access arrangement proposal, APTPPL proposed the risk free rate be determined over a 20 day averaging period with those dates to be proposed at a later stage in correspondence with the AER.⁶³

A series of correspondence between the AER and APTPPL followed. The AER informed APTPPL that it required a proposed averaging period to be included within the access arrangement information, and that without this information the AER may reject APTPPL's access arrangement proposal as non-compliant under r.10(1)(b) of the NGR. Subsequently, APTPPL proposed an undertaking that set out a procedure for reaching agreement between the AER and APTPPL over the dates of the averaging period. The AER accepted the terms of the undertaking and in recognition of this undertaking did not reject APTPPL's access arrangement proposal on the grounds of non-compliance.⁶⁴

The terms of the undertaking included that the AER agreed to notify APTPPL of the expected publication date of its draft decision in advance of publication, and APTPPL agreed to respond within a short specified period nominating an averaging period. APTPPL agreed to propose an averaging period that commenced after the expected draft decision publication date and before the expected final decision publication date. APTPPL also agreed to propose an averaging period at least 10 and not more than 40 business days in length.

On 30 March 2012, APTPPL submitted its proposed averaging period dates to the AER. The proposed dates conformed with the undertaking previously agreed between the AER and APTPPL. The AER therefore approves APTPPL's proposed averaging period.

For the purposes of this draft decision the AER determines an indicative risk free rate of 4.21 per cent. This will be updated for the final decision based on the agreed averaging period.

7.2.2 Market risk premium

The AER adopts a MRP of 6 per cent. The AER does not agree with APTPPL's proposed MRP of 7 per cent.

⁶³ APTPPL's access arrangement proposal included an indicative risk free rate of 4.25 per cent calculated over the 20 business days ending 30 September 2011.

⁶⁴ The AER considered this undertaking constituted an addendum to APTPPL's access arrangement information under rule 43(3)(b) of the NGR.

The AER takes into account the following evidence in determining the MRP:

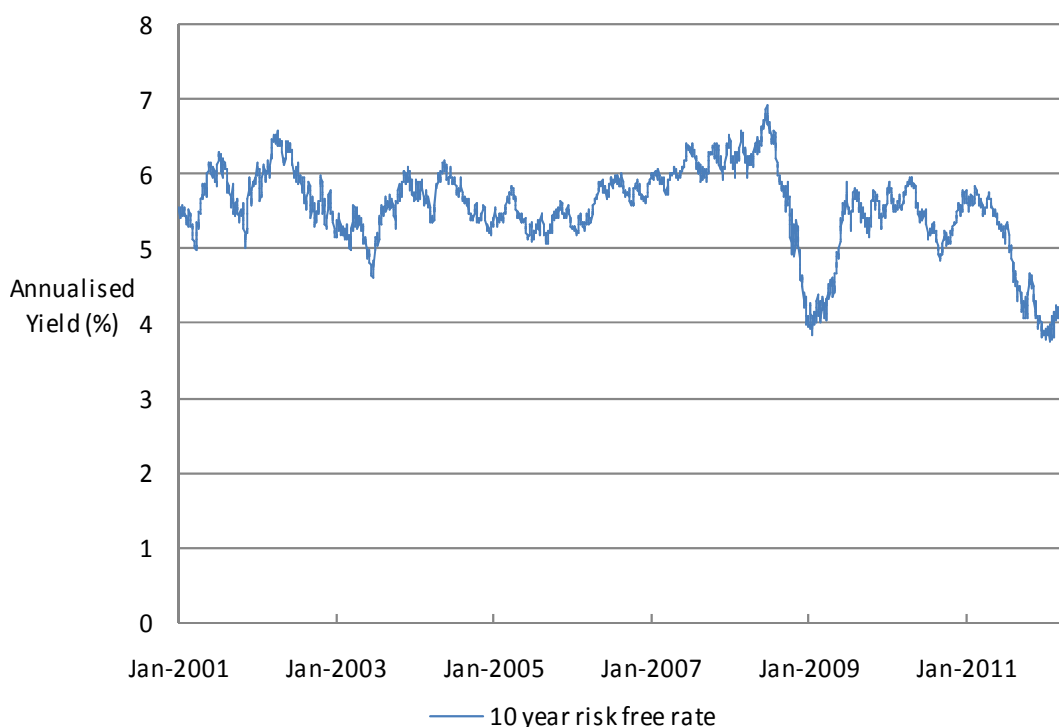
- Historical excess returns—The long-term historical estimates of average excess returns produce a range of 5.7-6.1 per cent (based on arithmetic averages) and 3.5-4.7 per cent (based on geometric averages).⁶⁵
- Survey based estimates—Survey measures both before and after the height of the global financial crisis (GFC) support 6 per cent as the MRP.
- Dividend growth model (DGM) estimates—The output from these models are highly sensitive to the exact construction of the model, assessment of inputs, and point of time of estimation. In this context, DGM estimates are useful only as a cross check on the reasonableness of other methods.
- Implied volatility analysis—There are no direct implications of implied volatility for the 10 year forward looking MRP. To the limited extent that this evidence is relevant to expectations of market risk, it supports an MRP at the long term average of 6 per cent.
- Market commentary and economic outlook—Less weight has been placed on this evidence, which is consistent with an MRP of 6 per cent.

The AER interprets the information available with regard to the advantages and limitations of each type of evidence.

In the AER's opinion the weight of evidence supports the adoption of a 10 year forward looking MRP estimate of 6 per cent. The AER continues with its practice of adding this MRP estimate (multiplied by equity beta) to the prevailing 10 year risk free rate. The adoption both of a prevailing 10 year risk free rate and a 6 per cent MRP are supported by advice the AER has received from Professor McKenzie and Associate Professor Partington. This advice explicitly endorses this position even where the 10 year risk free rate is lower than the historical average rate. Figure 7.1 shows that this has been the case recently.

⁶⁵ These estimates have been adjusted to incorporate a value for distributed imputation credits (theta) of 0.35. Handley, J.C., *An estimate of the historical equity risk premium for the period 1883 to 2011*, April 2012, p. 6.

Figure 7.1 Long term (10 year) risk free rate from 2001 to present (%)



Source: RBA data; AER analysis.

Notes: 10 year risk free rate is reported as the annualised yield on Commonwealth Government Securities, interpolating between the nearest issues.

The AER considered the alternative approach to calculating the overall return on equity proposed by APTPPL. This approach combines the prevailing 10 year risk free rate with a 'conditional MRP' estimate based on conditioning variables (such as implied option volatility, dividend yields and credit spreads). The AER considers such conditioning approaches are not robust and attempt to introduce a level of precision in the estimation of the MRP which is not reliable.

The AER also considered a third approach, put forward by Aurora Energy in a contemporaneous regulatory process. This approach is to adopt the long run average historical risk free rate (which Aurora proposed is 5.5 per cent) and a long run MRP (which Aurora proposed is 6.5 per cent). The adoption of a long run historical risk free rate relies on there being an inverse relationship between the risk free rate and MRP. The AER considers that the empirical evidence in support of such a relationship is not strong. Further, the adoption of this approach only at times when the risk free rate is low, as has been suggested, would be poor regulatory practice as it would lead to a bias in regulatory outcomes.

7.2.3 Equity beta

The AER adopts an equity beta of 0.8. The AER does not agree with APTPPL's proposed equity beta of 1.0. An equity beta of 0.8 is more reflective of the risks involved in providing reference services than the equity beta of the average firm in the market, which by definition is 1.0.

The AER's estimate of 0.8 is based on the empirical evidence examined by the AER during its 2009 review of WACC parameters for electricity service providers. This empirical evidence indicated a point estimate of between 0.4 and 0.7 for the equity beta of electricity and gas service providers.⁶⁶ The adoption of an equity beta just above this range was in recognition of the level of imprecision around these estimates and the desirability of stability in regulatory decision making over time.⁶⁷ Since the WACC review, the AER has adopted 0.8 in each of its regulatory decisions for other gas distribution and transmission service providers.

The AER considers that alternative empirical analysis—using different statistical techniques or different time periods—provides supportive results that also converge on the range of 0.4 to 0.7. Cross checks against Australian water utilities or overseas electricity and gas networks also indicate that the equity beta set by the AER is reasonable.

The AER commissioned expert advice from Professor McKenzie and Associate Professor Partington. The expert advice provides conceptual analysis that supports the equity beta for a gas transmission service provider as being 'among the lowest possible' and below 1.0.⁶⁸ Professor McKenzie and Associate Professor Partington were also asked to comment on APTPPL's concerns that the AER's empirical estimates were unreliable or biased. They found no foundation to these criticisms.

Overall, the AER considers that an equity beta of 0.8 provides APTPPL with a reasonable opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.⁶⁹

7.2.4 Debt risk premium

The AER estimates the DRP on the basis of:

- the Bloomberg BBB rated FVC at the 7 year term, and
- the last available historical spread between the Bloomberg 7 and 10 year AAA rated FVCs to extrapolate the 7 year DRP estimate to 10 years.⁷⁰

This is consistent with APTPPL's proposal.

For the purposes of this draft decision the AER adopts an indicative DRP of 4.03 per cent. This will be updated for the final decision based on the same averaging period used to estimate the risk free rate.

⁶⁶ AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, pp. 239–344 (AER, *Final decision: WACC review*, May 2009).

⁶⁷ Most Australian regulators had previously provided electricity and gas service providers with an equity beta of either 0.9 or 1.0. In its last decision on the RBP, the ACCC adopted an equity beta of 1.0.

⁶⁸ McKenzie, M., and G. Partington, *Report to the AER: Estimation of the equity beta (conceptual and econometric issues) for a gas regulatory process in 2012*, 3 April 2012, pp. 15, 23 (McKenzie and Partington, *Estimation of equity beta*, April 2012).

⁶⁹ NGL, s. 24(2).

⁷⁰ Specifically, the last published historical spread is based on the 20 days prior to 22 June 2010.

The Tribunal recently released its reasons for its decision on the DRP review for APT Allgas and Envestra's access arrangements. The Tribunal found error in the AER's DRP approach in those decisions. The Tribunal decided that for those regulatory decisions under review, 100 per cent weight should be placed on the extrapolated Bloomberg BBB rated FVC to estimate the DRP.⁷¹ The Tribunal stated that if the AER wishes to adopt an alternative methodology to the extrapolated Bloomberg FVC, it should develop the alternative approach through an industry wide consultation process.⁷²

The AER considers that there may be other preferable methodologies to estimate the DRP. Notwithstanding this, the AER has considered the Tribunal's views and agrees that it is desirable to widely consult on a new approach to estimate DRP before it is used. The AER will begin an internal review of alternative methods to estimate the DRP and will advise of a public consultation process in due course. For this draft decision the AER adopts the extrapolated Bloomberg BBB rated FVC to estimate the DRP, consistent with APTPPL's proposal.

⁷¹ Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 120; Australian Competition Tribunal, *Application by APT Allgas Energy Ltd [2012] ACompT 5*, 11 January 2012, paragraph 117; and Australian Competition Tribunal, *Application by United Energy Distribution Pty Ltd [2012] ACompT 1*, 6 January 2012, paragraph 462.

⁷² Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraphs 95, 118 and 121.

8 Capital base

The capital base of a gas transmission pipeline is the capital value attributed to pipeline assets.⁷³

APTPPL proposed an opening capital base of \$427.7 million (\$nominal) as at 1 July 2012.

The AER must assess APTPPL's proposed capital base by taking into account:

- the value of the capital base as at 12 April 2007
- conforming capital expenditure (capex) over the earlier access arrangement period forming the opening capital base
- forecast capex over the access arrangement period forming the projected capital base at 30 June 2017.

The AER's detailed reasons for its draft decision on APTPPL's proposed capex are provided in attachment 8.

8.1 Draft decision

The AER approves APTPPL's proposed value of the capital base at 12 April 2007. This becomes the opening capital base for the earlier access arrangement period.⁷⁴

The AER does not approve the opening capital base submitted by APTPPL of \$427.7 million (\$nominal) as at 1 July 2012. This is because the AER does not approve components of APTPPL's conforming capex over the earlier access arrangement period which forms part of the opening capital base.⁷⁵ The AER approves the proposed growth capex on the Lytton Lateral and RBP8 expansion project in the earlier access arrangement.

However, the AER does not approve the stay in business capex in the earlier access arrangement period. The AER requires APTPPL to amend its estimated capex in relation to the PMA contract buyout. The AER is not satisfied that the PMA expenditure meets the definition of capex in r. 69 of the NGR because APTPPL has not substantiated that the expenditure was incurred to provide or in providing pipeline services. The AER also considers that the proposed expenditure is not conforming capex for the purposes of r. 79 of the NGR.

Table 8.1 summarises the proposed amendments on APTPPL's opening capital base. After making these adjustments, the AER has calculated an opening capital base on 1 July 2012 of \$392.3 million (\$nominal), \$35.4 million less than that proposed by APTPPL, as set out in table 8.5 in attachment 8.

⁷³ NGR, r. 69.

⁷⁴ NGR, r. 77(2)(a).

⁷⁵ NGR, r. 77(2)

The AER has assessed APTPPL's proposed capex over the access arrangement period which forms part of the projected capital base.⁷⁶ The AER is satisfied that APTPPL's proposed \$18.3 million (\$2011–12) stay in business capex is necessary to maintain the safety, reliability and integrity of the pipeline. The AER considers that most of the forecast capex complies with the NGR.

The AER has calculated a closing capital base on 30 June 2017 of \$393.3 million (\$nominal) as set out in table 8.3 below.

Table 8.1 summarises the AER's approved opening capital base in the earlier access arrangement period.

Table 8.1 AER approved opening capital base (\$million, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Opening capital base	296.4	300.2	309.4	313.4	326.7	340.5
Plus capex	2.7	2.9	3.2	11.5	10.5	51.4
Plus speculative capital	-	-	-	-	-	-
Plus reused redundant assets	-	-	-	-	-	-
Less depreciation	-6.0	-6.5	-6.8	-7.1	-7.7	-8.0
Plus indexation	7.2	12.7	7.6	9.1	10.9	8.5
Less redundant assets	-	-	-	-	-	-
Less disposals	-	-	-	-	-	-
Closing capital base	300.2	309.4	313.4	326.7	340.5	392.3

Source: AER analysis.

Table 8.2 summarises the AER's approved capex in the earlier access arrangement period.

Table 8.2 AER approved capital expenditure by asset class over the earlier access arrangement period (\$million, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Stay in business	2.6	2.6	2.7	4.1	2.6	3.4
Pipelines and compressors	-	0.2	0.3	6.9	7.5	46.0
Total capex	2.6	2.7	3.1	11.0	10.1	49.4

Source: AER analysis.

⁷⁶ NGR, r. 78.

Table 8.3 summarises the AER's approved projected capital base for the access arrangement period.

Table 8.3 AER approved projected capital base (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17
Opening capital base	392.3	394.2	395.5	394.4	393.8
Plus capex	4.2	4.8	3.7	4.0	3.5
Plus speculative capital	-	-	-	-	-
Plus reused redundant assets	-	-	-	-	-
Less depreciation	-12.5	-13.7	-15.1	-14.9	-14.2
Plus indexation	10.2	10.2	10.3	10.3	10.2
Less redundant assets	-	-	-	-	-
Less disposals	-	-	-	-	-
Closing capital base	394.2	395.5	394.4	393.8	393.3

Source: AER analysis.

Table 8.4 summarises the AER's approved capex over the access arrangement period.

Table 8.4 Forecast capital expenditure by asset class over the access arrangement period (\$million, 2011–12)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Stay in business	4.0	4.5	3.3	3.5	3.0	18.3
Pipelines and compressors	-	-	-	-	-	-
Total capex	4.0	4.5	3.3	3.5	3.0	18.3

Source: AER analysis.

8.2 Summary of analysis and reasons

The AER's draft decision on APTPPL's closing capital base at 30 June 2017 is lower than APTPPL's forecast as costs associated with the PMA contract buyout and adjustments to proposed non-system costs were removed. The AER also analysed major proposed growth capex in the earlier access arrangement period but did not require any adjustments.

8.2.1 PMA contract buyout

The AER does not approve the inclusion of the proposed capex for the PMA contract buyout in APTPPL's opening capital base. The AER considers that the proposed expenditure:

- does not meet the definition of capex in r. 69 of the NGR because APTPPL has not substantiated that the expenditure was incurred to provide or in providing pipeline services
- does not result in a positive overall economic value and is therefore not conforming capex for the purposes of r. 79(2)(a) of the NGR. The AER does not accept the approach for calculating expected savings over the life of the PMA contract as proposed by APTPPL and KPMG.

The AER requires APTPPL to remove the proposed costs relating to the PMA contract buyout from its opening capital base.

8.2.2 Growth capex in the earlier access arrangement period

The AER approves the proposed growth capex on the Lytton Lateral and RBP8 expansion projects in the earlier access arrangement period. The AER and its engineering consultant, Wilson Cook & Co Limited (Wilson Cook), assessed these projects. The AER is satisfied that the proposed capex is conforming⁷⁷ as the present value of the revenue from these projects exceeds the present value of the proposed capex.

The AER considers that the Lytton Lateral extension is required to meet increasing demand and will also allow future demand increases in the Lytton area. The project is underwritten by a long term contract with a large industrial user, providing a secure revenue stream as a direct result of this investment.

The AER considers that the RBP8 expansion is required to increase the capacity of the RBP–metro pipeline which is currently fully contracted. The additional capacity has been substantially contracted under long term transportation agreements with an energy retailer and a major industrial gas user. The RBP8 expansion will also allow for business growth in Brisbane.

APTPL submitted that it expects the capacity of the RBP to be constrained in the future by the capacity of the metro section, and will require significant growth capex either late in the access arrangement period or early in the following period. After a request from the AER for further information, APTPL confirmed that there is no current or future capex associated with this project included in its access arrangement proposal. The AER accepts that additional costs for this project have not been included in the calculation of APTPL's capital base.

8.2.3 Non-system capital expenditure

The AER is generally satisfied that APTPL's proposed non-system capex is conforming capex.⁷⁸ However, the AER requires an adjustment to remove all costs that are subject to alternative cost recovery under the short term trading market (STTM) rules.

Rules 424 and 425 of the NGR provide a mechanism which allows an STTM pipeline operator to recover its market operator service (MOS) allocation service costs from AEMO.⁷⁹ The AER

⁷⁷ NGR, r. 79.

⁷⁸ NGR, r. 79.

is concerned that there is potential for double counting in the recovery of APTPPL's non-system capex costs. Therefore, the AER is of the view in the draft decision that all costs that are likely to be recovered under rr. 424–425 of the NGR should not be included in the opening capital base.

If APTPPL cannot recover these costs under the STTM rules, the AER will reconsider its position in the final decision.

⁷⁹ The NGR defines MOS allocation service costs as the costs reasonably incurred by an STTM pipeline operator for the purpose of allocating pipeline deviations as MOS or overrun MOS.

9 Operating expenditure

Opex refers to the operating, maintenance and other non-capital costs incurred in the provision of pipeline services.⁸⁰

APTPPL proposed a 37 per cent real increase in opex, or \$18.6 million (\$2011–12), compared to the earlier access arrangement.⁸¹

The AER is required to assess APTPPL's forecast opex to decide whether it is satisfied the forecast opex complies with applicable criteria prescribed by the NGL and NGR. The AER has only a limited discretion – it must approve each element of APTPPL's proposed opex if satisfied it complies, and is consistent, with the criteria prescribed in the NGL and NGR.⁸² The AER must accept a forecast that is arrived at on a reasonable basis and represents the best forecast or estimate possible in the circumstances.⁸³

The AER's detailed reasons for its draft decision on operating expenditure are provided in attachment 9.

9.1 Draft decision

The AER approves APTPPL's application of the base year roll forward methodology to forecast opex. The AER also approves APTPPL's forecasts for asset licences and insurance costs.

However, the AER does not approve APTPPL's forecast opex in respect of labour, contractors, capacity expansions, corporate costs and debt raising costs. The AER is not satisfied APTPPL's forecasts for these elements comply with the criteria governing opex,⁸⁴ taking into account the criteria for forecasts and estimates.⁸⁵

The AER's estimate of APTPPL's required opex includes amendments relating to:

- labour and contractor costs (discussed in confidential appendix I)
- expanded capacity
- corporate costs

⁸⁰ NGR, r. 69.

⁸¹ APTPPL, *Access arrangement submission*, October 2011, tables 8.3 and 8.5; APTPPL's proposal incorporates six years for the earlier access arrangement period - five years of actual data and a final year (2011–12) of actual and estimated data. APTPPL presented this by financial year, beginning with the full 2006-07 financial year and concluding with the full 20011–12 financial year. The new access arrangement period covers only five years. To enable like-with-like comparison of the proposed five year opex against opex from the earlier access arrangement, the first year of data provided by APTPPL for the earlier access arrangement (2006–07) has been set aside from calculations. However, data presented in some charts retains 2006–07 data.

⁸² NGR, rr. 91(2) and 40(2).

⁸³ NGR, r. 74.

⁸⁴ NGR, r. 91.

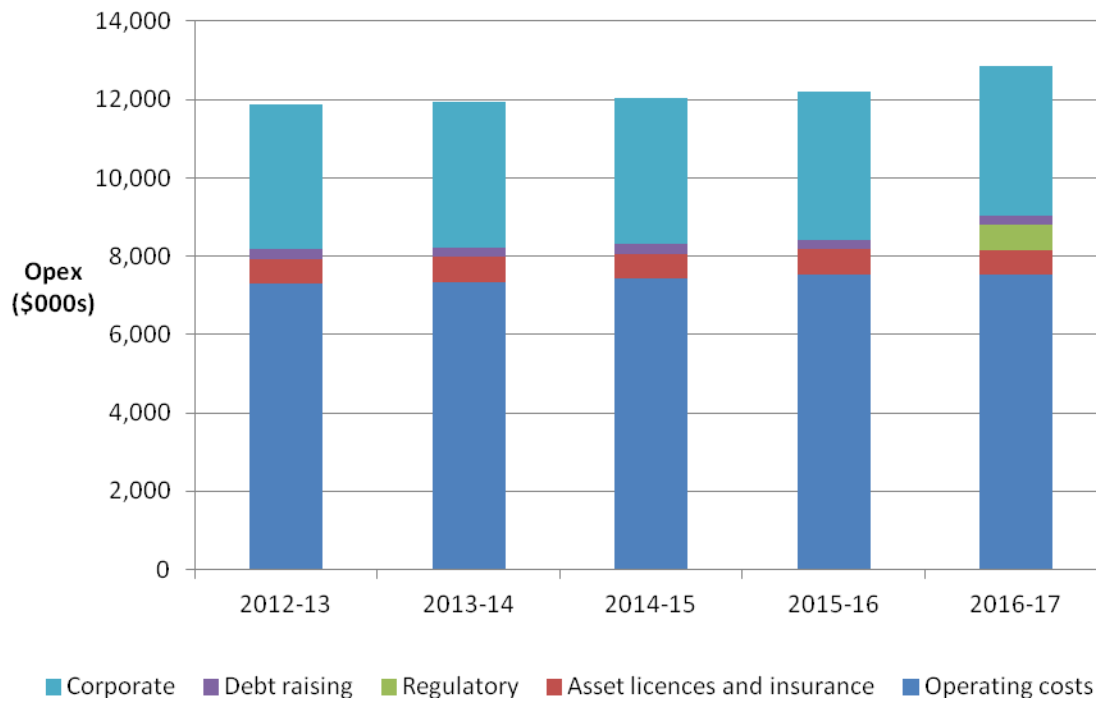
⁸⁵ NGR, r. 74.

- debt raising costs.

Consequential amendments are also required for regulatory costs.

Overall, the AER estimates a total forecast opex of \$60.9 million (\$2011–12) for the access arrangement period (figure 9.1 and table 9.1).

Figure 9.1 AER draft decision on APTPPL’s opex (\$’000, 2011–12)



Source: AER analysis.

Table 9.1 AER draft decision on APTPPL's opex (\$million, 2011–12)⁸⁶

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Labour						
Contractors O&M						
Other operating costs						
Total controllable opex	7.3	7.3	7.4	7.6	7.5	37.1
Asset licences & insurance	0.6	0.6	0.6	0.6	0.6	3.2
Regulatory costs	0	0	0	0	0.6	0.6
Debt raising costs	0.3	0.3	0.3	0.2	0.2	1.2
Corporate costs	3.7	3.7	3.8	3.8	3.8	18.7
Total Operating Expenditure	11.9	11.9	12.1	12.2	12.8	60.9

Source: AER analysis.

9.2 Summary of analysis and reasons

Regarding network capacity expansions, the AER does not approve APTPPL's forecast opex associated with the RBP8 expansion project and Lytton Lateral extension and has re-estimated RBP8 expansion project opex. APTPPL did not provide a rationale for its proposed RBP8 expansion project opex. APTPPL's opex roll forward model indicates that the Lytton Lateral was commissioned in July 2010,⁸⁷ so is reflected in APTPPL's base year. Incorporating the Lytton Lateral as a step change would result in double counting.

The AER adjusted APTPPL's corporate cost escalator, based on APTPPL's proposed labour cost escalator, for consistency with the AER's labour cost escalators.

The AER estimated APTPPL's debt raising costs using updated information. Table 9.2 compares the AER's forecast for each opex element with APTPPL's forecasts. The opex elements of labour, contractors, and other operating costs are set out in confidential appendix I.

⁸⁶ Costs for internal labour, contract labour and other operating costs have been removed to retain the confidentiality of APTPPL's labour related funding. These details are provided in confidential appendix I.

⁸⁷ APTPPL, *Opex roll forward model*, received 14 December 2011, sheet "Lytton Lateral", cell 27A.

Table 9.2 APTPPL's proposed opex and AER draft decision (\$million, 2011–12)⁸⁸

		2012–13	2013–14	2014–15	2015–16	2016–17	Total
Labour	APTPLL						
	AER						
Contractors O&M	APTPLL						
	AER						
Other operating costs	APTPLL						
	AER						
Asset licences & insurance	APTPLL	0.6	0.6	0.6	0.6	0.6	3.2
	AER	0.6	0.6	0.6	0.6	0.6	3.2
Regulatory costs	APTPLL	0	0	0	0	0.8	0.8
	AER	0	0	0	0	0.6	0.6
Debt raising costs	APTPLL	0.3	0.2	0.2	0.2	0.2	1.2
	AER	0.3	0.3	0.3	0.2	0.2	1.2
Corporate costs	APTPLL	3.7	3.9	4.0	4.3	4.6	20.4
	AER	3.7	3.7	3.8	3.8	3.8	18.7
Total Operating Expenditure	APTPLL	12.5	12.9	13.3	14.0	15.5	68.2
	AER	11.9	11.9	12.1	12.2	12.8	60.9

Source: APTPLL, *Access arrangement information*, October 2011, p. 13; AER analysis.

⁸⁸ Costs for internal labour, contract labour and other operating costs have been removed to retain the confidentiality of APTPLL's labour related funding. These details are provided in confidential appendix I.

10 Tariff setting – transmission pipelines

An access arrangement is required to set out how a service provider intends to charge for reference services. Access arrangement information must include an explanation of the basis for setting reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs.⁸⁹

APTPL proposed a flat 'postage stamp' capacity charge and a capacity based tariff for its nominated reference service. It proposed a capacity tariff of \$0.5586 per GJ of MDQ/Day, and a throughput tariff of \$0.0283 per GJ.⁹⁰ APTPL proposed changes to other charges and rates as outlined in attachment 1.

The AER is required to assess APTPL's proposed reference tariffs against the provisions established by r. 95 of the NGR, and the revenue and pricing principles and the NGO, both established by the NGL. The AER's role includes an assessment of APTPL's proposed reference services to which the reference tariff applies.

The AER's detailed reasons for its decision on tariff setting are provided in attachment 1.

10.1 Draft decision

The AER accepts the general methodology proposed by APTPL for calculating a reference tariff. In particular, the AER accepts the concept of a single reference tariff with components for capacity and throughput.

However, the AER does not approve the amount of the reference tariff calculated by APTPL.

A reference tariff must be set for each reference service and, in calculating the tariff, must generate the portion of total revenue referable to the reference service. The AER has not accepted APTPL's nominated reference service. Instead, the AER's draft decision is that a different reference service should be specified in the access arrangement.⁹¹ This necessarily affects the calculation of the reference tariff.

In revising its reference tariff to address the matters in this attachment, APTPL is required to incorporate the various amendments required by the AER in other attachments of the draft decision which affect the inputs used in calculating the tariff (such as the rate of return and lower non-capital costs).

The draft decision of the AER is that the reference tariff for 2012–13 is to comprise a capacity component (\$/GJ of MDQ/day) of \$0.5149 and a throughput component of (\$/GJ) of \$0.0344.

The AER approves APTPL's proposed increase in other charges and rates as outlined in attachment 1.

⁸⁹ NGR, rr. 72(1)(j), 95(1) and 95(3)(a).

⁹⁰ APTPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

⁹¹ This is discussed in more detail in attachment 3 (pipeline services).

10.2 Summary of analysis and reasons

The AER accepts the tariff structure proposed by APTPPL, given the need to send appropriate pricing signals, to facilitate short term capacity trading and to maximise pipeline utilisation.

The AER accepts APTPPL's proposal of a capacity based tariff with a 95:5 split between capacity and throughput tariff. However, the AER does not accept the amount of capacity used in the calculation of that tariff. This is consistent with the AER's draft decision on the capacity attributable to the reference service.

The AER does not agree with excluding costs associated with Lytton Lateral and RBP8 augmentations in determining the costs attributable to reference services. The Lytton Lateral and RBP8 augmentations are part of the covered pipeline. Further, the AER considers that the pipeline service of gas haulage over the covered pipeline as a whole is the applicable reference service for the access arrangement.⁹² Therefore, the costs associated with Lytton Lateral and RBP8 augmentations directly attributable to that reference service should be allocated to that reference service. As such APTPPL's proposal does not appropriately determine the portion of total revenue that is referable to the reference service. Therefore the AER does not accept the reference tariff calculated on the basis of these allocations.

The AER has determined a starting tariff that is about 6.4 per cent⁹³ less than the overall tariff proposed by APTPPL. The tariff includes a capacity reference tariff (\$/GJ of MDQ/day) of \$0.5149 and a throughput reference tariff (\$/GJ) of \$0.0344. The difference between the APTPPL and AER starting tariff reflects differences in input parameters from the determination of a different reference service, a different rate of return, and lower non-capital costs to those proposed by APTPPL.

The NGR requires that total revenue be allocated between reference and other services in the ratio in which costs are allocated between reference and other services.⁹⁴ The AER does not accept APTPPL's approach to allocate costs between reference and negotiated services.

The AER approves APTPPL's proposed changes to other charges and rates.

⁹² NGR, r. 101(2).

⁹³ Calculated based on APTPPL proposed capacity tariff of \$0.5586 and throughput tariff of \$0.0283 as at 1 July 2012, (provided in Schedule 1 Details of APTPPL's access arrangement submission) and AER's estimated capacity tariff of \$0.5149 and throughput tariff of \$0.0344 as at 1 July 2012.

⁹⁴ NGR, rr. 95(1) and 95(2).

11 Tariff variation mechanism

The reference tariff variation mechanism:

- permits building block revenues to be recovered smoothly over the access arrangement period
- accounts for actual inflation
- accommodates other tariff adjustments that may be required, such as for an approved cost pass through event; and
- sets administrative procedures for the approval of any proposed changes to tariffs.

APTPPL proposed a cost pass through materiality threshold of one per cent of total costs, to change the definition of an insurance cap event, to incorporate a forward looking element to cost pass through events, and an automatic reference tariff adjustment.

The AER assessed APTPPL's proposal against the explicit tariff variation mechanism requirements of the NGL and NGR and further considered whether changes to APTPPL's proposals could better meet the broader requirements of the regulatory framework.

The AER's detailed reasons for its decision on tariff variation mechanism are provided in attachment 2.

11.1 Draft decision

The AER accepts APTPPL's proposed annual reference tariff variation mechanisms and the proposed cost pass through materiality threshold of one per cent of total costs. The AER accepts most of the proposed process for approval of reference tariff variations.

The AER does not accept certain elements of APTPPL's proposed cost pass through reference tariff variation methodology. Specifically, the AER considers that APTPPL's proposed change to the definition of an insurance cap event could undermine incentives for APTPPL to undertake appropriate risk management. Further, the AER is of the view that APTPPL's proposal to incorporate a forward looking element to cost pass through events could give rise to risk of increased administrative costs and inefficient tariffs and is not justified. In terms of the process for approval of annual reference tariff variations, the AER does not approve the proposed automatic reference tariff adjustment in the context of delays to a decision being made by the AER. Consequently, the AER has amended the proposed cost pass through methodology to align with r. 97 of the NGR.

11.2 Summary of analysis and reasons

11.2.1 Annual tariff variation mechanism

APTPPL proposed that the capacity tariff and the throughput tariff for the firm service to apply on 1 July 2013 and on each subsequent 1 July will be varied according to the following formula:⁹⁵

$$RT_n = RT_{n-1} \times (1 + [CPI_{n-1} - CPI_{n-2}] / CPI_{n-2}) \times (1 - X)$$

The AER approves APTPPL's proposed formula as it is consistent with the earlier access arrangement, providing for inflation adjustment plus an X factor adjustment. The formula appropriately references the consumer price index (CPI) change from the March quarter in the preceding calendar year to the March quarter in the current calendar year. The AER is of the view that this is consistent with the most accurate measure available of the inflationary impacts on APTPPL's costs.

11.2.2 Cost pass through tariff variation mechanism

APTPPL included a cost pass through mechanism in its access arrangement proposal to ensure it can recover incremental costs resulting from defined events.⁹⁶ The categories and definitions of cost pass through events proposed by APTPPL are consistent with those approved by the AER in the Amadeus Gas Pipeline (AGP) access arrangement decision, with some exceptions.

Insurance cap event

APTPPL proposed to amend the definition of an insurance cap event from:

- 'This event excludes all costs incurred beyond an insurance cap that are due to Service Provider's negligence, fault or lack of care'; to
- 'This event excludes all costs incurred beyond an insurance cap that are due to Service Provider's Gross Negligence/Wilful Misconduct'.⁹⁷

The AER does not approve APTPPL's proposed definition of an insurance cap event. Mitigation of pipeline operational and commercial risk is a key consideration for the AER in this context. The AER considers that if it were to approve APTPPL's proposal, there may be a shift in the allocation of risk, both operational and commercial, between APTPPL and pipeline users. Such a shift in risk allocation would be counter to the effective management of the pipeline. The AER considers that the definition of an insurance cap event previously approved by the AER for other pipelines more effectively retains incentives for APTPPL to operate the RBP safely and reliably.

⁹⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 16.

⁹⁶ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

⁹⁷ APTPPL, *Access arrangement submission*, October 2011, pp. 103–104; APTPPL, *Access arrangement proposal*, October 2011, pp. 17–18.

Tax change event

The AER approves APTPPL's proposal to introduce a definition for a relevant tax, noting its consistency with the definition provided in the National Electricity Rules (NER).

Forward looking cost pass through

APTPPL proposed a forward-looking element to all categories of cost pass through approvals. APTPPL stated in its access arrangement submission that incorporation of a forward looking element to the cost pass through mechanism will allow costs and revenues to better align.⁹⁸

The AER does not approve APTPPL's proposed forward looking cost pass through approval. The AER considers that the existing cost pass through approval process does not disadvantage APTPPL as it would be fully compensated should a cost pass through event occur. Further, that the proposal would give rise to risk that, should the anticipated cost pass through event not eventuate, additional tariff variations would be required to 'correct' adjusted tariffs.

11.2.3 Procedures for oversight and approval of tariff variations

APTPPL proposed that where the AER does not approve an annual tariff variation before the next 1 July, then the proposed tariff variation will take effect automatically.

The AER does not approve APTPPL's proposal for annual tariff variations to take effect automatically. The AER considers that the proposal is inconsistent with r. 97(4) which requires that a tariff variation mechanism must give the AER adequate oversight or powers of approval over reference tariff variations. APTPPL's proposal would also give rise to significant risk that tariffs may not be efficient, as the AER may ultimately reject the proposed annual reference tariff variation or approve a different variation.

⁹⁸ APTPPL, *Access arrangement submission*, October 2011, p. 104.

12 Non-tariff components

Non-tariff components refer to the terms and conditions that are not directly related to the nature and level of tariffs paid by users, but which are important to the relationship between the network service provider and users. These include APTPPL's proposed:

- capacity trading requirements—how user may assign contracted capacity and change delivery and receipt points⁹⁹
- queuing requirements—establish a process or mechanism for establishing an order of priority between prospective users of spare and/or developable capacity¹⁰⁰
- extension and expansion requirements—the method for determining whether an extension or expansion is a part of the covered pipeline and the effect this will have on tariffs. These requirements are relevant when identifying the covered pipeline and pipeline services which will be regulated through the access arrangement.¹⁰¹
- commencement and review dates¹⁰²
- terms and conditions on which the reference service will be provided.

The AER assessed APTPPL's proposed arrangements for capacity trading, queuing, and extensions and expansions against specific relevant provisions established by the NGL and NGR. It also considered APTPPL's proposals for consistency with the broader regulatory framework.

The AER's detailed reasons for its draft decision on non-tariff components is provided in attachment 11, on queuing requirements in attachment 10, and on extension and expansion requirements in appendix B.

12.1 Draft decision

The AER approves the capacity trading policy and most of the terms and conditions of the access arrangement proposal. However, the AER does not approve the following elements¹⁰³:

- queuing requirements
- extension and expansion requirements
- commencement and review dates.

⁹⁹ NGR, r. 105.

¹⁰⁰ NGR, r. 103.

¹⁰¹ NGR, r. 104(1) and the definition of 'extension and expansion' requirements in NGL, s. 2.

¹⁰² NGR, rr. 49 and 52.

¹⁰³ NGR, r. 40(3).

12.2 Summary of analysis and reasons

12.2.1 Capacity trading requirements

The AER approves APTPPL's capacity trading requirements.¹⁰⁴ However, the AER requires APTPPL to define the term 'reasonable commercial or technical grounds'. This is to clarify the circumstances enabling APTPPL to withhold or give consent to a user wishing to substitute all or part of an existing receipt or delivery point maximum daily quantity (MDQ) for another receipt or delivery point on the RBP.¹⁰⁵

12.2.2 Queuing requirements

The AER does not approve APTPPL's proposed queuing requirements. The AER requires APTPPL to amend its queuing requirements to the first-come-first-served approach consistent with the earlier access arrangement, with minor amendments required to reflect the access arrangement period.

To inform its draft decision on APTPPL's proposed queuing requirements, the AER reviewed recently published literature on network capacity allocation and auctions, sought external expert advice from Frontier Economics and undertook additional stakeholder consultation.

Cooperatively with APTPPL, the AER held an industry workshop on queuing requirements in January 2012. Participation in the workshop was supported by an industry paper prepared by the AER and circulated prior to the workshop. Representatives from several major RBP users attended.

The AER concludes that APTPPL's proposed queuing requirements do not comply with the requirements and objectives of the NGL and NGR. The AER's reasons for its draft decision are outlined in table 12.1. The AER has reached this draft decision, taking into account user submissions, because APTPPL's proposed queuing requirements do not maintain the role and effectiveness of the negotiate-arbitrate framework established by the joint operation of the NGL and the NGR. The AER is also of the view that the proposed queuing requirements do not meet the criteria set out in r.103 of the NGR, and may not promote efficient outcomes in accordance with the NGO and the revenue and pricing principles.¹⁰⁶

¹⁰⁴ NGR, r. 105.

¹⁰⁵ APTPPL, *Access arrangement proposal*, October 2011, clause 5.4, pp. 24–25.

¹⁰⁶ NGL, ss. 23 and 24.

Table 12.1 Summary of the AER’s reasons for draft decision

Element	AER assessment of APTPPL’s proposed queuing requirements
<p>The negotiate-arbitrate model established by the joint operation of the NGL and NGR</p> <p>Chapter 6 of the NGL and part 12 of the NGR which provide the access dispute provisions</p>	<p>The AER considers that the proposed auction to allocate capacity and set the terms and conditions of access goes beyond establishing positions in a queue for prospective users to obtain access to pipeline services. Users should always be able to choose the reference tariff and reference terms and conditions when negotiating access. The AER is not satisfied that the role and effectiveness of the arbitration process will be maintained.</p>
<p>Rule 103(3) of the NGR requires that a process or mechanism for establishing an order of priority between prospective users must be established</p>	<p>The AER considers that APTPPL’s proposed queuing requirements do not satisfy r.103 (3) of the NGR where there is a lack of clarity in the operation of processes. In these instances a process or mechanism for establishing an order of priority between prospective users may not always exist. Specifically, there is a lack of clarity regarding when APTPPL will hold an auction, the amount of capacity which will be offered, the terms and conditions that will apply to that capacity and when negotiations rather than auctioning will take place.</p>
<p>Rule 103(3) of the NGR requires prospective users to be treated on a fair and equal basis</p>	<p>The AER is not satisfied that prospective users will be treated on a fair and equal basis in accordance with r.103(3) of the NGR. This is because it is unclear how APTPPL will exercise its discretion in determining bid requirements prior to auction, and then whether a bid is compliant. There is also insufficient detail to determine how the net present value (NPV) ranking will operate, and how users will be treated.</p>
<p>Rule 103(4) of the NGR provides the example of a publically notified auction in which all relevant prospective users are able to participate</p>	<p>The AER considers that an auction is provided as an example in r.103(4) of the NGR. Queuing requirements still need to satisfy the other relevant requirements of the NGL and NGR.</p>
<p>Rule 103(5) of the NGR requires sufficient detail to enable prospective users to understand the basis on which an order of priority between them is determined</p>	<p>The AER considers that there is insufficient detail to enable prospective users to understand the basis on which an order of priority between them is determined, in accordance with r.103(5) of the NGR. This is as there is insufficient detail to understand how the NPV ranking will operate. Furthermore, the lack of clarity in the operation of processes prevents a complete understanding of how an order of priority will be determined.</p>
<p>Section 23 of the NGL provides the National Gas Objective (NGO) which promotes efficient operation, use of, and investment in, the pipeline.</p> <p>Section 24 of the NGL provides the revenue and pricing principles which promote the efficient investment in, or in connection with, a pipeline, the efficient provision of pipeline services and the efficient use of the pipeline with respect to the reference service.</p>	<p>The AER considers that efficient outcomes may not be promoted in accordance with the NGO and the revenue and pricing principles. This is because investment decisions and efficiency may be impacted by APTPPL’s accrual of revenues from auctioning, and the potential increase in tariffs charged to access the pipeline. Higher capacity tariffs may undermine incentives for pipeline users to undertake investment which would otherwise be efficient. Higher revenues from capacity may also distort incentives for APTPPL to carry out economic pipeline investment.</p> <p>Since NPV rankings would be determined by APTPPL using unclear methods, an inefficient outcome could result which may not account for users of the pipeline or the broader community.</p> <p>One-shot irrevocable bids could create an information asymmetry that may not promote effective negotiation between APTPPL and prospective users that may otherwise encourage more efficient outcomes.</p> <p>Users are required to bid for an unspecified non-homogeneous product. It is unclear what is being auctioned, as the capacity and terms and conditions must be nominated by the user. The AER considers that prospective bidders may face difficulty in forming valuations for an imprecisely defined product. Bids may not accurately reflect the relative valuations of capacity across bidders, and efficient allocations may be less likely.</p>

12.2.3 Extension and expansion requirements

The AER accepts the majority of APTPPL's proposed extension and expansion requirements. The AER does not approve the inclusion of a fixed principle as proposed by APTPPL in the extension and expansion requirements on the basis that:¹⁰⁷

- the nature of expansions is such that they should generally form part of a covered pipeline and not be excluded from regulatory coverage through the application of a fixed principle
- APTPPL is likely to receive sufficient returns where the services offered over the extension or expansion are offered as a reference service.
- it is sufficient to support APTPPL's investment to allow developed capacity to be offered as a negotiated service during the access arrangement period
- contracts which are entered into to underpin the viability of commencing the extension or expansion will not be affected by future access arrangements
- APTPPL can utilise the NGR provision to establish a speculative capital expenditure account for non-conforming capital expenditure.¹⁰⁸ This will cover expenditure which APTPPL incurs that is not recoverable through a surcharge on users or capital contribution.

12.2.4 Commencement and review dates

Clause 1.5 of APTPPL's access arrangement proposal states that the access arrangement will commence on the date on which the approval of the AER takes effect under r. 62 of the NGR. The AER agrees that r. 62 of the NGR will be applicable if the AER approves an access arrangement as proposed by the service provider.

The AER considers that the proposed commencement date fails to account for the possibility that the AER may reject APTPPL's access arrangement proposal and propose its own access arrangement, in which case the commencement date would be determined under clauses 64(6) of the NGR. The AER therefore requires APTPPL to amend clause 1.5 to include reference to both r. 62 and r. 64 of the NGR as set out in amendment 11.3.

The AER also considers that clause 1.6 of the access arrangement proposal fails to mention the AER as the body to which revisions are to be submitted. The AER therefore requires the APTPPL to make appropriate amendments to rectify these issues.

12.2.5 Terms and conditions

APTPPL's proposed alignment of its terms and conditions with provisions in APA's standard form terms and conditions means that APTPPL has mostly adopted the AER approved terms and conditions for the AGP access arrangement 2011–2016. APTPPL has proposed some amendments in its access arrangement, which are different from the AER approved terms

¹⁰⁷ APTPPL, *Access arrangement proposal*, October 2011, clause 7.4, p. 36.

¹⁰⁸ NGR, r. 84.

and conditions for the AGP. APTPPL also proposed additional clauses to support the Queensland STTM and commencement of the Brisbane hub which became effective from 1 December 2011.

The AER approves most of the definitions and terms and conditions in the APTPPL's proposal, but does not approve some of the definitions and amended / new clauses on the ground that they are not consistent with the NGO and the NGR. The AER's detailed reasons for its draft decision on definitions and terms and conditions are provided in appendix A.

Attachments

1 Tariff setting – transmission pipelines

An access arrangement is required to set out how a service provider intends to charge for reference services. The NGR requires that the access arrangement information must include an explanation of the basis for setting reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs.¹⁰⁹ Rules 95(1) and 95(3)(a) of the NGR outline how the tariff for a reference service provided by a transmission pipeline should be determined.

This attachment sets out the AER's consideration of APTPPL's proposed reference tariffs structure and presents the revised tariffs for 2012–13, reflecting the proposed revisions to revenues and demand set out by the AER in this decision.

1.1 Draft decision

The AER accepts the general methodology proposed by APTPPL for calculating a reference tariff. In particular, the AER accepts the concept of a single reference tariff with components for capacity and throughput.

However, the AER does not approve the amount of the reference tariff calculated by APTPPL.

A reference tariff must be set for each reference service and, in calculating the tariff, must generate the portion of total revenue referable to the reference service. The AER has not accepted APTPPL's nominated reference service. Instead, the AER's draft decision is that a different reference service should be specified in the access arrangement.¹¹⁰ This necessarily affects the calculation of the reference tariff.

In revising its reference tariff to address the matters in this attachment, APTPPL is required to incorporate the various amendments required by the AER in other attachments of the draft decision which affect the inputs used in calculating the tariff (such as the rate of return and lower non-capital costs).

The draft decision of the AER is that the reference tariff for 2012–13 is to comprise a capacity component (\$/GJ of MDQ/day) of \$0.5149 and a throughput component of (\$/GJ) of \$0.0344.

The AER approves APTPPL's proposed increase in other charges and rates as outlined in section 1.4.5.

1.2 APTPPL's proposal

APTPPL submitted that in developing its services and reference tariffs, it focused on the following objectives:¹¹¹

¹⁰⁹ NGR, r. 72(1)(j).

¹¹⁰ This is discussed in more detail in attachment 3 (pipeline services).

¹¹¹ APTPPL, *Access arrangement proposal*, October 2011, p. 13.

- a. consistency with existing contracts and practices, and recognition of previous regulatory regimes and outcomes under those regimes
- b. providing encouragement for the service provider to respond to the growth of natural gas markets by allowing negotiated services including negotiated tariffs to underpin expansions or extensions to the Pipeline; and
- c. encouraging efficient use of the Pipeline.

The key features of APTPPL's proposed reference tariff structure and cost allocation methodology are as follows:

- a single reference service (the 'Firm service')¹¹²
- reference tariffs designed to recover the total revenue allocated to the reference service based on costs allocated to the reference service¹¹³
- split of 95 per cent capacity and 5 per cent throughput¹¹⁴
- a single reference tariff for pipeline access, irrespective of injection or delivery point along the pipeline¹¹⁵
- users will also pay other applicable tariff charges (i.e. authorised overrun rate 120%, unauthorised overrun rate 250%, imbalance rate 250%, and daily variance rate 250%) and other charges in respect of receipt and delivery stations¹¹⁶
- a charging parameter based on capacity, that is, MDQ¹¹⁷

The proposed reference tariff, shown in table 1.1 below, consists of the sum of the capacity charge and the throughput charge. The capacity charge is based on the GJ of MDQ, while the throughput charge is based on the volume transported. The throughput charge for each Day is the product of:

- a. the throughput tariff and
- b. the actual quantity of gas (expressed in GJ) delivered to or to the account of the user on that Day.¹¹⁸

Table 1.1 APTPPL proposed reference tariff

Tariff Component	\$ (July 2012)
Capacity reference tariff (\$/GJ of MDQ/day)	0.5586
Throughput reference tariff (\$/GJ)	0.0283

Source: APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

¹¹² APTPPL, *Access arrangement proposal*, October 2011, p. 4.

¹¹³ APTPPL, *Access arrangement information*, October 2011, p. 19.

¹¹⁴ APTPPL, *Access arrangement information*, October 2011, p. 19.

¹¹⁵ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

¹¹⁶ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

¹¹⁷ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

¹¹⁸ APTPPL, *Access arrangement proposal*, October 2011, p. 19.

APTPPL's proposed other charges and rates are as shown in table 1.2 below.

Table 1.2 APTPPL proposed other charges/ rates

Charges	Rate
Authorised Overrun Rate	120% of Capacity Tariff +Throughput Tariff
Unauthorised Overrun Rate	250% of Capacity Tariff +Throughput Tariff
Imbalance Rate	250% of Capacity Tariff +Throughput Tariff
Imbalance Allowance	5% (either positive or negative) of the sum of the MDQ for all Delivery Points
Daily Variance Rate	250% of Capacity Tariff +Throughput Tariff
Daily Variance Allowance	5% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point

Source: APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

1.3 Assessment approach

The AER is required to assess APTPPL's proposed reference tariff. Where the AER does not approve APTPPL's proposed reference tariff, the AER must determine an initial reference tariff.

Identifying the reference service

A reference tariff must be set for each reference service.¹¹⁹ In assessing APTPPL's proposed reference tariff, the AER first considers what is (or are) the reference service(s) for the purpose of r.101 of the NGR. The AER's draft decision on what constitutes the reference service is set out in attachment 3.

As APTPPL has proposed a capacity tariff for the reference service, the AER must also consider the capacity on which the tariff is calculated. The total forecast capacity of the pipeline to which the reference tariff will apply is 232 TJ/ day as at 1 July 2012.¹²⁰

Assessing the tariff setting methodology for the reference service

Once the reference service has been identified, the AER is then required to assess the overall tariff setting methodology adopted by APTPPL. The reference tariff must be designed to meet the requirements of r. 95 of the NGR. The AER's discretion under r. 95 is limited. This means that any elements of the proposal that are consistent with the rules and law must be approved even if the AER considers that an alternative proposal is more desirable.

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

¹¹⁹ NGR, r. 95(1).

¹²⁰ This is discussed in more detail in attachment 4 (capacity utilisation).

in the access arrangement proposal by defining the tariff classes and allocating the revenue to be raised by each reference tariff with the cost of providing service to each class.¹²¹ The NGR also requires that total revenue should be allocated between reference and other services in the same ratio that costs are allocated between these services.¹²² The AER assessed APTPPL's proposal against these requirements.

1.4 Reasons for decision

The AER accepts the concept of a single 'postage stamp' and capacity based tariff proposed by APTPPL. However, the AER does not approve the reference service to which the tariff applies. There are also other consequential amendments to the inputs used in calculating the reference tariff that follow from the decisions made in other attachments of this draft decision (such as the rate of return and non-capital costs). As a consequence, the AER does not approve the reference tariff as calculated by APTPPL.¹²³

The AER's reasoning in coming to this conclusion is set out against the following headings:

- the allocation of revenues to the reference service
- the establishment of user classes and allocation of costs
- the capacity based charging
- the calculation of reference tariffs
- other charges and fees.

1.4.1 Allocation of revenue to the reference service

The NGR requires that total revenue is to be allocated between reference and other services in the ratio in which costs are allocated between reference and other services. Costs are also to be allocated between reference and other services.¹²⁴

APTPPL submitted that in order to allocate costs between the reference and negotiated services, APTPPL adopted a with/without approach. Under this approach, the total revenue requirement of the RBP includes all assets included as part of the capital base and all associated return on and of capital, all operating costs, and the tax impact.¹²⁵

In order to determine costs with Lytton Lateral and RBP8 expansion projects,¹²⁶ APTPPL removed this capital expenditure from the asset based roll forward model (ABRFM), and removed the associated operating costs (including a share of common and overhead costs) from the PTRM opex forecast. APTPPL then updated the PTRM—excluding the costs

¹²¹ NGR, r. 72(1)(j).

¹²² NGR, rr. 93(1) and 93(2).

¹²³ NGR, rr. 93(1) and 93(2).

¹²⁴ NGR, rr. 93(1) and 93(2).

¹²⁵ APTPPL, *Access arrangement submission*, October 2011, p. 99.

¹²⁶ APTPPL undertook the Lytton Lateral extension and RBP8 expansion project during the earlier access arrangement. Access to these services is provided as negotiated services at negotiated tariffs.

associated with the extensions and expansions—to determine the total revenue requirement attributable to the reference services.¹²⁷

As outlined in attachment 3, the AER considers that the Lytton Lateral and RBP8 augmentations are part of the covered pipeline. Further, the AER considers that the pipeline service of gas haulage over the covered pipeline as a whole is the applicable reference service for the access arrangement.¹²⁸ Therefore, the costs associated with the Lytton Lateral and RBP8 augmentations directly attributable to that reference service should be allocated to that reference service.

The AER considers that, while APTPPL has outlined its cost allocation approach as required under r. 72(1)(j) of the NGR, it did not allocate costs associated with Lytton Lateral and RBP8 augmentations to reference services. As such, APTPPL's proposal does not appropriately determine the portion of total revenue that is referable to the reference service.

APTPPL provided total revenue figures in its access arrangement information.¹²⁹ However, it is not clear how the revenue is allocated between reference and non-reference services. The AER requires APTPPL to demonstrate the following as outlined in amendment 1.1:

- that revenue is allocated between reference and non-reference services (negotiated) in the ratio in which costs are allocated between reference and non-reference services
- that costs are allocated between reference and non-reference services according to r. 93(2) of the NGR.

1.4.2 Establishment of user classes and allocation of costs

The AER accepts APTPPL's proposal that there should be a single reference service and a single reference tariff for pipeline access, irrespective of injection or delivery point along the pipeline.¹³⁰ The AER is required to assess whether direct and indirect costs are allocated to users or user classes in accordance with r. 95(3) of the NGR. The direct costs of usage on the pipeline are the specific connection assets that only serve particular users, such as metering equipment. The AER does not expect these costs will differ significantly between users, and this will be addressed by setting a per unit tariff. Consequently, a reference tariff that spreads total pipeline costs evenly between users must allocate at least the direct costs to each user.

The remainder—and majority—of pipeline costs are therefore indirectly attributable. The AER considers that APTPPL's proposed reference tariff allocates costs in a manner consistent with the revenue and pricing principles as required by r. 95(3)(b) of the NGR. The revenue and pricing principles require the AER to consider the efficient level of pipeline usage weighed against the potential for under and over utilisation of the pipeline.¹³¹

¹²⁷ APTPPL, *Access arrangement submission*, October 2011, p. 99.

¹²⁸ NGR, r. 101(2).

¹²⁹ APTPPL, *Access arrangement information*, October 2011, p. 23.

¹³⁰ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

¹³¹ NGL, ss. 24(3) and 24(7).

In considering whether the proposed reference tariff allocates costs in a manner consistent with the revenue and pricing principles, the AER considered the overall pricing structure. In some circumstances, multi-zone or distance based pricing can be more efficient in terms of improving pipeline augmentation decision making. However, as the RBP is at or near full capacity, changing the pricing structure to incentivise the provision of short haul gas may not increase pipeline utilisation. A distance based tariff would result in higher charges for some users and lower charges for others.¹³² It is arguable whether users with loads west of Brisbane should need to pay for looping in the Brisbane area, and that a zone based tariff might be appropriate. For now, any industrial user or power generator demanding gas west of Brisbane can negotiate a separate tariff.¹³³

Further, as noted by the ACCC in its decision on the earlier access arrangement, where users have made decisions to locate based on a single tariff, any shift to a location based tariff could have adverse consequences for their viability.¹³⁴ A postage stamp tariff on the other hand will prevent large tariff increases in some sections of the pipeline which will limit the likelihood of underutilisation.

The AER approves APTPPL's postage stamp pricing arrangement. In reaching this conclusion, the AER has considered all relevant factors, including the need to send appropriate pricing signals and the objective of facilitating short term capacity trading. The AER accepts that a tariff based on a single user class encourages pipeline utilisation that is in the long term interests of users, prospective users, and the service provider. Further, the AER has received no submissions in this regard. The AER considers the tariff structure proposed by APTPPL satisfies the revenue and pricing principles, and is consistent with r. 95(3) of the NGR.

1.4.3 Capacity based charging

The allocation of revenue between Capacity Charge and Throughput Charge is 95 percent to Capacity Charge and 5 percent to Throughput Charge consistent with APTPPL's earlier access arrangement. The AER considers that a capacity based tariff is relevant given the capacity constraints on the pipeline. The 95:5 split between the capacity reservation charge and throughput tariff approximates the split between fixed and variable costs for this pipeline.¹³⁵

The revenue and pricing principles require the AER to consider, amongst other things, the efficient level of pipeline usage weighed against the risk of under utilisation of the pipeline.¹³⁶

The RBP is currently contracted to its full capacity. APTPPL forecasts that 93 per cent of the RBP capacity will be utilised in 2016–17 due to the expiry of a user's contract.¹³⁷ APTPPL

¹³² ACCC, *Final decision: Revised access arrangement by APTPPL for the Roma to Brisbane Pipeline 2006–2011*, 20 December 2006, p. 154 (ACCC, *Final decision: APTPPL access arrangement*, December 2006).

¹³³ ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. 154.

¹³⁴ ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. 154.

¹³⁵ ACCC, *Draft decision: Revised access arrangement by APT Petroleum Pipelines Limited for the Roma to Brisbane Pipeline 2006–2011*, 23 August 2006, p. 93 (ACCC, *Draft decision: APTPPL access arrangement*, August 2006).

¹³⁶ NGL, ss. 24(3) and 24(7).

¹³⁷ APTPPL, *Access arrangement submission*, October 2011, pp. 28–29.

submitted that there is currently no firm contract in place for this capacity.¹³⁸ The AER considers that keeping in view the projected capacity utilisation, this capacity will be taken up either by the existing user or a new user.¹³⁹ If this is the case, the pipeline is likely to be fully contracted during the access arrangement period. The AER considers a capacity based charge would provide a more direct signal of pipeline usage than gas flows because costs are driven by demand for capacity rather than throughput.

The AER approves APTPPL's proposal for a capacity/throughput tariff, based on the user's MDQ at the relevant delivery point, consistent with its earlier access arrangement.¹⁴⁰ However, consistent with the AER's draft decision on the capacity attributable to the reference service, the AER does not approve the amount of capacity used in the calculation of that tariff.

1.4.4 Calculation of reference tariffs

Rule 93 of the NGR provides a process under which costs are allocated among services, and then the total revenue is allocated in proportion to the costs allocated.

Rule 93(1) requires that total revenue is to be allocated between reference and other services in the ratio in which costs are allocated between reference and other services.

Once the total revenue requirement attributable to the provision of reference services is determined, the service provider must develop the tariffs to recover the portion of total revenue referable to that reference service according to the provisions under r. 95 of the NGR.

The reference tariff will only apply to spare capacity and contracted capacity when existing contracts are terminated. The reference tariff for existing capacity, while not strictly applicable to expansions during the term of the access arrangement, could serve as a reference point for prospective users in their negotiations with APTPPL.¹⁴¹

The AER accepts Origin Energy Limited's (Origin) submission that setting the reference tariff at the appropriate level is important to more than just those who have reference tariff contracts. The reference tariff sets the base for negotiating all other RBP services and their rates.¹⁴²

APTPL proposed an initial reference tariff for the reference service comprising a capacity reservation charge (\$0.5586 per GJ of MDQ/Day) and a throughput charge (\$0.0283 per GJ. The reference tariff is to increase by CPI and an X factor on each 1 July of the access arrangement period.¹⁴³

¹³⁸ APTPPL, *Access arrangement submission*, October 2011, pp. 24–33.

¹³⁹ This is discussed in detail in attachment 4 (capacity utilisation).

¹⁴⁰ AER, *Draft decision: N.T. Gas: Access arrangement proposal for the Amadeus Gas Pipeline 2011–2016*, April 2011, p. 155 (AER, *Draft decision: N.T. Gas access arrangement*, April 2011).

¹⁴¹ ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. xiv.

¹⁴² Origin Energy Limited, *Submission on the Roma to Brisbane Pipeline access arrangement proposal*, 19 December 2011, p. 2 (Origin, *Submission to the AER*, December 2011).

¹⁴³ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 1 Details*, p. 1.

The AER has determined a starting tariff that is about 6.4 per cent¹⁴⁴ less than the overall tariff proposed by APTPPL. The tariff includes a capacity reference tariff (\$/GJ of MDQ/day) of \$0.5149 and a throughput reference tariff (\$/GJ) of \$0.0344. The reasons for the difference between the APTPPL and AER starting tariff are outlined in Total Revenue section of the overview.

1.4.5 Other charges and rates

Consistent with its earlier access arrangement, APTPPL proposed other charges and rates as shown in table 1.2 above. The AER compared these charges with the APTPPL's earlier access arrangement and found that APTPPL has proposed to increase some of these charges. Table 1.3 compares APTPPL's proposed charges with the charges in its earlier access arrangement and the AER approved charges for the AGP access arrangement 2011–16.¹⁴⁵

¹⁴⁴ Calculated based on APTPPL proposed capacity tariff of \$0.5586 and throughput tariff of \$0.0283 as at 1 July 2012, (provided in Schedule 1 Details of APTPPL's access arrangement submission) and AER's estimated capacity tariff of \$0.5149 and throughput tariff of \$0.0344 as at 1 July 2012.

¹⁴⁵ AER, *Access arrangement for the Amadeus Gas Pipeline 2011–2016*, July 2011, Schedule 1, p. 26 (AER, *Access arrangement for AGP*, July 2011).

Table 1.3 Comparison of APTPPL's current / proposed other charges/ fees with AER approved charges

Charges	Current Rate	Proposed Rate	AER approved for AGP	AER decision on RBP
Authorised Overrun Rate	120% of Capacity Tariff	120% of Capacity Tariff +Throughput Tariff	120% of Reference Tariff ¹⁴⁶	120% of Capacity Tariff + Throughput Tariff
Unauthorised Overrun Rate	300% of Capacity Tariff	250% of Capacity Tariff +Throughput Tariff	250% of Reference Tariff ¹⁴⁷	250% of Capacity Tariff + Throughput Tariff
Imbalance Rate	250% of Capacity Tariff	250% of Capacity Tariff +Throughput Tariff	250% of Reference Tariff	250% of Capacity Tariff + Throughput Tariff
Daily Variance Rate	120% of Capacity Tariff	250% of Capacity Tariff +Throughput Tariff	250% of Reference Tariff ¹⁴⁸	250% of Capacity Tariff + Throughput Tariff
Imbalance Allowance	Not specified	5% (either positive or negative) of the sum of the MDQ for all Delivery Points	5% (either positive or negative) of the sum of the MDQ for all Delivery Points	5% (either positive or negative) of the sum of the MDQ for all Delivery Points
Daily Variance Allowance	10% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point	5% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point	5% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point**	5% (either positive or negative) of the MDQ for the applicable Delivery Point or Receipt Point
MHQ	1.2 times MDQ/24	1.1 times MDQ/ 24	1.1 times MDQ/ 24	1.1 times MDQ/ 24

Source: APTPPL, *Access arrangement proposal*, October 2011, *Schedule 1 Details*, p. 1.

The other charges and rates included in the reference tariff are generally intended as penalties to incentivise users to abide by their scheduled gas takings when using the pipeline and, as such, they are not set on a cost–recovery basis.

The AER notes that the establishment of an appropriate incentive structure for other charges and rates is consistent with the NGO. However, as these charges are not cost recovery in nature, it may not be possible to attribute associated revenues to the reference services in the calculation of the tariffs under r. 93(2) of the NGR. Rule 93(2)(a) requires that costs directly attributable to reference services are to be allocated to those services. Rule 95(2) of the NGR also specifies that the portion of total revenue attributable to a reference service must be determined on the basis of costs incurred by the service provider.

¹⁴⁶ AGP has charges for overrun only – not authorised or unauthorised overrun.

¹⁴⁷ AGP has charges for overrun only – not authorised or unauthorised overrun.

¹⁴⁸ AGP access arrangement has Variance allowance not Daily variance allowance.

The AER considers it would be possible to net out revenues from these other charges and rates from reference service revenues under r.93(3) of the NGR if they met the definition of a rebateable service in r. 93(3) of the NGR. However, the AER is of the view other charges and rates do not satisfy the rebateable services criteria in the NGR as they are not in a substantially different market to the reference service.¹⁴⁹

The AER has been guided by the NGO in assessing APTPPL's proposed other charges and rates. Mitigation of pipeline operational and commercial risk is a key consideration for the AER in this context. The AER is of the view that APTPPL, as the RBP operator, is in the best position to ensure the pipeline is operated in a manner consistent with the NGO.

Authorised and unauthorised overruns

APTPPL's existing charges and rates are broadly related to capacity tariffs. The AER considers that APTPPL's proposal to extend these charges to throughput tariffs will have a nominal affect on the revenue as the split between capacity and throughput is 95:5.

APTPPL's proposed charges are broadly in line with those of AGP charges approved by the AER for AGP access arrangement 2011–16.¹⁵⁰ However, because RBP is fully contracted (and therefore more sensitive to overruns), the AER considers that proposed charges are acceptable in preventing misuse of the pipeline and to provide for the economically efficient operation of the RBP. This is consistent with the NGO.

Daily variance charges and allowance

Daily variance charges are a mechanism by which service providers seek to encourage users to correctly nominate their gas needs and in so doing ensure the efficient operation of the pipeline. Users can avoid daily variance charges by ensuring that the quantity of gas they nominate to receive at each receipt point (or have delivered at each delivery point) is within a range of plus or minus 5 per cent of their MDQ. The AER considers this range provides users with reasonable flexibility.

The AER also considers that a penalty of 250 per cent for variations beyond the 5 per cent range is reasonable in that it provides users with the requisite incentive to correctly nominate their gas usage and further provide for the economically efficient operation of the RBP with respect to reliability and security of supply of natural gas consistent with the NGO.

The AER notes APG's and Origin's submissions and concerns regarding increasing the daily variance charge.¹⁵¹ The AER considers that a reasonable regime is necessary to encourage users to correctly nominate their gas needs and to discourage behaviour by a user that is likely to disadvantage other users.

Imbalance rate

APTPPL's earlier access arrangement does not specify any imbalance allowance limit. APTPPL has proposed an imbalance allowance limit of 5 per cent (either positive or negative)

¹⁴⁹ NGR, r. 93(4)(c).

¹⁵⁰ AER, *Access arrangement for AGP*, July 2011, Schedule 1, p. 26.

¹⁵¹ APTPPL, *Response to information request AER/048 of 21 December 2011*, received 28 February 2012.

of the sum of MDQ for all Delivery Points. Further APTPPL has proposed imbalance rate at 250 per cent of capacity plus throughput tariff against 250 per cent of only capacity tariff in the earlier access arrangement. The AER considers that APTPPL's proposal to extend the imbalance rate to throughput tariff will have a nominal affect on the revenue as the split between capacity and throughput is 95:5. The AER notes that APTPPL earned nominal revenue of \$70,583 from the imbalance rates during the earlier access arrangement period 2007-2011.¹⁵²

The AER considers that there is no evidence that the charges for the balancing arrangements are unreasonable. Furthermore, they appear to provide users with:

- a reasonable imbalance limit which is applied to the user's on delivery points
- sufficient opportunity to rectify imbalances before the relevant imbalance charges are applied
- flexibility in rectifying monthly imbalances
- the necessary incentive to remain in balance as required for the safe and reliable operation of the pipeline.

Origin submitted that APTPPL has proposed tightening the imbalance and daily variance allowances, as well as increasing the daily variance rate. TRUenergy also noted in its submission that APTPPL is proposing that the imbalance charge be applied on a daily rather than a monthly basis and this may allow them to recover more revenue from imbalance charges. The AER also notes BP's submission that impact of APTPPL's proposed rates and allowance changes is likely to be a material increase in revenue to APTPPL.

The AER does not agree that impact of APTPPL's proposed rates and allowance changes is likely to be a material increase in revenue to APTPPL. The AER notes that APTPPL earned total revenue of approximately \$4.01 million from other charges and rates during the earlier access arrangement period which is only 1.3 percent of total APTPPL's total revenue. The AER considers that APTPPL's proposed increase in rates and allowance will not have a material impact on the revenue earned during the access arrangement period. The AER notes that during the earlier access arrangement period, revenue earned from the other charges decreased from \$1.01 million in 2008–09 to \$0.61 million in 2010–11. The AER therefore considers that these charges do not provide regular consistent revenue to APTPPL. However, the AER will monitor these charges during the access arrangement period and will reconsider its position in light of pipeline service revenues.

1.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

¹⁵² APTPPL, *Response to information request AER/048 of 21 December 2011*, received 28 February 2012.

Amendment 1.1:

Amend the access arrangement submission to:

- demonstrate that revenue is allocated between reference and non-reference services (negotiated) in the ratio in which costs are allocated between reference and non-reference services
- demonstrate that costs are allocated between reference and non-reference services according to r. 93(2) of the NGR

Amendment 1.2:

Revise the 2012–13 reference tariffs to a capacity reference tariff (\$/GJ of MDQ/day) of \$0.5149 and a throughput reference tariff (\$/GJ) of \$0.0344.

2 Tariff variation mechanism

This attachment sets out the AER's consideration of APTPPL's proposed reference tariff variation mechanism. The reference tariff variation mechanism:

- permits building block revenues to be recovered smoothly over the access arrangement period
- accounts for actual inflation
- accommodates other tariff adjustments that may be required, such as for an approved cost pass through event
- sets administrative procedures for the approval of any proposed changes to tariffs.

2.1 Draft decision

The AER accepts APTPPL's proposed annual reference tariff variation mechanisms and the proposed cost pass through materiality threshold of one per cent of total costs. The AER accepts most of the proposed process for approval of reference tariff variations.

The AER does not accept certain elements of APTPPL's proposed cost pass through reference tariff variation methodology. Specifically, the AER considers that APTPPL's proposed change to the definition of an insurance cap event could undermine incentives for APTPPL to undertake appropriate risk management. Further, the AER is of the view that APTPPL's proposal to incorporate a forward looking element to cost pass through events could give rise to risk of increased administrative costs and inefficient tariffs and is not justified. In terms of the process for approval of annual reference tariff variations, the AER does not approve the proposed automatic reference tariff adjustment in the context of delays to a decision being made by the AER. Consequently, the AER amended the proposed cost pass through methodology to align with r. 97 of the NGR.

2.2 APTPPL's proposal

Consistent with the earlier access arrangement, APTPPL proposed two reference tariff variation mechanisms as part of its access arrangement proposal:

- an annual scheduled reference tariff adjustment mechanism and process, which applies in respect of each year of the access arrangement period
- a cost pass through reference tariff variation mechanism and process.

APTPPL submitted that all rates and charges for reference services will be adjusted on 1 July 2013 and on each subsequent 1 July in accordance with the approach set out in clause 4.5.1 of the access arrangement proposal.¹⁵³

¹⁵³ APTPPL, *Access arrangement proposal*, October 2011, p. 16.

APTPPL proposed separate notification and approval processes for annual reference tariff variations and for cost pass through events.

2.2.1 Annual tariff variation mechanism formula

APTPPL proposed that the capacity tariff and the throughput tariff for the firm service to apply on 1 July 2013 and on each subsequent 1 July will be varied according to the following formula:¹⁵⁴

$$RT_n = RT_{n-1} \times (1 + [CPI_{n-1} - CPI_{n-2}] / CPI_{n-2}) \times (1 - X)$$

Where:

RT_n	means Capacity Tariff or the Throughput Tariff (as relevant) in Year n
n	means the Year in which the adjusted Capacity Tariff or the Throughput Tariff is to be applied
RT_{n-1}	means the Capacity Tariff or the Throughput Tariff in Year n -1
CPI	means Consumer Price Index (All Groups — weighted Average Eight Capital Cities) published quarterly by the Australian Bureau of Statistics. If the Australian Bureau of Statistics ceases to publish the quarterly value of that index, then CPI means the quarterly values of another Index which Service Provider reasonably determines most closely approximates that Index.
CPI_{n-1}	means the CPI published for the March quarter in Year n-1
CPI_{n-2}	means the CPI published for the March quarter in Year n-2
X	means the factors for each year set out in the Details attachment of the access arrangement.

2.2.2 Cost pass through tariff variation mechanism

APTPPL included a cost pass through mechanism in its access arrangement proposal to ensure it can recover incremental costs resulting from defined events.¹⁵⁵

APTPPL submitted that its earlier access arrangement incorporated a limited cost pass through event mechanism, relying on the process for approving events set out in the superceded Code. In its submission, APTPPL noted that the transfer to the National Gas Rules means that cost pass through events must be spelt out in greater detail.¹⁵⁶ APTPPL

¹⁵⁴ APTPPL, *Access arrangement proposal*, October 2011, pp. 16–17.

¹⁵⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

¹⁵⁶ APTPPL, *Access arrangement submission*, October 2011, p. 103.

further noted that its cost pass through reference tariff adjustment mechanism is based in large part on that approved by the AER for the AGP access arrangement decision.¹⁵⁷

The categories and definitions of cost pass through events proposed by APTPPL are consistent with those approved by the AER in the AGP access arrangement decision. However, there are some exceptions to this consistency as outlined below:

- insurance cap event: APTPPL has amended the definition of an insurance cap event, from: 'This event excludes all costs incurred beyond an insurance cap that are due to Service Provider's negligence, fault or lack of care'; to: 'This event excludes all costs incurred beyond an insurance cap that are due to Service Provider's Gross Negligence/Wilful Misconduct'.¹⁵⁸
- tax change event: Inclusion of a definition for *Tax* and *Relevant tax* in respect of a tax pass through event. The definitions proposed are consistent with those in the NER and reduce uncertainty as to the scope of this cost pass through event.¹⁵⁹

APTPPL further proposed a forward-looking element to all categories of cost pass through approvals. Clause 4.5.2 of APTPPL's access arrangement proposal states:¹⁶⁰

Subject to the approval of the AER under the National Gas Rules, Reference tariffs may be adjusted after one or more Cost Pass-through Event/s occurs, in which each individual event materially increases or materially decreases, or is reasonably expected to materially increase or decrease, the cost of providing the Reference Service. Any such adjustment will take effect from the next 1 July.

APTPPL stated in its access arrangement submission that incorporation of such a forward looking element to the cost pass through mechanism will allow costs and revenues to better align. APTPPL provided an example of carbon price implementation as a cost pass through event which may be expected and which would materially impact on its costs. APTPPL specifically focused on the final year of an access arrangement and the risk that carbon pricing related costs may not be recoverable in the context of ex post approved tariff variations.¹⁶¹

APTPPL proposed a materiality threshold for cost pass through events of one per cent of the smoothed forecast revenue over the access arrangement period.¹⁶²

APTPPL's proposed Cost Pass-through Events are:

- an insurance cap event
- an insurer credit risk event

¹⁵⁷ APTPPL, *Access arrangement submission*, October 2011, p. 103.

¹⁵⁸ APTPPL, *Access arrangement submission*, October 2011, p. 104; APTPPL, *Access arrangement proposal*, October 2011, p. 18.

¹⁵⁹ APTPPL, *Access arrangement submission*, October 2011, p. 104; APTPPL, *Access arrangement proposal*, October 2011, pp. 19–20; APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and Interpretation*, p. 12–13.

¹⁶⁰ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

¹⁶¹ APTPPL, *Access arrangement submission*, October 2011, p. 104.

¹⁶² APTPPL, *Access arrangement proposal*, October 2011, p. 20.

- a natural disaster event
- a regulatory change event
- a service standard event
- a tax change event and
- a terrorism event.¹⁶³

The Cost Pass-through events and Materiality threshold are defined in clause 4.5.2 of APTPPL's access arrangement proposal.

2.2.3 Procedures for oversight and approval of tariff variations

Annual tariff variation oversight and approval procedure

APTPL proposed an annual tariff variation process whereby annual changes in tariffs are notified to the AER at least 50 business days prior to implementation on the next 1 July.¹⁶⁴ As proposed, the AER would be required to respond in writing within 30 business days of receiving the notification. The AER's period to respond may be extended up to 90 business days to gain information, consult and obtain expert advice, though it must notify APTPL of such an extension within the initial 30 day period.

APTPL has further proposed that should the AER not approve the annual tariff variation prior to the next 1 July, then the reference tariffs will be automatically adjusted as proposed in the notification to the AER.¹⁶⁵

Cost pass through oversight and approval procedure

APTPL proposed a cost pass through process whereby it will notify the AER within 90 business days of a cost pass through event occurring. As proposed, the AER would have 90 business days after receiving the notification to respond by approving or rejecting the variation. The AER's period to respond may be extended by notifying APTPL of this intent and its duration within the initial 90 day period.

2.3 Assessment approach

The AER has full discretion in assessing APTPL's proposed tariff variation mechanism.¹⁶⁶ The AER can therefore reject a proposed element of the tariff variation mechanisms if it considers a preferable alternative exists that better promotes the requirements in the NGR and NGL. To reach its decision, the AER assessed whether the proposal meets the explicit tariff variation mechanism requirements of the NGL and NGR and further considered whether

¹⁶³ APTPL, *Access arrangement submission*, October 2011, p. 103.

¹⁶⁴ APTPL, *Access arrangement submission*, October 2011, p. 106.

¹⁶⁵ APTPL, *Access arrangement submission*, October 2011, p. 106.

¹⁶⁶ NGR, r. 40(3).

amendments to APTPPL's proposals could better meet the broader requirements of the regulatory framework.

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 under r. 97(3) of the NGR. These include the need for efficient tariff structures; the possible effects of the reference tariff variation mechanism on administrative costs; the regulatory arrangements (if any) applicable to the relevant reference services; the desirability of consistency between regulatory arrangements for similar services, and any other relevant factor.¹⁶⁷

The AER therefore considered the implications of APTPPL's proposals for pricing efficiency and administrative costs, with a view to minimising costs for natural gas consumers, APTPPL and the AER as regulator. The AER has further taken into account the nature and scope of pipeline reference services to which reference tariffs are applicable. The AER also compared APTPPL's proposed tariff variation mechanism arrangements with the current arrangements for the RBP and with other recent gas transmission access determinations for consistency in approach across the provision of similar services.

Rule 97(3)(e) of the NGR provides the AER with broad discretion to take into account any factors it considers relevant in deciding whether APTPPL's proposed reference tariff variation mechanisms are appropriate. In this context, the AER has assessed the potential impacts of APTPPL's proposal on incentives for pipeline operation in a manner consistent with the NGO¹⁶⁸ and with the revenue and pricing principles.¹⁶⁹ The AER explicitly considered the proposal's implications for the allocation of operational risk amongst the pipeline operator and users of pipeline services. Further to this, the AER assessed APTPPL's proposed tariff variation mechanism's implications for effective risk management in light of the long term interests of consumers of natural gas.

In undertaking the above analysis, the AER has considered APTPPL's rationale for its proposed tariff variation mechanism elements, as required by r. 72(1)(k) of the NGR. Further, the AER considered the proposals in light of the revenue requirements established by r. 92(2) of the NGR.

The specific requirements of the NGR in respect of tariff variation mechanisms may be summarised as:

- a full access arrangement must include a mechanism for variation of a reference tariff over the course of an access arrangement period (r. 92(1))
- an access arrangement proposal must include the service provider's rationale for any proposed reference tariff variation mechanism (r. 72(1)(k))
- the reference tariff variation mechanism must be designed to equalise (in present value terms):

¹⁶⁷ NGR, r. 97(3).

¹⁶⁸ NGL, s. 23.

¹⁶⁹ NGL, s. 24.

- 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 (r. 92(2))
- 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
 - by the combination of two or more of these operations (r. 97(1))
- 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 (r. 97(2))
- a reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff (r. 97(4)).

2.4 Reasons for decision

The AER accepts that, at a high level, APTPPL's proposed tariff variation mechanisms are consistent with the NGL and NGR. However, at a level of detail the AER does not approve elements of APTPPL's proposal, as the AER considers there are preferable alternatives that better promote the purpose of the NGR and NGL. The elements which the AER does not approve relate to limited aspects of APTPPL's proposal.

This section sets out the AER's reasons for its decisions under the following headings:

- annual tariff variation formula mechanism
- cost pass through tariff variation mechanism
- procedures for oversight and approval of tariff variations.

2.4.1 Annual tariff variation formula mechanism

The AER approves APTPPL's proposed annual tariff variation formula for variations to the reference capacity tariff and throughput tariff. The proposed formula is consistent with the earlier access arrangement, providing for inflation adjustment plus an X factor adjustment.

The AER is of the view that the CPI published by the Australian Bureau of Statistics (ABS) is the most appropriate measure of the annual inflationary cost impacts on APTPPL's operation of the RBP. Further, that the CPI published nearest in time to the relevant tariff adjustment taking effect is the most appropriate CPI measure to be used.

The annual tariff adjustment formula proposed by APTPPL appropriately references CPI as an indicator of inflation for an adjustment to take effect in the following financial year. Further,

the formula appropriately references the CPI change from the March quarter in the preceding calendar year to the March quarter in the current calendar year. The AER is of the view that this is consistent with the most accurate measure available of the inflationary impacts on APTPPL's costs.

2.4.2 Cost pass through tariff variation mechanism

The AER accepts most aspects of APTPPL's proposed cost pass through tariff variation mechanism, including the proposed materiality threshold. The cost pass through categories and definitions, while new to the RBP, are largely consistent with other recent gas pipeline decisions by the AER.¹⁷⁰ The AER approves the proposed categories of cost pass through events and most of the proposed definitions without change. The AER approves the introduction of the proposed definition for a relevant tax, noting its consistency with the definition provided in the NER.

However, the AER does not approve the proposed introduction of a forward looking aspect to the cost pass through mechanism. The AER's consideration of these issues is set out below.

Forward looking cost pass through

APTPL proposed that, subject to approval by the AER, cost pass through events which may be reasonably expected may be used to adjust tariffs. The AER considers that adoption of the proposed forward looking element to cost pass through raises significant concerns:

- the possibility that an expected pass through event does not eventuate, or does not eventuate to the expected quantum.

In this case, where a proposed cost pass through event has been approved and reference tariffs adjusted accordingly, a further tariff adjustment would be required to balance revenues against realised costs. Further, the service provider and the AER may face pressure from users to amend tariffs within a year, rather than at the end of a year when tariff variations generally occur.

Rule 97(3) states that in assessing a tariff variation mechanism the AER must have regard to the need for efficient tariff structures and its possible effects on the administrative costs of the service provider, the AER and users. The AER considers that APTPL's above proposal gives rise to significant risks that tariffs would not be efficient and administrative costs would increase.

- that the proposal does not address an existing weakness in the cost pass through mechanism.

¹⁷⁰ AER, *Draft decision: N.T. Gas access arrangement*, April 2011, pp. 166–167; AER, *Draft decision: Envestra Ltd: Access arrangement proposal for the Qld gas network 2011–2016*, February 2011, p. 191 (AER, *Draft decision: Envestra access arrangement Qld*, February 2011); AER, *Draft decision: Envestra Ltd: Access arrangement proposal for the SA gas network 2011–2016*, February 2011, p. 209 (AER, *Draft decision: Envestra access arrangement SA*, February 2011); AER, *Draft decision: APT Allgas: Access arrangement proposal for the Qld gas network 2011–2016*, February 2011, pp. 138–140.

The AER is of the view that the existing cost pass through methodology does not disadvantage service providers. Under the current methodology, where a cost pass through event occurs and meets the required threshold the service provider is compensated for the additional costs incurred prior to the tariff variation taking place. This compensation includes the time value of money. As such, the AER considers that varying tariffs after a pass through event occurring meets the requirements of r. 92(2) by providing appropriate revenue adjustment for the service provider (in present value terms).

Insurance cap event

APTPPL proposed that the definition of an insurance cap event previously approved by the AER in other access arrangement decisions be amended.¹⁷¹ The proposed amendment would in effect establish a lower hurdle for pass through of costs beyond an insurance cap associated with negligence by the service provider. The AER does not approve APTPPL's proposed definition of an insurance cap event. The AER is of the view that the definition of an insurance cap event approved by the AER in other access arrangement decisions remains consistent with the requirements of the NGO and the NGR.

Under r. 97(3) the AER is required to consider 'any other relevant factor' when assessing a reference tariff variation mechanism. The AER considers that changing the insurance cap event definition as proposed by APTPPL may undermine incentives for appropriate risk management by APTPPL in its operation of the pipeline.

Under APTPPL's proposed insurance cap event definition, there may conceivably be a future circumstance where the service provider may be found to have been negligent in its provision of reference services but not 'grossly' negligent. In these circumstances, the service provider would be able to pass on to customers the cost of that negligence. The AER considers that this raises moral hazard issues.

Mitigation of pipeline operational and commercial risk is a key consideration for the AER in this context. The AER is of the view that APTPPL, as the RBP operator, is in the best position to ensure the pipeline is operated in a manner consistent with the NGO:

The objective of this law is to promote efficient investment in, and efficient operation of 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.

The AER considers that if it were to accept APTPPL's proposal, there may be a shift in the allocation of risk, both operational and commercial, between APTPPL and pipeline users. Further, the AER is of the view that such a shift in risk allocation would be counter to the effective management of the pipeline.

In light of the above considerations, the AER considers that the definition of an insurance cap event previously approved by the AER for other pipelines more effectively retains incentives for APTPPL to operate the RBP safely and reliably.

¹⁷¹ APTPPL, *Access arrangement submission*, October 2011, p. 104.

Under APTPPL's proposal, compared to the definition of an insurance cap event previously approved by the AER, APTPPL may face relatively low incentives to manage the operation RBP in a manner which minimises and mitigates risk. The AER considers that for consistency with the NGO, the definition of an insurance cap event should retain incentives for appropriate risk management in operating the RBP.

As such, the AER considers that APTPPL's proposal is inconsistent with the NGO. The proposed insurance cap event definition would not promote the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

2.4.3 Procedures for oversight and approval of tariff variations

APTPL proposed that where the AER does not approve an annual tariff variation before the next 1 July, then the proposed tariff variation will take effect automatically.

The AER considers that the proposal is inconsistent with r. 97(4) which requires that a tariff variation mechanism must give the AER adequate oversight or powers of approval over reference tariff variations. APTPL's proposal would also give rise to significant risk that tariffs may not be efficient, as the AER may ultimately reject the proposed annual reference tariff variation or approve a different variation.

If the AER were to accept this proposal, a circumstance may arise whereby APTPL undertakes a tariff variation without AER approval, only for the AER to then approve a different variation or no variation. In this context, a further variation would be required. This may hold implications for gas transportation contracts struck under the overruled tariff variation, potentially adding to the administrative costs of users. Administrative costs incurred by the AER and APTPL may also be higher than an efficient tariff path would provide.

The counter-factual case, whereby the AER does not approve a tariff variation consistent with the normal timing of a variation, does not add any commercial risk to APTPL. In this circumstance, the AER would approve a tariff variation consistent with APTPL's cost recovery, including the time value of money.

Therefore, the AER does not approve APTPL's proposed procedures for oversight and approval of annual tariff variations as they do not meet the requirement of r. 97(4) of the NGR. Further, the proposal may give rise to higher administrative costs than necessary, and would therefore be inconsistent with the NGO.

2.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 2.1:

Delete the first paragraph of clause 4.5.2 of the access arrangement proposal and replace with the following:

Subject to the approval of the AER under the National Gas Rules, Reference Tariffs may be adjusted 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 Service. Any such adjustment will take effect from the next 1 July.

Amendment 2.2:

Delete the definition of an insurance cap cost pass through event in clause 4.5.2 of the access arrangement proposal and include the following:

An event that would be covered by an insurance policy but for the amount that materially exceeds the policy limit, and as a result Service Provider must bear the amount of that excess loss. For the purpose 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 Service Provider'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 Service Provider's negligence, fault or lack of care. This also excludes all liability arising from the Service Provider's unlawful conduct.

Amendment 2.3:

Amend clause 4.5.4 of the access arrangement proposal by deleting the following:

If Service Provider proposes adjustments to the Reference Tariffs (other than as a result of a Cost Pass-through Event) and those adjustments have not been approved by the next 1 July, then the Reference Tariffs will be adjusted with effect from that next 1 July, until such time as adjustments to reference tariffs are approved by the AER.

3 Pipeline services

In considering a full access arrangement the first step is to identify the covered pipeline that will be regulated through the access arrangement. This involves identifying:

- the covered pipeline under the earlier access arrangement
- any extensions or expansions that were completed during the earlier access arrangement and which are taken to be 'covered' under that access arrangement's extension and expansion requirements.

After identifying the covered pipeline the next step is to describe the pipeline services and reference service that will be regulated through the access arrangement. It is then possible to:

- calculate the reference tariff
- determine the other non-tariff terms and conditions which will form part of the access arrangement.¹⁷²

APTPPL's access arrangement proposal describes the type and nature of pipeline services to be provided by the RBP. This includes those services APTPPL considers are likely to be sought by a significant part of the market (reference services) and non-reference services (referred to by APTPPL as negotiated services). APTPPL's access arrangement proposal sets out two services that are offered under the access arrangement proposal, a firm service¹⁷³ and a negotiated service.¹⁷⁴

This attachment sets out the AER's consideration of APTPPL's identification of the pipeline, description of the pipeline services and specification of the reference services. APTPPL is proposing to restrict the application of the access arrangement to only a portion of the capacity and a portion of the geographic reach of the covered pipeline. As discussed in the draft decision below the AER does not approve of APTPPL's proposed approach as it will exclude extensions and expansions built during the earlier access arrangement from coverage by the access arrangement.

Further discussion of the specified reference services and tariffs proposed by APTPPL is provided in attachment 1 of the draft decision.

3.1 Draft decision

The AER is of the view that a full access arrangement applies to a covered pipeline in its entirety, not to a portion of the capacity, or a portion of the geographic reach, of the covered pipeline. The AER does not approve APTPPL's proposal to restrict the capacity and geographic reach of the covered pipeline to which the access arrangement applies.

To address these issues, the AER considers that it will be necessary for APTPPL to:

¹⁷² Such as queuing requirements, extension and expansion requirements, and capacity trading requirements.

¹⁷³ APTPPL, *Access arrangement proposal*, October 2011, clause 2.2.1, p. 4.

¹⁷⁴ APTPPL, *Access arrangement proposal*, October 2011, clause 2.3, p. 9.

- amend clause 1.3 of the access arrangement proposal to change the definition of Existing Capacity so that it refers to the capacity of the covered pipeline as at the commencement of the access arrangement for the term 2012–2017
- amend clause 2.2.1 of the access arrangement proposal by inserting the word 'Covered' before the word 'Pipeline'.

The AER considers there is at present insufficient evidence to support the view that intra-day renomination or any other services should be defined as part of the reference service, or as additional reference services in accordance with r. 101(2) of the NGR. The AER will continue to monitor these negotiated services, the associated revenues, and demand, during the access arrangement period.

3.2 APTPPL's proposal

APTPPL's description of the covered pipeline

Clause 1.3 of the APTPPL's access arrangement proposal describes the covered pipeline. It states:¹⁷⁵

The RBP consists of:

- a) the mainline pipeline from Wallumbilla (near Roma) to Brisbane and associated facilities (Mainline);
- b) the lateral pipeline known as the Caltex Lateral located at Lytton (Lytton Lateral); and
- c) the lateral pipeline from Arubial on the Mainline to Peat / Scotia, and associated facilities (Peat Lateral).

A map of the Pipeline is at Schedule 7, and can be viewed at <http://www.apa.com.au/our-business/economic-regulation/qld-gas-assets.aspx>.

The entire Pipeline, as configured as at July 2012, is the Covered Pipeline. Existing Capacity refers to the capacity of the pipeline as at 1 January 2006.

The definition of 'Existing Capacity' at the end of this clause has important implications for the application of the access arrangement (which is dealt with in clause 1.4). As at 1 January 2006,¹⁷⁶ the capacity of the RBP was 203 TJ/day.¹⁷⁷ APTPPL has forecast that in mid-2012, when the access arrangement commences, the capacity of the RBP will be 232 TJ/day.¹⁷⁸

Clause 1.4 of the access arrangement proposal purports to set out the capacity and geographic reach of the pipeline to which the access arrangement applies. It provides that:¹⁷⁹

This Access Arrangement applies to:

- (a) the Existing Capacity; and

¹⁷⁵ APTPPL, *Access arrangement proposal*, October 2011, pp. 1–2.

¹⁷⁶ APTPPL, *Access arrangement proposal*, October 2011, clause 1.4, p. 2.

¹⁷⁷ APTPPL, *Access arrangement submission*, October 2011, refers on p. 4 to the existing capacity as configured at 31 January 2006 to be 204 TJ/day. However, on pp. 24, 25, and 98 of APTPPL's submission the existing capacity of the RBP as at 1 January 2006 is referred to as 203 TJ/day.

¹⁷⁸ APTPPL, *Access arrangement submission*, October 2011, p. 28.

¹⁷⁹ APTPPL, *Access arrangement proposal*, October 2011, p. 2.

- (b) any future capacity or geographic extension to the Pipeline which is Covered and subject to this Access Arrangement under Extensions and Expansions in section 7 of this Access Arrangement.

The effect of these clauses is that APTPPL's access arrangement proposal would only apply to a portion of the capacity of the covered pipeline. That is, it would apply to the capacity of the pipeline at 1 January 2006 (203 TJ/day), together with certain extensions and expansions that may be made during the term of the 2012-2017 access arrangement. However, the increase to the capacity of the covered pipeline due to extensions and expansions carried out between 1 January 2006 and the commencement of the access arrangement would be excluded from the application of the access arrangement.

Services offered by APTPPL

APTPL's access arrangement proposal offers two services, a firm service¹⁸⁰ and a negotiated service.¹⁸¹

The firm service is a reference service provided at the reference tariff and is defined as a 'service for the receipt, transportation and delivery of Gas through any length of the Pipeline in the direction from Wallumbilla or Peat to Brisbane'.¹⁸²

Clause 2.3 of the access arrangement proposal states that a negotiated service will be provided where the conditions of the firm service vary from a prospective user's requirements and circumstances. This includes where a prospective user seeks access to capacity other than the existing capacity. A prospective user may seek a negotiated service on different terms and conditions (including tariffs) than the firm service.¹⁸³

¹⁸⁰ APTPPL, *Access arrangement proposal*, October 2011, clause 2.2.1, p. 4.

¹⁸¹ APTPPL, *Access arrangement proposal*, October 2011, clause 2.3, p. 9.

¹⁸² APTPPL, *Access arrangement proposal*, October 2011, clauses 2.1 and 2.2.1, pp. 4–5.

¹⁸³ APTPPL, *Access arrangement proposal*, October 2011, clause 2.3, p. 9.

Table 3.1 Services offered in APTPPL's access arrangement proposal

Type of service	Description
Firm service	<p>A service for the receipt, transportation and delivery of Gas through any length of the Pipeline in the direction from Wallumbilla or Peat to Brisbane.¹⁸⁴ The Firm service is provided at the Reference Tariff and includes the following:</p> <ul style="list-style-type: none"> ▪ ability of User to request an Authorised Overrun; and ▪ for installations owned and operated by service provider, the measurement of gas quantity and quality and of gas pressures as detailed in the Terms and Conditions.
Negotiated services	<p>If a Prospective User's requirements and circumstances vary from the conditions of the Firm Service, including where the Prospective User seeks access to capacity other than the existing capacity, the prospective user may seek to negotiate different terms and conditions, including tariff, as a Negotiated Service.</p> <p>Negotiated Services will have priority agreed to in a Non-Discriminatory Manner in accordance with the Terms and Conditions set out in Schedule 3, but will not be higher than Firm Service.¹⁸⁵</p>

Source: APTPPL, *Access arrangement proposal*, October 2011, pp. 4–9.

3.3 Assessment approach

The AER must be satisfied that the service provider has appropriately:

- identified the pipeline to which the access arrangement relates (r. 48(1)(a))
- described the pipeline services the service provider proposes to offer (r. 48(1)(b))
- specified the reference services (r. 48(1)(c)).

To assess whether the pipeline to which the access arrangement relates is appropriately identified, the AER must consider whether any extensions or expansions, completed during an earlier access arrangement period, form part of the covered pipeline and should therefore be subject to the access arrangement.

In contrast to the position under the previous Code, r. 101(2) of the NGR now stipulates that a reference service is 'a pipeline service that is likely to be sought by a significant part of the market'. This limits the ability of a service provider to define the scope of its own reference service.

Rule 40 of the NGR sets out the AER's discretion in the decision making process for an access arrangement proposal. When the NGR and NGL do not state that the AER's discretion in relation to a particular decision is a 'limited' discretion, the AER can withhold its approval of

¹⁸⁴ APTPPL, *Access arrangement proposal*, October 2011, pp. 4–9.

¹⁸⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 9.

an element of an access arrangement proposal¹⁸⁶ under r. 40(3) of the NGR if, in the AER's opinion, a preferable alternative exists that complies with applicable requirements of the NGR and NGL, and is consistent with applicable criteria prescribed by the NGR and NGL. The AER has the discretion to withhold its approval of the part or provision of the access arrangement proposal identifying the pipeline to which the access arrangement relates, describing the pipeline services and specifying the reference services, and to substitute a preferable alternative in accordance with r. 40(3).

3.4 Reasons for decision

The AER does not approve APTPPL's proposal that the RBP access arrangement apply to only a portion of capacity, or a portion of the geographic reach, of the covered pipeline. APTPPL's proposed approach to identifying the pipeline will result in excluding part of the covered pipeline from the application of the access arrangement. This would be inconsistent with the legislature's intention to regulate covered pipelines through the NGL/NGR framework.

The AER therefore requires APTPPL to amend the definition of 'Existing Capacity' in clause 1.3 of the access arrangement proposal to ensure that the access arrangement applies to the covered pipeline as a whole. Clause 1.3 should be amended to change the definition of Existing Capacity so that it refers to the capacity of the covered pipeline as at the commencement of the access arrangement.

The AER is also of the view that the pipeline service for the receipt, transportation and delivery of Gas through any length of the covered pipeline is likely to be sought by a significant part of the market and should therefore be the reference service. The AER therefore requires Clause 2.2.1 of the access arrangement proposal to be amended by clarifying its application to the covered pipeline.

These amendments will also ensure that the pipeline services offered on all of the covered pipeline subject to the access arrangement, as configured as at 1 July 2012, are adequately described in the access arrangement as required by r. 48(1)(b) of the NGR.

3.4.1 Identification of the pipeline to which the access arrangement relates

Rule 48(1)(a) of the NGR requires that an access arrangement identify the pipeline to which the access arrangement relates and include a reference to a website at which a description of the pipeline can be inspected. APTPPL has sought to meet the requirement in r. 48(1)(a) of the NGR by identifying the pipeline in clauses 1.3 and 1.4 of the access arrangement proposal.¹⁸⁷

Clause 1.4 of APTPPL's access arrangement proposal relevantly states:

1.4 Capacity to which Access Arrangement applies

This Access Arrangement applies to:

¹⁸⁶ An 'element of an access arrangement proposal' is defined in r. 3 of the NGR as including a part or provision of the access arrangement proposal.

¹⁸⁷ APTPPL, *Access arrangement proposal*, October 2011, pp. 1–2.

- (a) the Existing Capacity; and
- (b) any future capacity or geographic extension to the Pipeline which is Covered and subject to this Access Arrangement under Extensions and Expansions in section 7 of this Access Arrangement.¹⁸⁸

The Existing Capacity, referred to in clause 1.4, is defined in clause 1.3 of APTPPL's access arrangement proposal as the capacity of the pipeline as at 1 January 2006. The effect of this definition is that extensions and expansions undertaken during the period 1 January 2006 until the commencement of the access arrangement would be excluded from the application of the access arrangement. The AER considers that this approach is inconsistent with the legislature's intention to regulate covered pipelines.

The AER takes the view that APTPPL is not able to exclude extensions and expansions undertaken between 1 January 2006 and the commencement of the access arrangement from the access arrangement's application if they are part of the covered pipeline, except in certain limited circumstances that are set out in the NGL and NGR. Those exceptions are not applicable.

Identification of the covered pipeline at the start of the access arrangement period

A full access arrangement applies to the covered pipeline and to pipeline services on the covered pipeline subject to certain exceptions outlined in the NGL and NGR.¹⁸⁹ To assess whether APTPPL has appropriately identified the pipeline to which the access arrangement relates, the first step the AER must take is to identify the covered pipeline as at the date the access arrangement commences.

The covered pipeline for the purposes of an access arrangement is:

- the covered pipeline under the earlier access arrangement;¹⁹⁰ and
- any extensions or expansions that were completed during the earlier access arrangement which are taken to be 'covered' under the extension and expansion requirements in the earlier access arrangement.¹⁹¹

It is possible to exclude the application of an access arrangement to certain pipeline services in certain limited circumstances. For example, the definition of the extension and expansion requirements in s. 2 of the NGL provides that certain pipeline services can be excluded from

¹⁸⁸ APTPPL, *Access arrangement proposal*, October 2011, p. 2.

¹⁸⁹ NGR, r. 46(1) provides for a full access arrangement to apply to the covered pipeline. NGR, r. 52 provides for revisions to that full access arrangement. Certain pipeline services offered over expansions and extensions can be excluded from the application of the particular access arrangement to which the extension or expansion relates (see the definition of extension and expansion requirements in NGL s. 2) and that exclusion can apply for 2 or more access arrangements if included in a fixed principle under NGR r. 99.

¹⁹⁰ NGL, item 6 of Sch 3 provides for an old scheme covered pipeline to be a covered pipeline under the NGR.

¹⁹¹ Under s.3.16 of the Code there was a requirement for an access arrangement to contain an extensions/expansions policy. NGL, Items 24 and 33 of Sch 3 provide for the earlier access arrangement, including its extension and expansion requirements, to continue to have legal effect under the NGR and for the extensions/expansions policy to be deemed as extension and expansion requirements. The coverage of an extension or expansion is therefore determined in accordance with the terms of the earlier access arrangement's extension and expansion requirements.

the application of an access arrangement. The extension and expansion requirements can stipulate:

'..(ii) whether the pipeline services provided or to be provided by means of, or in connection with, spare capacity arising out of an extension to, or expansion of the capacity of, a covered pipeline will be subject to the applicable access arrangement applying to the pipeline services *to which that arrangement applies*.¹⁹² (emphasis added)

As clearly indicated in this definition, to the extent that a particular extension and expansion requirement excludes pipeline services from an access arrangement, this exclusion is only relevant during the particular access arrangement to which the extension and expansion requirements apply. At the commencement of the next access arrangement period, the extensions and expansions that have been completed are no longer extensions or expansions for the purposes of the new access arrangement. They are either a part of the covered pipeline or not a part of the covered pipeline.

The exclusion in extension and expansion requirements of certain pipeline services from the application of an access arrangement could be made to operate in subsequent access arrangements by including the exclusion as a fixed principle (see r. 99 of the NGR).¹⁹³ However, there were no fixed principles agreed to in the earlier access arrangement.

Application of the extension and expansion requirements in the earlier access arrangement

The covered pipeline at the start of the earlier access arrangement was the entire capacity of the pipeline as at January 2006. It consisted of:

- (a) the mainline pipeline from Wallumbilla (near Roma) to Brisbane and associated facilities (referred to as the Mainline); and
- (b) the lateral pipeline from Arubial on the Mainline to Peat / Scotia, and associated facilities (referred to as the Lateral).¹⁹⁴

The extension and expansion requirements in an access arrangement set out the circumstances under which an extension or expansion under the access arrangement will be covered and the effect these investments will have on reference tariffs during the access arrangement period.¹⁹⁵

During the earlier access arrangement period, an extension, known as the Lytton Lateral, was completed in 2010.¹⁹⁶ The extension and expansion requirements for the RBP are set out in

¹⁹² NGL, s. 2.

¹⁹³ This is discussed further in appendix B to attachment 11 (non tariff components).

¹⁹⁴ APTPPL, *Access arrangement for RBP*, March 2007, clause 1.3, pp. 1–2. The Lateral is now known as the Peat Lateral.

¹⁹⁵ See NGL, s. 2 and NGR, r. 104.

¹⁹⁶ APTPPL, *Access arrangement submission*, October 2011, p. 6.

clause 7 of the earlier access arrangement.¹⁹⁷ The relevant provisions in clause 7 are summarised below.

Table 3.2 Summary of extension and expansion requirements in the current RBP access arrangement

Matter	Current RBP access arrangement period April 2007-April 2012
Extension: Requirements to determine coverage	Election in consultation with the regulator as to whether any geographic extension is covered (Clause 7.1(a)).
Covered Extension: Type of service and tariff	If extension is covered access to services will be provided as a negotiated service at a negotiated tariff (Clause 7.1 (b)).
Expansion: Requirements to determine coverage	Covered at the time expansion comes into operation unless APTPPL propose, and the regulator agrees, expansion will not be covered (Clause 7.2 (a)).
Covered Expansion: Type of service and tariff	If expansion is covered access to services will be provided as a negotiated service at a negotiated tariff (Clause 7.2 (b)).
Expectation to expand RBP capacity	Will occur where: (i) there are sufficient proven reserves to cover the economic life of the expanded pipeline; and (ii) a User commits to the use of the expanded capacity at a tariff negotiated between APTPPL and the User; and (iii) it is technically and economically feasible to provide the additional capacity ((Clause 7.2(c)).
Reference tariffs	N/A
Fixed principles	N/A

APTPL elected under clause 7.1 of the earlier access arrangement to have the Lytton Lateral extension covered from 24 November 2009 and offered as a negotiated service at a negotiated tariff. Accordingly, the Lytton Lateral is a part of the covered pipeline.

At the start of the access arrangement for 2012-2017, the Lytton Lateral is part of the overall covered pipeline and the access arrangement therefore applies to it. A different outcome would result if APTPL had elected for the extension not to be covered, in which case the Lytton Lateral would not have become a part of the covered pipeline and the access arrangement would not apply to it.

During the earlier access arrangement period, an expansion of the RBP's capacity, known as the RBP8 expansion project, was commenced. APTPL has forecast that the RBP8 expansion project will be completed by 30 June 2012.¹⁹⁸ Under clause 7.2 of the earlier

¹⁹⁷ APTPPL, *Access arrangement for RBP*, March 2007, clause 7, pp. 26–27. It should be noted that under s. 3.16 of the Code these requirements are referred to as an extensions/expansions policy.

¹⁹⁸ APTPPL, *Response to information request AER/055 of 2 February 2012*, received 16 February 2012.

access arrangement, the RBP8 expansion will be taken to be part of the covered pipeline if it is completed before the commencement of the access arrangement.

However, if the RBP8 expansion project is completed during the 2012–17 access arrangement period, the extension and expansion requirements set out in the 2012-2017 access arrangement will apply to determine whether it is a part of the covered pipeline. If the AER agrees to APTPPL's proposed extension and expansion requirements this would mean that the incremental services offered on the RBP8 expansion would be covered unless APTPPL proposes otherwise and the AER agrees.¹⁹⁹ Further, APTPPL would be able to elect if the incremental services are offered as part of the reference service at the reference tariff or the negotiated service at the negotiated tariff.²⁰⁰

In summary, the effect of applying the relevant extension and expansion requirements in the earlier access arrangement is that the Lytton Lateral pipeline is a part of the covered pipeline. If the RBP8 expansion comes into operation before this access arrangement commences it will also be part of the covered pipeline.

There are no fixed principles in the earlier access arrangement which would exclude the application of the 2012–2017 access arrangement to extensions and expansions undertaken during the period 1 January 2006 to the commencement of this access arrangement period. Consequently, the access arrangement for the period 2012–17 will apply to all of the covered pipeline at the date the access arrangement commences.

The AER is of the view that for APTPPL to meet the requirement in r. 48(1)(a) of the NGR, clause 1.3 of the access arrangement proposal should be amended so that the definition of Existing Capacity refers to the capacity of the covered pipeline as at the commencement of the access arrangement.

3.4.2 Description of the pipeline services

APTPPL must adequately describe the pipeline services the service provider proposes to offer in accordance with r. 48(1)(b).

APTPPL has described the pipeline services offered over the covered pipeline as being a 'firm service' and a 'negotiated service'. Subject to the amendments set out in this attachment being made, the AER accepts the description of two pipeline services being a firm service or a negotiated service.

3.4.3 Specification of the reference services

Rule 48(1)(c) of the NGR requires that an access arrangement specify those pipeline services which are reference services. Rule 101(2) of the NGR defines a reference service as 'a pipeline service that is likely to be sought by a significant part of the market'. This definition applies to all pipeline services over the covered pipeline that have not been excluded from the application of this access arrangement (for example, through the operation of a fixed principle).

¹⁹⁹ APTPPL, *Access arrangement proposal*, October 2011, clause 7.2(a), p. 36.

²⁰⁰ APTPPL, *Access arrangement proposal*, October 2011, clause 7.2(b), p. 36.

The RBP currently has eleven contracted users.²⁰¹ The AER understands that these contracts have been negotiated bilaterally and may or may not reflect the terms and conditions of the reference service depending on the circumstances. This is appropriate and consistent with the regulatory regime established by the NGL and NGR which allows service providers and users to negotiate and agree upon the terms and conditions for access to pipeline services. Any pre-existing contractual rights which have been negotiated before the commencement of this access arrangement will not be affected by this access arrangement.²⁰²

As the RBP is currently fully contracted, the reference service and reference terms of access will only apply to the allocation of spare capacity as it becomes available (for example, when a contract expires or is terminated). However, the reference service, reference tariff and other reference terms of access for the covered gas transmission pipeline still have a significant role in the regulatory system established under the NGL and NGR.²⁰³ They provide a reference basis for negotiating access to pipeline services and, if there is an access dispute, reference terms may effectively be enforced through arbitration.²⁰⁴

The AER takes the view that haulage of gas through the mainline pipeline, lateral pipelines and RBP8 expansion (when it comes into operation) in the direction from Wallumbilla or Peat to Brisbane, is likely to be sought by a significant part of the market throughout the 2012–2017 access arrangement period. This is demonstrated by the fact that the RBP is capacity constrained, with a queue in operation for spare and developable capacity.²⁰⁵ Further, the Lytton Lateral opens access to new industrial sites in the Lytton region.²⁰⁶

Clause 2.1 (a) of APTPPL’s access arrangement proposal defines the reference service as the ‘Firm Service’. Clause 2.2.1 states the Firm Service is:

a service for the receipt, transportation and delivery of Gas through any length of the Pipeline in the direction from Wallumbilla or Peat to Brisbane.

If the amendment to clause 1.3 discussed above is made, the definition of the firm service will apply to the entire covered pipeline. The AER considers that the preferable way of specifying the reference service is to clarify that the definition of the firm service in Clause 2.2.1 applies to ‘the receipt, transportation and delivery of Gas through any length of the Covered Pipeline’.

3.4.4 Inclusion of additional reference services

The AER has examined the reference service in the RBP access arrangement. It considered the submissions by BP,²⁰⁷ APG²⁰⁸ and TRUenergy²⁰⁹ that additional services, such as intra-day renomination, as available, and backhaul services, be included in the reference service. These services are currently negotiated between APTPPL and users. The AER considers there is at present insufficient evidence to support the view that these negotiated services

²⁰¹ APTPPL, *Access arrangement submission*, October 2011, p. 24.

²⁰² NGL, s. 321.

²⁰³ NGR, r. 48.

²⁰⁴ ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. xiv.

²⁰⁵ APTPPL, *Access arrangement submission*, October 2011, pp. 37–38.

²⁰⁶ These issues are considered in detail in attachment 4.

²⁰⁷ BP, *Submission to the AER*, December 2011, pp. 2–4.

²⁰⁸ APG, *Submission to the AER*, December 2011, p. 1–2.

²⁰⁹ TRUenergy, *Submission to the AER*, December 2011, p. 5.

should be defined as part of the reference service, or as additional reference services, in accordance with r.101(2) of the NGR.

The AER will continue to monitor these negotiated services, the associated revenues, and demand, during the access arrangement period. The AER will reconsider whether such services should be part of the reference service, or additional reference services, at the next access arrangement review.

Intra-day renomination services

Both the BP and APG submissions proposed that APTPPL should offer additional services on the RBP such as intra-day renomination. BP refers to an intra-day renomination as a pipeline service which allows users to vary pipeline receipt and delivery point nominations from their original nomination for that gas day.²¹⁰ BP submitted that it is now required by all prudent RBP users in order to mitigate the risk of unmanageable STTM penalties.

APG's submission noted that APTPPL offers additional services such as intra-day nominations. APG argued that given the risk created by the implementation of the STTM in Queensland the revenue from these additional services should be considered as a service that APTPPL is providing and included when determining service fees.

On the basis of the information presently available it does not appear to the AER that intra-day renomination services are likely to be sought by a significant part of the market. For example, there is currently a lack of material information regarding the likely future level of uptake of intra-day renomination services by RBP users. The intra-day renomination service offered by APTPPL has only been available since the Brisbane STTM commenced operation on 1 December 2011. Further, APTPPL has advised the AER that due to delays in rolling out information technology (IT) changes necessary for APTPPL to bill for intra-day renominations, the service is currently free of charge. Hence, any observed level of usage to date is subject to potentially significant change once charges are levied.

APTPPL advised that charges for intra-day renominations are designed on a sliding scale to: incentivise accurate nominations, and to encourage users to re-nominate as soon as they are aware of a change in their usage.²¹¹ APTPPL also submitted that as these charges are intended as incentives they are non-cost recovery in nature. The AER notes that the establishment of an appropriate incentive structure for these types of charges, to support the safe operation of the pipeline, is consistent with the NGO.

The AER is of the view that future demand for intra-day renomination services depends on the incentives created by APTPPL's charges, Brisbane STTM's ex-post prices, and by the risk appetite of RBP users. Users may experience a cost benefit from using the STTM compared to the intra-day renomination service – particularly if a renomination is late in the day or is not the first on that gas day. However, users would then face risk of the ex-post price reaching the price cap of \$400/GJ or the price floor of \$0. Further, users will not know ex-post STTM prices until after the gas day, but must decide whether to use APTPPL's intra-day

²¹⁰ BP, *Submission to the AER*, December 2011, p. 2.

²¹¹ APTPPL, *Response to information request AER/049 of 9 January 2012*, received 7 February 2012.

renomination service in real time. The AER considers that intra-day renomination services offer an attractive risk management option for RBP users.

APTPL forecast zero revenue to be derived from intra-day renomination charges over the forecast access arrangement period.²¹² The AER is of the view that APTPL is likely to derive some revenue from intra-day renominations once they start charging for the service. However, the AER acknowledges that the level of this revenue will be relatively small. Given the absence of information regarding the costs associated with intra-day renominations, the AER believes that any revenues generated from intra-day renominations do not meet the criteria established through r. 93(2) and r. 95(2) of the NGR. Rule 93(2)(a) requires that costs directly attributable to reference services are to be allocated to those services. Rule 95(2) of the NGR also specifies that the portion of total revenue attributable to a reference service must be determined on the basis of costs incurred by the service provider.

The AER also examined whether intra-day nomination services could be classified as a 'rebateable service' under the NGR.²¹³ Under r. 93 of the NGR it is possible for the costs and revenues of rebateable services to be allocated in whole, or part, to the reference service.²¹⁴ However, the AER is of the view that intra-day renomination services do not satisfy the definition of a 'rebateable service' as this service is not in a substantially different market to the reference service.²¹⁵

Given these uncertainties, the AER considers there is at present insufficient evidence to support the view that intra-day renominations are likely to be sought by a significant part of the market and should be defined as part of the reference service, or as a new reference service. The AER will continue to monitor intra-day renomination services during the access arrangement period.

As available and backhaul services

TRUenergy's submission has questioned why APTPL has only proposed one reference tariff. The submission suggests that likely developments in the Brisbane market including the implementation of the STTM may well make 'As Available' and 'Backhaul' services attractive.

The AER considered confidential material provided by APTPL in relation to additional pipeline services offered over the RBP. This consideration is at confidential appendix E.

The AER considers there is at present insufficient evidence to support the view that as available and backhaul services are likely to be sought by a significant part of the market. For this reason, the AER does not consider these services would be defined as part of the reference service, or as a new reference service. The AER will continue to monitor as available and backhaul services throughout the access arrangement. Further, the AER considers that due to the level of uncertainty associated with these services, the revenues generated do not meet the criteria established through r. 93(2) and r. 95(2) of the NGR. It is

²¹² APTPL, *Response to information request AER/049 of 9 January 2012*, received 7 February 2012.

²¹³ NGR, r. 93(4) defines a 'rebateable service'.

²¹⁴ NGR, rr. 93(1) and 93(3).

²¹⁵ NGR, r. 93(4)(c).

also likely that these services would not satisfy the definition of a 'rebateable service' as they are not in a substantially different market to the reference service.²¹⁶

The AER lodged a rule change proposal with the Australian Energy Market Commission (AEMC) in August 2011.

The AER will continue to monitor intra-day nomination, as available and backhaul services, the associated revenues, and demand, during the access arrangement period. The AER will re-consider whether such services should be part of the reference service, or additional reference services, at the next access arrangement review.

3.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

<p>Amendment 3.1:</p> <p>Amend clause 1.3 of the access arrangement proposal to change the definition of existing capacity as follows:</p> <p>Existing capacity refers to the capacity of the Covered Pipeline as at the commencement of this access arrangement.</p> <p>Amendment 3.2:</p> <p>Amend clause 2.2.1 of the access arrangement proposal by inserting the word 'Covered' before the word 'Pipeline'.</p>
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²¹⁶ NGR, r. 93(4)(c).

4 Capacity utilisation forecasts

This attachment sets out the AER's consideration of APTPPL's capacity utilisation forecasts for the access arrangement period. The NGR requires, to the extent it is practicable, that an access arrangement must include 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.²¹⁷

In this attachment, capacity refers to the fixed capacity of the RBP that is available for contracting and utilisation refers to the amount of RBP capacity that is contracted (which can be up to 100 percent of capacity). Throughput refers to the quantity of gas transported from day to day and can be greater than pipeline capacity. Similarly, demand refers to the quantity of gas sought by the market and can be greater than pipeline capacity. In its submission, APTPPL has provided demand forecasts that will be used to assess whether or not APTPPL's forecasts of pipeline utilisation and capacity are compliant with the requirements of r. 74 of the NGR.

The forecast capacity requirement is the sum of capacity contracted by users and is measured in terajoules (TJ) per day.²¹⁸ The forecast throughput is generally measured on an annual basis.²¹⁹ Utilisation forecasts should be arrived at independently of pipeline capacity forecasts, as they are used to gauge whether or not the demand forecasts will be met by the pipeline capacity.

The AER engaged SKM MMA to provide an independent assessment on the reasonableness of APTPPL's proposed demand forecasts.²²⁰

4.1 Draft decision

The AER approves APTPPL's estimate (for 2011–12) and forecasts of RBP capacity over the access arrangement period. The AER considers that the methodology and assumptions APTPPL used to arrive at these forecasts and estimate are reasonable and therefore meet the requirements of rr. 74(1) and 74(2) of the NGR.

For the same reason, the AER approves APTPPL's capacity utilisation forecasts and estimate for the RBP from 2011–12 to 2015–16.²²¹

However, the AER does not approve APTPPL's capacity utilisation forecast for the RBP for 2016–17. The AER considers that APTPPL's forecast does not take into account a number of factors which suggest that any capacity to be freed on the RBP is likely to be acquired by the market in 2016–17. Therefore, the AER considers that APTPPL's capacity utilisation forecast for the RBP for 2016–17 is not arrived on a reasonable basis and does not represent the best forecast possible in the circumstances.

²¹⁷ NGR, r. 72(1)(d).

²¹⁸ In this attachment, figures referring to pipeline capacity and capacity requirement are measured in TJ/day.

²¹⁹ In this attachment, figures referring to throughput are measured in TJ.

²²⁰ SKM MMA, *Report: RBP*, December 2011.

²²¹ NGR, rr. 74(1) and 74(2).

Tables 4.1, 4.2 and 4.3 set out the AER's alternative capacity utilisation and demand forecasts which make this element of the proposal acceptable to the AER.²²² These forecasts will be used to determine the reference tariffs for reference services provided on the RBP.

Table 4.1 AER draft decision on APTPPL's capacity utilisation forecasts

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Pipeline capacity (TJ/day)	219	232	232	232	232	232
Utilisation of pipeline capacity (%)						
APTPPL's proposal	100	100	100	100	100	93
AER's draft decision	100	100	100	100	100	100

Source: APTPPL, *Access arrangement information*, October 2011, p. 11; APTPPL, *RIN submission*, October 2011; AER analysis.

Table 4.2 AER draft decision on APTPPL's capacity requirement forecasts (TJ/day)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
APTPPL's proposal	219	232	232	232	232	216
AER's draft decision	219	232	232	232	232	233

Source: APTPPL, *Access arrangement submission*, October 2011, pp. 25, 28; AER's decision.

APTPPL has provided a confidential breakdown of forecast daily capacity utilisation by GPG users and non-GPG users²²³ (that is, domestic, commercial and industrial users). This breakdown is contained at confidential appendix F for the AER's draft decision attachments.

Table 4.3 AER draft decision on APTPPL's throughput forecasts (TJ)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
APTPPL's proposal	62, 833	70, 375	70, 903	71, 052	71, 909	67, 133
AER's draft decision	62, 833	70, 375	70, 903	71, 052	71, 909	70,346

Source: APTPPL, *Access arrangement submission*, October 2011, pp. 25, 29; AER's decision.

APTPPL has provided a confidential breakdown of forecast annual throughput by GPG and non-GPG users. This breakdown is contained at confidential appendix F for the AER's draft decision attachments.

²²² NGR, r. 59(2).

²²³ APTPPL, *Access arrangement submission*, October 2011, p. 26.

4.2 APTPPL's proposal

4.2.1 APTPPL's forecast of RBP's capacity

Table 4.4 shows APTPPL's capacity and utilisation forecasts for the RBP for the access arrangement period. The RBP's current capacity is estimated to be 219 TJ/day. APTPPL forecasts that the RBP's capacity will increase to 232 TJ/day by mid 2012.²²⁴ This forecast expansion is due to the completion of the RBP8 expansion project.²²⁵

4.2.2 APTPPL's forecast of the utilisation of the RBP's capacity

APTPPL forecasts that RBP capacity will be fully utilised over the access arrangement period, except in 2016–17. In this final year of the access arrangement period, APTPPL forecasts that 93 per cent of RBP capacity will be utilised.²²⁶

Table 4.4 APTPPL's forecasts of RBP's capacity and capacity utilisation

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Pipeline capacity (TJ/day)	219	232	232	232	232	232
Utilisation of pipeline capacity (%)	100%	100%	100%	100%	100%	93%

Source: APTPPL, *Access arrangement information*, October 2011, p.11; APTPPL, *RIN Submission*, October 2011.

Similarly, as shown in figure 4.1, APTPPL forecasts that the throughput of gas passing the RBP will gradually increase from 2011 to 2015, and then drop off in 2016–17 by 6.64 per cent when compared to 2015–16.

The AER compared APTPPL's forecasts of RBP reference service capacity over the earlier access arrangement period with the actual reference service capacity requirement over that period in table 4.5, and notes that APTPPL's forecasts were lower than the actual capacity requirements over the earlier access arrangement period.

²²⁴ APTPPL, *Access arrangement submission*, October 2011, pp. 25, 29; AER analysis.

²²⁵ APTPPL, *Response to information request AER/047 of 11 January 2012*, received 27 January 2012.

²²⁶ APTPPL, *Access arrangement information*, October 2011, p. 11.

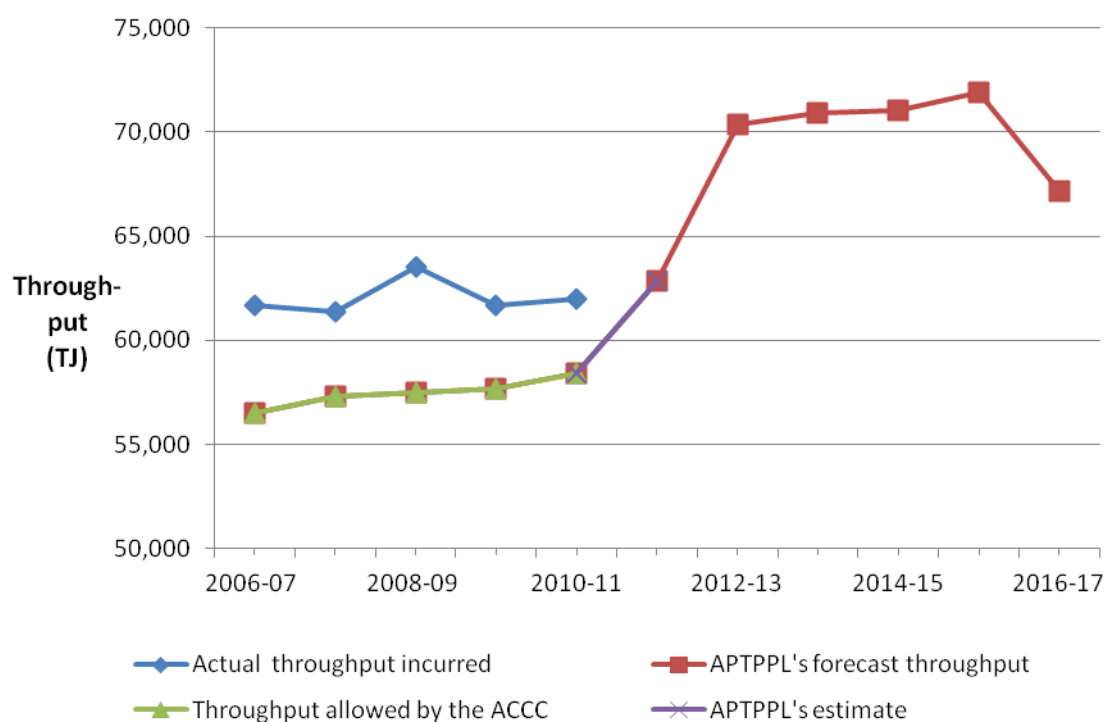
Table 4.5 Reference service capacity over the earlier access arrangement period

	2006–07	2007–08	2008–09	2009–10	2010–11
APTPL's forecast of RBP's reference service capacity (TJ/day)	196	199	200	201	203
Actual reference service capacity requirement (TJ/day)	197	203	203	203	203

Source: APTPL, *Access arrangement information for Roma to Brisbane Pipeline*, 28 February 2007, p. 12; APTPL, *Access arrangement submission*, October 2011, p. 25.

Figure 4.1 also shows that over the earlier access arrangement period, the actual throughput of gas was greater than that forecast by APTPL during the earlier access arrangement review.

Figure 4.1 RBP throughput 2006–2017



Source: APTPL, *Access arrangement submission*, October 2011, pp. 25, 29; ACCC, *Final decision, APTPL access arrangement*, December 2006, p. 23; AER analysis.

4.2.3 User numbers

APTPPL forecasts that 10 users will be on the RBP in 2012–13²²⁷ and anticipates that the number of users on the pipeline will remain constant until 2015–16.²²⁸ In 2016–17, APTPPL forecasts nine users on the pipeline due to the expiry of an existing user's contract in 2016.²²⁹

4.2.4 APTPPL's demand forecasts broken down

For the purpose of calculating the reference tariffs, APTPPL separated its forecasts of capacity and throughput requirements into those from the reference service users and negotiated service users as shown in tables 4.6 and 4.7 below.²³⁰ APTPPL also provided a confidential breakdown of its forecast capacity and throughput requirements for reference service users into those by GPG and non-GPG users. This breakdown is contained at confidential appendix F for the AER's draft decision attachments. APTPPL submitted that the lower forecasts for 2016–17 are due to the expiry of a user's contract in 2016.²³¹

Table 4.6 APTPPL's capacity requirement forecasts for RBP (TJ/day)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Total	219	232	232	232	232	216

Source: APTPPL, *Access arrangement submission*, October 2011, pp. 25, 28.

Table 4.7 APTPPL's throughput forecasts for RBP (TJ)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Total	62,833	70,375	70,903	71,052	71,909	67,133

Source: APTPPL, *Access arrangement submission*, October 2011, pp. 25, 29.

APTPPL's forecasts show the following:

- The increase in throughput forecasts in 2012–13 coincides with the forecast increase in RBP capacity resulting from the completion of the RBP8 expansion project in 2012.²³²
- Table 4.6 shows that APTPPL's forecasts of the capacity requirement will grow by 6 per cent from 2011–12 to 2012–13. In comparison, table 4.7 shows that APTPPL's forecasts of throughput will grow by 12 per cent from 2011–12 to 2012–13.

²²⁷ Some of APTPPL's major customers include Incitec Pivot, CS Energy's Swanbank E Power Station, BP's Bulwer Island Refinery and energy retailers AGL and Origin Energy. (APTPPL, *Access arrangement information*, October 2011, p. 1).

²²⁸ APTPPL, *Access arrangement submission*, October 2011, pp. 24–25.

²²⁹ APTPPL, *Access arrangement submission*, October 2011, pp. 25, 29.

²³⁰ The AER notes that APTPPL has provided demand forecasts for the reference service, which has the same meaning as that defined in the 2007 Access arrangement for the RBP approved by the ACCC. (See APTPPL, *Access arrangement submission*, October 2011, p. 24.)

²³¹ APTPPL, *Access arrangement submission*, October 2011, pp. 25, 27–28.

²³² AER analysis based on APTPPL, *Access arrangement submission*, October 2011, pp. 28–29, 37–38 and APTPPL, *Response to information request AER/047 of 11 January 2012, received 11 January 2012*.

- The expiry of a user's contract in 2016–17 will reduce total forecast capacity requirements by 16 TJ/day.
- Over the access arrangement period, negotiated service users will take up all of the forecast capacity growth.

4.2.5 APTPPL's demand forecasting methodology

APTPPL's forecasts of capacity reservation requirements are based on the existing contracts with its users. APTPPL submitted that its forecast throughput is arrived at using the historical trending of 83 to 85 percent of the contractual quantity, and the expectation that its users will continue to deliver gas based on this trend.²³³

APTPPL has also forecast an organic rate of growth for throughput passing the metro section of the RBP by using the approved throughput forecasts for APT Allgas and Envestra Queensland.²³⁴

APTPPL compared its demand forecasts with those provided in the *2011 Gas Market Review (2011 GMR)*²³⁵ and the *2010 Gas Statement of Opportunities for Eastern and South Eastern Australia (2010 GSOO)*²³⁶ to assess the reasonableness of its demand forecasts for the RBP.

4.3 Assessment approach

For the purpose of price and revenue regulation, the NGR provides that the access arrangement information for a full access arrangement proposal must include:

to the extent that is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.²³⁷

The NGR provides that any information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate, it also provides that a forecast or estimate must be arrived at on a reasonable basis and must represent the best forecast or estimate possible in the circumstances.²³⁸ Therefore, the AER makes an assessment of the service provider's forecasts of the pipeline capacity and utilisation of pipeline capacity over the access arrangement period for the covered pipeline.²³⁹

Assessments of the forecast capacity for reference services and the utilisation of this capacity are important for the purpose of making a draft decision.²⁴⁰ This is because the reference tariff

²³³ APTPPL, *Response to information request AER/009 of 16 November 2011*, received 1 December 2011.

²³⁴ APTPPL, *Response to information request AER/008 of 16 November 2011*, received 1 December 2011.

²³⁵ The 2011 GMR was published by the Queensland Government. Modelling in this report was conducted by SKM MMA (2011).

²³⁶ The 2010 GSOO was published by AEMO. Forecasts in this report were developed using historical and forecast data provided by various industry participants. This includes economic projections for residential growth by KPMG, surveys of larger industrial gas consumers conducted by MMA, and Gas Bulletin Board historical data.

²³⁷ NGR, r. 72(d).

²³⁸ NGR, r. 74.

²³⁹ NGR, rr. 40(3) and 74(2).

²⁴⁰ NGR, r. 59(2).

is calculated using the capacity utilisation forecasts for reference services.²⁴¹ The reference tariff derived from this provides a useful guideline for prospective users in their negotiations with APTPPL.²⁴² In practice, the reference tariff will also provide a reference point during access disputes regarding the costs of providing the reference services.

In its access arrangement proposal, APTPPL submitted forecasts of RBP's existing capacity and negotiated service capacity, and the forecast utilisation of RBP's total capacity

To form a view on the reasonableness of APTPPL's forecasts, the AER assessed APTPPL's forecasting method. A key objective is to assess whether or not APTPPL's demand forecasting processes are unbiased. The AER focused its assessment on APTPPL's:

- methods for deriving the forecasts for capacity and throughput requirements
- assumptions in deriving these forecasts such as the likelihood of contract renewal by users and the trend level of pipeline usage over the earlier access arrangement period for comparison.

To form a view on whether or not APTPPL's forecasts represent the best forecasts possible in the circumstances, the AER had regard to:

- the 2011 GMR and the 2010 GSOO, which provide demand forecasts for the RBP
- other aspects of APTPPL's access arrangement proposal, such as the proposed queuing requirements
- the forecast medium to long term trend in the uptake of gas in Queensland, and
- the impact on APTPPL's capacity and utilisation forecasts of two proposed new gas-powered electricity generation projects.

In assessing APTPPL's forecasts of RBP capacity and utilisation of this capacity, the AER relied on SKM MMA's analysis of these forecasts and submissions to APTPPL's access arrangement proposal. The AER also considered APTPPL's access arrangement proposal and its responses to the AER's information requests.

4.4 Reasons for decision

The AER does not approve APTPPL's capacity utilisation forecast for the RBP for 2016–17. The AER considers that RBP capacity will be fully utilised in 2016–17 because the capacity to be freed from the expiry of an existing user's contract in 2016 is likely to be acquired by the market in 2016–17.

The AER approves APTPPL's capacity utilisation forecasts and estimate for the RBP for the period 2011–12 to 2015–16. The AER considers that the forecasting methodology and assumptions APTPPL used to arrive at these forecasts are reasonable and represent the best

²⁴¹ PTRM submitted by APTPPL as part of its access arrangement proposal.

²⁴² ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. xiv.

forecasts and estimate possible in the circumstances. For the same reason, the AER also approves APTPPL's estimate (for 2011–12) and forecasts of RBP's capacity over the access arrangement period.²⁴³

4.4.1 APTPPL's capacity utilisation forecasts for 2016–17

The AER does not approve APTPPL's capacity utilisation forecast for the RBP for 2016–17. APTPPL forecasts that utilisation of RBP capacity will be reduced from 100 per cent in 2015–16 to 93 per cent in 2016–17 due to the expiry an existing user's contract in 2016.²⁴⁴ The AER considers that APTPPL's capacity utilisation forecast for 2016–17 does not take into account a number of factors which suggest that the capacity to be freed is likely to be acquired by the market in 2016–17.

The AER has come to this conclusion due to a number of factors which point to increasing gas use in Queensland and strong indications that the capacity made available in 2016 will be acquired by the market. The factors which the AER considers to be relevant to the RBP are set out below.

Take up of capacity via the queuing policy

As part of its access arrangement proposal, APTPPL submitted:

The reduction in throughput observed in 2016/17 reflects the expiry of an existing shipper contract. APTPPL expects that this capacity will be subscribed via the Queuing Policy described in Section 10.²⁴⁵

This submission suggests that the capacity freed from a user's contract expiry in 2016–17 is likely to be taken up by other users. The RBP queuing requirements will be applied to the capacity freed from a user's contract expiry in 2016–17.

The following submission made by APTPPL further supports the view that the capacity freed from the user's contract expiry in 2016–17 is likely to be taken up by other users.

Under the current access arrangement for the RBP, where there is insufficient capacity to satisfy a request from a user for capacity (either in full or in part), a queue is formed...

Existing capacity on the RBP is currently fully contracted. As a consequence, there is currently a queue in place for existing capacity. There is also a queue in existence for developable capacity.²⁴⁶

Queues exist for both existing and developable capacity.²⁴⁷ The AER is of the view that any capacity freed is likely to be acquired by the market when the existing shipper contract expires.

Submissions from AGL, BP and APG also questioned APTPPL's demand forecasts for 2016–17. For instance,

²⁴³ NGR, r. 74(2).

²⁴⁴ APTPPL, *Access arrangement information*, October 2011, p. 11; APTPPL, *Access arrangement submission*, October 2011, pp. 25, 28–29.

²⁴⁵ APTPPL, *Access arrangement submission*, October 2011, p. 29.

²⁴⁶ APTPPL, *Access arrangement submission*, October 2011, pp. 109–110.

²⁴⁷ APTPPL, *Access arrangement submission*, October 2011, p. 110.

AGP (Australian Power and Gas) disagrees with the assumption that additional available capacity as a result of the end of a large contract will not be utilised by either that same party in the form of another contract, or that another party will not take up this capacity.²⁴⁸

BP Australia submitted that:

...the proposed demand forecast in the AA is not suitable, and that forecasting demand based on currently contracted haulage for year 5 of a 5 year period, is fundamentally flawed. We believe the AER should project full utilisation of existing capacity throughout the 5 year time horizon.²⁴⁹

AGL also questioned APTPPL's rationale for its lower load forecasts. In particular, AGL questioned the practice of submitting lower load forecasts simply because a customer was coming out of contract and APA was not prepared to wear the risk of being under-booked. AGL submitted:

Given the expected greater reliance on gas in future, accelerated by the carbon pricing regime, and given the anticipated efficacy of APA's new queuing policy, it does seem a questionable practice at best.²⁵⁰

The AER considers that these submissions are in support of its view that any capacity to be freed on the RBP is likely to be taken up by other users. The AER arrived at this view after considering the uptake of capacity by users at a receipt/delivery point away from where the user whose contract will expire in 2016 currently receives/delivers gas. This consideration is set out below in Capacity to be freed along the RBP in 2016–17.

The 2011 GMR finding that the RBP is capacity constrained

The 2011 GMR notes that the RBP appears to be operating at full capacity²⁵¹ and that this capacity constraint may affect access to RBP capacity for small volume customers:

there are issues with small volume capacity expansion...to allow access for a new small gas user...No speculative incremental capacity exists, so these customers must wait to piggyback a future large capacity expansion. This effectively denies these customers access to the pipeline in a timely manner.²⁵²

The capacity that is forecast to be freed on the RBP in 2016–17 may be suitable for small volume customers. This provides some support for the view that the capacity freed from a user's contract expiry in 2016–17 is likely to be taken up.

The medium to long term trend towards gas usage

A number of recent reports forecast increased gas use in Queensland over the medium to long term. This provides reason to believe that spare capacity on the RBP is likely to be taken up by the market in 2016–17. These include:

²⁴⁸ APG, *Submission to the AER*, December 2011, p. 1.

²⁴⁹ BP, *Submission to the AER*, December 2011, pp. 6–7.

²⁵⁰ AGL, *Submission to the AER*, December 2011, p. 2.

²⁵¹ APTPPL, *Access arrangement submission*, October 2011: *Attachment 3.1 2011 Gas Market Review Queensland (Queensland Government)*, pp. 14–15.

²⁵² APTPPL, *Access arrangement submission*, October 2011: *Attachment 3.1 2011 Gas Market Review Queensland (Queensland Government)*, p. 52.

- a 2010 report by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) which shows that the production of coal seam gas (CSG) in Queensland and New South Wales is projected to continue its high growth trajectory, increasing from 118 petajoules in 2007–08 to 2507 petajoules by 2029–30, when it would represent 88 per cent of gas production in the eastern gas market. It is expected that a significant proportion of this CSG will be consumed domestically, supporting the projected growth in gas-fired electricity generation, particularly in Queensland and New South Wales²⁵³
- the 2011 GSOO also shows that in South East Queensland, there are potential capacity constraints under summer peak day conditions, with timing depending on the growth of gas demand for GPG. Options to meet this demand include augmentation of the RBP, development of dedicated pipelines for GPG, or development of alternative gas sources such as the Clarence-Moreton Basin²⁵⁴.
- the 2011 Major Electricity Generation Projects report by the Bureau of Resources and Energy Economics (BREE) which shows that a large proportion of new gas-fired projects will be based in Queensland.²⁵⁵ The 2011 BREE report also forecasts that over the medium to longer term, policies such as the Renewable Energy Target and the introduction of a carbon price will change Australia's electricity generation mix such that greater substitution towards gas will occur.²⁵⁶

SKM MMA's review of APTPPL's demand forecasts for 2016–17 concluded that these forecasts are not arrived on a reasonable basis because the range of alternative uses of capacity has not been fully taken into account. Nor do they represent the best forecast or estimate possible in the circumstances as there is a reasonable likelihood that some or all of the capacity will be taken up.²⁵⁷ SKM MMA noted the strong likelihood that the user whose contract will expire in 2016 will want to retain the point on its transmission system. SKM MMA's analysis is based on confidential material submitted by APTPPL. A summary of this analysis is contained at confidential appendix F for the AER's draft decision attachments.

The AER considers that the reasons and circumstances outlined above are relevant to the RBP, therefore should be factored into the capacity utilisation forecast for the RBP for 2016–17. For this reason, the AER considers that APTPPL's capacity utilisation forecast for the RBP for 2016–17 does not represent the best forecast possible in the circumstances, and does not meet the requirements of r. 74(2) of the NGR. The AER's draft decision on APTPPL's capacity utilisation forecasts for the RBP is set out in table 4.8.

²⁵³ The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *ABARE research report: Australian energy projections to 2029–30*, March 2010, p. 45.

²⁵⁴ AEMO, *2011 GSOO*, p. xxxiii.

²⁵⁵ Bureau of resources and energy economics, *Major electricity generation projects*, November 2011, p. 14 (BREE, *Major electricity generation projects*, November 2011).

²⁵⁶ BREE, *Major electricity generation projects*, November 2011, p. 4.

²⁵⁷ SKM MMA, *Report: RBP*, December 2011, p. 28.

Table 4.8 AER draft decision on APTPPL’s capacity utilisation forecasts for RBP

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Pipeline capacity (TJ/day)	219	232	232	232	232	232
Utilisation of pipeline capacity (%)	100	100	100	100	100	100

Source: AER amendment based on APTPPL, *RIN submission*, October 2011; SKM MMA, 2011 report.

4.4.2 Capacity to be freed along the RBP in 2016–17

The AER requested information from APTPPL about the capacity to be freed on the RBP in 2016–17 upon the expiry of the existing user’s contract, at receipt/delivery points away from where this user currently receives/delivers gas. APTPPL’s response is confidential. The AER’s analysis of this response is contained at confidential appendix F for the AER’s draft decision attachments.

Having had regard to APTPPL’s response, the AER considers that any capacity to be freed on the RBP in 2016 is likely to be acquired by the market. The AER’s consideration follows the reasons and circumstances outlined above, which it deemed to be relevant to the RBP. Therefore, the AER considers that the RBP will be fully utilised in 2016–17 regardless of the amount of capacity which will become available for uptake.

The AER has taken into account SKM MMA’s review of this issue. Based upon this review the AER considers that all of the 16 TJ/day of capacity to be freed in 2016 is likely to be acquired by the market in 2016–17. The AER’s draft decision on APTPPL’s capacity requirement forecast for the RBP is set out in table 4.9.

Table 4.9 AER draft decision on APTPPL’s capacity requirement forecast for RBP (TJ/day)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Reference service						
Total	219	232	232	232	232	233

Source: AER amendment based on APTPPL, *Access arrangement submission*, October 2011, pp. 25, 28.

RBP’s forecast throughput requirement for 2016–17

As a result of the amendments to the capacity utilisation forecasts, the AER has also developed alternative throughput forecasts for the RBP, as set out in table 4.10. These forecasts are relevant to the calculation of reference tariffs.

Table 4.10 AER draft decision on APTPPL’s throughput forecasts for RBP (TJ)

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)
Reference service						
Total	62, 833	70, 735	70, 903	71, 052	71, 909	70, 346

Source: AER amendment based on APTPPL, *Access arrangement submission*, October 2011, pp. 25, 29; AER analysis; SKM MMA’s draft report.

APTPL provided a confidential breakdown of forecast daily capacity and forecast annual throughput by GPG and non-GPG users. The AER’s draft decision on forecast daily capacity and forecast annual throughput containing a breakdown by GPG and non-GPG users is set out in confidential appendix F.

The AER’s throughput forecast for the RBP for 2016–17 is arrived at by applying a linear trend to load factors²⁵⁸ for 2012–13 to 2015–16. The AER chose to apply a linear trend to the load factors because this method follows the forecasting methodology APTPL applied to its forecast throughputs. APTPL calculated its forecast throughputs based on the historical trending of about 83 to 85 per cent of the contractual quantity.²⁵⁹ The load factors calculated by trending forward the forecasts for 2012–13 to 2015–16 fall within this range. That is, after applying the method of least squares to the load factors from 2012–13 and 2014–15, the AER derived a load factor of 83.1 per cent for 2016–17. This value falls within the 83 to 85 per cent range. The AER then derived the forecast throughput for 2016–17 based on its forecast load factor as shown in table 4.11.

Table 4.11 AER’s draft decision on APTPL’s throughput forecasts for the RBP

	2011-12 (estimated)	2012-13 (forecast)	2013-14 (forecast)	2014-15 (forecast)	2015-16 (forecast)	2016-17 (forecast)	2016-17 AER’s draft decision
APTPL’s forecast capacity requirement (TJ/day)	219	232	232	232	232	216	232
APTPL’s forecast throughput requirement (TJ)	62,833	70,374	70,902	71,052	71,909	67,133	70,346
Load Factor based on APTPL’s forecasts (%)	78.6	83.1	83.7	83.9	84.9	85.2	83.1

Source: APTPL, *Access arrangement submission*, October 2011, pp. 25, 29; AER analysis based on APTPL, *RIN submission*, October 2011; SKM MMA draft report.

²⁵⁸ The load factors in table 4.11 are defined as annual volume/(daily capacity requirement forecast*365).

²⁵⁹ APTPL, *Response to information request AER/009 of 16 November 2011*, received 1 December 2011.

4.4.3 APTPPL's forecast capacity utilisation 2012–16

The AER considers APTPPL's capacity utilisation forecasts for 2011–12 to 2015–16 are arrived at on a reasonable basis and represent the best forecasts and estimate possible in the circumstances, and therefore fulfil the requirements of rules 74(1) and 74(2) of the NGR.

In examining the reasonableness of APTPPL's capacity utilisation forecasts for 2011–12 to 2015–16, the AER assessed APTPPL's demand forecasting methodology. The AER considers that APTPPL's use of existing users' contracts to forecast capacity requirements is reasonable. The AER also considers that APTPPL's use of historical trending of about 83 to 85 per cent of the contractual quantity to forecast the throughput requirements is also reasonable.

In assessing whether APTPPL's demand forecasts represent the best forecast or estimate possible in the circumstances, the AER compared the demand forecasts for the RBP provided in the 2010 GSOO report with APTPPL's forecasts. The AER found that a discrepancy exists in the two forecasts. For instance, APTPPL has forecast a lower growth rate in yearly capacity requirement than that forecast in the 2010 GSOO report.²⁶⁰ The AER questioned APTPPL about this. APTPPL submitted that the 2010 GSOO report provided demand forecasts based on forecast capacity of the RBP which is in excess of the APTPPL's forecasts.²⁶¹ Since APTPPL has forecast full utilisation of the RBP's capacity from 2011–12 to 2015–16, the AER considers that these are the best forecasts in the circumstances.

The AER's consideration also takes into account SKM MMA's review of APTPPL's demand forecasts for 2011–12 to 2015–16. SKM MMA considered that the following aspects of APTPPL's forecasts and estimates are arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances:

- the growth rates in forecasts through the forecast period²⁶²
- and the forecast step up in capacity in 2012–13.²⁶³

Effect of new gas-fired power stations near the RBP on APTPPL's forecasts

In reaching its conclusion on APTPPL's capacity utilisation forecasts, the AER assessed the effect on APTPPL's forecasts of an announcement by the Queensland Government and TRUenergy to develop two new gas-fired power stations, in Ipswich and in Gladstone.²⁶⁴ The AER is of the view that this announcement is not likely to have an impact on APTPPL's capacity utilisation forecasts for the access arrangement period.

The AER arrived at this view after assessing APTPPL's response to its queries about the likely impact of this announcement on APTPPL's capacity utilisation forecasts and extension and expansion requirements. The AER also took into account SKM MMA's review of this

²⁶⁰ AER analysis based on APTPPL, *Access arrangement submission*, October 2011, pp. 25, 28, 31.

²⁶¹ APTPPL, *Response to information request AER/007 of 16 November 2011*, received 1 December 2011.

²⁶² SKM MMA, *Report: RBP*, December 2011, p. 28.

²⁶³ SKM MMA, *Report: RBP*, December 2011, p. 28.

²⁶⁴ Premier and TRUenergy announce plan to power Queensland bright future, 25 October 2011, accessed on 17 November 2011 at: <http://www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=77242>.

issue. APTPPL's response to AER's queries is confidential. The AER's analysis of this response is contained at confidential appendix F for the AER's draft decision attachments. SKM MMA was not convinced that the Ipswich plant will proceed, at least until the last two years of the access arrangement period.²⁶⁵

Caltex Australia's half-year review of its oil refinery assets

The AER's draft decision on APTPPL's capacity utilisation forecasts has also considered the implications of an announcement by Caltex Australia to conduct a half-year review into its refinery assets, including the Lytton Refinery. The announcement outlined that the future of these refineries will depend on the outcome of this review. At the time of this draft decision, APTPPL had not made a submission to the AER about the implications of Caltex Australia's announcement on its capacity utilisation forecasts. Caltex Australia's announcement outlined that the review will be completed in six months, indicating a completion date towards the end of 2012.²⁶⁶

The Caltex review will be completed after the AER makes a final decision on the access arrangement for the RBP. Therefore, the AER considers that there is insufficient information to gauge the impact of any review recommendation on APTPPL's capacity utilisation forecasts. The AER notes that APTPPL will have the opportunity to revise its capacity utilisation forecasts when it submits a revised access arrangement revision proposal for the RBP. The AER will assess this revised access arrangement revision proposal prior to making a final decision.

The step up in forecast throughput for 2012–13

SKM MMA's report questioned how APTPPL arrived at its forecast throughput requirement for 2012–13.²⁶⁷ SKM MMA noted that APTPPL has not provided any substantive information regarding the end users that will account for the 7,500 TJ increase in annual volume from 2011–12 to 2012–13.²⁶⁸ Following SKM MMA's advice, the AER requested information from APTPPL about the basis on which it arrived at the forecast throughput requirement for 2012–13. APTPPL submitted that the forecast increase in throughput requirement for 2012–13 is due to the RBP8 expansion project.²⁶⁹ The AER reviewed APTPPL's forecasting method and considers that it is arrived at on a reasonable basis. Therefore, the AER considers APTPPL's forecast throughput for 2012–13 meets the requirements of r. 74(2) of the NGR.

4.4.4 APTPPL's forecast of RBP's capacity

The AER considers that APTPPL's estimate (for 2011–12) and forecasts of RBP's capacity over the access arrangement period are arrived at on a reasonable basis and represent the best estimate and forecasts possible in the circumstances.²⁷⁰ The AER examined the basis of APTPPL's estimate (for 2011–12) and forecasts of RBP's capacity over the access

²⁶⁵ SKM MMA, *Report: RBP*, December 2011, p. 23.

²⁶⁶ Caltex Australia Limited, Caltex writes down refinery assets, 16 February 2012, accessed on 16 February 2012 at: <http://www.caltex.com.au/LatestNews/Pages/NewsItem.aspx?ID=13277>.

²⁶⁷ SKM MMA, *Report: RBP*, December 2011, p. 26.

²⁶⁸ SKM MMA, *Report: RBP*, December 2011, p. 26.

²⁶⁹ APTPPL, *Response to information request AER/047 of 11 January 2012*, received 27 January 2012.

²⁷⁰ NGR, r. 74(2).

arrangement period. The AER found that the following aspects of APTPPL's submission are arrived at on a reasonable basis:

- The estimated capacity of the RBP 2011–12 is 219 TJ/day, which is consistent with RBP's capacity submitted for 2010–11.²⁷¹
- The forecast increase in RBP's capacity from 219 TJ/day in 2011–12 to 232 TJ/day in 2012–13 is the result of the RBP8 expansion project.²⁷²

Therefore, the AER considers that the basis of APTPPL's methodology and assumptions used to arrive at the forecasts of RBP's capacity over the access arrangement period are reasonable and therefore meet the requirements of rr. 74(1) and 74(2) of the NGR.

4.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 4.1:

Make all necessary amendments to reflect the AER's draft decision on capacity utilisation forecasts for the access arrangement period as set out in table 4.8.

Amendment 4.2:

Make all necessary amendments to reflect the AER's draft decision on capacity requirement forecasts for the access arrangement period as set out in table 4.9.

Amendment 4.3:

Make all necessary amendments to reflect the AER's draft decision on throughput forecasts for the access arrangement period as set out in table 4.10.

²⁷¹ APTPPL, *RIN submission*, October 2011.

²⁷² APTPPL, *Response to information request AER/047 of 11 January 2012*, 27 January 2012.

5 Regulatory depreciation

When determining the total revenue for APTPPL, the AER must decide on the depreciation for the projected capital base (or return of capital).²⁷³ Regulatory depreciation is used to model the nominal asset values over the access arrangement period and the depreciation allowance in the total revenue requirement. The AER's draft decision on APTPPL's annual regulatory depreciation allowances—that is, the sum of the straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base—is outlined in this attachment. The AER's consideration of specific matters that affect the estimate of regulatory depreciation over the access arrangement period is also outlined in this attachment. This includes:

- the standard economic lives for depreciating new assets associated with forecast capex
- the remaining economic lives for depreciating existing assets in the opening capital base.

5.1 Draft decision

The AER approves APTPPL's proposed straight-line method for calculating depreciation on the projected capital base. The AER does not approve APTPPL's proposed forecast regulatory depreciation allowance of \$36.9 million (\$nominal)²⁷⁴ for the access arrangement period. The AER does not approve APTPPL's proposed depreciation schedule for:

- the 'Easements' asset class. The AER considers that easements are non-depreciating assets and therefore should not be subject to the calculation of depreciation in the revenue model. For modelling purposes, the AER has changed the remaining and standard economic life inputs for the 'Easements' asset class in APTPPL's revenue model to 'n/a'
- the 'RBP expansion 8' asset class. The AER considers that the standard/remaining economic life for the 'RBP expansion 8' asset class should be increased to 46 years from the proposed 35 years. This reflects the weighted average of the standard economic lives for the group of asset types within that asset class.²⁷⁵

The AER's determinations regarding other components of APTPPL's proposal also affect the regulatory depreciation allowance. These are discussed in other attachments and include:

- the opening capital base (attachment 7)
- forecast capex (attachment 7)

²⁷³ NGR, r. 76(b).

²⁷⁴ All dollar amounts are in nominal terms in this attachment because regulatory depreciation is an output of the PTRM. The output of the PTRM such as the tax allowance and regulatory depreciation are expressed in nominal terms, whereas the inputs of the PTRM such as forecast opex and capex are expressed in real terms.

²⁷⁵ 'RBP expansion 8' is a new asset class for the access arrangement period. The asset has not been depreciated in the earlier access arrangement period. Therefore, the remaining economic life of the 'RBP expansion 8' asset class as at 1 July 2012 will be the same as its standard economic life to reflect that it is a new asset. The PTRM uses the remaining economic life to calculate the straight-line depreciation of the opening capital base as at 1 July 2012.

- forecast inflation (attachment 7).

The AER's draft decision on APTPPL's total regulatory depreciation allowance over the access arrangement period is \$19.2 million (\$nominal). This represents a reduction of \$17.7 million (nominal) or 48.0 per cent of APTPPL's proposed total regulatory depreciation allowance.²⁷⁶ Table 5.1 sets out the AER's draft decision on APTPPL's annual regulatory depreciation allowance for the access arrangement period.

Table 5.1 AER's draft decision on APTPPL's depreciation for the access arrangement period (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Straight-line depreciation	12.5	13.7	15.1	14.9	14.2	70.5
Less: inflation indexation on opening capital base	10.2	10.2	10.3	10.3	10.2	51.2
Regulatory depreciation	2.3	3.5	4.8	4.7	3.9	19.2

Source: AER analysis.

5.2 APTPPL's proposal

APTPPL proposed a total regulatory depreciation allowance of \$36.9 million (\$nominal) over the access arrangement period (table 5.2). To calculate the forecast depreciation, APTPPL proposed to:²⁷⁷

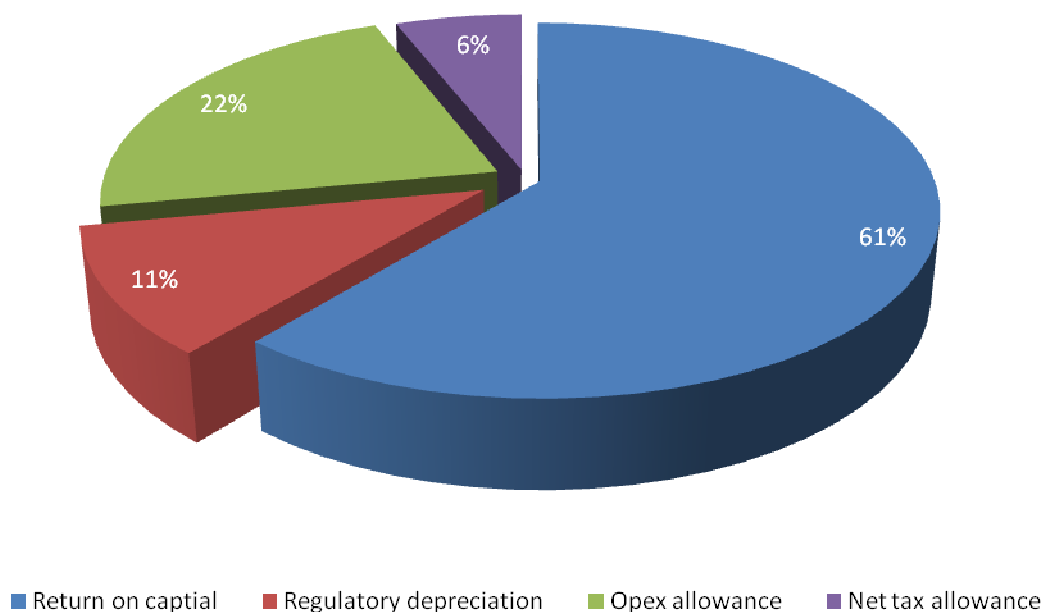
- use the straight-line depreciation methodology employed in the AER's PTRM
- depreciate assets according to the standard economic lives and remaining economic lives for each asset class contained in table 3.5 of its access arrangement information.²⁷⁸

²⁷⁶ APTPPL's proposed regulatory depreciation allowance is \$36.9 million (\$nominal). This proposed amount includes the depreciation schedule for the 'RBP expansion 8' and 'Lytton Lateral' asset classes. APTPPL proposed to classify these two asset classes as negotiated services. The AER has decided that RBP8 and Lytton Lateral should be classified to provide reference services for the purpose of determining a reference tariff (see attachment 1).

²⁷⁷ APTPPL, *Access arrangement information*, October 2011, pp. 8–10.

²⁷⁸ APTPPL, *Access arrangement information*, October 2011, p. 9.

Figure 5.1 APTPPL proposed regulatory depreciation and other building block components (per cent, nominal)



Source: AER analysis.

Table 5.2 APTPPL's proposed regulatory depreciation for the access arrangement period (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Straight-line depreciation	16.7	18.0	19.4	19.4	18.8	92.3
Less: inflation indexation on opening capital base	11.2	11.2	11.1	11.0	10.9	55.4
Regulatory depreciation	5.5	6.8	8.3	8.4	7.9	36.9

Source: APTPPL, *Access arrangement information*, October 2011, p. 10; APTPPL's PTRM, received October 2011.

5.3 Assessment approach

In its access arrangement proposal, APTPPL must provide a forecast of depreciation for the access arrangement period including a demonstration of how the forecast is derived on the basis of the proposed depreciation method.²⁷⁹ The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff. The depreciation schedule may consist of a number

²⁷⁹ NGR, r. 72(1)(c)(ii).

of separate schedules, each relating to a particular asset or class of asset.²⁸⁰ In making a decision on the proposed depreciation schedule, the AER is to assess the compliance of the proposed depreciation schedule with the depreciation criteria under r. 89 of the NGR. The AER's discretion under r. 89 is limited.²⁸¹

In recent access arrangement decisions, the AER has adopted the straight-line method for depreciation.²⁸² The AER considers that the straight-line method of depreciation satisfies the depreciation criteria. This is because:

- rule 89(1)(a): The straight-line depreciation method provides smooth changes in reference tariffs over time. Therefore, the AER is of the view that this depreciation method will promote efficient growth in the market for reference services over time.
- rule 89(1)(b): The straight-line depreciation method allows each asset or group of assets to be depreciated over the economic life of that asset or group of assets. However, the AER notes that compliance with r. 89(1)(b) is also subject to the AER's assessment of APTPL's proposed standard economic life and remaining economic life for each asset class. The AER's assessment approach on the standard and remaining economic lives is discussed below.
- rule 89(1)(c): The straight-line depreciation method allows, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets.
- rule 89(1)(d): The straight-line depreciation method ensures that an asset is depreciated only once (i.e. that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation).
- rule 89(1)(e): The straight-line depreciation method allows for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

The depreciation criteria in r. 89(2) also require that compliance with r. 89(1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:²⁸³

- rule 89(2)(a): the present market for pipeline services is relatively immature; and
- rule 89(2)(b): the reference tariffs have been calculated on the assumption of significant market growth; and

²⁸⁰ NGR, rr. 88(1) and 88(2).

²⁸¹ NGR, rr. 89(3) and 40(2). The example provided in r. 40(2) says: The AER has limited discretion under r. 89. Rule 89 governs the design of a depreciation schedule. In dealing with a full access arrangement submitted for its approval, the AER cannot, in its draft decision, insist on change to an aspect of a depreciation schedule governed by r. 89 unless the AER considers the change is necessary to correct non-compliance with a provision of the Law or an inconsistency between the depreciation schedule and the applicable criteria. Even though the AER might consider change desirable to achieve more complete conformity between the depreciation schedule and the principles and objectives of the Law, it would not be entitled to give effect to that view in the decision making process.

²⁸² AER, *Final decision: N.T. Gas access arrangement*, July 2011, p. 51; AER, *Final decision: Envestra Ltd access arrangement proposal for the Qld gas network, 2011–2016*, June 2011, p. 29 (AER, *Final decision: Envestra access arrangement Qld*, June 2011).

²⁸³ NGR, r. 89(2).

- rule 89(2)(c): the pipeline has been designed and constructed so as to accommodate future growth in demand.

The straight-line method does not involve deferral of a substantial proportion of the depreciation. The AER considers that a deferral of depreciation is not necessary for APTPPL because the three scenarios described under r. 89(2) do not apply to it.

The AER's PTRM employs the straight-line method and the regulatory depreciation allowance is an output of the PTRM.²⁸⁴ APTPPL has adopted the AER's PTRM for calculating its depreciation. The AER therefore has assessed APTPPL's regulatory depreciation allowance by analysing APTPPL's proposed inputs to the PTRM for calculating depreciation. These inputs include:

- the opening capital base as at 1 July 2012
- the forecast capex in the access arrangement period
- the forecast inflation rate for the access arrangement period
- the standard economic life for each asset class
- the remaining economic life for each asset class.

The AER's determinations affecting the first three inputs in the above list are discussed elsewhere.²⁸⁵ The AER amends APTPPL's proposed regulatory depreciation allowance according to the AER's determinations on these building block components. The AER's assessment approach on the remaining two inputs in the above list is set out below.

The depreciation criteria require that the depreciation schedule should be designed so that assets are depreciated over their economic lives.²⁸⁶ The AER therefore has assessed the proposed standard and remaining economic life for each asset class. The standard economic lives are used for calculating the depreciation of new assets associated with forecast capex in the access arrangement period. The remaining economic lives are used for calculating the depreciation of existing assets associated with the opening capital base as at 1 July 2012.

The AER considers that consistency in the standard economic life for each asset class across access arrangement periods will allow reference tariffs to vary smoothly over time. This will promote efficient growth in the market for reference services.²⁸⁷ However, the AER notes that the depreciation criteria allow reasonable adjustment to the expected economic life across access arrangement periods. When there is more than one asset type within an asset class, the AER considers that the standard economic life for the asset class should reflect the standard economic life of the group of asset types within that asset class. This can be

²⁸⁴ The AER's PTRM was developed based on the post-tax building block approach set out in the NER. Given that APTPPL has proposed the post-tax building block approach for its access arrangement, the PTRM can be used to calculate the revenue requirement.

²⁸⁵ Further details are set out in attachment 8 (for opening capital base and forecast capex) and attachment 7 (forecast inflation).

²⁸⁶ NGR, r. 89(1)(b).

²⁸⁷ NGR, r. 89(1)(a).

achieved by calculating the weighted average of the standard economic life for each asset type and using the proportion of the capex for each asset type as weights. This approach ensures that the group of assets under the asset class is depreciated over the economic life relevant to that group of assets.²⁸⁸

The AER's preferred method to determine the remaining economic lives is the weighted average method.²⁸⁹ The AER considers the weighted average method provides a better reflection of the mix of assets within an asset class and the economic life of the asset class.

5.4 Reasons for decision

The AER's draft decision on APTPPL's regulatory depreciation allowance is \$19.2 million (\$nominal). This results in a reduction of \$17.7 million (\$nominal) or 48.0 per cent to APTPPL's proposed regulatory depreciation allowance. The AER approves APTPPL's proposed straight-line depreciation method. However, the AER does not approve the proposed depreciation schedule for the 'Easements' and 'RBP expansion 8' asset classes because they do not reflect the economic lives of the group of assets in those two asset classes.²⁹⁰

5.4.1 Standard economic lives

The AER has considered and approves APTPPL's proposed standard economic lives for most of APTPPL's asset classes. The AER considers that the standard economic lives are:

- consistent with the ACCC approved standard economic lives in the earlier access arrangement period
- comparable with the standard economic lives approved in AER's recent access arrangement decisions.

However, the AER does not approve APTPPL's proposed standard economic lives for the following asset classes:

- 'Easements': The AER considers that easements should not have a standard economic life for depreciation purposes because easements are non-depreciating assets.
- 'RBP expansion 8': The AER considers that the proposed standard economic life does not represent the standard economic lives of the group of asset types within this asset class.

The AER's draft decision on APTPPL's standard economic lives is set out in table 5.3.

²⁸⁸ NGR, r. 89(1)(b).

²⁸⁹ The weighted average method involves weighting the remaining life of each capital stream within an asset class (that is, the opening capital value and the capital expenditures for each year) by the closing capital value of that capital stream as a proportion of the total closing capital value of the asset class as a whole. The resulting individual values for each capital stream are then added together to obtain the overall weighted average remaining life of the asset class.

²⁹⁰ NGR, r. 89(1)(b).

Table 5.3 APTPPL's proposed and AER's draft decision on APTPPL's standard and remaining economic lives (years)

Asset class	Standard economic life – APTPPL proposal	Remaining economic life – APTPPL proposal	Standard economic life – AER's draft decision	Remaining economic life – AER's draft decision
Original Pipeline	60.0	17.0	60.0	17.0
Looping 1	80.0	56.0	80.0	56.0
Looping 2	80.0	58.0	80.0	58.0
Looping 3	80.0	66.0	80.0	66.0
Looping 4	80.0	69.0	80.0	69.0
Looping 5	80.0	71.0	80.0	71.0
Looping 6	80.0	71.0	80.0	71.0
Lateral	80.0	69.0	80.0	69.0
Dalby Compressor	35.0	5.0	35.0	5.0
Kogan Compressor	35.0	5.0	35.0	5.0
Oakey Compressor	35.0	6.0	35.0	6.0
Condamine	35.0	7.0	35.0	7.0
Yuleba Compressor	35.0	9.0	35.0	9.0
Gatton Compressor	35.0	10.0	35.0	10.0
Easements	1000.0	957.0	n/a	n/a
Communications	15.0	4.0	15.0	4.0
Other	5.0	n/a	5.0	n/a
Capitalised AA costs	5.0	4.9	5.0	4.9
Pipelines / Laterals	80.0	78.1	80.0	78.1
Group IT	5.0	4.3	5.0	4.2 [^]
SIB Capex	5.0	3.5	5.0	3.5
PMA	12.0	8.0	n/a [*]	n/a [*]
Regulators and	40.0	35.7	40.0	35.7
Lytton lateral	80.0	79.0	80.0	79.0
RBP Expansion 8	35.0	35.0	46.0	46.0

* The AER did not approve APTPPL's proposed PMA capex. Therefore, there is no expenditure amount to be depreciated for this asset class. For modelling purposes, the AER has changed the remaining and standard economic life inputs for the 'PMA' asset class in APTPPL's revenue model to 'n/a'.

[^] The AER has updated the remaining economic lives for the 'Group IT' asset class to reflect the AER's decision on APTPPL's proposed Group IT capex.

Source: AER analysis.

Note: n/a: not applicable.

Easements asset class

APTPPL proposed a standard economic life of 1000 years for the 'Easements' asset class.²⁹¹ In recent AER gas access arrangement decisions, the AER treated land and easements assets as non-depreciating assets and did not apply an economic life to such asset class. The AER notes that:

- in general, easements are defined as the rights acquired over land for use of that land in a specific way; and
- an easement is usually granted in perpetuity. Therefore, easements are generally not subject to replacement, nor is depreciation applicable.

This suggests that APTPPL's 'Easements' asset class should not be subject to depreciation and thus should not be assigned with a standard economic life for depreciation purpose.

The ACCC approved a standard economic life of 1000 years for APTPPL's 'Easements' asset class for determining APTPPL's initial capital base in the earlier access arrangement period.²⁹² However, for the reasons discussed above, the AER considers that APTPPL's proposed depreciation schedule for the 'Easements' asset class does not comply with the depreciation criteria of r. 89(1)(b). The AER considers that this asset class should not be assigned with a standard economic life for depreciation purposes. This is because easement values do not depreciate overtime—easements are non-depreciating assets. The AER has therefore changed the standard economic life input for the 'Easements' asset class in APTPPL's PTRM to 'n/a' to exclude the forecast easements expenditure from being depreciated over the access arrangement period.

RBP expansion 8 asset class

APTPPL proposed a standard economic life of 35 years for the 'RBP expansion 8' asset class.²⁹³ APTPPL's RBP8 expansion capex involves the construction of an additional compressor, six kilometres of pipeline and some other works.²⁹⁴ The AER requested that APTPPL provide further information on what asset types are included in the 'RBP expansion 8' asset class and how it determined the proposed standard economic life. APTPPL responded that the main asset types in the 'RBP expansion 8' asset class are: compressors, pipelines, and regulators and other. APTPPL further stated it:²⁹⁵

...assumed the RBP expansion 8 to be a one-class asset type for ease of tracking project costs and doing the analysis on the impact of this project as well as provide transparency to the AER in the current and next regulatory periods. This would also help to avoid the issue of allocation [of] some project costs to a specific asset type.

Since the majority amount of forecast capex is spent on compression related assets, it is assumed that the standard life of 35 years for compressors can be applied to the total project costs.

²⁹¹ APTPPL, *Access arrangement information*, October 2011, p. 9.

²⁹² ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. 79.

²⁹³ APTPPL, *Access arrangement information*, October 2011, p. 9.

²⁹⁴ APTPPL, *Access arrangement submission*, October 2011, pp. 37–38.

²⁹⁵ APTPPL, *Response to information request AER/040 of 6 December 2011*, received 13 December 2011, pp. 11–12.

The AER calculated a weighted average of the standard economic life for the 'RBP expansion 8' asset class by weighting the standard economic lives for compressors, pipelines and regulators. The standard economic life for compressors, pipelines and regulators and meters are 35 years, 80 years and 40 years respectively (as shown in table 5.3).²⁹⁶ The AER used the respective proportions of the RBP8 expansion capex for each of the three asset types as the weights when calculating the weighted average standard economic life. The weighted average standard economic life for the 'RBP expansion 8' asset class is 46 years (as shown in table 5.4), which is 11 years more than APTPPL's proposed 35 years. Although pipeline and regulators account for a smaller portion of the total RBP8 expansion capex than compressors, the longer standard economic lives of these assets means that the weighted average of the standard economic lives for the three asset types is much longer than 35 years.

The AER therefore considers that the proposed depreciation schedule for the 'RBP expansion 8' asset class does not comply with the depreciation criteria.²⁹⁷ This is because the assets in the 'RBP expansion 8' asset class are not depreciated over the economic life of the group of assets in that asset class, as is required by rule 89(1)(b). The group of assets in the 'RBP expansion 8' asset class includes not only compressors, but also pipelines and regulators. The AER considers the economic life of all these asset types should be taken into account when determining the standard economic life for the 'RBP expansion 8' asset class. The increase of the standard economic life to 46 years from 35 years for the 'RBP expansion 8' asset class reduces APTPPL's total proposed regulatory depreciation by about \$2 million (nominal) or 6 per cent for the access arrangement period.

Table 5.4 AER's calculation of the weighted average standard life for the RBP expansion 8 asset class

RBP8 expansion project component by asset type	Proportion of capex by asset type (per cent)	Standard economic life for each asset type (years)	Weighted average of the standard economic life (years)
Dalby compressor	58.5	35	20
Metro looping 1	22.1	80	18
Pipeline MAOP upgrade	17.4	40	7
Ellengrove gate station	2.0	40	1
Total	100	n/a	46

Source: APTPPL, *Response to information request AER/021 of 6 December 2011*, received 13 December 2011, pp. 2–4; AER analysis.

(a): These components are mainly regulating station related assets. Therefore, the AER applied the standard economic life for regulators for these components.

²⁹⁶ APTPPL, *Access arrangement information*, October 2011, p. 9.

²⁹⁷ NGR, r. 89(1)(b).

5.4.2 Remaining economic lives

The AER approves APTPPL's proposed remaining economic lives as at 1 July 2012 for the majority of APTPPL's asset classes. This is because APTPPL has used the weighted average method for calculating its remaining economic lives. In accepting APTPPL's proposed weighted average method, the AER has updated the remaining economic lives to reflect the required amendments to the opening capital base.²⁹⁸

The AER does not approve APTPPL's proposed remaining economic lives for the following asset classes:

- 'Easements': The AER considers that easements should not have a remaining economic life for depreciation purposes because easements are non-depreciating assets.
- 'RBP expansion 8': The AER increased APTPPL's remaining economic lives for the 'RBP expansion 8' asset class to 46 years from 35 years. This reflects the weighted average of the standard economic lives for the group of asset types within that asset class.

The AER's draft decision on APTPPL's remaining economic lives is set out in table 5.3.

Easements asset class

APTPPL proposed a remaining economic life of 957 years for the 'Easements' asset class.²⁹⁹ In section 5.4.1, the AER considered that the 'Easements' asset class should not be assigned with a standard economic life for depreciation purposes.

For the same reasons discussed in section 5.4.1, the AER considers that the 'Easements' asset class should also not be assigned with a remaining economic life because easements are non-depreciating assets. The AER has therefore changed the remaining economic life input for the 'Easements' asset class in APTPPL's PTRM to 'n/a' to exclude the easements asset value associated with the opening capital base from being depreciated over the access arrangement period.

RBP expansion 8 asset class

APTPPL proposed a remaining economic life of 35 years for the 'RBP expansion 8' asset class. The RBP expansion 8 is a new asset class for the access arrangement period. It has not been depreciated in the earlier access arrangement period. Therefore, the remaining economic life of the 'RBP expansion 8' asset class as at 1 July 2012 is the same as the standard economic life of the 'RBP expansion 8' asset class to reflect that it is a new asset. For modelling purposes, the PTRM uses the remaining economic life to calculate the straight-line depreciation of the opening capital base as at 1 July 2012.

²⁹⁸ At the time of this draft decision the roll forward of APTPPL's capital base includes forecast capex for 2011–12. The AER may update this capex figure for its final decision. These capex figures are used to calculate the weighted average remaining lives of the assets. Therefore, the AER may recalculate APTPPL's remaining asset lives using the method approved in this draft decision to reflect the updated 2011–12 capex for the final decision.

²⁹⁹ APTPPL, *Access arrangement information*, October 2011, p. 9.

In section 5.4.1, the AER increased the standard economic life for the 'RBP expansion 8' asset class to 46 years (from 35 years) because the proposed standard economic life does not take into account the economic lives of all asset types within the asset class. Therefore, the AER amends APTPPL's proposed remaining economic life for the 'RBP expansion 8' to 46 years. Consistent with APTPPL's proposal, this results in remaining economic life as at 1 July 2012 being the same as the standard economic life for the 'RBP expansion 8' asset class.

5.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 5.1:

Make all necessary amendments to reflect the AER's draft decision on standard economic lives and remaining economic lives of assets for the access arrangement period, as set out in table 5.3.

Amendment 5.2:

Make all necessary amendments to reflect the AER's draft decision on regulatory depreciation allowance for the access arrangement period, as set out in table 5.1.

6 Corporate income tax

When determining the total revenue for APTPPL, the AER must estimate APTPPL's cost of corporate income tax.³⁰⁰ APTPPL has adopted a post-tax framework to derive its revenue requirement for the access arrangement period.³⁰¹ Under a post-tax framework, a separate corporate income tax allowance is calculated as part of the building blocks assessment.

6.1 Draft decision

The AER accepts APTPPL's proposal to use the AER's PTRM to estimate the forecast corporate income tax allowance. However, the AER does not approve APTPPL's proposed forecast corporate income tax allowance of \$18.5 million (\$nominal)³⁰² for the access arrangement period. This is mainly because of the AER's adjustments to APTPPL's proposed opening tax asset base as at 1 July 2012 (section 6.4.1), return on capital (attachment 7) and forecast opex (attachment 9).

The AER accepts APTPPL's proposed method to establish the opening tax asset base as at 1 July 2012. However, the AER rejects APTPPL's proposed opening tax asset base of \$134.7 million (\$nominal) as at 1 July 2012. The AER's draft decision on APTPPL's proposed capex in the earlier access arrangement period reduces APTPPL's proposed opening tax asset base as at 1 July 2012 by about \$6.3 million (nominal) or 4.7 per cent. Based on this adjustment, the AER determines APTPPL's opening tax asset base as at 1 July 2012 is \$128.4 million (\$nominal).

The AER approves APTPPL's proposed standard tax asset lives with the exception of the standard tax asset life for the 'Easements' asset class. The AER considers that easements are non-depreciating assets and therefore should not be subject to the calculation of tax depreciation in the revenue model. For modelling purposes, the AER has changed the standard tax asset life input for the 'Easements' asset class in APTPPL's PTRM to 'n/a'.³⁰³

The AER also approves APTPPL's proposed weighted average method to calculate the remaining tax asset lives as at 1 July 2012. In accepting APTPPL's proposed weighted average method, the AER has updated the tax remaining lives to reflect the required amendments to APTPPL's proposed capex in the earlier access arrangement period as discussed in attachment 8.

The AER's adjustments result in an estimated cost of corporate income tax allowance of \$8.1 million (\$nominal) as shown in table 6.1. Based on the approach to modelling the cash flows in the PTRM, the AER has derived an effective tax rate of 19.1 per cent for this draft decision.

³⁰⁰ NGR, r. 76(c).

³⁰¹ APTPPL, *Access arrangement information*, October 2011, p. 17.

³⁰² All dollar amounts are in nominal terms in this attachment because corporate income tax is an output of the PTRM. The output of the PTRM such as the tax allowance and regulatory depreciation are expressed in nominal terms, whereas the inputs of the PTRM such as forecast opex and capex are expressed in real terms.

³⁰³ The remaining tax asset life for the 'Easements' asset class is already shown as 'n/a' in APTPPL's proposed PTRM. Therefore, no change is needed for the remaining tax asset life for this asset class.

Table 6.1 AER's draft decision on corporate income tax allowance for APTPPL (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Tax payable	1.9	2.1	2.2	2.3	2.2	10.7
Less: value of imputation credits	-0.5	-0.5	-0.6	-0.6	-0.6	-2.7
Net corporate income tax allowance	1.4	1.6	1.7	1.7	1.7	8.1

Source: AER analysis.

6.2 APTPPL's proposal

APTPPL proposed a total corporate income tax allowance of \$18.5 million (\$nominal) for the access arrangement period as set out in table 6.2. APTPPL used the AER's PTRM to calculate the corporate income tax allowance for each year of the access arrangement period.³⁰⁴ In estimating its corporate income tax allowance, APTPPL used:³⁰⁵

- an opening tax asset base of \$134.7 million (\$nominal) as at 1 July 2012
- an expected statutory income tax rate of 30 per cent per year
- a value for the assumed utilisation of imputation credits (gamma) of 0.25
- the standard tax asset lives and remaining tax asset lives contained in table 3.5 of its access arrangement information for tax depreciation purposes.

Table 6.2 APTPPL's proposed corporate income tax allowance (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Tax payable	2.8	5.3	5.5	5.5	5.5	24.5
Less value of imputation credits	-0.7	-1.3	-1.4	-1.4	-1.4	-6.1
Net corporate income tax allowance	2.1	4.0	4.1	4.1	4.1	18.4

Source: APTPPL, *PTRM*, October 2011.

6.3 Assessment approach

In its access arrangement proposal, APTPPL must provide the proposed method for dealing with taxation, and a demonstration of how the allowance for taxation is calculated.³⁰⁶ The estimated cost of corporate income tax is one of the building blocks in determining APTPPL's

³⁰⁴ APTPPL, *Access arrangement submission*, October 2011, p. 65.

³⁰⁵ APTPPL, *Access arrangement information*, October 2011, p. 17.

³⁰⁶ NGR, r. 72(1)(h).

total revenue.³⁰⁷ APTPPL used a post-tax framework to derive its total revenue and the AER's PTRM for calculating its corporate income tax allowance.³⁰⁸

The AER's approach for calculating APTPPL's cost of corporate income tax is to first estimate a taxable income that would be earned by an efficient benchmark company operating APTPPL's business. The statutory income tax rate is then applied to the estimated taxable income to arrive at a notional amount of tax payable. The AER then applies a discount to that notional amount of tax payable to account for the assumed utilisation of imputation credits (γ). This amount is then included as a separate building block in determining APTPPL's total revenue.³⁰⁹

Using the PTRM, the AER has modelled APTPPL's benchmark corporate income tax liability during the access arrangement period based on the tax depreciation and cash flow allowances provided in this draft decision. The amount of tax payable is estimated using the benchmark 60 per cent gearing, rather than APTPPL's actual gearing, and a statutory company income tax rate of 30 per cent. To estimate the corporate income tax allowance, the AER requires a tax asset base to determine the tax depreciation. The tax depreciation is offset against the business's forecast income to estimate the taxable income. The value of γ of 0.25 has been applied when calculating the net tax allowance.

Under the post-tax nominal framework, the application of the statutory tax rate generates an effective tax rate. The effective tax rate is defined as the difference between pre-tax and post-tax rates of return. It is sensitive to several factors, including the corporate tax rate and the range of available tax concessions that serve to lessen tax liabilities or defer them to a later period.

The corporate income tax allowance is an output of the AER's PTRM. The AER therefore has assessed APTPPL's proposed corporate income tax allowance by analysing APTPPL's proposed inputs to the PTRM for calculating the tax allowance. These inputs include:

- the opening tax asset base as at 1 July 2012
- the standard tax asset life and remaining tax asset life for each asset class
- the income tax rate
- the value of γ .

The AER considers that the roll forward of the opening tax asset base from 1 July 2006 to 1 July 2012 should be based on the ACCC approved opening tax base as at 1 July 2006 and APTPPL's actual capex in the earlier access arrangement period. The ACCC approved an opening tax base as at 1 July 2006 of \$93.8 million (\$nominal) for APTPPL in the earlier access arrangement period. APTPPL has used its actual capex in the earlier access arrangement period for calculating the roll forward of the tax asset base. However, the exact

³⁰⁷ NGR, r. 76(c).

³⁰⁸ APTPPL, *Access arrangement information*, October 2011, p. 17.

³⁰⁹ NGR, r. 76(c).

value of the actual capex used for calculating the roll forward of the tax asset base will be subject to the AER's assessment on these values as discussed in attachment 8.

The AER assesses APTPPL's proposed standard tax asset lives against those prescribed by the Commissioner for taxation in tax ruling 2011/2 and the ACCC approved standard tax asset lives in the earlier access arrangement period.

The AER's preferred method to determine the remaining tax asset lives is the weighted average method.³¹⁰ The AER considers the weighted average method provides a better reflection of the mix of assets within an asset class and the effective life of the asset class.

6.4 Reasons for decision

The AER's draft decision on APTPPL's corporate income tax allowance is \$8.1 million (\$nominal). This represents a reduction of \$10.3 million (\$nominal) or 56.0 per cent to APTPPL's corporate income tax allowance. The AER accepts APTPPL's method for calculating the corporate income tax allowance because APTPPL has used the AER's PTRM for the calculation. However, the AER adjusted several of APTPPL's proposed inputs to the PTRM for calculating the income tax allowance, which include:

- the opening tax asset base as at 1 July 2012
- the standard tax asset life for 'Easement' asset class
- the remaining tax asset lives for several asset classes.

6.4.1 Opening tax asset base as at 1 July 2012

The AER accepts APTPPL's proposed method for calculating the opening tax asset base as at 1 July 2012. This is because APTPPL has used the ACCC approved opening tax base as at 1 July 2006 and the actual capex in the earlier access arrangement period for calculating the roll forward of the tax asset base.

However, the AER does not approve APTPPL's proposed total opening tax asset base of \$134.7 million (\$nominal) as at 1 July 2012. The AER's draft decision on APTPPL's proposed capex in the earlier access arrangement period reduces APTPPL's proposed total opening tax asset base as at 1 July 2012 by about \$6.3 million (\$nominal) or 4.7 per cent. This is because the proposed capex in the earlier access arrangement period is an input for calculating the opening tax asset base in APTPPL's proposed roll forward of the tax asset base. The AER's draft decision on APTPPL's proposed capex in the earlier access arrangement period is discussed in attachment 8.³¹¹ The AER's draft decision on APTPPL's

³¹⁰ The weighted average method involves weighting the remaining life of each capital stream within an asset class (that is, the opening tax capital value and the capital expenditures for each year) by the closing tax capital value of that capital stream as a proportion of the total closing tax capital value of the asset class as a whole. The resulting individual values for each capital stream are then added together to obtain the overall weighted average remaining life of the asset class.

³¹¹ At the time of this draft decision the roll forward of APTPPL's tax asset base includes forecast capex for 2011–12. The AER may update this capex figure for its final decision. This capex figure is used to calculate the opening tax asset base and the weighted average remaining tax asset lives. Therefore, the AER may

opening tax asset base as at 1 July 2012 for each APTPPL's asset class is set out in table 6.3.

Table 6.3 AER draft decision on APTPPL's opening tax asset base, standard tax asset lives and remaining tax asset lives

Asset class	Opening tax asset value (\$million, nominal)	Standard tax asset life (year)	Remaining tax asset life (year)
Original pipeline	-	20.0	n/a
Looping 1	0.0	20.0	n/a
Looping 2	0.0	20.0	n/a
Looping 3	3.3	20.0	6.0
Looping 4	7.3	20.0	9.0
Looping 5	29.5	20.0	11.0
Looping 6	5.3	20.0	11.1
Lateral	10.7	20.0	9.1
Dalby compressor	0.4	20.0	9.5
Kogan compressor	0.1	20.0	5.1
Oakey compressor	0.1	20.0	6.1
Condamine compressor	0.1	20.0	5.1
Yuleba compressor	0.1	20.0	6.0
Gatton compressor	0.1	20.0	3.7
Easements	-	n/a	n/a
Communications	-	20.0	n/a
Other	0.2	20.0	6.8
Capitalised AA costs	0.6	5.0	4.9
Pipelines/Laterals	0.3	20.0	18.3
Group IT	1.6	5.0	4.2^
SIB capex	7.0	5.0	3.5
PMA	-	n/a*	n/a*
Regulators and meters	1.0	20.0	15.7
Lytton lateral	8.8	20.0	19.0
RBP expansion 8	51.9	20.0	20.0
Total	128.4	n/a	n/a

* The AER did not approve APTPPL's proposed PMA capex. Therefore, there is no expenditure amount to be depreciated for this asset class. For modelling purposes, the AER has changed the tax remaining and standard economic life inputs for the 'PMA' asset class in APTPPL's revenue model to 'n/a'.

recalculate APTPPL's opening tax asset base as at 1 July 2012 and the remaining asset lives using the method approved in this draft decision to reflect the updated 2011–12 capex for the final decision.

^ The AER has updated the tax remaining economic lives for the 'Group IT' asset class to reflect the AER's decision on APTPPL's proposed Group IT capex.
Source: APTPPL, *PTRM*, October 2011.
Note: n/a: not applicable.

6.4.2 Standard tax asset life

The AER approves APTPPL's proposed standard tax asset lives for the majority of APTPPL's asset classes. This is because they are consistent with those prescribed by the Commissioner for taxation in tax ruling 2011/12 and the ACCC approved standard tax asset lives in the earlier access arrangement period. However, the AER does not approve APTPPL's proposed standard tax asset life of 20 years for the 'Easements' asset class. The AER's draft decision on APTPPL's standard tax asset life for each asset class is set out in table 6.3.

APTPPL proposed a tax standard life of 20 years for the 'Easements' asset class.³¹² According to the Australian accounting standards, land is generally not depreciable because land values tend to increase over time due to the limited supply of and the increasing demand for land.³¹³ The Australian Taxation Office also excludes land from the definition of depreciating asset.³¹⁴

The ACCC approved a tax standard life of 20 years for APTPPL's 'Easements' asset class for calculating APTPPL's tax depreciation in the earlier access arrangement period.³¹⁵ However, the AER considers that easements should not be assigned with a standard tax asset life for calculating tax depreciation because easements are non-depreciating assets. The AER has therefore changed the standard tax asset life input for 'Easements' asset class from 20 years to 'n/a' in the APTPPL's asset roll forward model and revenue model. This approach is consistent with the AER's draft decision on the standard economic life for APTPPL's 'Easement' asset class for regulatory depreciation purposes, as discussed in attachment 5. The AER's draft decision to amend APTPPL's standard tax asset life for the 'Easement' asset class to 'n/a' does not affect APTPPL's proposed corporate income tax allowance. This is because this asset has been fully depreciated for tax purposes and APTPPL has not proposed any forecast capex for this asset class in the access arrangement period.

6.4.3 Remaining tax asset lives

The AER approves APTPPL's proposed weighted average method to calculate the remaining tax asset lives as at 1 July 2012. In accepting APTPPL's proposed weighted average method, the AER has updated the remaining tax asset lives to reflect the required amendments to the proposed capex in the earlier access arrangement period as discussed in attachment 8. The

³¹² APTPPL, *Access arrangement information*, October 2011, p. 9. The AER notes that the standard tax asset life for the 'Easements' asset class in table 3.5 of APTPPL's access arrangement proposal information is shown as 20 years. However, the standard tax asset life for this asset class is shown as 'n/a' in table 5.2 of APTPPL's access arrangement submission. APTPPL has also used 20 years as the standard tax asset life for the 'Easements' asset class in its proposed roll forward model and revenue model. The AER has assessed APTPPL's proposed tax standard life for the 'Easements' asset class based on the standard tax asset life presented in APTPPL's access arrangement proposal information, roll forward model and revenue model.

³¹³ Australian accounting standard board, *Accounting standard AASB1021: Depreciation*, August 1997, pp. 10–11.

³¹⁴ ATO, *Guide to depreciating assets 2011*, 2011, p. 3.

³¹⁵ APTPPL, *RBP revenue model: 2006–2011 access arrangement period*, 2006.

AER's draft decision on APTPPL's remaining tax asset life for each asset class is set out in table 6.3.

6.4.4 Utilisation of imputation credits (gamma)

Under the Australian imputation tax system, domestic investors receive a credit for tax paid at the company level (an 'imputation credit' or gamma) that offsets part or all of their personal income tax liabilities. For eligible shareholders, imputation credits represent a benefit from the investment in addition to any cash dividend or capital gains received. As part of the post-tax nominal framework, the value of gamma must be applied to calculate the net income tax allowance.

The AER approves APTPPL's proposal to adopt the value of 0.25 for gamma. The proposed gamma value is consistent with the findings by the Tribunal in its review of the AER's 2010 distribution determinations for Energex, Ergon Energy and ETSA Utilities.³¹⁶ The AER also adopted the value of 0.25 for gamma in the recent Aurora draft distribution determination.³¹⁷ There is no new evidence before the AER to cause it to vary from the findings of the Tribunal.

6.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 6.1:

Make all necessary amendments to reflect the AER's draft decision on corporate income tax allowance for the access arrangement period, as set out in table 6.1.

Amendment 6.2:

Make all necessary amendments to reflect the AER's draft decision on the opening tax asset base as at 1 July 2012, the standard tax asset lives and the remaining tax asset lives for the access arrangement period, as set out in table 6.3.

³¹⁶ Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No. 5)[2011] ACompT 9*, 12 May 2011, paragraph 42.

³¹⁷ AER, *Draft decision: Aurora distribution determination*, November 2011, p. 27.

7 Rate of return

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.

APTPPL's return on capital building block is calculated by multiplying the rate of return with the value of APTPPL's capital base. Consistent with APTPPL's proposal and previous AER gas decisions, the rate of return adopted by the AER is the nominal 'vanilla' WACC formulation.

7.1 Draft decision

The AER's draft decision does not approve APTPPL's proposed (indicative) rate of return of 9.63 per cent. The AER withholds its approval as, in the AER's opinion, 8.55 per cent (indicative) is a preferable alternative that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.³¹⁸ The AER considers this rate (subject to updating) provides APTPPL with a reasonable opportunity to recover at least the efficient costs of capital financing. Consequently, the AER expects APTPPL will be able to attract funds in order to invest in its pipeline in the long run interests of both APTPPL and consumers.

The AER agrees with a number of aspects of APTPPL's proposed rate of return. Specifically, the AER agrees with:

- adopting the capital asset pricing model (CAPM) to calculate the cost of equity
- adopting the yield on 10 year Commonwealth Government Securities (CGS) as the proxy for the risk free rate
- adopting a 60 per cent gearing ratio
- specifying the cost of debt as the debt risk premium (DRP) over the risk free rate
- determining the DRP by defining the benchmark bond rate as a 10 year corporate bond rate with a BBB+ credit rating; and measuring the benchmark bond rate using the Bloomberg BBB rated 7 year FVC
- the method of extrapolating the Bloomberg BBB rated 7 year FVC out to a 10 year maturity (consistent with the definition of the benchmark bond) using historical Bloomberg FVCs.
- adopting the inflation forecasting method proposed by APTPPL.

The AER does not agree with the following aspects of APTPPL's proposal:

³¹⁸ The AER's adoption of this rate is subject to the risk free rate and debt risk premium parameters being updated closer to the date of the final decision.

- the value for the equity beta—the AER has adopted a 0.8 equity beta instead of APTPPL's proposal of 1.0
- the value for the MRP - the AER has adopted a 6 per cent MRP instead of APTPPL's proposal of 7 per cent

The main reasons for these differences are summarised in the next sections.

The individual WACC parameters and consequent overall rate of return determined by the AER is set out in table 7.1.

The AER's draft decision rate of return is comparable to that determined by the ACCC for the RBP in 2007, however some of the components have changed. The cost of equity is lower due to the lower prevailing risk free rate and the AER's determination that the pipeline's exposure to market wide systematic risk is lower than that determined by the ACCC. The cost of debt is higher due to the materially higher debt risk premium which has more than offset the decrease in the risk free rate.

Table 7.1 AER's draft decision on APTPPL's rate of return on capital (per cent, nominal)

Parameter	Previous ACCC decision	APTPPL proposal	AER draft decision
Nominal risk free rate	5.70%	4.25% ^a	4.21% ^a
Equity beta	1.0	1.0	0.8
Market risk premium	6.0%	7.0%	6.0%
Debt risk premium	1.14%	4.31% ^a	4.03% ^a
Gearing level	60%	60%	60%
Inflation forecast	3.21%	2.62% ^a	2.60%*
Gamma	0.5	0.25	0.25
Nominal post-tax cost of equity	11.70%	11.25% ^a	9.01% ^a
Nominal pre-tax cost of debt	6.84%	8.56% ^a	8.24% ^a
Nominal vanilla WACC	8.78%	9.63% ^a	8.55% ^a

Source: ACCC decision; APTPPL, *Access arrangement proposal*, October 2011; AER analysis.

(a) Indicative only. The risk free rate, debt risk premium and inflation forecast will be updated closer to the date of the final decision.

7.2 APTPPL's proposal

APTPPL proposed an indicative rate of return of 9.63 per cent. APTPPL's access arrangement information included three consultant reports commissioned by APTPPL and relied on in developing its proposed rate of return. Those were from:

- Strategic Finance Group (SFG) on the equity beta,³¹⁹
- SFG on the MRP,³²⁰ and
- Competition Economists Group (CEG) on the DRP.³²¹

APTPPL's proposed WACC parameters are set out in table 7.2.

Table 7.2 APTPPL proposed rate of return

Parameter	APTPPL proposal
Nominal risk free rate	4.25% ^a
Equity beta	1.0
Market risk premium	7.0%
Debt risk premium	4.31% ^a
Gearing level	60%
Inflation forecast	2.62% ^b
Assumed utilisation of imputation credits (gamma)	25%
Nominal post-tax cost of equity	11.25%
Nominal pre-tax cost of debt	8.56%
Nominal vanilla WACC	9.63%

Source: APTPPL, *Access arrangement submission*, October 2011, p. 63.

- (a) These estimates were based on an indicative 20 trading day averaging period ending on 30 September 2011. APTPPL stated that it would propose an averaging period through correspondence with the AER.
- (b) This is based on the RBA's *Statement on Monetary Policy* from August 2011. APTPPL stated its expectation that the forecast inflation estimate would be updated at the time of the AER's final decision.

The following sections summarise APTPPL's arguments on the two WACC parameters where the AER and APTPPL are not in agreement, which are the equity beta and MRP

³¹⁹ SFG, *Equity beta: Report prepared for APT Petroleum Pipelines Ltd*, 11 October 2011 (SFG, *Equity beta*, October 2011).

³²⁰ SFG, *Market risk premium: Report for APT Petroleum Pipelines Ltd*, 11 October 2011 (SFG, *MRP*, October 2011).

³²¹ CEG, *Estimating the regulatory debt premium for the Roma to Brisbane pipeline: A report for APT Petroleum Pipelines*, October 2011.

7.2.1 Equity beta

APTPPL has relied primarily on a report from SFG, which stated that the AER has no reasonable basis to adopt an equity beta other than 1.0.³²² Specifically, SFG stated that:³²³

- by definition, the market average equity beta is 1.0, and this should serve as a default estimate for the benchmark firm
- the AER should only depart from a beta of 1.0 where there is conceptual or empirical evidence to support the move:
 - there is no conceptual reason to depart from 1.0, since the benchmark firm has lower than average business risk but higher than average financial risk. The opposing factors will offset each other, so the default expectation for the benchmark firm accords with the market average.
 - there is no empirical reason to adopt an equity beta below 1.0, since the AER's empirical analysis is flawed. In particular, SFG stated that the AER:
 - used a small and unreliable data set that produced implausible estimates that were inconsistent between firms and across time.
 - used regressions with low explanatory power—more technically, low R² statistics—which indicated the results were unreliable and systematically biased downwards.
 - did not adjust for the inherent measurement bias in observed low beta estimates, which meant the results were biased downwards.
 - did not consider the high standard errors around the point estimates, which meant the results were unreliable and not distinguishable from 1.0.
 - used an econometric technique that generated implausible and highly variable results when applied to a different data set (five other industries).
- given the absence of valid conceptual or empirical evidence to justify a departure from an equity beta of 1.0, the AER should therefore accept this value.

7.2.2 Market risk premium

APTPPL proposed an MRP estimate of 7 per cent.³²⁴ This was based on advice it commissioned from SFG who recommended a range for the MRP of 4 to 8 per cent and that the current MRP is 'in excess of 7%'.³²⁵ SFG did not recommend a point estimate.

SFG adopted 6 per cent as the long run 'unconditional' estimate of the MRP (that is, the MRP that should be adopted in the absence of any current market data to the contrary). However,

³²² APTPPL, *Access arrangement submission*, October 2011, pp. 57–59.

³²³ SFG, *Equity beta*, Report prepared for APT Petroleum Pipelines Ltd, 11 October 2011, pp. 2–7.

³²⁴ APTPPL, *Access arrangement submission*, October 2011, p. 56.

³²⁵ SFG, *MRP*, 11 October 2011, p. 25.

SFG stated that based on current levels of 'conditioning variables', specifically implied option volatility, dividend yields, and relative debt spreads, an MRP of at least 7 per cent should be adopted at this time.³²⁶

This proposal differed from the recent AER decisions to reduce the MRP from 6.5 per cent to 6 per cent. This also differed from what APA proposed in its other recent access arrangements.

7.3 Assessment approach

This section sets out the AER's approach to the determination of the rate of return. The following matters are addressed:

- the NGL and NGR provisions relevant to the determination of the rate of return
- the use of overall rate of return measures as a 'reasonableness check' on the outcome from the AER's assessment of individual WACC parameters
- the AER's approach to the assessment of individual WACC parameters, focusing on the risk free rate, MRP, equity beta and DRP

7.3.1 Requirements of the law and rules relevant to the rate of return

The NGR does not include specific requirements for individual WACC parameters. Rather r. 87 provides the following:

- The rate of return is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services
- In determining the rate of return it will be assumed that the service provider meets benchmark levels of efficiency and uses a financing structure that meets benchmark standards, and
- In determining a rate of return, a well accepted approach that incorporates the cost of equity and debt, such as the WACC, is to be used, and a well accepted financial model, such as the CAPM, is to be used.

Rule 87 is a full discretion provision. This means that the AER may, but is not bound, to approve APTPPL's proposed rate of return if it complies with the applicable requirements of the NGL and NGR and is consistent with applicable criteria prescribed by the NGL and NGR. The AER has the discretion to withhold its approval of APTPPL's proposed rate of return if, in the AER's opinion, a preferable alternative exists that:

- complies with applicable requirements of the NGL and NGR, and
- is consistent with applicable criteria prescribed by the NGL and NGR.

³²⁶ SFG, *MRP*, 11 October 2011, p. 5.

Further, if an access arrangement contains a fixed principle on the rate of return then that fixed principle is binding on the AER and the service provider for the period for which the principle is fixed. APTPPL's access arrangement does not contain any fixed principles associated with the rate of return.

If the AER does not approve APTPPL's access arrangement, the AER's access arrangement proposal is to be formulated with regard to:

- the matters that the NGL and NGR require an access arrangement to include
- the service provider's access arrangement proposal, and
- the AER's reasons for refusing to approve that proposal.

This list is not exhaustive and the service provider's proposal is not the only source of information the AER has regard to when assessing a service provider's proposed rate of return. Issues associated with the cost of capital are generally not specific to a particular service provider, so there are many relevant information sources from other regulatory processes. Further, many issues have evolved across a long history of consideration by the AER and other regulators.

The information the AER has regard to includes:

- previous AER decisions—including the AER's 2009 review of WACC parameters for electricity service providers (the 'WACC review') and resultant Statement of Regulatory Intent (SRI)
- the service provider's proposal
- consultant reports commissioned by the AER, the service provider and other stakeholders
- the decisions of the Tribunal
- the decisions of other economic regulators, particularly within Australia.

The AER must, in performing or exercising an AER economic regulatory function or power, perform or exercise that function or power in a manner that will or is likely to contribute to the achievement of the NGO. Both the AER's approval or withholding of its approval of APTPPL's proposed rate of return, and in the case of the latter the AER's determination of a preferable rate of return, are AER economic regulatory functions or powers. The NGO is³²⁷:

...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.

In addition, the AER must take into account the revenue and pricing principles when exercising discretion in approving or making those parts of an access arrangement relating to

³²⁷ NGL, s. 23.

a reference tariff.³²⁸ The rate of return is a part of an access arrangement relating to a reference tariff. Therefore the AER must take into account the revenue and pricing principles in deciding to either approve APTPPL's proposed rate of return or in deciding a preferable rate of return. The revenue and pricing principles relevant to the rate of return are:

- A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in providing reference services
- A service provider should be provided with effective incentives in order to promote economic efficiency with respect to the reference services the service provider provides. The economic efficiency that should be promoted includes efficient investment in, or connection with, a pipeline with which the service provider provides reference services.
- A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference services to which that tariff relates.
- Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.

7.3.2 Bottom-up determination with reasonableness check on overall rate of return

Consistent with recent AER decisions, the AER first assesses each WACC parameter. In this first stage, the AER also has appropriate regard for economic interdependencies (i.e. internal consistency) between the various WACC calculation inputs (e.g. between the MRP and gamma). Second, the AER compares the resultant WACC against a series of reasonableness checks on the overall rate of return based on:

- the rate of return used by equity analysts in valuation analysis of listed companies operating regulated energy networks or pipelines in Australia, as set out in recent brokers' reports
- the multiple of market value to book value (as reflected in the regulated asset base) both when an asset is sold and over time for companies operating regulated energy networks or pipelines in Australia
- the rate of return recently set by other Australian economic regulators in comparable industries

APTPL's proposed rate of return was based on the build-up of individual WACC parameters. It did not include any reasonableness checks on the overall rate of return.³²⁹

³²⁸ NGL, s. 24.

³²⁹ SFG has previously proposed its 'market based assessment using dividend yields' as an overall reasonableness check; but in the latest report it was only used to inform the equity beta. SFG, *Equity beta*, October 2011.

7.3.3 Approach to the determination of specific parameters

Risk free rate

The risk free rate, as with other WACC parameters, should be commensurate with prevailing conditions in the market for funds. Following this approach for each parameter would be expected to lead to an overall rate of return that is commensurate with prevailing conditions in the market for funds.³³⁰ In the WACC review, the AER considered evidence before it and concluded the appropriate methodology for estimating the risk free rate is using the yield on CGS bonds with a 10 year term and an averaging period commencing as close as practically possible to the start of the regulatory control period. The AER provided further guidance that it would accept proposed averaging periods that were between 10 and 40 business days in length (as well as met the above criteria). The AER has applied that approach in this decision.

Equity beta

The AER's approach for this draft decision begins with conceptual analysis of equity beta, then proceeds with rigorous empirical analysis using a comparator set of listed firms that resemble the benchmark firm. Finally, the equity beta estimate is cross checked against other estimates derived from less relevant data, such as overseas firms or other regulated sectors.

Even where the conceptual analysis provides a clear prediction of equity beta for the benchmark firm, this is not a sufficient basis for the AER to determine an equity beta. Rather, the conceptual analysis frames the later empirical analysis, providing a theoretical hypothesis that must be confirmed or refuted using the available data. Hence, in the AER's approach the empirical analysis is the primary determinant of equity beta, even though it is not the first step. Further, although the cross checks use empirical evidence, this is given less weight because of the reduced relevance of these firms (overseas or in other industry sectors) to the characteristics of the benchmark firm.

In evaluating both the conceptual and empirical evidence, the AER sought advice from finance experts Professor McKenzie and Associate Professor Partington of the University of Sydney.³³¹ The AER also examines other recent consultant reports on equity beta, considering not just the results reported in these reports but also the approach taken to estimating the equity beta.

In arriving at the estimate of the equity beta, the AER has regard to the level of imprecision in the available empirical evidence, consistent with the AER's previous regulatory practice.

Market risk premium

Consistent with previous AER decisions, the AER assesses the MRP by considering a range of evidence, assessing the relative strengths and weaknesses of that evidence, and applying its judgement to the evidence before it in determining an appropriate value.

The AER takes the following evidence into account to determine its estimate of the MRP:

³³⁰ NGR, r. 87 (1)

³³¹ McKenzie and Partington, *Estimation of equity beta*, April 2012.

- Historical excess returns—These estimates represent the additional return that investors could have earned in the past by investing in a diversified portfolio of shares, including appropriate adjustments for any imputation credits earned on this portfolio. Historical excess return estimates are taken into account on the basis that investors' expectations of the forward looking MRP are informed by past experience.
- Survey based estimates—Surveys of market practitioners and academics provide information on the expected forward looking MRP and their application in practice.
- Dividend growth model (DGM) estimates—Cash flow based measures of the MRP generally employ a dividend discount model. One such model is the DGM which values a stock by estimating the next dividend to be paid and then assumes dividends per share will increase in perpetuity by a constant growth rate. By rearranging the equation the implied cost of equity can be derived from the current share price. Replacing individual stock parameters for market parameters implies that the MRP equals the next period's market dividend yield plus expected market growth rate in dividends per share minus the risk free rate.³³²
- Implied volatility analysis—This method uses a number of assumptions to infer a required short-term rate of return based on option prices in derivative markets, which reflect short-term expectations of future prices and volatility. Further assumptions can then be used to extrapolate from the short term volatility to a longer horizon.
- Market commentary and economic outlook—Market commentary from respected economic and financial commentators, such as the RBA, the Organisation for Economic Cooperation and Development (OECD) and International Monetary Fund (IMF), provides information on their assessment of economic and financial conditions.

The AER's approach to estimating the MRP does not rely on any one type of evidence. Instead, the AER reviews evidence from across all these areas to inform its decision on the appropriate MRP for this draft determination. Each of these five areas of evidence informs the AER's assessment of the appropriate forward looking 10 year MRP. The AER's approach involves the exercise of appropriate regulatory judgement in the context of complex and conflicting evidence.

Debt risk premium

The AER estimates the DRP using:

- an appropriate benchmark
- a method used to estimate the DRP that conforms to these benchmark parameters.

Benchmark

The AER adopts a 10 year Australian corporate bond with a BBB+ credit rating as the benchmark for estimating the DRP. This benchmark assumption has also been adopted by:

- APTPPL in its proposal to estimate the DRP

³³² AER, *Final decision: WACC review*, May 2009, pp. 216–217.

- the AER in previous gas decisions
- the AER's SRI for electricity WACC parameters.³³³

The 10 year term for the cost of debt provides internal consistency with the use of a 10 year risk free rate.

Method used to estimate the DRP

In assessing APTPPL's proposal, the AER considers:

- previous Tribunal decisions on estimation of the DRP
- the use of the Bloomberg 7 year BBB FVC to estimate a 7 year (base) DRP³³⁴
- the method used to extrapolate the base DRP estimate from 7 to 10 years, consistent with the benchmark term.

The AER has previously used the Bloomberg BBB rated FVC to estimate the DRP.³³⁵ In its decisions since 2009, the AER adopted the Bloomberg BBB rated FVC only where it performed best on quantitative tests using available market data. However, in its decisions since October 2010, the AER has progressively reduced its reliance on the Bloomberg BBB rated FVC in favour of more direct market observations to determine the DRP. The AER considered the Bloomberg BBB rated FVC did not appear to reflect prevailing market conditions and was likely to overstate the benchmark DRP.

The AER commenced placing less weight on the Bloomberg BBB rated FVC in its 2010 Victorian electricity distribution determinations.³³⁶ The AER estimated the DRP based on a weighted average of the extrapolated Bloomberg BBB rated FVC and the spread on the APA Group bond, which has characteristics that closely match that of the benchmark bond. In its 2011 final decisions on APT Allgas, Envestra and NT Gas' access arrangements, the AER determined the DRP by giving equal weighting to the extrapolated Bloomberg BBB rated FVC and the APA Group bond.³³⁷ More recently, in its Aurora and Powerlink draft decisions the AER estimated the DRP based on a sample of observed bond market data and placed no weight on the Bloomberg BBB rated FVC.³³⁸

³³³ This benchmark is defined in the SRI, which is not binding in gas decisions. See AER, *Statement of regulatory intent on the revised WACC parameters (distribution)*, May 2009; AER, *Final decision: WACC review*, May 2009.

³³⁴ While the benchmark credit rating is BBB+, Bloomberg's BBB rated FVC is based on a composite of BBB-, BBB, BBB+ and A- rated bonds.

³³⁵ CBASpectrum was the other data provider that published a FVC for the cost of debt.

³³⁶ AER, *Final decision: Victorian electricity distribution network service providers: Distribution determination 2011–2015*, October 2010, p. 514 (AER, *Final decision: Victorian distribution determination*, October 2010).

³³⁷ AER, *Final decision: APT Allgas: Access arrangement proposal for the Qld gas network 2011–2016*, June 2011, p. 37 (AER, *Final decision: APT Allgas access arrangement*, June 2011); AER, *Envestra access arrangement SA*, June 2011, p. 54; AER, *Final decision: N.T. Gas access arrangement*, July 2011, p. 178.

³³⁸ AER, *Draft decision: Aurora distribution determination*, November 2011, pp. 28–29; AER, *Draft decision: Powerlink: Transmission determination 2012–2017*, November 2011, p. 34 (AER, *Draft decision: Powerlink transmission determination*, November 2011).

The Tribunal recently released its decisions relating to APT Allgas and Envestra's access arrangements (the APT Allgas and Envestra decision) and the Victorian electricity DNSPs. Amongst other issues, the Tribunal considered the AER's approach to estimating the DRP. The Tribunal found error in the AER's DRP approach. It decided that for those regulatory decisions under review, 100 per cent weight would be placed on the extrapolated Bloomberg BBB rated FVC to estimate the DRP.³³⁹ The Tribunal stated that if the AER wishes to adopt an alternative methodology to the extrapolated Bloomberg BBB rated FVC, it should develop the alternative approach through an industry wide consultation process.³⁴⁰

The AER considers that there may be other preferable methodologies to estimate the DRP. Notwithstanding this, the AER acknowledges the Tribunal's views and agrees that it is desirable to widely consult on a new approach to estimate the DRP before it is used. Prior to undertaking this consultation, and taking account of recent Tribunal decisions, the AER will use the following method to estimate the 10 year DRP:

- the Bloomberg BBB rated FVC to estimate the (base) 7 year DRP
- the last historical spread between the Bloomberg 7 and 10 year AAA rated FVCs, to extrapolate the 7 year DRP estimate to 10 years.

The AER will begin an internal review of alternative methods to estimate the DRP and advise of a public consultation process in due course.

7.4 Reasons for decision

7.4.1 Risk free rate

The risk free rate measures the return an investor would expect from an asset with no default risk. The yield on long term CGS is often used as a proxy for the risk free rate because the risk of the Australian Government defaulting on interest and debt repayments is considered to be low.

In its access arrangement proposal, APTPPL proposed the risk free rate be determined over a 20 day averaging period with those dates to be proposed at a later stage in correspondence with the AER. APTPPL used an indicative risk free rate of 4.25 per cent for calculating the nominal vanilla WACC.

A series of correspondence between the AER and APPTPL followed. The AER informed APTPPL that it required a proposed averaging period to be included within the access arrangement information, and that without this information the AER may reject APTPPL's access arrangement proposal as non-compliant under r. 10(1)(b) of the NGR. Subsequently, APTPPL proposed an undertaking that set out a procedure for reaching agreement between

³³⁹ Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 120; Australian Competition Tribunal, *Application by APT Allgas Energy Ltd [2012] ACompT 5*, 11 January 2012, paragraph 117; and Australian Competition Tribunal, *Application by United Energy Distribution Pty Ltd (No 2) [2012] ACompT 1*, 6 January 2012, paragraph 462.

³⁴⁰ Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 4*, 11 January 2012, paragraphs 98, 120 and 121.

the AER and APTPPL over the dates of the averaging period. The AER accepted the terms of the undertaking and in recognition of this undertaking did not reject APTPPL's access arrangement proposal on the grounds of non-compliance.

The terms of the undertaking included that the AER agreed to notify APTPPL of the expected publication date of its draft decision in advance of publication, and APTPPL agreed to respond within a short specified period nominating an averaging period. APTPPL agreed to propose an averaging period that commenced after the expected draft decision publication date and not later than 15 business days before the expected final decision publication date. APTPPL also agreed to propose an averaging period at least 10 and not more than 40 business days in length.

On 30 March 2012, APTPPL submitted its proposed averaging period dates to the AER. The proposed dates conformed with the undertaking previously agreed between the AER and APTPPL. The AER considers this averaging period is consistent with r. 87(1) of the NGR. The AER therefore agrees with APTPPL's proposed averaging period. The AER also accepts APTPPL's request to keep the dates of this averaging period confidential until the averaging period has expired.

For this draft decision, the AER has used an indicative averaging period. The AER will update the risk free rate based on the agreed averaging period in the final decision.

7.4.2 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.³⁴¹ 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 directly observable. 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 literature³⁴² as well as in reports put forward by regulated entities.³⁴³ 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.

The AER does not accept APTPPL's proposed MRP value of 7.0 per cent. The AER considers that a MRP value of 6.0 per cent meets the requirements of rule 72(1), 74, and 87 of the NGR, and is the best estimate in the circumstances and commensurate with prevailing conditions in the market for funds as:

³⁴¹ All assets other than the risk free asset have the potential to provide a negative return and are therefore classified as risky assets.

³⁴² See for example Mehra R. and E.C. Prescott, 'The equity premium, A puzzle', *Journal of Monetary Economics*, 15, 1985, pp. 145–161; Damodaran 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.

³⁴³ See for example Officer, B. and S. Bishop, *Market risk premium, a review paper*, August 2008, pp. 3–4.

- Historical excess returns and survey evidence support 6 per cent as a forward looking 10 year MRP estimate.
- McKenzie and Partington advised that the AER should adopt a MRP of 6 per cent.
- In the recent Envestra matter, the Tribunal held that it was open for the AER to adopt 6 per cent for the MRP.

In the following sections the AER examines:

- the strengths and weaknesses of each type of evidence on the MRP—historical excess returns, survey evidence, DGM estimates, implied volatility and other financial market indicators, market commentary and the economic outlook
- the relationship between the risk free rate and the MRP
- the applicability of the AER's reasons for the adoption of 6.5 per cent in the WACC review and the practice among Australian regulators over the MRP both before and after the WACC review

Historical excess returns

Historical excess returns, though strictly not forward looking, have predominantly been used to estimate the MRP on the assumption that investors base their forward looking expectations on past experience. In a regulatory context, the use of historical excess returns has a number of advantages as supported by McKenzie and Partington in their December 2011 MRP report:

- the estimation methods and the results are transparent
- the estimation methods have been extensively studied and the results are well understood, and
- historical estimates are widely used and have support as the benchmark method for estimating the MRP in Australia.³⁴⁴

The long-term averages of historical excess returns, adjusted to incorporate a value for the imputation credit utilisation rate (theta) of 0.35, produce a range of 5.7 to 6.1 per cent (based on arithmetic averages) and 3.5 to 4.7 per cent (based on geometric averages) over the periods 1883-2011, 1937-2011 and 1958-2011.³⁴⁵ These results are set out in Table 7.3. The starting point for each of the five estimation periods in Table 7.3 were chosen because of changes in the quality of the underlying data sources (1883, 1937, 1958 and 1980) and the introduction of the imputation tax system (1988).³⁴⁶ Consistent with the AER's position in the WACC review, the AER places greater emphasis on the three longest estimation periods.

³⁴⁴ McKenzie, M. and G. Partington, *Equity market risk premium*, 21 December 2011, pp. 5–6.

³⁴⁵ The 0.35 value for theta is consistent with the Tribunal's position in *Application by Energex Limited (Gamma) (No 5) [2011] ACompT9*.

³⁴⁶ Brailsford, Handley and Maheswaran, *Re-examination of the historical equity risk premium in Australia, Accounting and Finance*, vol. 48, 2008, pp. 85–86.

Table 7.3 Historical excess return estimates—assuming a utilisation rate of distributed imputation credits 0.35 (per cent)

Sampling period	Arithmetic mean	Geometric mean
1883–2011	6.1 ^a	4.7
1937–2011	5.7 ^a	3.7
1958–2011	6.1 ^a	3.5
1980–2011	5.7	3.1
1988–2011	4.9	3.0

Source: Handley, J.C., *An Estimate of the Historical Equity Risk Premium for the Period 1883 to 2011*, April 2012, p. 6.

Notes: (a) Indicates estimates are statistically significant at the 5 per cent level using a two tailed test.

In the WACC review, the AER considered it was appropriate to consider a range of estimation periods, having regard to the strengths and weaknesses of each period:

- Longer time series contain a greater number of observations and therefore produce a more statistically precise estimate.
- The quality of the underlying data source, with significant increases in the quality of the data becoming available in 1937, 1958 and 1980.
- More recent sampling periods closely accord with the current financial environment, particularly since financial deregulation (1980) and the introduction of the imputation credit taxation system (1988).
- Shorter time series are more vulnerable to influence by the current stage of the business cycle or other (one off) events.³⁴⁷

On balance, the AER considers that the three longest estimation periods (from 1883, 1937 and 1958) should all be given primary consideration, but the shorter estimation periods (from 1980 and 1988) are also relevant.³⁴⁸

In arriving at an estimate of a 10 year forward looking MRP using historical annual excess returns, the AER considers it is important to consider both the arithmetic and geometric averages. Arithmetic averages of annual returns result in an overestimate of a 10 year forward looking rate whereas geometric averages of annual returns result in an underestimate. The best estimate of historical excess returns over a 10 year period is therefore likely to be somewhere between the geometric average and the arithmetic average of annual excess returns. Further details of the AER's analysis and reasons for its decision on this issue are set out in section C.1.1.

³⁴⁷ AER, *Final decision: WACC review*, May 2009, pp. 200, 204; Brailsford, Handley and Maheswaran, *Re-examination of the historical equity risk premium in Australia*, *Accounting and Finance*, vol. 48, 2008, pp. 78–82.

³⁴⁸ In forming this view, the AER has had regard to NERA's view on the volatility of historical excess returns in the first half of the previous century. The AER's considerations on this issue are set out in section C.1.2.

Based on the estimates reported in table 7.3, the AER considers that the latest historical excess return estimates support a forward looking long-term MRP of 6 per cent. Given that this estimate is at the top of the quoted range, the AER considers that, if anything, it is more likely to overstate the MRP based on historical excess returns.

Survey based estimates

Survey based estimates of the MRP are relevant for consideration as they are forward looking and reflect actual market practice. However, the Tribunal and others have noted that the relevance of some survey results depends on how clearly the survey sets out the framework for MRP estimation. This includes the term over which the MRP is estimated and the treatment of imputation credits. Survey based estimates may also be subjective, though this concern is mitigated as the sample size increases. The AER recognises that survey based evidence, like other types of evidence, should be carefully reviewed before it is relied upon.

In the WACC review, the AER focused on the following survey evidence on the MRP:

- KPMG (2005) surveyed 33 independent expert reports on takeover valuations from January 2000 to June 2005. It found that the MRP adopted in valuation reports ranged from 6–8 per cent. KPMG reported that 76 per cent of survey respondents adopted an MRP of 6 per cent.³⁴⁹
- Truong, Partington and Peat (2008) in the last quarter of 2004 surveyed chief financial officers, directors of finance, corporate finance managers, or similar finance positions of 365 companies included in the All Ordinaries Index as of August 2004. From the 87 responses received, 38 were relevant to MRP. They found 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.³⁵⁰

The AER concluded that survey measures of the MRP across different years, different survey respondents or sources, and different authors results in similar outcomes. The AER noted that the above survey measures indicated that a MRP of 6 per cent is by far the most commonly adopted value by market practitioners, though these surveys were conducted prior to the onset of the GFC. The AER did not know whether surveys of market participants in the then current financial conditions would lead to the same results.

Following from the SRI final decision, new survey evidence has become available. The AER considered these in recent regulatory reviews. The latest surveys conducted after the on-set of the GFC indicate that the forward looking MRP expected to prevail in the future did not change as a result of the GFC and that 6 per cent remains a reasonable estimate of the long term MRP. In fact, the survey evidence did not indicate a step change in the MRP employed by market practitioners even at the height of the GFC. In chronological order, these surveys include the following:

³⁴⁹ KPMG, *Cost of capital – market practice in relation to imputation credits*, August 2005, p. 15.

³⁵⁰ Truong, G., Partington, G. and M. Peat, 'Cost of capital estimation and capital budgeting practices in Australia', *Australian Journal of Management*, Vol. 33, No. 1, June 2008, p. 155.

- Bishop (2009) reviewed valuation reports prepared by 24 professional valuers from January 2003 to June 2008. It found that the average MRP adopted is 6.3 per cent and 75 per cent of these experts adopted an MRP of 6 per cent.³⁵¹
- Fernandez (2009) surveyed university finance and economic professors around the world in the first quarter of 2009. The survey received 23 responses from Australia and found that the required MRP used by Australian academics in 2008 ranged from 2–7.5 per cent with an average of 5.9 per cent.³⁵²
- Fernandez and Del Campo (2010) surveyed analysts around the world in April 2010. The survey received 7 responses from the Australian analysts and found that the MRP used by them in 2010 ranged from 4.1–6 per cent with an average of 5.4 per cent.³⁵³
- A further survey by Fernandez et al (2011) in April 2011 reported that average MRP used by 40 Australian respondents ranged from 5–14 per cent, with an average of 5.8 per cent.³⁵⁴
- Asher (2011) surveyed 2,000 members of the Institute of Actuaries of Australia. Asher reported that 33 out of a total of 58 Australian analysts who responded to the survey expect the 10 year MRP to be between 3 to 6 per cent. The most commonly adopted MRP value is 5 per cent. The report also illustrated that expectations of an MRP much in excess of 5 per cent were extreme.³⁵⁵

The key findings of the surveys are summarised below

Table 7.4 Results of relevant MRP surveys

	Numbers of responses	Mean	Median	Mode
KPMG (2005)	33	7.5%	6.0%	6.0%
Truong, Partington and Peat (2008)	38	5.9%	6.0%	6.0%
Bishop (2009)	27	NA	6.0%	6.0%
Fernandez (2009)	23	5.9%	6.0%	NA
Fernandez and Del Campo (2010)	7	5.4%	5.5%	NA
Fernandez et al (2011)	40	5.8%	5.2%	NA
Asher (2011)	49	4.7%	5.0%	5.0%

³⁵¹ Bishop, S., *IERs - a Conservative and Consistent Approach to WACC Estimation by Valuers*, Value Advisor Associates, 2009.

³⁵² Fernandez, P., *Market Risk Premium used by Professors in 2008: A Survey with 1400 Answers*, IESE Business School Working Paper WP-796, May 2009, p. 7.

³⁵³ Fernandez, P. and J. 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.

³⁵⁴ Fernandez, P., Arguirreamalloa, J. and L. Corres, *Market Risk Premium used in 56 Countries in 2011: A Survey with 6,014 Answers*, IESE Business School Working Paper WP-920, May 2011, p. 3.

³⁵⁵ Asher, A., 'Equity Risk Premium Survey – results and comments', *Actuary Australia 2011*, July 2011, Issue 161, pp. 13–14.

For the surveys under consideration, the most commonly used MRP is 6 per cent with average of 5.8 per cent across all surveys.

The AER acknowledges that survey evidence must be treated with caution as the results may be subject to limitations. This is noted by the Tribunal and the following comments were made in a recent decision:

Surveys must be treated with great caution when being used in this context. Consideration must be given at least to the types of questions asked, the wording of those questions, the sample of respondents, the number of respondents, the number of non-respondents and the timing of the survey. Problems in any of these can lead to the survey results being largely valueless or potentially inaccurate.

When presented with survey evidence that contains a high number of non-respondents as well as a small number of respondents in the desired categories of expertise, it is dangerous for the AER to place any determinative weight on the results.

The AER engaged McKenzie and Partington to review the survey evidence used in its Aurora draft decision and comment on any matters that others have raised in relation to it. Consistent with comments made by the Tribunal in a recent decision,³⁵⁶ the AER and McKenzie and Partington have considered the following criteria in the review of survey evidence:

- the timing of the survey
- the type of survey questions asked and the wording of the questions
- sample of respondents
- numbers of responses and response rate

The AER has taken the McKenzie and Partington report into account when considering the reliability of survey evidence. McKenzie and Partington's assessment of the available survey evidence against these criteria is set out in appendix C.

Based on its own review and the advice from McKenzie and Partington, the AER considers that survey based estimates of the MRP are relevant for consideration to inform the forward looking MRP. Survey estimates provide some indication that expectations of the forward looking long-term MRP have not been affected by the GFC. They also suggest a reduced likelihood that there was a structural break of the type considered at the time of the WACC review. Moreover, this evidence supports the view that a forward looking MRP of 6 per cent is commensurate with prevailing conditions in the market for funds.

Dividend growth model estimates

While not proposed by APTPPL, the AER has considered the use of dividend growth model (DGM) estimates that calculate an implicit MRP from current equity prices and forecasts of future dividends. The AER sought advice from Professor McKenzie and Associate Professor Partington on the use of DGM estimates to measure the MRP.

³⁵⁶ Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 150–154.

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 have a sound basis, otherwise estimated results from DGM analysis may be inaccurate and lead analysts into error.³⁵⁷ The AER considers that DGM based analysis of the MRP can provide some information on the expected MRP. However, due to the sensitivity of results to input assumptions in the model, the DGM analysis should be limited to providing a general point of reference for assessing the reasonableness of MRP. For this reason, the AER has not used the DGM based analysis as the principal basis for estimating the return on equity, and therefore the MRP.

At the time of the WACC review, the AER noted or considered:

- The implied MRP produced by DGM estimates are very sensitive to both the exact specification of the model used and the exact point in time in which they are estimated
- Generally the expected market growth rate in dividends per share (a key input) is proxied with analysts' short term forecasts of market wide earnings per share growth, or long term expectations of GDP growth (or both). The AER referenced advice from Associate Professor Lally that explained how:
 - DGM estimates based on analysts' short term forecasts of earnings extrapolated into perpetuity will likely produce an upwards bias in the resultant MRP estimates, and
 - DGM estimates based on long run expected GDP growth will produce an "upper bound on the true value" of the MRP.
- That regulators had previously been wary to lower the MRP when DGM estimates had been below 6 per cent and that the AER was similarly wary to increase the MRP (based on DGM estimates) even though those estimates at the time of the WACC review produced estimates above 6 per cent
- Academics (Officer and Bishop, CEG) and industry representatives (ENA (which represents Aurora), APIA, GridAustralia) considered DGM estimates should be used as a "cross check" on the reasonableness of other methods to estimate the MRP rather than used as the primary method.

No new information has come to light since the WACC review that causes the AER to place any greater reliance on DGM estimates. To the contrary, McKenzie and Partington's advice supports the AER's position of placing little weight on this measure of the MRP.

McKenzie and Partington's main criticism of DGM estimates is that the MRP estimates derived from valuation models (such as the DGM) are sensitive to the assumed growth rate of dividend used in the models. Their review found that there is no consensus on how the either short term or long term expected growth rates should be estimated.³⁵⁸ In their December 2011 MRP report, McKenzie and Partington recommended that little weight should be attached to

³⁵⁷ 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." Brealey, R., Myers, S.C. and F. Allen, *Principles of Corporate Finance: International Edition*, 9th Edition, Boston: McGraw-Hill, 2008, p. 95.

³⁵⁸ McKenzie, M. and G. Partington, *Equity market risk premium*, 21 December 2011, pp. 25–27.

the use of implied cost of capital estimates such as those derived from the DGM in determining the MRP for the purpose of regulation.³⁵⁹

Other financial market indicators

Other financial market indicators (implied volatility, dividend yields and relative debt spreads) have been proposed as relevant factors in the estimation of the MRP. The AER considers that each has limitations:

- Implied volatility relies on certain assumptions to derive an MRP estimate.³⁶⁰ Some of these are contentious. In particular, the assumption that the price of risk per unit of implied volatility is constant is disputed on theoretical and empirical grounds.³⁶¹ The method only provides a short-term estimate of the MRP (usually 3 months, matching the term of the implied volatility measure) and the AER is unaware of any settled method to extrapolate to a longer term. Given that the relevant MRP is the 10 year forward looking rate, the AER places limited weight on the MRP estimate derived on this basis.
- Dividend yield in this context is calculated for the entire market, using forecast distributions (dividends) for all firms in a broad share market index divided by the total value of those shares. As a practical matter, the dividend yield estimate will differ based on the choice of index, the method of obtaining and aggregating dividend forecasts and the horizon of those dividend forecasts. The key limitation is the lack of clarity around the relationship (if any) between dividend yield and the 10 year forward looking MRP.
- Relative debt spread refers to the difference in yields between bonds with high (AAA-rated) and low (BBB-rated) credit ratings. Relative debt spreads will differ based upon the method chosen to measure the bond yields. The key limitation is that it is not clear to the AER how a change in relative debt spreads relates to a change in the 10 year forward looking MRP.

The conditional MRP approach put forward by SFG uses these three financial market indicators as 'conditioning variables' to adjust the MRP estimate around its long run average (here called the unconditional MRP).³⁶² The AER does not consider that the SFG conditional MRP approach is a relevant basis to estimate the 10 year forward looking MRP. This is because there is insufficient evidence to establish a quantifiable relationship between the three conditioning variables and the MRP. This point is discussed in detail in appendix C. However, if the AER were to give weight to this approach, the current estimates for the three conditioning variables would support an MRP of 6 per cent.

The most prominent of the three is implied volatility, which has also been proposed as a separate indicator of the MRP. The underlying principle is that higher implied volatility is indicative of higher risk and consequently a higher MRP. Implied volatilities are typically calculated based on short term (3 month or less) option prices.

³⁵⁹ McKenzie, M. and G. Partington, *Equity market risk premium*, 21 December 2011, pp. 25–27.

³⁶⁰ Further, there are problems determining the appropriate measure of implied volatility, with different measures (based on different underlying options) producing conflicting figures.

³⁶¹ See AER, *Draft decision: Envestra access arrangement Qld*, February 2011, pp. 262–263.

³⁶² SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 8–13, 26–30.

Recent data for one common measure of implied volatility, based on three month options over the S&P/ASX 200, is shown in figure 7.1.

Figure 7.1 Implied volatility (VIX) over time



Source: Citibank VIX implied volatility index (3 month put/call options on S&P/ASX 200), sourced via Bloomberg code CITJAVIX.

It is evident that implied volatility is quite variable and that the level can change substantially in a matter of months. Further, although implied volatility was high during the worst of the GFC, the current level is below the long run average. Using data updated to the end of March 2012, this measure of implied volatility is at 15.2 per cent, 3.6 per cent below the long run average of 18.8 per cent (measure from the commencement of this series in 1997).

If this latest point estimate is to be used to inform the forward looking 10 year MRP, as proposed by the latest SFG report,³⁶³ it appears to support a value at or slightly below the long term average MRP (that is, 6 per cent).³⁶⁴

The AER considers this result should be treated with caution, and does not propose to rely upon it to set the forward looking 10 year MRP. The AER considers that implied volatility is not able to be directly related to the MRP, because of:

³⁶³ To clarify, SFG proposed to use implied volatility to inform the estimate of the MRP. SFG did not propose to use the latest point estimate of implied volatility (but rather an older point estimate), SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 9.

³⁶⁴ Briefly, the proposed relationship is that the current value of implied volatility relative to its long term average is indicative of the current value of the market risk premium relative to its long term average.

- term mismatch—The implied volatility measures are short term (usually less than 3 months), in accordance with the term of the underlying financial derivatives (options). There is no reasonable method to extrapolate to a longer term, and the relevant MRP is over 10 years.³⁶⁵ Even if (for example) implied volatility indicated that the three month MRP was double its long run average, this still would not indicate that the 10 year MRP had departed from the average.
- measurement problems—Different implied volatility measures produce different (and sometimes conflicting) results. Further, there is evidence that these measures are systematically biased (upwards).
- contentious assumptions—Observing the amount of risk (via implied volatility) does not equate to the price of that risk (which is what is relevant to the MRP). This gap is most commonly breached by assuming a constant ratio, for instance that if the current implied volatility is double the long run average, the MRP will also be double its long run average. This assumption is disputed on theoretical and empirical grounds.

McKenzie and Partington supported the AER's view in their February 2012 supplementary MRP report, who concluded that:³⁶⁶

Further work on this technique (implied volatility) might be warranted, but given the current state of play it could hardly be regarded as a validated method, let alone an accurate and reliable adjustment to the MRP.

The AER maintains its view that option implied volatility is not a reliable basis for estimating the forward looking 10 year MRP. For this reason, the AER places little weight on the implied volatility analysis to inform the appropriate MRP for this draft decision.

A detailed discussion of the AER's assessment of the conditional MRP approach, and the three financial indicators can be found in appendix C

Market commentary and economic outlook

General market commentary and economic outlook provided by eminent bodies gives some useful insights to their thoughts about the current and future state of the financial market. However, the AER accepts that since most commentaries do not make specific reference to returns in equity markets, the link between the commentary and the MRP is difficult to quantify. Consistent with comments made by the Tribunal in a recent decision,³⁶⁷ the AER placed limited weight on this evidence.

The AER noted a few recent submissions, which made reference to market commentaries discussing the GFC and the European Sovereign debt crisis, including reference to the joint expert report provided with the ENA's submission on WACC matters in response to the AER's

³⁶⁵ AER, *Draft decision: Aurora distribution determination*, November 2011, pp. 215–216, 235–237.

³⁶⁶ McKenzie, M. and G. Partington, *Supplementary report on the equity market risk premium*, 22 February 2012, p. 26–27.

³⁶⁷ McKenzie, M. and G. Partington, *Supplementary report on the equity market risk premium*, 22 February 2012, p. 19.

rule change proposal³⁶⁸. Specifically, this report noted in its rule change submission that the RBA stated in its March 2009 Financial Stability Review:

The global financial system has continued to experience significant stress. ... A notable feature of the current crisis has been a marked increase in the price of risk, after risk had been underpriced in many markets for a number of years. This repricing of risk has resulted in large falls in the price of many financial assets, often by considerably more than can be explained by changes in the expected underlying cash flows.³⁶⁹

Consistent with the Tribunal decision and the view of SFG³⁷⁰, the AER does not consider such commentaries make specific reference to returns in equity markets. Therefore the AER does not consider these commentaries can be used to inform the appropriate estimate for the MRP.

Relationship between the risk free rate and MRP

Although not proposed by APTPPL, the AER considered a recent proposal by Aurora that suggested the 6 per cent for the market risk premium is too low and the AER should address this problem through a higher risk free rate. The AER continues to recognise the importance of integrity in the individual parameters. The AER remains of the view that it is not appropriate to address an MRP issue via an adjustment in the risk free rate. This is because the AER prescribes the CAPM formula for calculating the nominal post-tax weighted average cost of capital (WACC) and sets out separate requirements for calculating each of its inputs such as the risk free rate and MRP. The AER considers that this indicates an intention that the AER seek to ensure the integrity of each parameter and not alter an otherwise appropriate parameter to resolve an issue elsewhere.

In the WACC review, CEG considered the downward trend in the regulatory ROE since mid-2008 might be a result of the MRP moving in the opposite direction to the yield on CGS. However, CEG did not provide a solution to address this issue through the MRP. Instead, it argued this is a reason why the AER should not lower the equity beta from the previously adopted value. The AER considered in the WACC review that a good regulatory principle was to preserve the integrity of each of the WACC parameters:

However, the AER considers that the integrity in the estimation of each individual WACC parameter is important. This integrity includes that the MRP is a measure of market-wide non-diversifiable risk, whereas the equity beta is a measure of the benchmark efficient NSP's exposure to non-diversifiable risk relative to that of the market. To the extent that the prevailing MRP (and the MRP into the foreseeable future) is above the long term MRP, the AER does not agree that it is appropriate to address this issue via the equity beta.³⁷¹

For the reasons discussed below, the AER does not consider that there is persuasive evidence justifying a departure from this view.

In the ACT distribution determination, the AER noted that ActewAGL submitted that the risk-free rate should be adjusted to take into account the variations in the MRP. This was because

³⁶⁸ ENA submission was referred to by both Aurora and TransGrid. See: Aurora, *Revised proposal—Supporting information: Return on capital*, January 2012, p.13 and TransGrid,

³⁶⁹ Balchin, J., Dermody, C., Houston G. and B. Quach, *Assessment of the AER's proposed WACC framework: a joint report for the Energy Networks Association*, 8 December 2011, p. 18.

³⁷⁰ SFG, *MRP*, October 2011, p. 21.

³⁷¹ AER, *Final decision: WACC review*, May 2009, p. 190.

the NER fixed the MRP at 6 per cent. Katzmann J concluded in *ActewAGL v AER* federal court case that:

The AER rejected the argument, not because it was blindly adhering to a rule or policy but for multiple reasons explained in the Final Decision at 264-265. It suffices to refer to one: adjusting the risk-free rate to make up for a higher MRP was an attempt to circumvent the legislation and would undermine the intended certainty provided under the regulatory regime.³⁷²

The AER considers Katzmann J's conclusion provides strong support of the AER's view that it is inappropriate to address an MRP issue via an adjustment to the risk free rate. In essence, Aurora's revised proposal suggests that as a consequence of lower CGS yields, there should be a compensating increase in the MRP. Such an argument relies on the assumption that there is an inverse relationship between the long term CGS yield and the long term MRP. However, the AER is not aware of any persuasive evidence to support this assumption.³⁷³

McKenzie and Partington supported this view in their February 2012 supplementary MRP report. They note that there is some empirical evidence supporting a negative correlation between the short term nominal government bill yield and future nominal excess returns on the market. However this negative correlation gets weaker for longer term estimates. This is relevant, as the AER estimates a forward looking 10 year risk free rate and a forward looking 10 year MRP.

McKenzie and Partington further advised that while there is some empirical evidence supporting an inverse relationship between the nominal government bond yield and future nominal excess returns. However, the explanatory power of these regressions is low. The consequence is that these regressions are unlikely to provide a reliable forecast of excess returns. McKenzie and Partington stated:

Low explanatory power is usual for equations that predict returns, but in the current case it does mean that the effect of the yield is readily offset by random variation in other factors. In other words, random variation represents most of the excess returns. It also seems that the relation is not particularly stable. A consequence of low explanatory power and instability is that the regression between yields and excess returns is unlikely to provide a reliable forecast of excess returns.³⁷⁴

Further, McKenzie and Partington suggest that the prevailing government bond yield represents the opportunity cost that a risky investment must beat. They advise:

At the time of writing investors can invest in a 10 year government bond at yield of 3.84%. So a ten year project that offers say 4.5% is worth considering if the risk is low enough. The question is how risky is the investment and what is the required risk premium? The fact that bond yields were higher in the past does not make 4.5% a bad deal, or 3.84% too low a benchmark. We see no reason to switch from using the current 10 year government bond yield as the proxy for the risk free rate.

³⁷² Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 148.

³⁷³ McKenzie, M. and G. Partington, *Supplementary report on the equity market risk premium*, 22 February 2012, pp. 9–12.

³⁷⁴ McKenzie, M. and G. Partington, *Supplementary report on the equity market risk premium*, 22 February 2012, p.10.

Comparison with WACC review position

Prior to the 2009 WACC review, Australian regulators consistently applied an MRP of 6 per cent in regulatory decisions.³⁷⁵ The regulators determined the MRP under a specific CAPM framework:

- The MRP is forward looking (not an historical measure), and cannot be directly observed.
- The MRP is for a 10 year term, which means that short-term market fluctuations are of little relevance.
- The MRP is for a domestic CAPM, which means overseas evidence is of little relevance.

Since the forward looking MRP cannot be observed, the value of the MRP is contentious amongst academics and market practitioners. There is conflicting expert opinion and no definitive answer.³⁷⁶ For this reason, Australian regulators were informed by a variety of evidence. This included historical estimates, survey based estimates, estimates derived from various dividend discount models and qualitative data on market conditions.

However, given the nature of the task, the determination of an MRP always involved the exercise of regulatory judgement in the context of conflicting evidence. Regulators considered the various arguments and limitations surrounding the forms of evidence presented to them.

The MRP is estimated using a 10 year term. In this context, Australian regulators gave appropriately limited weight to transient market sentiment or short-term fluctuations. That is, evidence on short-term market expectations was only relevant to the extent that it influenced long-term (10 year) market expectations. Further, the regulators did not simply adopt the 'latest' estimates presented at any one regulatory reset, noting that year by year updates of a highly volatile series could be unstable.³⁷⁷

The use of a domestic CAPM reflects the conditions observed in Australian capital markets, recognising international investors only to the extent that they invest in the domestic capital market.³⁷⁸

The 6 per cent consensus is illustrated in table 7.5, which shows decisions from Australian state and territory regulators dealing with electricity and gas. It also includes decisions by the ACCC concerning various regulated sectors.

³⁷⁵ AER, *Final decision: WACC review*, May 2009, p. 176.

³⁷⁶ See for example Mehra R. and E.C. Prescott, '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 R.S. Goldberg, *A simple model for time-varying expected returns on the S&P 500 Index*, August 2005, pp. 2–3.

³⁷⁷ AER, *Final decision: WACC review*, May 2009, p. 236.

³⁷⁸ AER, *Final decision: WACC review*, May 2009, pp. 100–101.

Table 7.5 The 6 per cent consensus prior to the GFC

Regulator	Year	Sector	MRP (per cent)
ACCC	2000	Telecommunications	6.0
ACCC	2001	Airports	6.0
ACCC	2002	Rail	6.0
ICRC	2004	Gas	6.0
ACCC	2005	Electricity	6.0
IPART	2005	Gas	6.0
ESCOSA	2006	Electricity	6.0
QCA	2006	Gas	6.0
OTTER	2007	Electricity	6.0
ESC	2008	Gas	6.0
ACCC	2008	Postal services	6.0
ERA	2008	Rail	6.0

Source: ACCC;³⁷⁹ ICRC;³⁸⁰ IPART;³⁸¹ ESCOSA;³⁸² QCA;³⁸³ OTTER;³⁸⁴ ESC;³⁸⁵ ERA.³⁸⁶

Notes: This list is not exhaustive. Reported decisions were selected to give a spread of years and industry sectors.

On 1 May 2009, the AER published its review of WACC parameters in the SRI. The AER reviewed a range of evidence to inform its decision on the best estimate of the forward looking 10 year domestic MRP. At the time, the AER acknowledged there was significant uncertainty in financial markets and it considered one of two scenarios could explain the market conditions.³⁸⁷

³⁷⁹ ACCC, *A Report on the Assessment of Telstra's Undertaking for the Domestic PSTN Originating and Terminating Access Services*, July 2000, pp. 74–77; ACCC, *Decision: Sydney Airports Corporation Limited: Aeronautical pricing proposal*, May 2001, p. 194; ACCC, *Decision: Australian Rail Track Corporation: Access undertaking*, May 2002, p. 158; ACCC, *Final decision: NSW and ACT transmission networks revenue cap: TransGrid 2004–2009*, April 2005, pp. 147–151; ACCC, *Decision: Australian Postal Corporation: Price notification*, July 2008, p. 173.

³⁸⁰ ICRC, *Final decision: Investigation into prices for electricity distribution services in the ACT*, March 2004, p. 70.

³⁸¹ IPART, *Final decision: Revised access arrangement for Country Energy gas network*, November 2005, p. 69.

³⁸² ESCOSA, *Final decision: Proposed revisions to the access arrangement for the South Australian as distribution system*, June 2006, p. 80.

³⁸³ QCA, *Final decision: Revised access arrangement for gas distribution networks: Allgas Energy*, May 2006, p. 62.

³⁸⁴ OTTER, *Final report and proposed maximum prices: Investigation of prices for electricity distribution services and retail tariffs on mainland Tasmania*, September 2007, p. 152.

³⁸⁵ ESC, *Final decision: Gas access arrangement review 2008–2012 (public version)*, March 2008, p. 489.

³⁸⁶ ERA, *Final Determination: 2008 Weighted Average Cost of Capital for the freight (WestNet Rail) and urban (Public Transport Authority) railway networks*, June 2008, p. 22

³⁸⁷ AER, *Final decision: WACC review*, May 2009, p. 238.

- 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 was above the long-term MRP that previously prevailed.
- The AER considered that there was insufficient evidence at that time to establish which scenario was the correct interpretation. Due to the uncertainty about the effects of the GFC on future market conditions the AER exercised its judgment and departed from the previous consensus MRP estimate of 6 per cent and increased it to 6.5 per cent.³⁸⁸ The AER noted that this increase was appropriate under either scenario, even though it could not identify which was the correct interpretation.

The AER considers that the likelihood of the GFC generating a structural break in the MRP has reduced, even though this might have been a plausible interpretation of the available evidence in May 2009. The AER notes that the impact of the GFC for Australian capital markets was moderate relative to international experience. The alternative scenario contemplated by the AER in the WACC review—that there was a temporary elevation above the long-term MRP—does not provide grounds for keeping the MRP above the long run average in perpetuity. Information and data available since the release of the SRI suggests that the prevailing medium-term MRP has not been above the long-term MRP. The AER reaches this conclusion based on the following evidence:

- Survey measures since the height of the GFC accord with those from before the GFC.³⁸⁹
- Implied volatility since the height of the GFC has returned to its long run average.³⁹⁰

Cyclical trends are observed in financial markets over time and typically involve shifts between periods of strong economic growth (boom) and periods of relative stagnation or sharp decline (recession). The fluctuations in financial markets are unpredictable and the duration of cycles varies from more than a year to twelve years.³⁹¹ When an investor considers the likely return across a 10 year horizon, these cyclical fluctuations are a normal experience. The long-term expected return takes account of the expected future investment growth and decline. That is, the long-term MRP has always been determined in the inevitable presence of these business cycles.

The return to the 6 per cent MRP as used in the pre-GFC period should not be misconstrued. In part this is because the definition of 'pre-GFC' is rather vague when considering the cyclical

³⁸⁸ AER, *Final decision: WACC review*, May 2009, p. 228.

³⁸⁹ See Fernandez, P., *Market Risk Premium used by Professors in 2008: A Survey with 1400 Answers*, IESE Business School Working Paper, WP-796, May 2009; Fernandez, P. and J. del Campo, *Market Risk Premium Used in 2010 by Analysts and Companies: A Survey with 2400 Answers*, IESE Business School, May 21 2010; Fernandez, P., Arguirreamalloa, J. and L. Corres, *Market Risk Premium used in 56 Countries in 2011: A Survey with 6,014 Answers*, IESE Business School Working Paper, WP-920, May 2011; Asher, A., 'Equity Risk Premium Survey – results and comments', *Actuary Australia 2011*, July 2011, Issue 161.

³⁹⁰ For clarity, the AER notes the differing opinions on the implications of implied volatility measurements for the long run MRP. This statement does not depend on such an assessment. Rather, the return of the implied volatility index to the pre-GFC average suggests that this indicator of financial markets conditions did not undergo a structural break.

³⁹¹ Burns and Mitchell, *Measuring business cycles*, National Bureau of Economic Research, 1946.

nature of financial markets. The AER does not consider that (short-term) market conditions now are identical to the (short-term) market conditions just before GFC began (that is, the 2006–07 financial year). However, the present market conditions are comparable to the market conditions that generally existed across the fluctuating business cycles through the last fifteen years. The MRP for a forward looking 10 year horizon (encompassing business cycles, as such a time horizon necessarily entails) will be the same now as pre-GFC.

The AER conducted the WACC review during 2008 and published its SRI in May 2009. This review increased the MRP for electricity distribution and transmission service providers to 6.5 per cent. Across the next year or so, several regulatory decisions applied this elevated MRP,³⁹² including in the AER’s gas network decisions in March and June 2010.³⁹³ However, table 7.6 shows that from the second half of 2010 and throughout 2011, there has been a return to the 6 per cent consensus.³⁹⁴ This includes determinations by different Australian regulators and for various regulated sectors. Importantly, those that had increased their MRP have subsequently had published decisions returning to the 6 per cent MRP.³⁹⁵

³⁹² For example, in ACCC decisions for Telecommunications and Postal services. See ACCC, *Draft pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS*, August 2009, p. 72; and ACCC, *Australia Post’s draft 2009 price notification: ACCC View*, December 2009, p. 137.

³⁹³ AER, *Final decision: ActewAGL: Access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network 2010–2015*, March 2010, p. 63 (AER, *Final decision: ActewAGL access arrangement*, March 2010); AER, *Final decision: Country Energy Gas Pty Ltd: Access arrangement proposal for the Wagga Wagga natural gas distribution network 2010–2015*, March 2010, p. 44 (AER, *Final decision: Country Energy Gas access arrangement*, March 2010); AER, *Final decision: Jemena Gas Networks: Access arrangement proposal for the NSW gas networks 2010–2015*, June 2010, p. 201 (AER, *Final decision: Jemena access arrangement*, June 2010); AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 59.

³⁹⁴ Specifically, the three sectors were an MRP of 6.5 per cent was used—Telecommunications, Postal Services and Gas—have all had subsequent decisions applying an MRP of 6 per cent.

³⁹⁵ Several regulators for different sectors did not apply the elevated MRP in the first place—though this may be because there were no decisions made in the relevant period.

Table 7.6 Regulatory decisions from 2010 onwards

Regulator	Decision date	Sector	MRP
ACCC	May 2010	Postal services	6.0
QCA	June 2010	Water	6.0
QCA	September 2010	Rail	6.0
ACCC	December 2010	Rail	6.0
ERA	February 2011	Gas	6.0
AER	June 2011	Gas	6.0
ACCC	July 2011	Telecommunications	6.0
ACCC	July 2011	Water	6.0
ESC	August 2011	Rail	6.0
ACCC	September 2011	Airports	6.0
ERA	October 2011	Gas	6.0
QCA	November 2011	Water	6.0
IPART	December 2011	Water	5.5-6.5
ESCOSA	February 2012	Water	6.0
IPART	March 2012 (draft decision)	Water	5.5-6.5
IPART	March 2012 (draft decision)	Water	5.5-6.5
ERA	March 2012 (draft decision)	Electricity	6.0
IPART	April 2012 (draft decision)	Electricity	5.5-6.5

Source: ACCC;³⁹⁶ AER;³⁹⁷ ERA;³⁹⁸ ESC;³⁹⁹ QCA;⁴⁰⁰ IPART.⁴⁰¹

³⁹⁶ ACCC, *Australian Postal Corporation 2010 price notification*, May 2010 p. 80–81; ACCC, *Position Paper in relation to the Australian Rail Track Corporation’s proposed Hunter Valley Rail network Access Undertaking*, 21 December 2010, p. 104; ACCC, *Final report: Inquiry to make final access determinations for the declared fixed line services*, July 2011, p. 63; ACCC, *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011, pp. 32–33; and ACCC, *Final decision: Airservices Australia price notification*, September 2011, p. 26, 29.

³⁹⁷ AER, *Final decision: APT Allgas access arrangement*, June 2011, p. 41.

³⁹⁸ ERA, *Final decision: WA Gas Networks Pty Ltd proposed revised access arrangement for the Mid–West and South–West Gas Distribution systems*, 28 February 2011, p. 103.

³⁹⁹ ESC, *Final decision: Metro proposed access arrangement*, August 2011, p. 85.

⁴⁰⁰ QCA, *Final Report: Gladstone area Water Board: Investigation of pricing practices*, June 2010, p. 124; QCA, *Final decision: Dalrymple Bay Coal Terminal 2010 Draft access undertaking*, September 2010, p. 8.

Notes: Only final decisions are listed, omitting draft or interim reports where a later document includes consideration of the MRP. Where multiple decisions since 2010 have used an MRP of 6 per cent, only the first decision by that regulator/for that sector is listed.

It should also be noted that the period immediately before the GFC was one of strong market outlook (for example, due to the commodity boom) when compared to a longer term average. However, rather than reducing the MRP due to any short-term effects, the AER maintained with setting the MRP at its long-term estimate of 6 per cent.

The AER considers that the available evidence supports the view that 6 per cent is the appropriate forward looking estimate of the 10 year MRP.

7.4.3 Equity beta

The AER adopts an equity beta of 0.8. The AER does not accept APTPPL's proposed equity beta of 1.0.⁴⁰² An equity beta of 0.8 is more reflective of the risks involved in providing reference services than adopting the equity beta of the average firm in the market which by definition is 1.0.

Overall, 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 transmission network service provider, taking into account the need to reflect prevailing market conditions and the risks involved in providing reference services.⁴⁰³ 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 0.7.⁴⁰⁴

The AER also considers other factors, such as the need to achieve an outcome that is consistent with the NGO,⁴⁰⁵ and the revenue and pricing principles. The AER also takes into account the level of precision around the best estimates and the importance of consistency in regulatory decisions.⁴⁰⁶ In this context, the AER notes that it has applied an equity beta of 0.8 in other gas network regulatory processes.⁴⁰⁷ On the basis of the available information, the AER concludes that an equity beta of 0.8 provides APTPPL with an opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.⁴⁰⁸

⁴⁰¹ IPART, *Final report: Review of water prices for Sydney Desalination Plant Pty Limited*, December 2011, p. 80; IPART, *Draft report: Review of prices for Sydney Water Corporation's water, sewerage, drainage and other services*, March 2012, p. 79; IPART, *Review of prices for the Sydney Catchment Authority*, March 2012, p. 85; IPART, *Draft report: Changes in regulated electricity retail prices from 1 July 2012*, April 12, p. 96.

⁴⁰² APTPPL, *Access arrangement submission*, October 2011, pp. 57–59.

⁴⁰³ NGR, rr. 74(2)(b) and 87(1).

⁴⁰⁴ AER, *Final decision: WACC review*, May 2009, pp. 311–332.

⁴⁰⁵ In particular, the need for efficient investment in natural gas services for the long-term interests of consumers of natural gas.

⁴⁰⁶ See AER, *Final decision: WACC review*, May 2009, pp. 341–344.

⁴⁰⁷ AER, *Final decision: N.T. Gas access arrangement*, July 2011, pp. 67–70; AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 46–49, 176–184; and AER, *Final decision: APT Allgas access arrangement*, June 2011, pp. 29–32, 112–121.

⁴⁰⁸ NGL, s. 24(2).

The AER considers that conceptual analysis supports an equity beta of 0.8. The AER commissioned expert advice from Professor McKenzie and Associate Professor Partington.⁴⁰⁹ The expert advice provides conceptual and theoretical reasons on why the equity beta for a gas transmission service provider is 'among the lowest possible' and below 1.0.⁴¹⁰

The AER considers that the best available empirical evidence supports a point estimate of between 0.4 and 0.7 for the equity beta of electricity and gas service providers. This empirical evidence is the primary determinant of the equity beta set by the AER. This analysis was undertaken during the AER's WACC review.⁴¹¹ The AER considers that appropriate econometric techniques were used in this empirical analysis and that these results are reliable.⁴¹² Alternative econometric techniques provide supportive results that also converge on the range of 0.4 to 0.7. The AER interprets all these estimates with proper acknowledgment of the limitations of these techniques and the imprecision of the results.

Cross checks using overseas firms and Australian firms from other regulated industries also support the adoption of an equity beta of 0.8, or perhaps a lower figure.⁴¹³

This attachment presents key reasons underlying the AER's adoption of an equity beta of 0.8:

- conceptual analysis
- empirical analysis
 - core results
 - alternative results for the Australian comparator set

In appendix C, the AER presents further detailed reasoning on the equity beta, including consideration of cross checks and several other issues.

Conceptual analysis

Across all firms in the market, the average firm has an equity beta of 1.0.⁴¹⁴ Conceptual analysis attempts to determine the equity beta of the benchmark firm relative to the average equity beta. All parties agree that there are countervailing factors for the benchmark firm:⁴¹⁵

- The benchmark firm has higher financial risk than the market average, which suggests an equity beta above 1.0

⁴⁰⁹ McKenzie and Partington, *Estimation of equity beta*, April 2012.

⁴¹⁰ McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 22–23.

⁴¹¹ AER, *Final decision: WACC review*, May 2009, pp. 239–344.

⁴¹² Professor McKenzie and Associate Professor Partington were also asked to comment on APTPPL's concerns that the AER's empirical estimates were unreliable or biased. They found no foundation to these criticisms. This point is covered in detail in the appendix.

⁴¹³ See AER, *Final decision: WACC review*, May 2009, pp. 328–331; and other sources below.

⁴¹⁴ More precisely, the value weighted average across all firms in the market is 1.0. As pointed out by McKenzie and Partington, the equal weighted average may not be 1.0, since larger firms may be unevenly distributed above or below 1.0. See McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 21.

⁴¹⁵ Here, 'all parties' refers to SFG, APTPPL, the AER and McKenzie and Partington.

- The benchmark firm has lower business risk than the market average which suggests an equity beta below 1.0.

Hence, the conceptual assessment of equity beta is determined by the relative magnitude of these offsetting factors. The AER requested expert advice from McKenzie and Partington on the conceptual expectations for equity beta.⁴¹⁶

McKenzie and Partington provided a more detailed explanation of the conceptual factors that should be considered, disaggregating business risk into two further categories, economic risk and operational risk. They considered that for the benchmark firm, both financial risk and operational risk (also labelled financial leverage and operational leverage) will be above the market average.⁴¹⁷ Economic risk (also labelled intrinsic risk) will be below the market average. The relevant consideration is then whether this would offset the combined effect of financial and operating risk.

McKenzie and Partington concluded that the equity beta for the benchmark firm should be substantially below 1.0:⁴¹⁸

Taken together, the previous conceptual discussion clearly provides evidence to suggest that the theoretical beta of the benchmark firm is very low. While it is difficult to provide a point estimate of beta, based on these considerations, it is hard to think of an industry that is more insulated from the business cycle due to inelastic demand and a fixed component to their pricing structure. In this case, one would expect the beta to be among the lowest possible and this conclusion would apply equally irrespective as to whether the benchmark firm is a regulated energy network or a regulated gas transmission pipeline.

McKenzie and Partington explained this position with reference to the underlying demand elasticity, the tariff structure and cohort effects within a given industry. They reference a range of published academic literature, along with several working papers.⁴¹⁹ This supports the conclusion that there are theoretical grounds to expect that the equity beta for the benchmark firm will be below 1.0.

McKenzie and Partington also discussed the role that leverage plays in determining the equity beta. They identified the limitations of various linear and nonlinear leverage formulae, which would predict a larger role for financial risk in the overall equity beta. McKenzie and Partington considered that empirical evidence supports their conceptual analysis.⁴²⁰

Thus, although a theoretical trade off exists between (operational and financial) leverage and economic risk, in practical terms, the empirical evidence suggests that it is the intrinsic risk of the firm which is the primary, if not sole, driver of its systematic risk.

The AER considers that the advice from McKenzie and Partington supports the AER equity beta estimate of 0.8.⁴²¹

⁴¹⁶ As per the terms of reference listed in McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 3–4.

⁴¹⁷ McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 5–7.

⁴¹⁸ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 15.

⁴¹⁹ McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 13–15.

⁴²⁰ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 14.

⁴²¹ To prevent misinterpretation, the primary determinant of the equity beta remains the empirical evidence. As in the WACC review explanatory statement, the AER does not set the equity beta on the basis of the conceptual or theoretical analysis, even where there is a strong conceptual expectation.

In appendix C, the AER discusses in more detail the conceptual analysis of equity beta, including the APTPL position on this matter.

Empirical analysis

Core results

Empirical estimates of equity beta are based on regressions that relate the return on comparator firms to the return on the market. Different econometric techniques (including different regression forms) can produce different outcomes from the same data set.⁴²² For robustness the AER considers the results from a range of different economic techniques,⁴²³ which provide a reliable basis for the estimation of equity beta.⁴²⁴ In the WACC review the AER determined the appropriate methodology after careful consideration of the alternative approaches.⁴²⁵ The AER also obtained expert advice from Associate Professor Olan Henry of the University of Melbourne.⁴²⁶

The AER considers that the most relevant empirical estimates:

- use listed Australian gas and electricity networks as the set of comparable firms⁴²⁷
- commence after the technology boom (2002 onwards) but end just before the start of the GFC⁴²⁸
- implement two types of regression equations – ordinary least squares (OLS) and least absolute deviation (LAD)⁴²⁹
- use both weekly and monthly estimation intervals⁴³⁰
- adopt other appropriate econometric techniques.⁴³¹

This produces point estimates of:

- 0.45 to 0.59 as the average of individual firms⁴³²

⁴²² AER, *Final decision: WACC review*, May 2009, pp. 264–311.

⁴²³ AER, *Final decision: WACC review*, May 2009, pp. 311–332.

⁴²⁴ AER, *Explanatory statement: WACC review*, December 2008, pp. 181–253 and AER, *Final decision: WACC review*, May 2009, pp. 239–344.

⁴²⁵ Although the WACC review was conducted in an electricity context, gas and electricity businesses are close comparators. AER, *Final decision: WACC review*, May 2009, pp. 101–110

⁴²⁶ Henry, O., *Econometric advice and beta estimation*, 28 November 2008, and Henry, O., *Estimating β* , 23 April 2009.

⁴²⁷ AER, *Final decision: WACC review*, May 2009, pp. 104–110, 269–275.

⁴²⁸ The set of comparable firms used to estimate equity beta in the WACC review was predominantly comprised of businesses that operated gas networks. AER, *Final decision: WACC review*, May 2009, pp. 269–275.

⁴²⁹ AER, *Final decision: WACC review*, May 2009, pp. 267–268,

⁴³⁰ AER, *Final decision: WACC review*, May 2009, pp. 260, 267–269, 275–277.

⁴³¹ Such as calculating continuous (not discrete) returns, not applying a Blume or Vasicek adjustment, adjusting for double leverage and stapled securities, closely scrutinising time series where an unrepresentative event may have occurred, using the Dimson approach to identify thick/thin trading, considering the stability of (recursive) estimates over time, considering confidence intervals and R^2 statistics.

⁴³² Henry, O., *Estimating β* , 23 April 2009, pp. 10–11, 14–15; and AER, *Final decision: WACC review*, 1 May 2009, p. 318 (table 8.5).

- 0.49 to 0.65 as the average of fixed-weight portfolios⁴³³
- 0.55 to 0.57 as the average of time-varying-weight portfolios⁴³⁴
- 0.41 to 0.65 as the median of time-varying-weight portfolios.⁴³⁵

The empirical estimates support an equity beta point estimate between 0.4 and 0.7 for the benchmark firm.

Appendix C presents detailed analysis on the econometric techniques used in this empirical analysis and the interpretation of the results.

Alternative results for the Australian comparator set

The AER considers that the core results briefly presented above indicate a range of 0.4 to 0.7 for the equity beta of the benchmark firm. However, in many areas alternative approaches are valid, with the various scenarios considered in turn by the AER. The results across all these variations indicate that a point estimate of 0.4 to 0.7 is reasonable for the benchmark firm.⁴³⁶

- The AER considers that the most appropriate time period for estimation extends from the end of the technology boom (2002) to the beginning of the GFC.⁴³⁷ However, the AER also gave weight to results from the shorter five year period up until the beginning of the GFC. Further, the AER also considered estimates from the Allen Consulting Group (ACG) that covered a longer period, from 1990 until 2008 (but excluding the technology boom).⁴³⁸

⁴³³ The fixed-weight portfolios included a fixed number of firms, and the weight given to each firm did not change across the life of the portfolio. The weight assigned to each firm was determined two ways: by the value of each firm relative to other firms, and by giving equal weight to each firm regardless of size. Since different firms had different available data periods, the overall portfolio estimation period was therefore determined by the firm with the shortest estimation period. See Henry, O., *Estimating β* , 23 April 2009, pp. 20–24; and AER, *Final decision: WACC review*, 1 May 2009, pp. 307–310, 322–323.

⁴³⁴ The time-varying-weight portfolios included a different number of firms across the life of the portfolio, with firms added in and taken out in accordance with available data. The overall estimation period is therefore not limited by the firm with the shortest estimation period. All firms in the portfolio in a given point in time are equally weighted. For details of portfolio construction see Henry, O., *Estimating β* , 23 April 2009, pp. 25–28; and AER, *Final decision: WACC review*, 1 May 2009, pp. 307–310, 324.

⁴³⁵ The median was calculated for this method because it was not prudent to undertake value-weighting of the time-varying portfolios. Note that table 8.10 in the WACC review incorrectly reports the data for the LAD regression, Median (2002–2008). The correct values are obtained from table 5.6 of the Henry report: $\beta = 0.43$, $\beta_U = 0.52$, $\beta_L = 0.34$. See Henry, O., *Estimating β* , 23 April 2009, p. 28; and AER, *Final decision: WACC review*, 1 May 2009, p. 324.

⁴³⁶ AER, *Final decision: WACC review*, May 2009, pp. 317–328.

⁴³⁷ To clarify, 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). The AER considers that a date in late 2007 or mid 2008 is plausible. The AER considers that the use of data through to September 2008 (but not after this time) would be appropriate in the context of a five or six year estimation period. See AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 178.

⁴³⁸ ACG, *Beta for regulated electricity transmission and distribution: Report to Energy Networks Association, Grid Australia and APIA*, September 2008 (ACG, *Beta for regulated electricity transmission and distribution*, September 2008); ACG, *AER's draft conclusions on the weighted average cost of capital parameters: Commentary on the AER's analysis of the equity beta: Report to the Energy Networks Association, Grid*

- The AER considers that the average of individual firms should be given more weight, relative to the fixed-weight portfolios.⁴³⁹ However, the AER separately reported and gave weight to fixed weight portfolios. Further, the AER also considered the time-varying portfolios proposed by ACG, by instructing Henry to construct these portfolios in his second report.
- The AER considers that it is most appropriate to analyse both weekly and monthly estimation intervals.⁴⁴⁰ However, the AER separately reported the results for each interval period.
- The AER considers that it is most appropriate to analyse both OLS and LAD regression forms.⁴⁴¹ However, the AER separately reported the results for each regression form. Further, the AER also considered the re-weighted ordinary least squares (re-OLS) regressions undertaken by ACG.

The point estimates across all these estimation periods, aggregation methods, estimation intervals and regression forms all converge on the range of 0.4 to 0.7. This is illustrated in table 7.7, which shows the range of estimates generated from the breadth of analysis.

Australia and Australian Pipeline Industry Association, January 2009 (ACG, Commentary on the AER's analysis of the equity beta, January 2009).

⁴³⁹ AER, *Final decision: WACC review*, May 2009, pp. 307–311.

⁴⁴⁰ AER, *Final decision: WACC review*, May 2009, pp. 275–278.

⁴⁴¹ AER, *Final decision: WACC review*, May 2009, pp. 267–269.

Table 7.7 Convergence of alternative empirical analysis in the WACC review

Issue	Alternative approaches	Point estimate range	Notes
Time period for estimation	2002–2008	0.45 to 0.59	Individual firms, weekly/monthly by Henry
	2003–2008	0.59 to 0.71	Individual firms, weekly/monthly by Henry
	1990–1998 and 2002–2008	0.50 to 0.69	Individual firms, monthly by ACG
Individual or portfolio	Individual	0.45 to 0.57	Average, weekly/monthly by Henry
	Fixed-weight portfolios	0.55 to 0.65	Average, weekly/monthly by Henry
	Time-varying weight portfolios	0.52 to 0.78	Average/median, weekly/monthly by Henry
	Time-varying weight portfolios	0.64 to 0.58	Monthly, OLS, Re-OLS and LAD by ACG
Measurement interval	Weekly	0.45 to 0.59	Average, individual firms by Henry
	Monthly	0.45 to 0.57	Average, of individual firms by Henry
	Weekly	0.49 to 0.54	Average of fixed weight portfolios by Henry
	Monthly	0.55 to 0.65	Average of fixed weight portfolios by Henry
	Weekly	0.52 to 0.66	Average, time varying portfolios by Henry
	Monthly	0.63 to 0.78	Average, time varying portfolios by Henry
Regression form	OLS	0.57 to 0.71	Individual, all periods, weekly/monthly by Henry
	LAD	0.45 to 0.64	Individual, all periods, weekly/monthly by Henry
	OLS	0.54 to 0.63	Individual, all periods, monthly by ACG
	Re-OLS	0.49 to 0.61	Individual, all periods, monthly by ACG
	LAD	0.52 to 0.69	Individual, all periods, monthly by ACG

Source: AER, *Final decision: WACC review*, May 2009, p. 318, 320, 322–323, 324; Henry, O., *Estimating β* , April 2009, pp. 10–11, 14–15, 20–24, 27–28; ACG, *Beta for regulated electricity transmission and distribution*, September 2008; and ACG, *Commentary on the AER's analysis of the equity beta*, January 2009.

The AER considers that the point estimates are the most relevant output from the empirical analysis, rather than the confidence intervals constructed around each point estimate.⁴⁴² However, the AER reported and considered such confidence intervals.⁴⁴³ In particular, the

⁴⁴² AER, *Final decision: WACC review*, May 2009, pp. 286–291, 342.

⁴⁴³ AER, *Final decision: WACC review*, May 2009, pp. 320–325.

examination of confidence intervals reasonably supported the rejection of an equity beta of 0.9 or 1.0 (which were the relevant regulatory precedents). Across both point estimates and confidence intervals, this evidence converges on the range of 0.4 to 0.7.

This analysis was first presented by the AER in the WACC review in May 2009. It has not been superseded by new analysis (using recent data) primarily because of the influence of the GFC. The GFC equity market was unlikely to be consistent with the CAPM as an equilibrium pricing model, and is unrepresentative of (forward-looking) market expectations. In this context, new empirical analysis is only likely to be reliable with the accumulation of a sufficiently long data period after the GFC ceased to impact Australian equity markets.⁴⁴⁴ With this context, there is limited support for the AER's equity beta estimate in the following reports:

- analysis performed by CEG for Envestra Ltd in September 2010⁴⁴⁵—CEG estimated the equity beta of the six listed Australian electricity and gas businesses (the same comparator set used by the AER in its portfolio analysis) across the five year period ending in June 2010.⁴⁴⁶ The average equity beta estimate was 0.62 and the median was 0.52.⁴⁴⁷ This result accords with the range generated by the AER of 0.4 to 0.7. However, given the five year estimation period is centred on the GFC, this result needs to be interpreted with caution.
- analysis performed by NERA Economic Consulting (NERA) for the Queensland Competition Authority (QCA) in March 2011⁴⁴⁸—NERA estimated the equity beta for nine listed Australian electricity and gas businesses (the same comparator set used by the AER in its individual firm analysis) from January 2000 to March 2011, a period of approximately eleven years.⁴⁴⁹ The average equity beta point estimate was 0.45 to 0.52, depending on whether equal weighted or value weighted portfolios were used.⁴⁵⁰ This result accords with the range generated by the AER of 0.4 to 0.7.⁴⁵¹ However, the eleven year period includes the end of the tech boom and the start of the GFC, so this result should be interpreted with some caution. This longer analysis (ten years) should be less affected by these events than the shorter analysis (five years) by CEG, so in relative terms this analysis is to be preferred.
- NERA also estimated equity beta using the same comparator set for the period 2009 to 2011, though the exact start and end months are not clear.⁴⁵² The average point estimates were 0.46 to 0.65. The AER considers that this estimation period is not a

⁴⁴⁴ Further, the assessment of an exact end date for the GFC is problematic. As with the determination of a commencement date for the GFC, the AER acknowledges that there is no consensus on a date.

⁴⁴⁵ CEG, *Estimating the cost of capital under the NGR: A report for Envestra*, September 2010.

⁴⁴⁶ CEG, *Estimating the cost of capital under the NGR: A report for Envestra*, September 2010, p. 49–50.

⁴⁴⁷ AER, *Final Decision: Envestra access arrangement SA*, June 2011, p. 47. CEG, *Estimating the cost of capital under the NGR: A report for Envestra*, September 2010, p. 49.

⁴⁴⁸ NERA Economic Consulting, *Cost of capital for water infrastructure company: Report for the Queensland Competition Authority*, 28 March 2011 (NERA, *Cost of capital for water infrastructure*, March 2011).

⁴⁴⁹ NERA labelled this period '2000 to 2011', but given that the report is dated March 2011 at most the data extended three months into 2011; it may have been less.

⁴⁵⁰ NERA, *Cost of capital for water infrastructure*, March 2011, pp. 36–37.

⁴⁵¹ NERA also used an alternative leverage formula (preferred by the QCA) to arrive at different point estimates, 0.44 to 0.52, although these estimates still converge on the same range. NERA, *Cost of capital for water infrastructure*, March 2011, p. 60.

⁴⁵² The NERA report is dated March 2011, so the data could not extend past this time. It is not clear from the NERA report whether this period has been chosen as an 'after GFC' data period, or if it simply reflects a desire to use two years of the most recent data.

reliable basis for the estimation of equity beta given its length (just two years) and the overlap with the GFC.⁴⁵³

- analysis performed by the Economic Regulation Authority (ERA) of Western Australia in March 2012⁴⁵⁴—The ERA estimated the equity beta for nine listed Australian electricity and gas businesses (the same comparator set used by the AER in its individual firm analysis) from January 2002 to October 2011, a period of approximately ten years.⁴⁵⁵ The ERA implemented two sampling periods (monthly and weekly), two different regression forms (OLS and LAD) and considered both average and median results, shown in table 7.8.

Table 7.8 ERA equity beta estimates for an Australian comparator set 2002–2011

	Average		Median	
	Monthly	Weekly	Monthly	Weekly
OLS	0.45	0.60	0.42	0.49
LAD	0.47	0.44	0.44	0.34

Source: ERA, *Draft decision: Proposed revisions to the access arrangement for the Western Power network*, 29 March 2012, p. 202–204.

- Using OLS regressions, the average/median point estimates are between 0.42 and 0.60. Using LAD regressions, the average/median point estimates are between 0.34 and 0.49. The results accord with those reported by the AER for the shorter period (ending in 2008), and support an equity beta in the range 0.4 to 0.7. Further, the ERA also reported confidence intervals around these point estimates for individual firms. The majority of confidence intervals (75 per cent) did not include an equity beta of 1.0. After consideration of the WACC review and this latest evidence, the ERA applied an equity beta of 0.65 in this decision.

Appendix C presents further analysis on the econometric techniques used in the empirical analysis of the Australian comparator set, including discussion of several simulation studies.

Cross checks

The AER also considers whether the empirical evidence from other comparator sets support the equity beta estimate determined by the AER. In particular, noting the extent to which there are similarities across different regulated utilities, the AER examines the equity beta applied to the Australian water industry. Another potential evidence source is the equity beta of overseas electricity and gas networks. The AER considers the extent to which these networks

⁴⁵³ To clarify, the AER does not attempt to date the end of the GFC and acknowledges that this is a contentious issue. Nonetheless, the AER considers that the GFC had a substantial impact on Australian equity markets in 2009, which represents half the estimation period.

⁴⁵⁴ ERA, *Draft decision: Proposed revisions to the access arrangement for the Western Power network*, 29 March 2012, pp. 186–205.

⁴⁵⁵ The ERA also calculated results for the 2003 to 2008 period examined by Henry for the AER, to ensure that their results were comparable. Only one of the 36 individual firm estimates differed from the AER estimates at a statistically significant level. The ERA results supported the range 0.4 to 0.7 as the point estimate of equity beta.

will relate to the benchmark (Australian) firm and the available empirical evidence. The AER also considers two other cross checks proposed by SFG.⁴⁵⁶

The AER has regard to the limitations of these approaches when interpreting these cross checks. In particular, the relevance of this evidence declines as the comparator set moves further away from the benchmark firm (in this case, an Australian gas transmission network service provider).⁴⁵⁷

Overall, the AER considers that these cross checks suggest the equity beta set by the AER (0.8) is reasonable. If anything, the cross checks indicate the AER's equity beta estimate might be a little high. This supports the AER's position that setting the equity beta at 0.8 provides APTPPL with a reasonable opportunity to recover at least its efficient costs.

This cross check analysis is presented in the appendix C.

7.4.4 Debt risk premium

The AER estimates the benchmark DRP for APTPPL on the basis of:

- the Bloomberg BBB rated FVC at the 7 year term (the longest term published by Bloomberg)
- the last historical spread between the Bloomberg 7 and 10 year AAA rated FVCs to extrapolate the 7 year DRP estimate to 10 years.

This is consistent with APTPPL's proposal.

For the purposes of this draft decision the AER determines an indicative DRP of 4.03 per cent (effective annual compounding rate). This will be updated for the final decision based on the same averaging period used to estimate the risk free rate.

The AER assesses APTPPL's proposed method to extrapolate the Bloomberg 7 year BBB rated FVC against two alternative approaches.⁴⁵⁸ These are:

- 'paired bonds' analysis, which CEG presented as an alternative extrapolation method but did not propose to apply.⁴⁵⁹ This approach uses the change in observed spreads for a pair of bonds with different terms issued by the same corporation.
- linear extrapolation, which CEG presented as an alternative extrapolation method but did not propose to apply. This approach takes the difference between the 5 and 7 year DRPs published by the Bloomberg BBB rated FVC. The 7 year DRP is then extrapolated in a straight line to a 10 year term by adding that difference.

⁴⁵⁶ Specifically, the SFG cross checks are estimates of equity beta for Australian non-utility industry sectors, and analysis based on the dividend yield of Australian utilities.

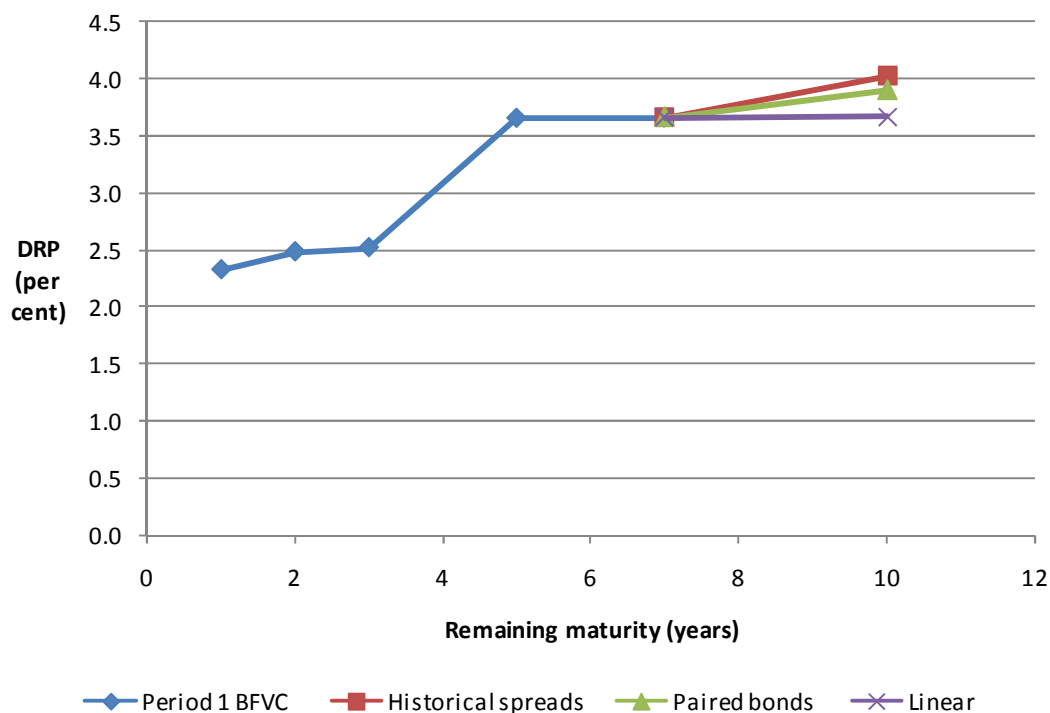
⁴⁵⁷ To prevent misinterpretation, less weight is placed on this method than on the (direct) empirical evidence and conceptual evidence.

⁴⁵⁸ APTPPL's proposed method extrapolates the Bloomberg 7 year BBB rated FVC using the last historical spread between the Bloomberg 7 and 10 year AAA rated FVCs, consistent with the Tribunal's recent APT Allgas and Envestra decision.

⁴⁵⁹ CEG referred to this method as 'extrapolation using actual differences in yield'.

The three extrapolation approaches are set out in figure 7.2.

Figure 7.2 Extrapolation approaches for the Bloomberg 7 year BBB rated FVC



Source: Bloomberg; RBA; AER analysis.

In the Tribunal's APT Allgas and Envestra decision, the use of the Bloomberg BBB rated FVC to estimate the DRP was in contention. The method for extrapolating the Bloomberg BBB rated FVC was not in contention. However, the Tribunal stated that:

If the AER were to decide that the **EBV**⁴⁶⁰ was an unreliable indicator for the purposes of deciding that DRP, it would be desirable in the longer term to develop an alternative coherent and consistent methodology, in consultation with the relevant regulated entities and other interested parties. Although the DRP must be determined at a particular point in time, the use of a consistent and acceptable methodology would ensure regulatory consistency, and in relation to particular matters would also facilitate efficient decision making and in turn reduce the number of reviews of the DRP decisions by the AER brought to the Tribunal. While such a task would be a complex and lengthy one, it is one the Tribunal commends to the AER.⁴⁶¹ (AER's emphasis)

...

The Tribunal, of course, accepts that in the first instance it is for the AER to determine whether to rely upon the Bloomberg curve, **or to accept the extrapolation of that curve in the manner done in the past.** It is not obliged to do so, although given the past regulatory decisions it may

⁴⁶⁰ The Tribunal used EBV as the acronym for the extrapolated Bloomberg fair value curve.

⁴⁶¹ Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 4*, 11 January 2012, paragraph 98.

be expected to do so unless there were sound reasons to depart from that practice. For the future, that is a matter for the AER.⁴⁶² (AER's emphasis)

In light of the Tribunal's statements, the AER understands that in discussing the extrapolated Bloomberg BBB rated FVC the Tribunal is referring to:

- the Bloomberg BBB rated FVC to estimate the DRP at 7 years
- the last historical spread⁴⁶³ between the Bloomberg 7 and 10 year AAA rated FVCs to extrapolate the 7 year DRP estimate to 10 years.

The AER considers that all three of the extrapolation approaches have shortcomings, and all three rely on contentious assumptions.⁴⁶⁴ In the absence of a more robust alternative approach and consistent with the Tribunal's recent APT Allgas and Envestra decision, the AER adopts APTPPL's proposed approach for extrapolating the Bloomberg BBB rated FVC.

The AER considers its previous analysis has shown that the extrapolated Bloomberg 7 year BBB rated FVC results in a DRP higher than that indicated from market evidence, such as observed bond data and independent market commentary.⁴⁶⁵ Nevertheless, in light of the recent Tribunal decisions, the AER accepts APTPPL's proposal to apply the extrapolated Bloomberg BBB rated FVC for estimating the DRP until it has undertaken a public consultation process to determine alternative methodologies.

7.4.5 Gearing

The AER agrees with APTPPL's proposed gearing ratio of 60 per cent.

A 60 per cent gearing ratio is consistent with that determined by the AER in its 2009 WACC review. This gearing ratio was based on the AER's examination of the gearing ratio from the range of comparator firms in the electricity network and gas pipeline industries.

7.4.6 Forecast inflation

The AER approves APTPPL's proposed methodology for estimating forecast inflation.

APTPL's proposed methodology is consistent with that adopted by the AER in previous regulatory decisions. This methodology involves:

⁴⁶² Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 4*, 11 January 2012, paragraph 120.

⁴⁶³ Specifically, it is based on the last published 20 days prior to 22 June 2010.

⁴⁶⁴ The AER set out its detailed analysis of the use of historical AAA curve spreads in its recent electricity draft decisions. For example, see: AER, *Draft decision: Powerlink transmission determination*, November 2011, pp. 229–232. The AER has also set out its analysis of the use of paired bonds in its recent electricity draft decision for Powerlink, in the context of reasonableness checks proposed by Powerlink: AER, *Draft decision: Powerlink transmission determination*, November 2011, pp. 229–232. Similarly, the AER set out its detailed analysis of the use of historical linear extrapolation in: AER, *Final decision: Jemena access arrangement*, June 2010, p. 189.

⁴⁶⁵ See market evidence at: AER, *Draft decision: Powerlink transmission determination*, November 2011, pp. 225–229.

- forecasting inflation for each of the next 10 years (consistent with the use a 10 year term for the risk free rate and other WACC parameters) then taking a geometric average of these values to estimate a 10 year forecast inflation rate
- adopting the RBA's headline inflation forecasts from its latest Statement on Monetary Policy for as many future years as the RBA publishes inflation forecasts (usually 2 years), and
- adopting the mid-point of the RBA's inflation target (2.5 per cent) for the remaining futures years out to year 10 (usually 8 years).

Following this methodology APTPPL's proposal adopted an indicative inflation forecast of 2.62 per cent.⁴⁶⁶ In this draft decision, the AER updates the RBA short term inflation forecasts resulting in an indicative inflation forecast of 2.60 per cent.⁴⁶⁷ This is shown in table 7.9.

Table 7.9 AER draft decision on inflation forecast (per cent)

	2012–13	2013–14	2014–15 to 2021–22	Geometric average
Forecast inflation	3.25	2.75a	2.50	2.60b

Source: RBA, *Statement on Monetary Policy*, February 2012, p. 67.

(a) The RBA published a range of 2.5–3.0 per cent for its 2013–2014 forecast of inflation. The AER has selected the mid-point of 2.75 per cent for the purposes of this final determination.

(b) This is an indicative figure and will be updated for the final decision.

For the final decision, the AER will again update the RBA's short term inflation forecasts based on the most recent RBA Statement on Monetary Policy at the time of the final decision.

7.4.7 Reasonableness checks on overall rate of return

In previous sections the AER evaluates the evidence on each WACC parameter individually, while also taking into account the interdependencies between WACC parameters where relevant. In this section the AER evaluates the overall rate of return that results from the individual WACC parameter values being combined in accordance with the WACC and CAPM formulae. The AER considers that the overall rate of return is commensurate with prevailing market conditions.⁴⁶⁸ In turn the AER considers that the overall rate of return provides a reasonable opportunity for APTPPL to recover at least its efficient costs.⁴⁶⁹

The overall rate of return is determined using market data and finance theory. There are techniques available to assess the overall rate of return, which can produce a range of plausible results. Nevertheless, these techniques provide a useful reasonableness check for the AER's primary approach of using a detailed bottom-up analysis of the WACC input parameters.

⁴⁶⁶ Based on the RBA's August 2011 Statement on Monetary Policy.

⁴⁶⁷ Based on the RBA's February 2012 Statement on Monetary Policy.

⁴⁶⁸ NGR, r. 87(1)

⁴⁶⁹ NGL, s. 24(2)(a)

The AER examines asset sales, trading multiples and broker WACCs for listed regulated business in Australia; as well as recent decisions by other Australian regulators and the historical range of WACC values provided by the AER for other electricity and gas service providers. These cross checks suggest that the regulated rate of return is reasonable.

For this draft decision, the AER determines an indicative overall rate of return using a nominal vanilla WACC of 8.55 per cent. This is based on a cost of equity of 9.01 per cent, a cost of debt of 8.24 per cent and a gearing level of 60 per cent.

Trading multiples analysis suggests the overall rate of return is reasonable given market and sales valuations. The overall rate of return also falls within the range of estimates found in broker reports. While the overall rate of return is at the lower end of recent AER decisions, it is in line with recent decisions made by other Australian regulators.

Recent regulated asset sales

For recent transactions of regulated assets, for which relevant data is available, the AER compares the market value (i.e. the sale price) with the book value (i.e. the RAB).

Over the past few years, regulated assets have generally been sold at a premium to the RAB. If the market value is above book value, this may imply that the regulatory rate of return is above that required by investors. Conversely, when the market value is below the book value, this may imply that the regulatory rate of return is below that required by investors.

Caution must be exercised before inferring that the difference indicates a disparity in WACC's, particularly where the difference is small. A range of factors may contribute to a difference between market and book values. A RAB multiple greater than one might be the result of the buyer:⁴⁷⁰

- expecting to achieve greater efficiency gains that result in actual operational and capital expenditure below the amount allowed by the regulator
- increasing the service provider's revenues by encouraging demand for regulated services
- benefiting from a more efficient tax structure or higher gearing levels than the benchmark assumptions adopted by the regulator, and growth options
- expecting to achieve higher returns if regulation is relaxed.⁴⁷¹

Regulated asset sales in the market are also infrequent allowing limited opportunity to conduct this analysis.

⁴⁷⁰ Each of these reasons assumes the purchasing firm is making a rational purchasing decision. Another reason for a RAB multiple greater than one might be that the purchasing firm misjudged the value of the target assets and paid too much for those assets. Each transaction considered by the AER involved sophisticated investors with significant knowledge of the industry. Accordingly, the AER does not consider it likely the RAB multiples greater than one result from poor valuations of the target assets.

⁴⁷¹ Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock and Brown Infrastructure*, 9 October 2009, p. 77.

Regulated asset sales do, however, provide a useful real-world indication of whether market participants consider the AER's benchmark WACC is within a reasonable range. The consistent positive trend as discussed below provides evidence that the AER's WACC approach is reasonable.

In October 2010, Envestra purchased Country Energy's NSW gas network at a multiple of 1.25 times the 2010 RAB.⁴⁷² Further details on this transaction can be found in the AER's draft decision for the QLD/SA gas distribution networks.⁴⁷³

In July 2011, DUET sold its 25.9 per cent stake in West Australian Gas Network (WAGN) to ATCO Ltd in return for a 20 per cent interest in the Dampier to Bunbury pipeline (DBP) and a 20.1 per cent interest in Multinet.⁴⁷⁴ Table 7.10 below shows the multiples at which these transactions occurred.

In December 2011 APA Group divested 80 per cent of its holding of APT Allgas (a gas distributor in South East Queensland) to Marubeni Corporation and RREEF; each acquiring 40 per cent equity stakes.⁴⁷⁵

APA Group stated that net funds released from the sale were \$477m after transaction costs and the net enterprise value was \$526m.⁴⁷⁶ Applying a RAB value, estimated to the sale date, to this enterprise value produces a multiple of 1.20.

This transaction involved the sale of both regulated and unregulated assets. Accordingly the RAB multiple may overstate the premium on the regulated assets as unregulated assets generally require a higher cost of capital.⁴⁷⁷

APA also stated that the sale price was in line with the book value of the assets. The gross sale price was \$500.9 million, with the book value of assets sold at \$488.8 million.⁴⁷⁸ This equates to a multiple of 1.02. These multiples can be considered the upper and lower bound estimates of the RAB multiple for this transaction.

Other historical sales have been at premiums of between 20 and 119 per cent to the regulated asset base.⁴⁷⁹ The RAB multiples from each of these transactions, together with the

⁴⁷² AER, *Final decision: Country Energy Gas access arrangement*, March 2010 and ASX, *Envestra company announcement*, 26 October 2010, viewed 10 January 2012, <<http://www.asx.net.au/asxpdf/20101026/pdf/31tcvlnblp4xqc.pdf>>.

⁴⁷³ AER, *Draft decision: Envestra access arrangement Qld*, February 2011, p. 63.

⁴⁷⁴ ASX, DUET company announcement, 29 July 2011, viewed 9 February 2012, <<http://asx.com.au/asx/statistics/announcements.do?by=asxCode&asxCode=due&timeframe=Y&year=2011>>

⁴⁷⁵ APA Group, *Completion of the sale of 80% of Allgas*, 16 December 2011, viewed 10 January 2012, <<http://apa.com.au/investor-centre/news/asxmedia-releases/2011/completion-of-the-sale-of-80-per-cent-of-allgas.aspx>>.

⁴⁷⁶ APA Group, *Completion of the sale of 80% of Allgas*, 16 December 2011, viewed 10 January 2012, <<http://apa.com.au/investor-centre/news/asxmedia-releases/2011/completion-of-the-sale-of-80-per-cent-of-allgas.aspx>>.

⁴⁷⁷ Allgas is a holding company that also owns the unregulated Moura pipeline and the Gatton-Gympie easement.

⁴⁷⁸ Net proceeds after transaction costs were \$478.4 million, with transaction costs of \$22.5 million and a gain on sale of \$12.1 million. APA Group, *Interim Financial Report for the half year ended 31 December 2011*, 22 February 2012, p. 3.

⁴⁷⁹ Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock and Brown Infrastructure*, 9 October 2009, p. 78.

transactions discussed above, are summarised in the following table from most recent to least recent.

Table 7.10 Selected acquisitions – RAB multiples

Date	Acquirer	Entity/Asset Acquired	RAB Multiple (times)
July 2011	ATCO	25.9% of West Australian Gas Networks	1.20
July 2011	DUET	20% of Multinet Gas	1.13
July 2011	DUET	20% of Dampier to Bunbury Natural Gas Pipeline	0.95 ⁴⁸⁰
Dec 2011	Marubeni Corp/RREEF ⁴⁸¹	Allgas	1.20
Dec 2011	Marubeni Corp/RREEF ⁴⁸²	Allgas	1.02
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

Source: DUET;⁴⁸³ APA Group;⁴⁸⁴ Grant Samuel;⁴⁸⁵ AER calculations.

As Grant Samuel has previously explained, listed infrastructure entities should theoretically trade at, and be acquired at, 1.0 times the RAB.⁴⁸⁶ However, nearly all recent asset sales have been transacted at RAB multiples of greater than one.

Acquisition premiums have been substantial and are, as a result, unlikely to be explained away by the factors noted above alone. This suggests that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses. Moreover, the

⁴⁸⁰ Dampier to Bunbury Natural Gas Pipeline (DBNGP) presents an unusual case because it is 96% contracted until 2016 under shipper contracts. As the Economic Regulation Authority of Western Australia (ERAWA) states, these contracts 'are substantially independent of the access terms and reference tariffs established under the access arrangement for the DBNGP.' ERAWA, *Final Decision: Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline – Submitted by DBNGP (WA) Transmission Pty Ltd*, 31 October 2011, p. 14. For this reason the DBNGP RAB multiple appears to be not driven by regulatory rates of return and does not provide a useful comparison for RAB multiple analysis.

⁴⁸¹ Quoted net enterprise value/calculated RAB.

⁴⁸² Gross sale price/book value of assets.

⁴⁸³ DUET, *Presentation to Macquarie Retail Adviser Network*, 12 January 2012, viewed 9 February 2012.

⁴⁸⁴ APA Group, *Completion of the sale of 80% of Allgas*, 16 December 2011, viewed 10 January 2012, <<http://apa.com.au/investor-centre/news/asxmedia-releases/2011/completion-of-the-sale-of-80-per-cent-of-allgas.aspx>>.

⁴⁸⁵ Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock and Brown Infrastructure*, 9 October 2009, p. 77.

⁴⁸⁶ Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock and Brown Infrastructure*, 9 October 2009, p. 77.

consistency of the numbers across many transactions lends support to the conclusion that the regulated rate of return is consistent with the efficient rate of return.

The AER therefore considers that market transactions suggest that regulated rates of return provide network service providers the opportunity to recover at least efficient costs.

Trading multiples

A comparison of the asset value implied by share prices against the RAB—often expressed as a ‘trading multiple’—also provides insight into the required rate of return.⁴⁸⁷

As with regulated asset sales, a trading multiple above one may imply that the market discount rate is below the regulated WACC. The same cautions when interpreting the results of regulated asset sales apply to trading multiples. In addition, this assessment relies on the assumption that share prices reflect the fundamental valuation of the company.

First, Grant Samuel showed in 2009 that trading multiples for listed businesses operating regulated networks have ranged from 1.15 to 1.81 times the RAB as outlined in table 7.11.⁴⁸⁸

Table 7.11 RAB multiples of regulated assets

Entity	Average RAB as at June 2009	Average RAB as at 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 and Brown Infrastructure*, 9 October 2009, p. 77.

Second, recent broker reports have also identified RAB trading multiples. These multiples are consistently greater than one, as shown in table 7.12 to table 7.15. None of these multiples are less than or equal to one.

⁴⁸⁷ The AER has not made any calculations of its own in this section. Trading multiples have only been stated where they could be identified in an external report.

⁴⁸⁸ Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock and Brown Infrastructure*, 9 October 2009, p. 77.

Table 7.12 JP Morgan – various report dates

Date of report	Company	FY10A	FY11A	FY12E
22 Feb 2012	ENV	1.11	1.20	1.23
17 Feb 2012	DUET	1.33	1.26	1.12
13 Feb 2012	SKI	1.07	1.12	1.05

Source: JP Morgan, *Envestra Limited – 1H12 Result Preview*, 22 February 2012, p. 4; JP Morgan, *DUET Group – Transition costs exert downward pressure*, 17 February 2012, p. 8; JP Morgan, *Australian Regulated Utilities 2012 Outlook – Regulatory Clouds Gathering*, p. 19.

Table 7.13 Macquarie – 8 November 2011

Company	2011	2012	2013
ENV	1.18	1.16	1.14
DUET	1.07	1.10	1.10
SKI	1.23	1.17	1.13
SPN	1.08	1.15	1.10

Source: Macquarie, *DUET Group – limited RAB growth – at fair value*, 8 November 2011, p. 4.

Table 7.14 Credit Suisse – 22 February 2012

Company	Date unspecified
ENV	1.29
DUET	1.09
SKI	1.32
SPN	1.13

Source: Credit Suisse, *APA Group – Forget 1H12 result; all eyes on HDF refinance*, 22 February 2012, p. 8.

Table 7.15 Goldman Sachs – 6 December 2011

Company	Various dates
SKI	1.15
ENV	1.25
SPN	1.14

Source: Goldman Sachs, *Reinstating coverage: Prefer SKI, Ahead of APA, ENV & SPN*, 6 December 2011, p. 2.

Finally, Spark Infrastructure recently released a Fact Book showing an unadjusted trading multiple of 1.34 as at 24 February 2012. The Fact Book reports that this decreases to 1.10 when adjusted for total revenue excluding customer contributions.⁴⁸⁹

There are also other listed entities that hold regulated assets, such as APA Group and Hastings Diversified Utilities Fund. These companies are not conducive to RAB multiples analysis because they have a diverse portfolio of assets, making it difficult to isolate the RAB.

Each of these figures cannot be considered definitive without careful consideration of the assumptions and methodologies used. They do, however, provide a useful insight into whether market analysts, and indeed industry analysts, consider the AER's benchmark WACC is appropriate. Importantly, each multiple is calculated after the GFC and also after the AER's WACC review.

Recent comments by Macquarie in a broker report also suggest the AER's WACC approach does not under-compensate to service providers:

The importance of the RAB growth reflects our belief there is a sustainable arbitrage beyond the current regulatory period, that justifies paying a premium above RAB for these assets...This arbitrage reflects WACC calculations in the regulatory setting have a degree of conservatism.⁴⁹⁰

Comments made by the AEMC in its recent Directions Paper also lend support to the AER's interpretation of broker reports and suggest the cost of debt may be a driver of the RAB multiple premiums:

A number of these [broker] reports indicate that the recommended valuations placed on these businesses by the equity analysts assume an ability for the NSPs to raise debt at a rate lower than the cost of debt allowed by the regulator. A number of the reports have indicated that a major reason why they value the NSPs at above their RAB is due to their ability to out-perform their cost of debt allowance.⁴⁹¹

When coupled with the consistently high multiples shown above, these comments suggest the regulatory rate of return has been at least as high as the actual cost of capital. The conclusion then is that the AER's approach to setting WACC parameters is reasonable and allows a reasonable opportunity to recover at least efficient costs.

Broker reports

Equity analysts publish broker reports on those listed companies operating regulated energy networks in Australia. These reports generally include WACC estimates along with a range of information, including analysis of current financial positions and forecasts of future performance.

⁴⁸⁹ Spark Infrastructure, *2012 Fact Book*, 27 February 2012, p. 9.

⁴⁹⁰ Macquarie, *DUET Group – Limited RAB growth – at fair value*, 8 November 2011, p. 2.

⁴⁹¹ Australian Energy Market Commission, *Directions Paper*, 2 March 2012, p. 108.

The AER uses broker WACC estimates as a reasonableness check for the overall rate of return. The Tribunal noted in the recent APT Allgas and Envestra decisions that it was acceptable for the AER to use broker reports in this manner.⁴⁹²

The broker reports generally do not state the full assumptions underlying their analysis, or provide thorough explanations of how they arrive at their forecasts and predictions. As such, caution should be exercised in the interpretation of these broker reports. In particular, the AER considers that the price and dividend forecasts from these reports do not constitute a sufficiently reliable basis for calculation of an overall rate of return. However, the broker reports do reliably report discount rates, which are equivalent to the broker's estimate of the WACC for the company.

It is important to note that the five listed companies undertake both regulated and unregulated activities, which are assessed by the brokers in aggregate. However, only the regulated activities are directly relevant to the benchmark firm.

It is generally considered 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. As they are less risky, the return required on regulated activities is less than the return required by the firm as a whole. This means that the overall rate of return implied by broker reports will likely overstate the rate of return for the benchmark firm. Therefore the WACC for a regulated benchmark firm should be toward the lower end of the observed range, noting the large range of broker WACCs.

The AER analyses recent equity broker reports, coinciding with the most recent round of earnings announcements for these companies. Only those brokers who report the WACC in nominal vanilla form or provide sufficient detail to enable conversion to this form were considered. The reports considered were from:

- Credit Suisse
- Goldman Sachs
- JP Morgan
- Deutsche Bank
- Macquarie Equities Research
- Bank of America Merrill Lynch

The companies evaluated by the broker reports are:

- APA Group
- DUET Group

⁴⁹² Australian Competition Tribunal, *Application by Envestra Ltd (No 2)[2012] ACompT 3*, 11 January 2012, paragraph 167.

- Envestra Limited
- Spark Infrastructure Group
- SP AusNet

The output from this analysis is shown in table 7.16 below. The nominal vanilla WACC of 8.55 per cent for APTPPL falls within the lower half of that range.

Table 7.16 Broker WACC estimates (per cent)

Measure	Minimum	Maximum
Broker headline post-tax WACC	6.30	8.60
Calculated vanilla WACC	7.52	10.02

Source: AER calculations.

The benchmark firm nominal vanilla WACC of 8.55 per cent falls within the lower half of that range.

Recent decisions by other regulators and AER historical rate of return range

The AER reviews a range of returns it approved for other gas and electricity service providers and also the rates of return in recent decisions by other Australian regulators. Recent rate of return values set by the AER since the last WACC review are lower than those previously provided. However, recent decisions by other regulators suggest that these values—and 8.55 per cent in this case—are reasonable.

The rate of return range applied by the AER in recent decision for other gas and electricity service providers is 8.28–10.43 per cent.⁴⁹³ This range covers gas and electricity decisions made by the AER since the last WACC Review was completed in 2009 and includes the Aurora and Powerlink final decisions.

Recent decisions by other regulators have also been considered and produce a range from 6.45–9.08 per cent.⁴⁹⁴ The decisions reviewed are shown in table 7.17 and have been taken

⁴⁹³ AER, *Final decision: Aurora Energy Pty Ltd: Distribution determination 2012–2017*, April 2012; AER, *Final decision: Powerlink: Transmission determination 2012–2017*, April 2012; AER, *Final decision: Victorian distribution determination*, October 2010, p. 519; AER, *Final decision: Queensland electricity distribution network service providers: Distribution determination 2010–2015*, May 2010, p. 267 (AER, *Final decision: Queensland distribution determination*, May 2010); AER, *Final decision: N.T. Gas access arrangement*, July 2011, p. 80; Australian Competition Tribunal, *Envestra - Annexure A (Part 2) - Amended Access Arrangement*, February 2012, p. 13; Australian Competition Tribunal, *APT Allgas - Annexure A - Amended Access Arrangement*, February 2012, p. 17; Australian Competition Tribunal, *NSW Gas Networks - Annexure A - Amended Access Arrangement*, June 2011, p. 18; Australian Competition Tribunal, *ActewAGL Gas Distribution Network - Order*, September 2010, p. 2.

⁴⁹⁴ ACCC, *Final report: Inquiry to make final access determinations for the declared fixed line services*, July 2011, p. 59; ESCV, *Final decision: Metro proposed access arrangement*, August 2011, p. 87; ACCC, *Final decision: Airservices Australia price notification*, September 2011, p. 7; ERAWA, *Final decision: Access arrangement information for the Dampier to Bunbury Natural Gas Pipeline*, December 2011, p. 159; QCA, *Draft report: SunWater irrigation price review: 2012–17, Volume 1*, November 2011, p. 392; IPART, *Final report: Review of*

from decisions made in the last 12 months. The 8.55 per cent applied for APTPPL falls within this range. This suggests that the rate of return for this decision is reasonable and in line with regulatory decisions that have been made in the past year.

Table 7.17 Recent decisions by Australian regulators (per cent)

Regulator	Decision	Date	Nominal vanilla WACC
ACCC	FAD Fixed line services – Final decision	Jul 2011	8.54
ESCV	Metro Access arrangement – Final decision	Aug 2011	9.08
ACCC	Airservices Australia – Final decision	Sep 2011	8.60
ERAWA	Dampier to Bunbury Pipeline – Final decision	Oct 2011	7.57
QCA	SunWater – Final decision	Nov 2011	7.55
IPART	Sydney Desalination Plant – Final decision	Dec 2011	8.16-8.59 ^a
ESCOSA	Advice on a regulatory rate of return for SA Water – Final decision	Feb 2012	8.07
IPART	Sydney Catchment Authority – Draft decision	Mar 2012	8.14-8.25 ^a
IPART	Sydney Water Corporation – Draft decision	Mar 2012	8.14-8.25 ^a
ERAWA	Western Power – Draft decision	Mar 2012	6.45

Notes: For comparative purposes, all WACCs have been converted to the nominal vanilla WACC formulation consistent with the AER's reported figure for APTPPL (which excludes debt raising costs).

(a) Ranges are presented for recent decisions by the IPART where the point estimate (real post-tax or real pre-tax) was not sufficiently disaggregated so as to allow precise conversion to the relevant formulation (nominal vanilla WACC).

7.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 7.1:

Make all necessary amendments to reflect the AER's draft decision on the rate of return on capital for the access arrangement period, as set out in table 7.1.

water prices for Sydney Desalination Plant Pty Limited, December 2011, p. 80; ESCOSA, Final advice: Advice on a regulatory rate of return for SA Water, February 2012, p. 50; IPART, Draft report: Review of prices for Sydney Water Corporation's water, sewerage, drainage and other services, March 2012, p. 79; ERAWA, Draft decision: Proposed revisions to the access arrangement for the Western Power Network, March 2012, p. 207.

8 Capital base

This attachment sets out the AER's draft decision, reasoning and approach to assessing APTPPL's proposed capital base, for the access arrangement period.

The capital base of a gas transmission pipeline is the capital value attributed to pipeline assets.⁴⁹⁵ The AER must assess APTPPL's proposed capital base by taking into account:

- the opening capital base
- any proposed adjustments to the opening capital base
- the projected capital base; and
- any proposed adjustments to the projected capital base.

8.1 Draft decision

The AER approves APTPPL's proposed value of the capital base at 12 April 2007. This becomes the opening capital base for the earlier access arrangement period.⁴⁹⁶

The AER does not approve the opening capital base submitted by APTPPL of \$427.7 million (\$nominal) as at 1 July 2012. This is because the AER does not approve all of the components of APTPPL's conforming capex over the earlier access arrangement period which forms part of the opening capital base.⁴⁹⁷ The AER approves the proposed growth capex on the Lytton Lateral and RBP8 expansion project in the earlier access arrangement.

However, the AER does not approve the stay in business capex in the earlier access arrangement period. The AER requires APTPPL to remove capex in relation to the PMA contract buyout. The AER is not satisfied that the PMA expenditure meets the definition of capex in r. 69 of the NGR because APTPPL has not substantiated that the expenditure was incurred to provide or in providing pipeline services. The AER also considers that the proposed expenditure is not conforming capex for the purposes of r. 79 of the NGR.

Table 8.1 summarises the proposed amendments on APTPPL's opening capital base. After making these adjustments, the AER has calculated an opening capital base on 1 July 2012 of \$392.3 million (\$nominal), \$35.4 million less than that proposed by APTPPL, as set out in table 8.5.

The AER has assessed APTPPL's proposed capex over the access arrangement period which forms part of the projected capital base.⁴⁹⁸ The AER is satisfied that APTPPL's proposed \$18.3 million (\$2011–12) stay in business capex is necessary to maintain the

⁴⁹⁵ NGR, r. 69.

⁴⁹⁶ NGR, r. 77(2)(a).

⁴⁹⁷ NGR, r. 77(2)

⁴⁹⁸ NGR, r. 78.

safety, reliability and integrity of the pipeline. The AER considers that most of the forecast capex complies with the NGR.

The AER has calculated a closing capital base on 30 June 2017 of \$393.3 million (\$nominal) as set out in table 8.3 below.

Table 8.1 summarises the AER's approved opening capital base in the earlier access arrangement period.

Table 8.1 AER approved opening capital base (\$million, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Opening capital base	296.4	300.2	309.4	313.4	326.7	340.5
Plus capex	2.7	2.9	3.2	11.5	10.5	51.4
Plus speculative capital	-	-	-	-	-	-
Plus reused redundant assets	-	-	-	-	-	-
Less depreciation	-6.0	-6.5	-6.8	-7.1	-7.7	-8.0
Plus indexation	7.2	12.7	7.6	9.1	10.9	8.5
Less redundant assets	-	-	-	-	-	-
Less disposals	-	-	-	-	-	-
Closing capital base	300.2	309.4	313.4	326.7	340.5	392.3

Source: AER analysis.

Table 8.2 summarises the AER's approved capex in the earlier access arrangement period.

Table 8.2 AER approved capital expenditure by asset class over the earlier access arrangement period (\$million, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Stay in business	2.6	2.6	2.7	4.1	2.6	3.4
Pipelines and compressors	-	0.2	0.3	6.9	7.5	46.0
Total capex	2.6	2.7	3.1	11.0	10.1	49.4

Source: AER analysis.

Table 8.3 summarises the AER's approved projected capital base for the access arrangement period.

Table 8.3 AER approved projected capital base (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17
Opening capital base	392.3	394.2	395.5	394.4	393.8
Plus capex	4.2	4.8	3.7	4.0	3.5
Plus speculative capital	-	-	-	-	-
Plus reused redundant assets	-	-	-	-	-
Less depreciation	-12.5	-13.7	-15.1	-14.9	-14.2
Plus indexation	10.2	10.2	10.3	10.3	10.2
Less redundant assets	-	-	-	-	-
Less disposals	-	-	-	-	-
Closing capital base	394.2	395.5	394.4	393.8	393.3

Source: AER analysis.

Table 8.4 summarises the AER’s approved capex over the access arrangement period.

Table 8.4 Forecast capital expenditure by asset class over the access arrangement period (\$million, 2011–12)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Stay in business	4.0	4.5	3.3	3.5	3.0	18.3
Pipelines and compressors	-	-	-	-	-	-
Total capex	4.0	4.5	3.3	3.5	3.0	18.3

Source: AER analysis.

8.2 APTPPL’s proposal

8.2.1 Capex in the earlier access arrangement period

APTPL proposes an opening capital base of \$427.7 million (\$nominal) as at 1 July 2012.⁴⁹⁹ The calculation of the proposed opening capital base is shown in table 8.5.

⁴⁹⁹ APTPL, *Access arrangement information*, October 2011, p. 10.

Table 8.5 APTPPL's proposed opening capital base (\$million, nominal)

	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12
Opening capital base	296.35	300.22	340.88	345.66	359.98	374.80
Plus capex	2.67	34.39	3.18	11.45	10.50	51.68
Plus speculative capital						
Plus reused redundant assets						
Less depreciation	-6.02	-6.46	-6.81	-7.12	-7.68	-8.15
Plus indexation	7.22	12.73	8.41	9.98	12.00	9.37
Less redundant assets						
Less disposals						
Closing capital base	300.22	340.88	345.66	359.98	374.80	427.70

Source: APTPPL, *Access arrangement information*, October 2011, p. 6.

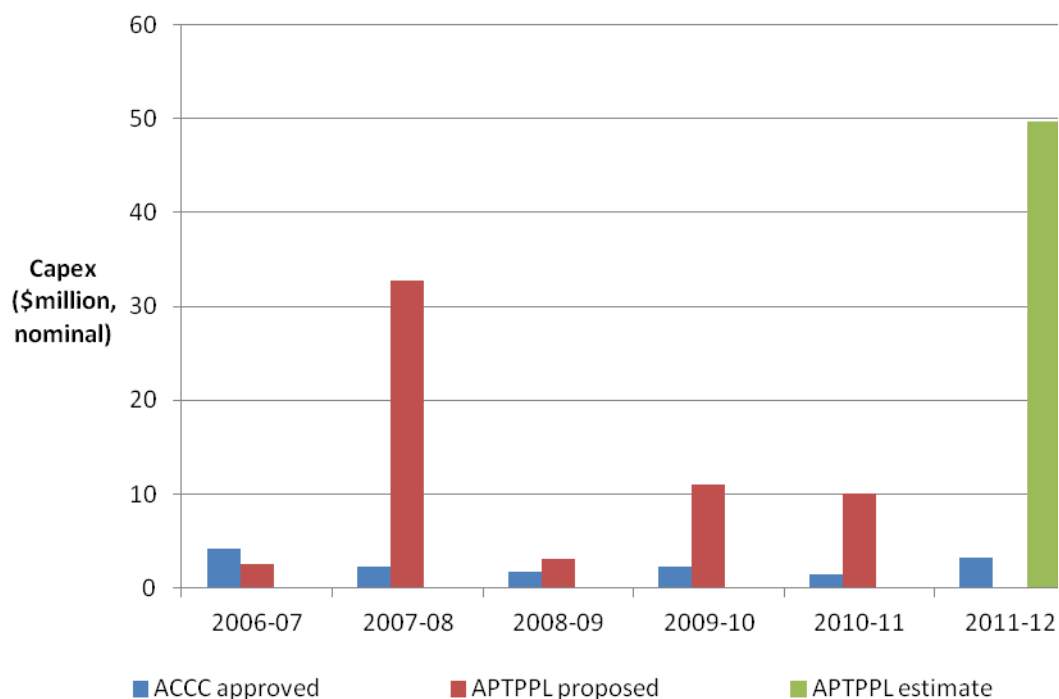
APTPL indicated it has incurred capex of \$109.19 million (\$nominal)⁵⁰⁰ in the earlier access arrangement period and proposes that this amount be included in the opening capital base for the access arrangement period.⁵⁰¹ This is \$94.1 million (\$nominal) higher than the amount approved by the ACCC.⁵⁰² The overspend was largely due to expenditure which occurred in 2007–08 and 2011–12 as shown in figure 8.1.

⁵⁰⁰ APTPL have rolled a higher total capex figure of \$113.87 million (nominal) into the capital base. This higher figure (due to half WACC allowance) is a modelling adjustment to recognise that capex is incurred in the middle of the financial year, but the model applies a rate of return to the end of year capital base. This means there is a half year difference arising from the “delay” in the modelling where the capex should be earning a rate of return (from middle of year rather than end of year). Hence the half WACC is applied to compensate but is capitalised.

⁵⁰¹ APTPL, *Access arrangement information*, October 2011, p. 3.

⁵⁰² APTPL, *Access arrangement submission*, October 2011, p. 36.

Figure 8.1 Comparison of ACCC approved and APTPPL proposed/estimated capital expenditure for the earlier access arrangement period (\$million, nominal)

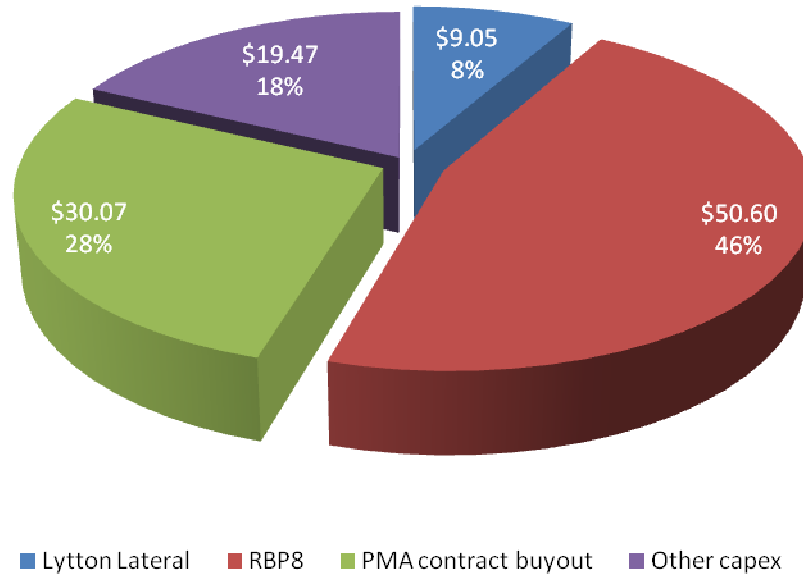


Source: APTPPL, *Access arrangement information*, October 2011, p. 3; APTPPL, *Access arrangement submission*, October 2011, p. 36.

Note: The ACCC did not approve expenditure for 2011–12 during the last access arrangement review. Throughout this attachment, data referring to ACCC approved expenditure in this year is taken from ACCC 2006 access arrangement model. The access arrangement information submitted as part of the 2006 review did not include this forecast.

Actual expenditure in the earlier access arrangement period significantly exceeded the ACCC approved expenditure. This occurred mainly as a result of three capex items; the PMA contract buyout, the Lytton Lateral extension, and the RBP8 expansion project. This is illustrated in figure 8.2.

Figure 8.2 Major components of total capex over the earlier access arrangement period (\$million, nominal)



Source: APTPPL, *Access arrangement submission*, October 2011, p. 36.

Table 8.6 shows APTPPL’s approved and incurred capex for the major capex categories (stay in business and growth) in the earlier access arrangement period. During this period, APTPPL overspent its approved expenditure in both capex categories. The variations in these categories are discussed below.

Table 8.6 APTPPL's approved and actual/forecast capital expenditure by category for the earlier access arrangement period (\$million, nominal)

		2006–07	2007–08	2008–09	2009–10	2010–11	2011–12F	Total
Stay in business	Approved	4.2	2.2	1.8	2.2	1.4	3.2	15.1
	Actual	2.6	32.7	2.7	4.1	2.6	3.8	48.4
	Variance	-1.7	30.4	1.0	1.9	1.2	0.6	33.3
Growth	Approved	-	-	-	-	-	-	-
	Actual	-	0.2	0.3	6.7	7.5	46.0	60.8
	Variance	-	0.2	0.3	6.9	7.5	46.0	60.8
Total	Approved	4.2	2.2	1.8	2.2	1.4	3.2	15.1
	Actual	2.6	32.8	3.1	11.0	10.1	49.7	-
	Variance	-1.7	30.6	1.3	8.8	8.6	46.5	94.1

Source: APTPPL, *Access arrangement submission*, October 2011, p. 36.

Stay in business capex

PMA contract buyout

APTPLPPL overspent its approved stay in business capex over the earlier access arrangement period by 220 per cent.⁵⁰³ Approximately 28 per cent of this overspend was attributed to the PMA capitalisation of \$30.1 million (\$nominal) in 2007–08.⁵⁰⁴

In the earlier access arrangement period, the planning, design, capex project management, and operation and maintenance of the RBP was contracted to Agility Asset Management (Agility). In June 2007, APA acquired the Agility business from Alinta Limited (Alinta) for \$206.2 million (\$nominal) of which \$30.1 million of goodwill was attributed to the RBP. The acquisition internalised the construction, management and services functions by acquiring the various asset management contracts as well as the employees, including some items of property, plant and equipment.⁵⁰⁵ APTPLPPL submitted that it will no longer incur the management fees paid to the contracted operator which will result in cost savings.⁵⁰⁶ APTPLPPL has therefore proposed to capitalise the cost of the PMA contract buyout as an investment to achieve these cost savings. The PMA contract buyout is approximately 62 per cent of stay in business capex in the earlier access arrangement period.⁵⁰⁷

⁵⁰³ APTPLPPL, *Access arrangement submission*, October 2011, p. 36.

⁵⁰⁴ APTPLPPL, *Access arrangement submission*, October 2011, p. 36.

⁵⁰⁵ APTPLPPL, *Access arrangement submission*, October 2011, pp. 36–37.

⁵⁰⁶ APTPLPPL, *Access arrangement submission*, October 2011, attachment 4.3.

⁵⁰⁷ APTPLPPL, *Access arrangement submission*, October 2011, p. 36.

Non-system capital expenditure

APTPPL undertook significant expenditure on IT systems in the earlier access arrangement period. The major projects are set out in table 8.7 below.

Table 8.7 Non-system capex projects (\$million, nominal)

Project	Function	Total cost to APA	Proportion allocated to RBP
Gas management system (GMS)	Provides a web-based B2B gas management system to manage system configuration and user nominations and gas measurement and verification, and gas allocation facilities. The GMS also manages the STTM functions in NSW.	0.5	0.04
Portfolio and project operating model (PPOM)	Seeks to establish a single portfolio and project management operating model across APA.	1.4	0.1
Financial transformation system	APA has undertaken a project to rationalise the multiple finance systems used across the business.	9.0	0.6
Project Colin	Includes development of a new web-based customer interface to provide metering, billing and contractual information for users, a single nominations tool for transport of gas across multiple assets, customer invoicing capabilities and customer access to real time pipeline capacity information to support nominations.	12.5	0.8
Enterprise Historian	The Supervisory Control and Data Acquisition (SCADA) Historian project involves the development and implementation of a SCADA Enterprise Historian within APA. A SCADA Historian provides a secure warehouse for validated data from various SCADA systems, and provides facilities to view manage and audit data from disparate SCADA systems.	3.2	0.2

Source: APTPPL, *Access arrangement submission*, October 2011, pp. 38–40.

APA has also undertaken a number of smaller corporate IT projects of which a portion of costs have been allocated to APTPPL. In total, the capitalised amounts associated with these smaller projects amount to \$0.6 million (\$nominal).⁵⁰⁸

The majority of non-system capex is associated with IT programs undertaken at the APA corporate level which support or replace systems or processes within each APA asset. APTPPL has submitted that while APA expects to derive efficiency benefits from its investments in new national systems and processes in the longer term, the main driver for many of these investments in IT is risk management, increased regulatory obligations, and service integrity.⁵⁰⁹

⁵⁰⁸ APTPPL, *Access arrangement submission*, October 2011, p. 40.

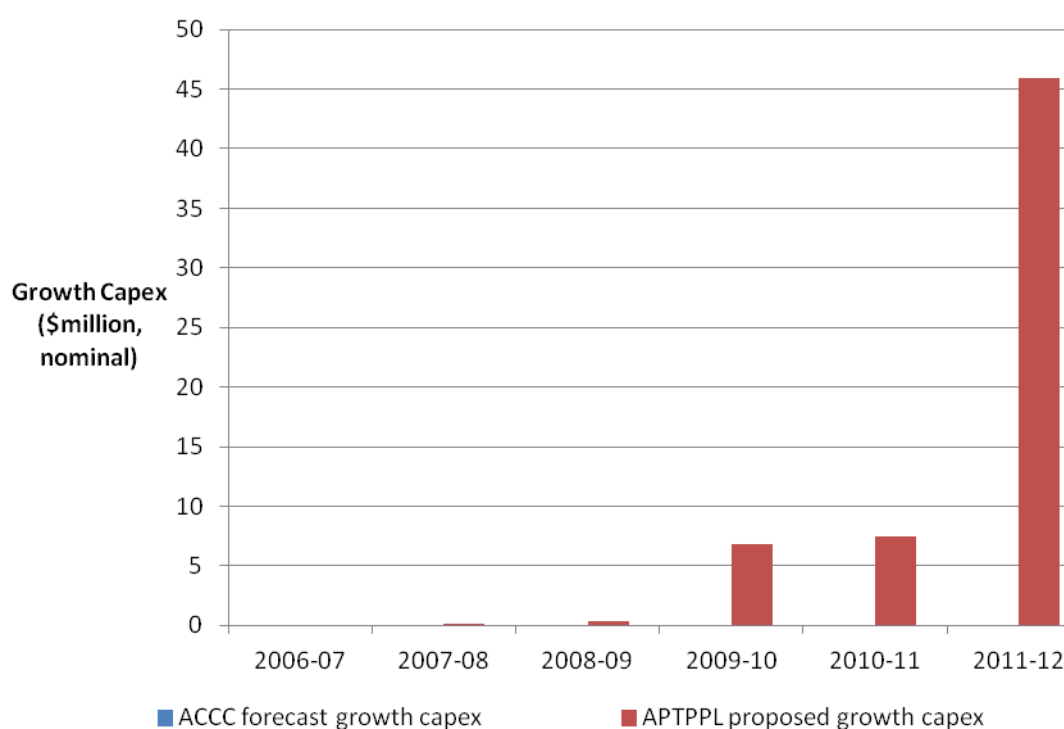
⁵⁰⁹ APTPPL, *Access arrangement submission: Attachment 4.7*, October 2011, p. 1 (confidential).

APTPPL submitted that two of the IT projects, GMS and Project Colin, are potentially subject to an alternative cost recovery mechanism through the STTM rules.⁵¹⁰ APTPPL submitted that of the total proposed non-system costs, an amount is potentially subject to recovery.⁵¹¹ This amount is contained in confidential appendix G. APTPPL indicated in its proposal that it intends to reflect the outcome of the current process assessment for this cost recovery amount in its revised access arrangement proposal.⁵¹²

Growth capex

APTPPL has proposed \$60.8 million (\$nominal) in growth capex over the earlier access arrangement period. This is outlined in figure 8.3 below. This expenditure was not proposed during the earlier access arrangement review and was therefore not approved by the ACCC.

Figure 8.3 Growth capex over the earlier access arrangement period (\$million, nominal)



Source: APTPPL, *Access arrangement submission*, October 2011, p. 36; ACCC, *Final decision: APTPPL access arrangement*, December 2006.

The Lytton Lateral extension (2009–10 and 2010–11) and the RBP8 expansion project (2011–12) form APTPPL’s proposed growth capex in the earlier access arrangement period.

⁵¹⁰ APTPPL, *Access arrangement submission*, October 2011, p. 41.

⁵¹¹ APTPPL, *Response to information request AER/033 of 6 December 2012*, received 13 December 2011, pp. 7–8.

⁵¹² APTPPL, *Access arrangement submission*, October 2011, p. 41.

RBP8 expansion project

APTPPL submitted that the design capacity of the RBP supplying Brisbane is fully utilised. APA received requests for additional gas transportation in 2010 and subsequently announced in April 2011 that it was undertaking an expansion of the RBP. The additional capacity was substantially contracted under long term transportation agreements with an energy retailer and a major industrial user. The project phase included a package of works required to meet the contracted capacity requirements with estimated costs of \$50.6 million (\$nominal) occurring mainly in 2011–12.⁵¹³ The RBP8 expansion project commenced in 2010–11 and is forecast to be completed in 2011–12.⁵¹⁴ The RBP8 expansion project comprises of four sub-projects which include:

- installation of a new compressor on the RBP at Dalby
- construction of a 5.5 kilometre (km) loop of RBP–Metro pipeline
- upgrade of RBP DN400 maximum allowable operating pressure (MOAP)
- upgrade the Ellengrove Gate Station pig receiving facility.⁵¹⁵

Table G.1 in confidential appendix G sets out the RBP8's four sub projects and associated costs.

Lytton Lateral extension

APTPPL submitted that the existing Allgas gas network could no longer provide for increasing gas demand in the industrial Lytton area of Brisbane. In 2009 APA secured a long term contract to supply additional capacity for an energy retailer which provided the economic justification for establishing a new gas pipeline into the Lytton area.⁵¹⁶

The Lytton Lateral was constructed in 2010–11 and completed at a final project cost of \$9.1 million (\$nominal).⁵¹⁷ APTPPL submitted its estimated costs for the Lytton Lateral as set out in table G.2 in confidential appendix G.

APTPPL submitted that its final project cost was higher than original estimates due to the following reasons:

- APA not being able to secure approval to construct the extension on the planned route
- the final route used for the project was considerably more complex than that planned, with a number of third party crossings and directional drills
- a large part of construction had to be carried out at night due to the obligation not to close Lytton Road traffic lanes during the day

⁵¹³ APTPPL, *Access arrangement submission*, October 2011, pp. 37–38.

⁵¹⁴ APTPPL, *Access arrangement submission*, October 2011, p. 37.

⁵¹⁵ APTPPL, *Access arrangement submission*, October 2011, p. 38.

⁵¹⁶ APTPPL, *Access arrangement submission*, October 2011, attachment 4.4 (confidential).

⁵¹⁷ APTPPL, *Access arrangement submission*, October 2011, attachment 4.4 (confidential).

- delays caused by wet weather and localised flooding.⁵¹⁸

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

APTPPL proposed an adjustment to the capital base using actual inflation based on the CPI. For 2011–12, APTPPL estimated an inflation rate of 2.5 per cent. APTPPL's proposed inflation rates for adjusting the capital base are shown in table G.3 in confidential appendix G.

8.2.3 Depreciation in the earlier access arrangement period

The ACCC approved a straight line method of depreciation in the earlier access arrangement period. The method proposed by APTPPL to adjust the actual depreciation involved the following steps:

1. calculate the amount of depreciation using the straight-line depreciation method in the AER's RFM (actual depreciation)
2. calculate the difference between the actual and forecast depreciation (the adjustment amount)⁵¹⁹
3. allocate the adjustment amount across the original asset classes based on the proportion of actual depreciation for the asset class to the total actual depreciation across all asset classes
4. deduct the adjustment amount from the actual depreciation calculated in the RFM to arrive at the level of forecast depreciation.

Table G.4 in confidential appendix G sets out APTPPL's proposed depreciation over the earlier access arrangement period.

8.2.4 Forecast capex over the access arrangement period

APTPPL has proposed a projected closing capital base as at 30 June 2017 of \$411.1 million (\$nominal).⁵²⁰ The calculation of the projected capital base is shown in table 8.8.

⁵¹⁸ APTPPL, *Access arrangement submission*, October 2011, attachment 4.4 (confidential).

⁵¹⁹ The forecast and actual depreciation amounts upon which the adjustment amount is calculated are in real 2005–06 dollars. This is also reflected in table 8.1.

⁵²⁰ APTPPL, *Access arrangement information*, October 2011, p. 10.

Table 8.8 APTPPL's proposed projected capital base (\$million, nominal)

	2012–13	2013–14	2014–15	2015–16	2016–17
Opening capital base	427.7	426.5	424.5	419.9	415.5
Plus capex	4.2	4.9	3.7	4.1	3.5
Plus speculative capital	-	-	-	-	-
Plus reused redundant assets	-	-	-	-	-
Less depreciation	-16.7	-18.0	-19.4	-19.4	-18.8
Plus indexation	11.2	11.2	11.1	11.0	10.9
Less redundant assets	-	-	-	-	-
Less disposals	-	-	-	-	-
Closing capital base	426.5	424.5	419.9	415.5	411.1

Source: APTPPL, *Access arrangement information*, October 2011, p. 10.

APTPPL proposed forecast capex of \$18.3 million (\$2011–12) over the access arrangement period. The proposed forecast capex is set out in table 8.9.

Table 8.9 APTPPL's forecast capital expenditure for the access arrangement period (\$million, 2011–12)

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Stay in business capex	4.0	4.5	3.3	3.5	3.0	18.3

Source: APTPPL, *Access arrangement submission*, October 2011, p. 43.

Proposed forecast capex over the access arrangement period is made up of stay in business capex only. As the capacity utilisation forecasts indicate relatively stable demand over the access arrangement period, APTPPL has not forecast any growth related capex. Stay in business capex includes routine capital activities targeted at maintaining the pipeline in a good working order. These projects, such as pigging, are relatively minor.⁵²¹

8.2.5 Adjustment of the capital base for inflation in the access arrangement period

To roll forward the capital base over the access arrangement period, APTPPL included a forecast rate of inflation of 2.62 per cent.⁵²²

⁵²¹ APTPPL, *Access arrangement submission*, October 2011, p. 43.

⁵²² APTPPL, *Access arrangement submission*, October 2011, p. 63.

8.2.6 Forecast depreciation allowance in the access arrangement period

APTPPL's proposed allowance for depreciation in the access arrangement period is discussed in attachment 5 of the draft decision.

8.3 Assessment approach

8.3.1 Opening and projected capital base

The AER is required to consider the transitional provisions of the NGR because the access arrangement for the RBP for the period 2007–12 falls within the definition of a transitional access arrangement.⁵²³ The NGR provides that actual or forecast capex (new facilities investment) approved by a Relevant Regulator under section 8.21 of the Code is taken to be a decision by the AER that the capex conforms with the new capex criteria under r. 79 of the NGR.⁵²⁴ The opening capital base for the RBP is therefore set at \$296.4 million (\$nominal) as at 12 April 2007.

The approach to assessing APTPPL's capital base for the access arrangement period is consistent with the AER's approach in previous gas decisions reviewed under the NGR.⁵²⁵ In accordance with r. 77 of the NGR, the AER applied three steps to calculate the capital base:

- first, the value of the capital base at 12 April 2007 is obtained from the access arrangement review undertaken for the earlier access arrangement period. Then, an adjustment is made to account for any difference between actual and estimated capex in the first year of the earlier access arrangement period (2006–07). This becomes the opening capital base for the earlier access arrangement period
- second, the opening capital base at 12 April 2007 is rolled forward to 30 June 2012. This involves.⁵²⁶
 - adding conforming actual capex over the earlier access arrangement period
 - removing regulatory depreciation
 - removing any amounts of capital contributions
 - adding amounts of, speculative capex or reused redundant assets, to the extent allowed under the NGR
 - removing any redundant capital and disposals, and

⁵²³ NGR, clause 1 of Schedule 1.

⁵²⁴ NGR, clause 3(2)(a) of Schedule 1.

⁵²⁵ AER, *Final decision: Jemena access arrangement*, June 2010; AER, *Final decision: Country Energy Gas access arrangement*, March 2010; AER, *Final decision: ActewAGL access arrangement*, March 2010; AER, *Final decision: Envestra arrangement proposal Qld*, June 2011; AER, *Final decision: Envestra Ltd access arrangement proposal for the SA gas network 2011–2016*, June 2011 (AER, *Final decision: Envestra access arrangement SA*, June 2011); AER, *Final decision: APT Allgas access arrangement*, June 2011; AER, *Final decision: NT Gas access arrangement*, July 2011.

⁵²⁶ NGR, r. 77(2).

- indexing the capital base and other components of the roll forward for actual inflation
- third, the opening capital base at 1 July 2012 is rolled forward to 30 June 2017. This involves.⁵²⁷
 - adding forecast conforming capex over the access arrangement period
 - removing forecast depreciation for the access arrangement period
 - removing the forecast value of pipeline assets to be disposed of in the course of the access arrangement period, and
 - indexing the capital base and other components of the roll forward for forecast inflation.

8.3.2 Conforming capital expenditure

NGR requirements for conforming capital expenditure

The AER must accept, as part of the opening capital base for the access arrangement period, any conforming capex made (or to be made) during the earlier access arrangement period. Capex will be conforming if it:

- meets the definition of capex in r. 69 of the NGR. Capex is defined as costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services
- is based on a forecast or estimate which is supported by a statement of the basis of the forecast or estimate as set out in r. 74(1) of the NGR. Any forecast or estimate submitted:
 - has been arrived at on a reasonable basis
 - represents the best forecast or estimate possible in the circumstances⁵²⁸
- conforms with the capex criteria in r. 79 of the NGR. There are two essential criteria that must both be met under this rule:
 - The expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing services; and
 - The expenditure must be justifiable on one of four grounds set out in r. 79(2) of the NGR.

The four grounds set out in r. 79(2) of the NGR can be summarised as follows. The capex must either:

- have an overall economic value that is positive

⁵²⁷ NGR, r. 78.

⁵²⁸ NGR, r. 74(2).

- demonstrate an expected present value of the incremental revenue that exceeds the expenditure
- be necessary to maintain and improve the safety of services, or maintain the integrity of services, or comply with a regulatory obligation or requirement, or maintain capacity to meet levels of demand existing at the time the capex is incurred, or
- be justifiable as a combination of the preceding two dot points.

The AER has limited discretion when making decisions under r. 79 of the NGR. The AER must approve a particular element of the access arrangement proposal if that element complies with the applicable requirements of the NGR and NGL and is consistent with any criteria set out in the NGR or NGL.⁵²⁹ This is different to the position under the National Electricity Rules (NER), where the AER is required to consider total forecast capex and whether that forecast total reasonably reflects certain criteria. In contrast, under the NGR, any element of the access arrangement proposal that satisfies the requirements of the NGR must be approved and individual elements that do not satisfy the NGR requirements may not be accepted.

Assessment of conforming capital expenditure

In making its assessment of APTPPL's proposed capex, the AER considers, amongst other things, the access arrangement information provided by APTPPL. The information provided by APTPPL must meet certain standards. This is important when assessing APTPPL's proposed capex. The AER will not approve certain information and forecasts provided by APTPPL if the information does not meet the requirements set out in the NGR.⁵³⁰

The AER must, in performing and exercising an AER economic regulatory functional power, exercise that functional power in a manner that will or is likely to contribute to the achievement of the NGO.⁵³¹ For instance, having regard to the NGO, the AER takes the view that a prudent service provider will seek cost efficiencies through continuous improvements, and that customers ultimately share in these benefits. This also provides the service provider with a reasonable opportunity to recover at least its efficient costs in accordance with the revenue and pricing principles. This is pertinent as no incentive mechanism (or similar) is applied to capex for the RBP.

The AER has reviewed APTPPL's access arrangement and notes the proposed capex of \$109.2 million (\$nominal) in the earlier access arrangement period, exceeds that of the ACCC approved capex by 622.6 per cent. The AER reviewed APTPPL's supporting material including its reasoning and, where relevant, business cases, audited regulatory accounts, or other drivers. This information helped the AER identify the need for the capex over the earlier access arrangement period and, in turn, whether that capex should be included in the opening capital base in accordance with r. 77 (2)(b) of the NGR .

⁵²⁹ NGR, rr. 40(2) and 79(5).

⁵³⁰ For instance, r. 74 of the NGR requires estimates and forecasts to be made on a reasonable basis, amongst other things.

⁵³¹ NGL, s. 28(1).

In making its assessment of whether APTPPL's proposed capex in the opening capital base conforms with the capex criteria in r. 79(1) of the NGR, the AER considered APTPPL's historic capex and assessed the key drivers for the capex. This included an analysis of APTPPL's:

- asset management plan
- business management systems and operations
- business process improvement initiatives
- investment justification processes
- assessment of major risks identified for the period, and the risk management practices and policies adopted to mitigate those risks.

By examining key documents, processes and assumptions, and comparing historical expenditure to that proposed, the AER can better understand the key drivers behind APTPPL's proposed capex.

The AER engaged Wilson Cook to provide a technical review of APTPPL's proposal. The AER also engaged Frontier Economics Pty Ltd and RSM Bird Cameron (Bird Cameron) to provide advice on the PMA contract buyout.

The AER did not receive any submissions from other interested parties relating to APTPPL's capex proposal.

8.4 Reasons for decision

There are three aspects to the AER's role in assessing APTPPL's capital base. These are:

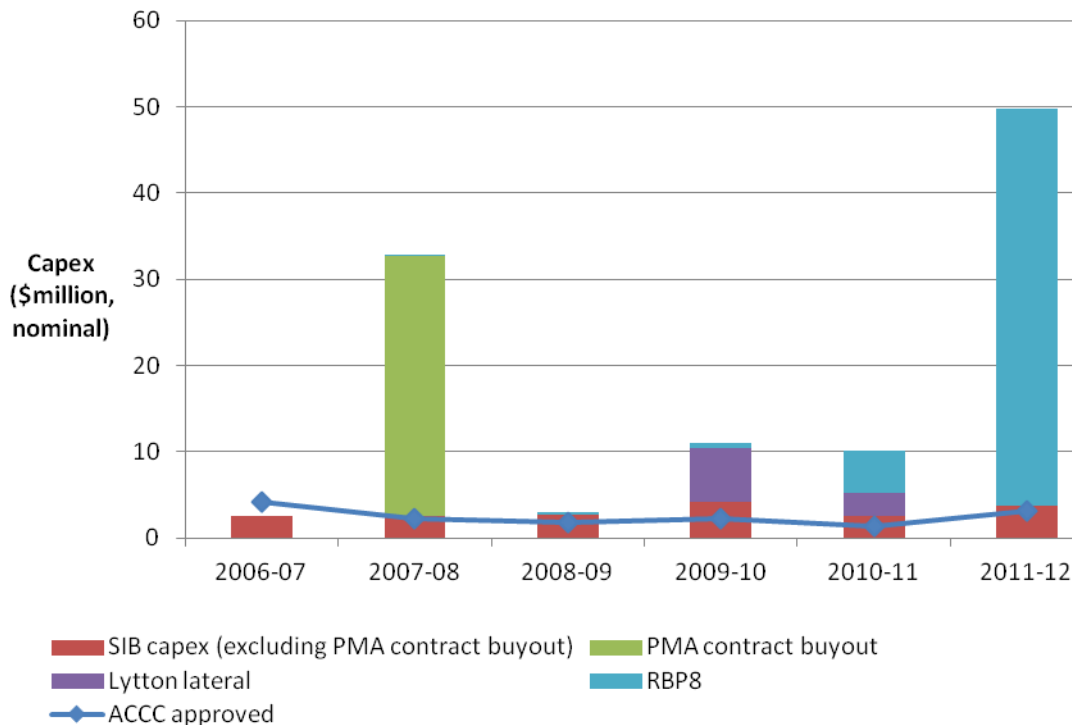
- first, the AER must set the value of the capital base at 12 April 2007. This becomes the opening capital base for the earlier access arrangement period.⁵³² The AER approves APTPPL's opening capital base for the earlier access arrangement period
- second, the AER is required to assess APTPPL's conforming capex over the earlier access arrangement period which forms part of the opening capital base.⁵³³ Figure 8.4 shows the major capex components of the total proposed capex in each year of the earlier access arrangement period. Figure 8.4 also shows a significant divergence between APTPPL's proposed capex and that approved by the ACCC. The AER has carefully examined this divergence. The sources of the divergence include:
 - the PMA contract buyout—The AER does not consider that the PMA expenditure was incurred to provide, or in providing, pipeline services as required by r. 69 of the NGR. The AER is also of the view that the PMA expenditure is not conforming capex for the purposes of r. 79 of the NGR. This is discussed further in appendix D

⁵³² NGR, r. 77(2)(a).

⁵³³ NGR, r. 77(2)

- RBP8 expansion project—APTPPL has demonstrated a positive NPV for the RBP8 expansion project. The AER considers that it is the most prudent, long term option for increasing the capacity of the pipeline. Therefore the AER approves the capex associated with the RBP8 expansion project
- Lytton Lateral—The AER is satisfied that the costs proposed by APTPPL represent the most cost effective option available. Further, APTPPL has demonstrated that the project is NPV positive.⁵³⁴ Therefore the AER approves the capex associated with the Lytton Lateral extension

Figure 8.4 Total proposed capex over the earlier access arrangement period by component (\$million, nominal)



Source: APTPPL, *Access arrangement submission*, October 2011, p. 36.

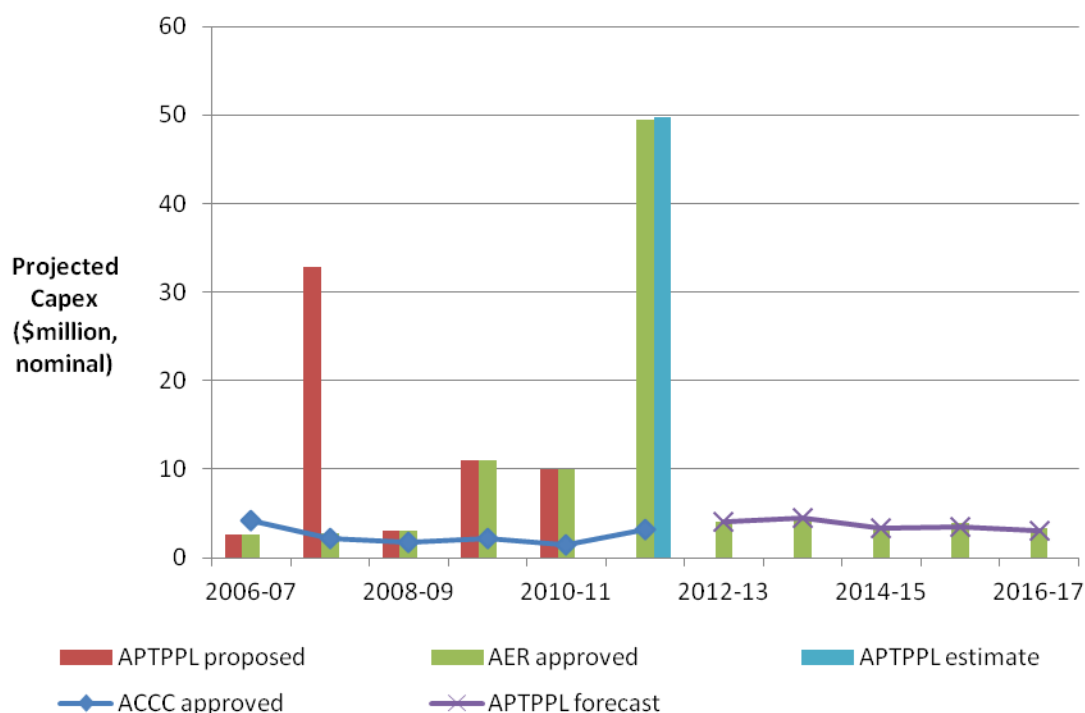
- third, the AER is required to assess APTPPL's proposed capex over the access arrangement period. This forms part of the projected capital base.⁵³⁵ Figure 8.5 shows the total proposed capex in each year of the access arrangement period. With respect to forecast capex in the access arrangement period, the AER has considered the capex proposed by APTPPL. The AER is satisfied that APTPPL's proposed stay in business capex is necessary to maintain the safety, reliability and integrity of the pipeline. The AER also considers that this expenditure is broadly in line with the ACCC approved stay in business capex over the earlier access arrangement period. The AER, however, requires APTPPL to make inflation adjustments to its proposed capex over the access arrangement period.

Figure 8.5 sets out APTPPL's proposed capex compared with the AER's approved capex.

⁵³⁴ NGR, r. 79(2)(b).

⁵³⁵ NGR, r. 78.

Figure 8.5 APTPPL's proposed projected capital expenditure (\$million, nominal)



Source: APTPPL, *Access arrangement submission*, October 2011, p. 36; APTPPL, *Access arrangement information*, October 2011, p. 10; AER analysis.

These components of the capital base are explored in detail below.

8.4.1 Opening capital base

Opening capital base as at 12 April 2007

APTPPL proposed \$296.4 million (\$nominal) as the value for the opening capital base as at 12 April 2007. APTPPL has submitted that no adjustment was required for actual capex in the 2002–07 access arrangement period.⁵³⁶

The AER is satisfied with APTPPL's proposed initial capital base. As a consequence, the AER approves \$296.4 million (\$nominal) as the value for the opening capital base as at 12 April 2007 as it is consistent with r. 77(2) of the NGR.

Conforming capital expenditure in the earlier access arrangement period

APTPPL proposed \$109.2 million (\$million) of conforming capex in the earlier access arrangement period. The proposed conforming capex arises from expenditure in four broad categories: PMA contract buyout, Lytton Lateral, RBP8 expansion project and non-system capex.

⁵³⁶ APTPPL, *Access arrangement submission*, October 2011, p. 46.

The AER approves a portion of the non-system capex and part of the stay in business capex proposed by APTPPL. However the AER does not approve the expenditure for the PMA contract buyout.

PMA contract buyout

The AER does not consider that the PMA expenditure was incurred to provide, or in providing, pipeline services as required by r. 69 of the NGR. The AER is also of the view that the PMA expenditure is not conforming capex for the purposes of r. 79 of the NGR. This is discussed further in appendix D

RBP8 expansion project⁵³⁷

The AER is of the view that the proposed RBP8 expenditure for the RBP8 expansion project reflects the best forecast in the circumstances and complies with r. 74(2) of the NGR. The AER is satisfied that the expenditure proposed by APTPPL will result in an overall economic positive value.⁵³⁸ Consequently, the AER considers that the proposed capex on the RBP8 expansion project is conforming capex in accordance with r. 79 of the NGR.

APTPPL has undertaken capacity expansion of the RBP through the RBP8 expansion project estimated to cost \$50.6 million (\$nominal). It was commenced in 2010–11 and is to be completed by 2011–12.⁵³⁹ To assess whether the RBP8 expansion project is conforming capex the AER evaluated APTPPL's business case for the RBP8 expansion project. The business case identified the following key drivers for the project:

- the RBP pipeline and the RBP–metro pipeline has reached design capacity and current pipeline configuration has a maximum capacity. This maximum capacity is referred to in confidential appendix G.
- in 2010, APTPPL secured long term contracts with an energy retailer and a major industrial user to transport a substantial amount of the additional capacity
- the RBP8 expansion project would allow for future business growth in Brisbane.

The AER also considered APTPPL's evaluation of alternative options and agrees that looping of the RBP-metro pipeline is the most prudent, long term option for increasing the capacity of the pipeline. The AER agrees that this option is preferable to the other options considered, those being the installation of further compressors or increasing the maximum allowable operating pressure of the metro section of the pipeline. The RBP8 expansion project will allow APTPPL to fulfil its contractual requirements to long term users of the pipeline and provide supply for the forecast growth in industrial loads over the period 2010–29.⁵⁴⁰

⁵³⁷ APTPPL proposed that services offered on the RBP8 expansion be offered as a negotiated service. However the AER has included the expenditure associated with RBP8 expansion project as part of APTPPL's opening capital base. This is because the AER assessed the RBP8 expansion project as forming part of the covered pipeline as long as it is completed by the commencement of the access arrangement for the period 2012–2017. This is discussed in more detail in the Pipeline Services attachment, attachment 3.

⁵³⁸ NGR, r. 79(2)(a).

⁵³⁹ APTPPL, *Access arrangement submission*, October 2011, p. 37.

⁵⁴⁰ APTPPL, *Access arrangement submission*, October 2011, p. 37, attachment 4.6,

In considering whether the RBP8 project is conforming capex, the AER also analysed APTPPL's NPV analysis. This analysis showed that the expenditure on the RBP8 expansion project will be NPV positive over the period over the period 2011–48. This being the case, the RBP8 expansion project is justified under r. 79(2)(b) of the NGR.

The RBP8 expansion project is proposed to be completed by 30 June 2012. Initially, the AER had concerns that there was a possibility that the construction of the RBP8 expansion project, in particular the Dalby compressor and for the Metro Looping Phase 1 project, would not be completed by the proposed date. This was because it was not until 25 January 2011 that a contract was awarded for construction of the 5.8 km metro loop. In February 2012 the AER requested more up to date costs and timing of the project. APTPPL advised on 16 February 2012 that the project is expected to be completed on time and on budget.

Therefore, for the purposes of the draft decision, the AER considers that the proposed forecasts in the APTPPL access arrangement proposal reflects the best forecasts in the circumstances and therefore, complies with r. 74(2) of the NGR. The AER is satisfied that the capex is conforming capex for the purposes of r. 79 of the NGR and therefore approves the capex associated with RBP8 expansion project.

Lytton Lateral⁵⁴¹

The AER is satisfied that the present value of the incremental revenue to be generated as a result of the expenditure on the Lytton Lateral exceeds the present value of the capex. Therefore the expenditure meets the capex criteria in r. 79(2)(b) of the NGR. Consequently, the AER considers that the proposed growth related capex on the Lytton Lateral is conforming capex in accordance with r. 79 of the NGR.

The Lytton extension will allow APTPPL to provide increasing gas capacity to a major industrial user in the Lytton area. The extension will also allow for future business opportunities in the Lytton industrial area.

Based on figures provided by APTPPL, the AER is satisfied that the NPV of incremental revenue arising from the Lytton Lateral project exceeds the NPV of the capex incurred. As a long term contract was secured for supply of extra capacity, there is a secure revenue stream arising as a direct result of this investment. The AER is satisfied that the Lytton Lateral will achieve an NPV gain of █████ million over the period 2011–72.⁵⁴²

Although the final project cost for the Lytton Lateral of \$9.1 million (nominal) exceeded the project estimates (as set out in table G.2 in confidential appendix G), the AER is of the view that the extension was the most cost effective option available. The AER considered the alternative options and costs provided by APTPPL, as well as a confidential business case. In forming its view, the AER also took into account the reasons provided by APTPPL for the project costing more than planned, and received advice from its engineering consultant,

⁵⁴¹ APTPPL proposed Lytton Lateral as a negotiated service. However the AER has included the expenditure associated with Lytton Lateral as part of APTPPL's opening capital base. This because the AER assessed Lytton Lateral forming part of the covered pipeline, at the commencement of the access arrangement for the period 2012–2017. This is discussed in more detail in the Pipeline Services attachment, attachment 3.

⁵⁴² APTPPL, *Access arrangement submission*, October 2011, attachment 4.4 (confidential).

Wilson Cook. In light of this analysis, the AER is satisfied that the expenditure is conforming capex under r. 79 of the NGR.⁵⁴³

Non-system capital expenditure

The AER accepts that IT expenditure is necessary to ensure the continued operation of the pipeline. The AER is generally satisfied that APTPPL's proposed non-system capex is conforming capex for the purposes of r. 79 of the NGR. However, the AER requires an adjustment to remove all costs that are subject to alternative cost recovery under the STTM rules.

The majority of the IT projects proposed by APTPPL have been undertaken at an APA corporate level. APA has allocated \$2.3 million of this IT expenditure to the RBP.⁵⁴⁴ The allocation of these project costs amongst the different APA assets (including the RBP) is consistent with the allocation of corporate costs, whereby costs are allocated to specific assets first by driver, with the remainder allocated in proportion to APA revenue.

Rule 79(2)(c) of the NGR justifies capex that is necessary:

- to maintain and improve the safety of services; or
- to maintain the integrity of services; or
- to comply with regulatory obligations.

The AER considered whether the proposed IT projects (as set out in table 8.7 above) meets these requirements. The AER recognises that service providers are subject to new regulatory obligations such as STTM compliance, and a number of these IT projects are required to manage these types of obligations. Further, a number of the IT projects will implement an integrated approach to IT systems across APA which will lead to potential economies of scale in the future. The AER is therefore satisfied that the non-system capex is conforming capex for the purposes of r. 79 of the NGR.

The AER is concerned, however, that there is potential for double counting in the recovery of APTPPL's non-system capex costs. Rules 424 and 425 of the NGR provide a mechanism which allows an STTM pipeline operator to recover its MOS allocation service costs⁵⁴⁵ from AEMO.

The AER is of the view that for the purposes of the draft decision all costs that are likely to be recovered under rr. 424 and 425 of the NGR should not be included in the opening capital base. Should AEMO allow APTPPL to recover these costs under the STTM rules, approval of these costs by the AER would result in double counting and APTPPL's proposed non-system costs would therefore not represent the best forecast or estimate possible for the purposes of

⁵⁴³ NGR, r. 79(2)(b).

⁵⁴⁴ APTPPL, *Access arrangement submission*, October 2011, p. 41.

⁵⁴⁵ The NGR defines MOS allocation service costs as the costs reasonably incurred by an STTM pipeline operator for the purpose of allocating pipeline deviations as MOS or overrun MOS.

r. 74 of the NGR.⁵⁴⁶ As a result, the AER requires APTPPL to amend its access arrangement information to remove the non-system costs associated with implementation of the STTM.

If AEMO considers that APTPPL cannot recover these costs under the STTM rules, the AER will reconsider its position in the final decision.

Adjustment to the capital base for inflation

The AER considers that the inflation rate used to index the capital base should be consistent with the inflation rate used for the annual tariff variation mechanism. APTPPL's proposed RFM uses the change in March–March CPI figures to adjust the opening capital base for inflation. This is consistent with the annual tariff variation mechanism, which uses the change in March–March CPI figures.

The AER accepts the forecast inflation of 2.5% for 2011-12 as proposed by APTPPL for the draft decision. However, the inflation rate for 2011-12 will be updated for the final decision when the CPI for the March quarter 2012 will be available (unless the AER accepts APTPPL's revised access arrangement proposal).

Depreciation used in the earlier access arrangement period

The AER approves the depreciation amounts used to roll forward the capital base submitted by APTPPL as they are consistent with r. 77(2)(d) of the NGR. The amount of depreciation in APTPPL's roll forward model (RFM) reflects the approved allowances made by the ACCC, adjusted for actual inflation.⁵⁴⁷ The AER considers that the proposed depreciation amounts should be used to roll forward the capital base to 1 July 2012.

There are two broad approaches to determining the straight-line depreciation adjustment for the roll forward of the capital base. The depreciation can be based on either the actual capex spent during the access arrangement period or the forecast capex for the period as determined by the regulator at the earlier access arrangement period review. APTPPL proposed to roll forward the capital base using depreciation based on the forecast capex approved by the ACCC for the earlier access arrangement. This is consistent with the standard approach for gas transmission pipelines and distribution networks.

APTPPL has used the AER's prescribed RFM to calculate the depreciation adjustment.⁵⁴⁸ The AER's RFM uses a depreciation approach based on actual capex to calculate the depreciation. However, APTPPL has proposed to apply a depreciation method that results in an outcome consistent with depreciation based on forecast capex.⁵⁴⁹ The AER accepts the adjustment proposed by APTPPL. The AER has also made further adjustments to APTPPL's depreciation to take into account required amendments to APTPPL's proposed capex for

⁵⁴⁶ NGR, r. 79(1)(a).

⁵⁴⁷ ACCC, *Final approval: Revised access arrangement by the APT Petroleum Pipelines Ltd for the Roma to Brisbane Pipeline 2006–2011*, 28 March 2007, p. 11; APTPPL, *Access arrangement submission*, October 2011, p. 46.

⁵⁴⁸ APPTPL, *Access arrangement submission*, October 2011, p.46.

⁵⁴⁹ The forecast depreciation approach calculates depreciation based on the forecast capex allowance which is updated for actual inflation at the last access arrangement review.

2007-08 and 2011-12.⁵⁵⁰ These adjustments result in a reduction of APTPPL's opening capital base by \$0.1 million (nominal).

The level of regulatory depreciation⁵⁵¹ over the earlier access arrangement period is negative. This results in an increase in the capital base over the earlier access arrangement period. Regulatory depreciation is straight-line depreciation net of the indexation adjustment to the capital base for inflation. Regulatory depreciation is negative when the indexation applied to the capital base is greater than the straight-line depreciation amounts approved at the last access arrangement review.

The regulatory depreciation amounts approved by the ACCC in the earlier access arrangement period are significantly lower than the forecast regulatory depreciation amounts for the access arrangement period. This is explained largely by two factors:⁵⁵²

1. the ACCC adopted a relatively low depreciation rate based on an economic depreciation method for the earlier access arrangement period, when compared to the straight-line depreciation method used in the PTRM for the access arrangement period⁵⁵³
2. APTPPL incurred more capex during the earlier access arrangement period than approved by the ACCC, which resulted in higher indexation to the capital base.

8.4.2 Projected capital base

The AER does not approve APTPPL's proposed projected capital base. Figure 8.6 shows the total proposed capex in each year of the access arrangement period. While the AER largely accepts the proposed forecast capex over the access arrangement period, it requires an adjustment to the capital base for inflation. The AER considers that the expenditure proposed by APTPPL is in line with the ACCC approved stay in business capex over the earlier access arrangement period. The AER requires APTPPL to amend its access arrangement proposal as set out in amendment 8.13.

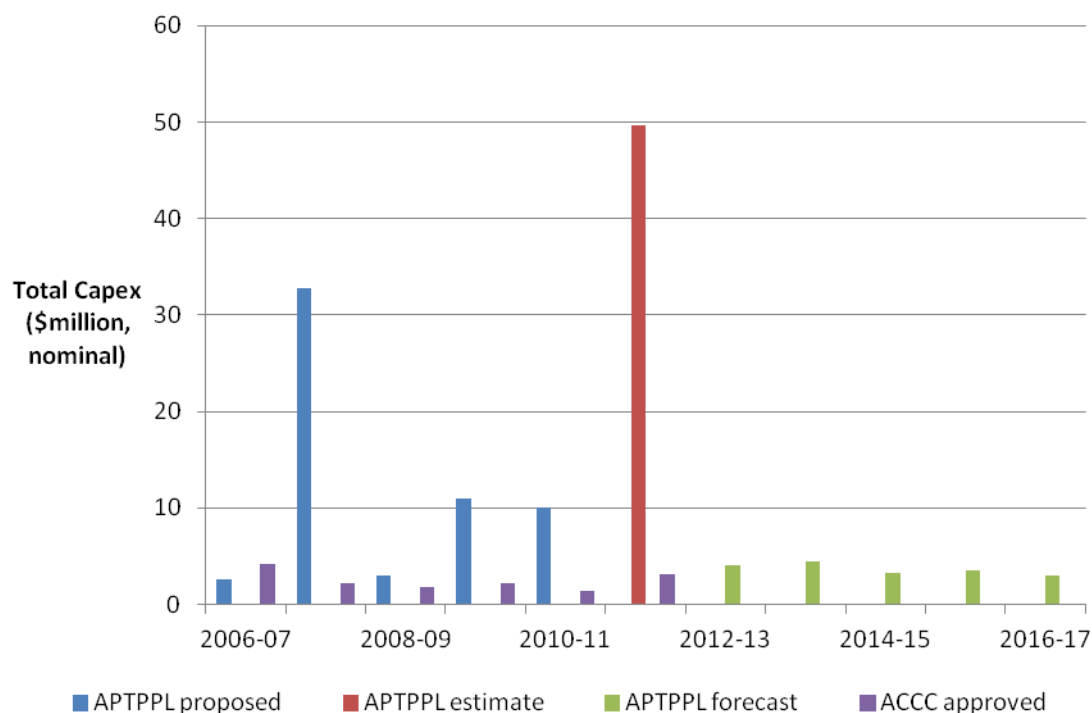
⁵⁵⁰ APTPPL adjusted the actual depreciation in the RFM to reflect the ACCC approved depreciation by: (i) calculating the amount of actual depreciation using the straight-line method of depreciation in the AER's RFM; (ii) calculating the difference using the actual and forecast depreciation, (the adjustment amount); (iii) allocating the adjustment amount across the original asset classes based upon the proportion of actual depreciation for the asset class to the total actual depreciation of all asset classes; (iv) deducting the adjustment amount from the actual depreciation calculated in the RFM to arrive at the level of forecast depreciation.

⁵⁵¹ Regulatory depreciation is the sum of straight line depreciation and the indexation for inflation of the capital base.

⁵⁵² Indexation of RAB for inflation also explains the increase in depreciation in nominal terms.

⁵⁵³ ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. 162.

Figure 8.6 Total capex proposed by APTPPL over the earlier access arrangement period (\$million, nominal)



Source: APTPPL, *Access arrangement information*, October 2011, p. 3, 7; APTPPL, *Access arrangement submission*, October 2011, p. 36.

Stay In Business

APTPPL has forecast \$18.3 million (\$nominal) of stay in business capex over the access arrangement period.⁵⁵⁴ The AER approves the forecast capex as proposed by APTPPL. The need to maintain the safety, reliability and integrity of the pipeline over the access arrangement period provides sufficient justification for the proposed capex.⁵⁵⁵ The AER is also satisfied that the forecast costs are prudent and efficient.⁵⁵⁶

Stay in business capex is comprised of a number of small projects, of which vehicle and mobile plant replacement, coating refurbishments, and unit control panel upgrades are the largest items.⁵⁵⁷ APTPPL has provided business cases for each of the stay in business projects over \$0.2 million (\$nominal) outlining the requirement for each project. The AER is satisfied that APTPPL’s proposed capex for stay in business is necessary to maintain the safety, reliability and integrity of the pipeline.⁵⁵⁸

The AER also considers that this expenditure is in line with the ACCC approved stay in business capex over the earlier access arrangement period. This is shown in figure 8.7.

⁵⁵⁴ APTPPL, *Access arrangement information*, October 2011, p. 7.

⁵⁵⁵ NGR, r. 79(2)(c)

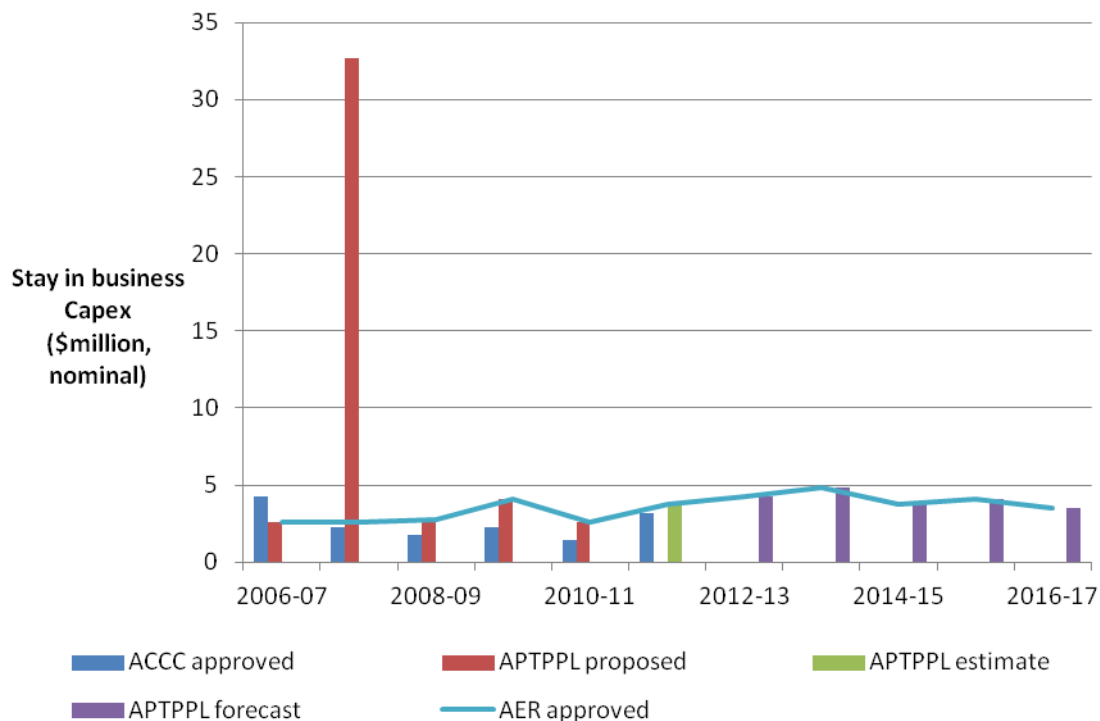
⁵⁵⁶ NGR, r. 79(1)(a)

⁵⁵⁷ APTPPL, *Access arrangement submission*, October 2011, p. 44, attachment 4.2 (confidential).

⁵⁵⁸ NGR, r. 79(2)(c)

Wilson Cook, the AER’s engineering consultant, also considered the expenditure to be justified and reasonable.⁵⁵⁹ As a result, the AER considers that stay in business capex complies with r. 79(2)(c) of the NGR.

Figure 8.7 Stay in business capex (\$million, nominal)



Source: APTPPL, *Access arrangement submission*, October 2011, p. 36; APTPPL, *Access arrangement information*, October 2011, p. 10, AER analysis.

Growth capex

APTPPL did not propose any growth capex over the access arrangement period and has therefore not provided business cases or detailed cost information in relation to growth capex in the access arrangement period. However, APTPPL indicated in its submission that significant growth capex may be required late in the access arrangement period or early in the following access arrangement period. This is because the capacity of the RBP is expected to be constrained at some point in the future by the capacity of the metro section. As a result, APTPPL submitted that the most likely solution to develop capacity in the metro section will be the completion of looping of the existing metro pipeline at an estimated cost of approximately \$50 million (\$nominal).⁵⁶⁰

⁵⁵⁹ Wilson Cook and Co., *Review of expenditure forecasts for Roma–Brisbane gas pipeline access arrangement for FYS 2013–2017*, January 2012, p. 11 (Wilson Cook report, January 2012).

⁵⁶⁰ APTPPL, *Access arrangement submission*, October 2011, p. 44.

The AER requested further information from APTPPL regarding the looping of the metro pipeline.⁵⁶¹ APTPPL provided confidential material to the AER in response to the AER's request. This is discussed in confidential appendix G.

Adjustment to the capital base for inflation

APTPL used a forecast inflation rate of 2.5 per cent in its modelling. APTPL's approach to estimating expected inflation is discussed in attachment 7 of the draft decision. For reasons discussed in attachment 7, the AER uses a geometric average comprised of the RBA's most up to date short-term inflation forecasts and the target range midpoint of 2.5 per cent to estimate an inflation rate of 2.6 per cent over a 10 year period for the access arrangement period. Therefore, the AER does not accept the proposed forecast inflation rate used by APTPL. The forecast inflation amount will be updated for the final decision based on most up to date information.

Depreciation

The AER assessment of APTPL's forecast depreciation allowance is set out in attachment 5 of the draft decision. Table 8.10 reproduces the conclusions from that chapter.

Table 8.10 AER approved depreciation for the access arrangement period (\$million, nominal).

	2012–13	2013–14	2014–15	2015–16	2016–17
Straight-line depreciation	12.5	13.7	15.1	14.9	14.2
Indexation	10.2	10.2	10.3	10.3	10.2
Regulatory depreciation	2.3	3.5	4.8	4.7	3.9

Source: AER analysis.

The AER requires APTPL to amend its forecast depreciation as outlined in amendment 5.2.

Forecast disposals

APTPL has submitted that it does not propose any disposals in the access arrangement period. The AER accepts APTPL's proposal that no disposals are forecast in the projected capital base for the access arrangement period.

8.5 Calculation of the opening capital base at the next access arrangement period

The AER's forecast of APTPL's opening capital base as at 1 July 2017 is \$393.3 million (\$nominal). The capital base at the commencement of the next access arrangement period will be subject to adjustments under r. 77(2) of the NGR. These adjustments are not limited

⁵⁶¹ AER, *Notice issued under s. 42 of the National Gas Law to APTPL*, 20 December 2011.

to, but include the difference between actual and forecast capex, actual inflation, and depreciation.

The AER accepts APTPPL's proposal to use forecast depreciation approved in this decision to establish APTPPL's opening capital base as at 1 July 2017.⁵⁶² The AER approved such an approach in the decisions for Jemena Gas Networks (JGN), APT Allgas, and Envestra networks.⁵⁶³ This approach is also consistent with the approach outlined in the AER's Access Arrangement Guideline (AAG).

The AER's forecast of the capital base as at 1 July 2017 excludes any forecast capex for the development of capacity of the metro section of the pipeline.⁵⁶⁴

In the event APTPPL begins the metro looping project during the access arrangement period, the AER will review this as part of APTPPL's proposal at the next access arrangement review. At the next access arrangement review, capex not included in the AER's approved forecast would be subject to the new capital expenditure criteria under r. 79 of the NGR.

8.6 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 8.1:

Make all necessary amendments to reflect the AER's draft decision on opening capital base for the access arrangement period, as set out in table 8.1.

Amendment 8.2:

Make all necessary amendments to reflect the AER's draft decision on capital expenditure by asset class over the earlier access arrangement period, as set out in table 8.2.

Amendment 8.3:

Make all necessary amendments to reflect the AER's draft decision on projected capital base for the access arrangement period, as set out in table 8.3.

Amendment 8.4:

Make all necessary amendments to reflect the AER's draft decision on forecast capex by asset class over the access arrangement period, as set out in table 8.4.

⁵⁶² APTPPL, *Access arrangement proposal*, October 2011, p. 12.

⁵⁶³ AER, *Final decision: Jemena access arrangement proposal*, June 2010, p. 92; AER, *Final decision: APT Allgas access arrangement*, June 2011, p. 13; AER, *Final decision: Envestra access arrangement Qld*, June 2011, p. 25; AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 28.

⁵⁶⁴ APTPPL, *Access arrangement revision submission*, October 2011, p. 44. APTPPL did not include any forecast capex associated with the metro looping in its access arrangement proposal. Therefore, the AER's approved forecast depreciation allowance does not reflect capex on the metro looping project.

9 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other non-capital costs incurred in the provision of pipeline services.⁵⁶⁵

9.1 Draft decision

The AER approves APTPPL's application of the base year roll forward methodology to forecast opex. The AER also approves APTPPL's forecasts for asset licences and insurance costs.

However, the AER does not approve APTPPL's forecast opex in respect of labour, contractors, capacity expansions, corporate costs and debt raising costs. The AER is not satisfied APTPPL's forecasts for these elements comply with the criteria governing opex,⁵⁶⁶ taking into account the criteria for forecasts and estimates.⁵⁶⁷

The AER's estimate of APTPPL's required opex includes amendments relating to:

- labour and contractor costs (discussed in confidential appendix I)
- expanded capacity
- corporate costs
- debt raising costs.

Consequential amendments are also required for regulatory costs.

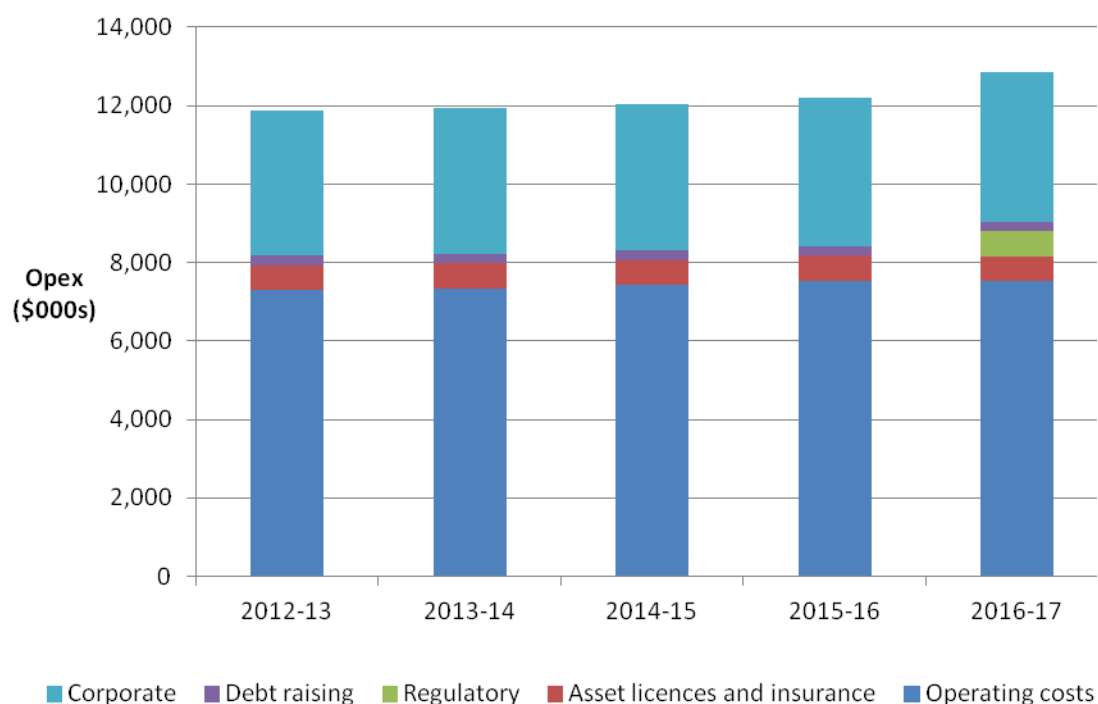
Overall, the AER estimates a total forecast opex of \$60.9 million (\$2011–12) for the access arrangement period (figure 9.1 and table 9.1).

⁵⁶⁵ NGR, r. 69.

⁵⁶⁶ NGR, r. 91.

⁵⁶⁷ NGR, r. 74.

Figure 9.1 AER draft decision on APTPPL's opex (\$'000, 2011–12)



Source: AER analysis.

Table 9.1 AER draft decision on APTPPL's opex (\$million, 2011–12)⁵⁶⁸

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Labour						
Contractors O&M						
Other operating costs						
Total controllable opex	7.3	7.3	7.4	7.6	7.5	37.1
Asset licences & insurance	0.6	0.6	0.6	0.6	0.6	3.2
Regulatory costs	0	0	0	0	0.6	0.6
Debt raising costs	0.3	0.3	0.3	0.2	0.2	1.2
Corporate costs	3.7	3.7	3.8	3.8	3.8	18.7
Total Operating Expenditure	11.9	11.9	12.1	12.2	12.8	60.9

Source: AER analysis.

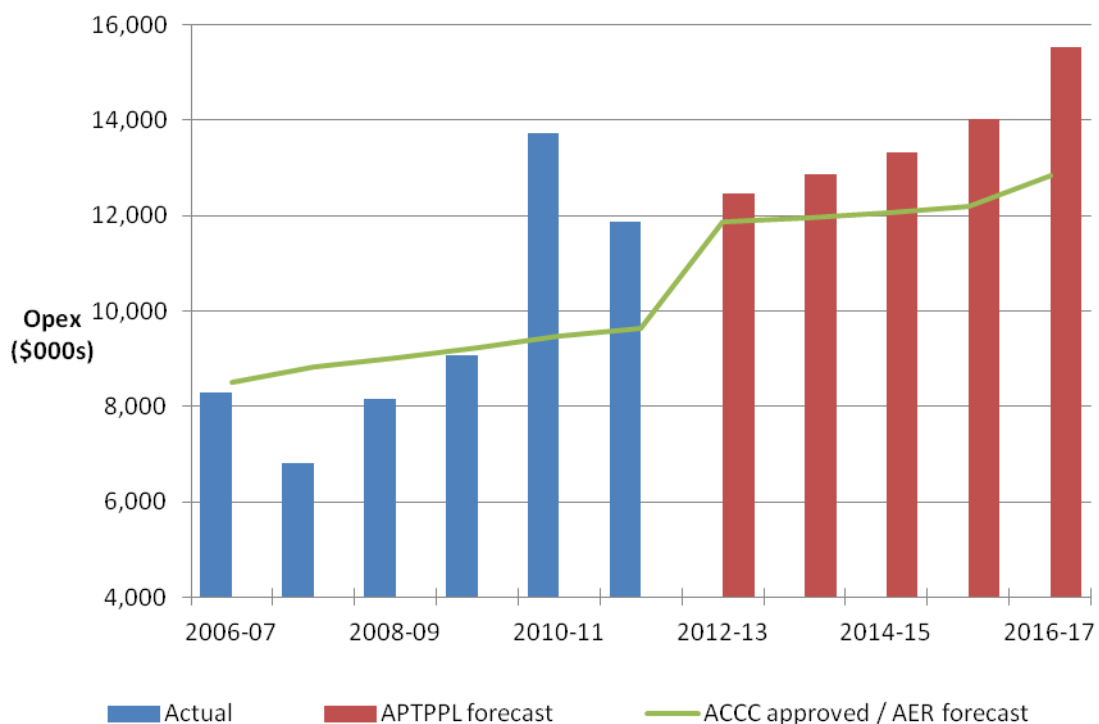
⁵⁶⁸ Costs for internal labour, contract labour and other operating costs have been removed to retain the confidentiality of APTPPL's labour related funding. These details are provided in confidential appendix I.

9.2 APTPPL's proposal

Total opex

APTPL proposed a 37 per cent real increase in opex compared to the earlier access arrangement.⁵⁶⁹ This represents a proposed increase of \$18.6 million (\$2011–12) compared to the earlier period.⁵⁷⁰ The increase has principally been substantiated by forecast increases in labour costs and in APA Group corporate costs of \$6.7 million⁵⁷¹ (\$2011–12) (table 9.2). Figure 9.2 illustrates approved and actual opex over the earlier access arrangement period, with APTPL's proposed opex and the AER's draft decision on opex over the access arrangement period.

Figure 9.2 APTPL opex – historical and forecast (\$'000, 2011–12)



Source: APTPL, *Access arrangement information*, October 2011, p. 13; APTPL, *Access arrangement submission*, October 2011, pp. 68–69; AER analysis.

⁵⁶⁹ APTPL, *Access arrangement submission*, October 2011, tables 8.3 and 8.5.

⁵⁷⁰ APTPL's proposal incorporates six years for the earlier access arrangement period - five years of actual data and a final year (2011–12) of actual and estimated data. APTPL have presented this by financial year, beginning with the full 2006-07 financial year and concluding with the full 2011-12 financial year. The new access arrangement period covers only five years. To enable like-with-like comparison of the proposed five year opex against opex from the earlier access arrangement, the first year of data provided by APTPL for the earlier access arrangement (2006–07) has been set aside from calculations. However, data presented in some charts retains 2006–07 data.

⁵⁷¹ Comparing the most recent five years of data from the earlier access arrangement period with the full five years of forecast data for the access arrangement period.

To forecast opex, APTPPL applied the base year roll forward methodology.⁵⁷² The opex base year chosen by APTPPL was 2010–11, the most recent full financial year for which actual data is available.⁵⁷³ APTPPL adjusted base year data for non-recurrent opex items.⁵⁷⁴ APTPPL then extrapolated into the access arrangement period for expected costs, using real cost escalators for internal labour and contractors provided by its consultant, BIS Shrapnel.⁵⁷⁵ APTPPL further proposed that labour cost forecasts be further annually escalated from 2013–14 to reflect the Australian Government’s announced superannuation guarantee rate increase.⁵⁷⁶ APTPPL’s proposed labour costs are discussed in detail in confidential appendix I to this attachment.

Table 9.2 APTPPL's proposed forecast opex (\$million, 2011–12)⁵⁷⁷

	2012–13	2013–14	2014–15	2015–16	2016–17	Total
Labour						
Contractors O&M						
Other operating costs						
Total controllable opex	7.8	8.2	8.5	8.9	9.4	42.7
Asset licences & insurance	0.6	0.6	0.6	0.6	0.6	3.2
Regulatory costs	0	0	0	0	0.8	0.8
Debt raising costs	0.3	0.2	0.2	0.2	0.2	1.2
Corporate costs	3.7	3.9	4.0	4.3	4.6	20.4
Total Operating Expenditure	12.5	12.9	13.3	14.0	15.5	68.2

Source: APTPPL, *Access arrangement information*, October 2011, p. 13.

APTPPL removed from base year opex non-recurrent costs associated with the Queensland floods in December 2010 and January 2011. In total, \$3.68 million (\$2011–12) was removed from 2010–11 actual opex due to flood impacts. A further three non-routine and non-recurrent projects were undertaken by APTPPL in 2010–11 and subsequently removed from the base year for forecasting purposes.⁵⁷⁸

⁵⁷² APTPPL, *Access arrangement submission*, October 2011, p. 72.

⁵⁷³ APTPPL, *Access arrangement submission*, October 2011, p. 73.

⁵⁷⁴ APTPPL, *Access arrangement submission*, October 2011, p. 76.

⁵⁷⁵ BIS Shrapnel, *Real cost escalation forecasts*, October 2011.

⁵⁷⁶ APTPPL, *Access arrangement submission*, October 2011, p. 84.

⁵⁷⁷ Costs for internal labour, contract labour and other operating costs have been removed to retain the confidentiality of APTPPL's labour related funding. These details are provided in confidential appendix I.

⁵⁷⁸ APTPPL, *Access arrangement submission*, October 2011, p. 78-80.

Table 9.3 Summary of all base year adjustments undertaken by APTPPL (\$'000, 2011–12)

Adjustment	Value
Unadjusted base year opex	13,729
Flood related adjustments	-3,682
Non-routine projects adjustments	-217.5
Base year business as usual	9,829

Source: APTPPL, *Access arrangement submission*, October 2011, p. 80

APTPPL nominated a single opex step or scope change within the access arrangement period, resulting from the RBP8 pipeline expansion.⁵⁷⁹ APTPPL propose to operate the expansion from 1 July 2012, aligning with the adjusted beginning of the access arrangement period.

Table 9.4 APTPPL proposed RBP8 expansion project opex (\$million, 2011–12)

Opex categories	2012–13	2013–14	2014–15	2015–16	2016–17	Total
APTPPL forecasts						
Labour	0.4	0.4	0.4	0.4	0.4	1.9
Contractors	0.1	0.1	0.1	0.1	0.2	0.7
Insurance, Licences, Fees	-	-	-	-	-	-
Other Operating Costs	0.3	0.3	0.3	0.3	0.3	1.4
Corporate costs	0.1	0.1	0.1	0.1	0.1	0.4
Total opex	0.8	0.8	0.9	0.9	1.0	4.4

Source: APTPPL, PTRM sheet "APA Group Assumptions" submitted with access arrangement proposal, October 2011.

The Lytton Lateral extension is addressed separately in APTPPL's submission as an additional incremental opex cost, although it was completed in 2010 during the earlier access arrangement.⁵⁸⁰ To operate the Lytton Lateral, APTPPL proposed additional labour costs of around \$60,000 to \$70,000 per year of the access arrangement period.⁵⁸¹

APTPPL further proposed that services offered over the RBP8 expansion and Lytton Lateral extension be negotiated services, to be provided at a negotiated tariff. However, the AER considers that costs associated with the RBP8 expansion project and Lytton Lateral extension should be included in the calculation of a reference tariff, as discussed in the Pipeline

⁵⁷⁹ APTPPL, *Access arrangement submission*, October 2011, p. 85.

⁵⁸⁰ APTPPL, *Access arrangement submission*, October 2011, pp. 71–72.

⁵⁸¹ APTPPL, *Opex roll forward model*, received x December 2012, sheet "Lytton Lateral".

Services attachment 3. As such, the AER has considered APTPPL's proposed opex forecast for the RBP8 expansion project and Lytton Lateral.

APTPL proposed that APA corporate costs of \$20.5 million (\$2011–12) be allocated to the RBP over the access arrangement period, or an average of \$4.1 million (\$2011–12) per annum. This represents an increase of \$6.7 million (\$2011–12), or 49 per cent, compared to the earlier access arrangement period.⁵⁸²

APTPL allocated APA corporate costs to APTPL based on the RBP's contribution to the APA's total revenue, adjusted by removing costs unrelated to functions provided to APTPL.⁵⁸³ APTPL applied a consistent methodology to the allocation of corporate costs across its assets and this methodology reflects its internal accounting practices.⁵⁸⁴ APTPL referenced a number of examples from previous AER decisions and other network regulation proposals that used the proportional revenue approach.⁵⁸⁵ In support of its corporate cost forecasts APTPL provided benchmarking information developed by its consultant KPMG.⁵⁸⁶

APTPL submitted that its forecast debt raising costs of \$1.2 million (\$2011–12) were calculated using a methodology previously approved by the AER.⁵⁸⁷

APTPL proposed regulatory costs in 2016–17 of \$767,000 (\$2011–12) to account for the cost of preparing its next RBP access arrangement proposal.

⁵⁸² Excluding the first year of actual data from the earlier access arrangement period so as to compare five year periods.

⁵⁸³ APTPL, *Access arrangement submission*, October 2011, p. 94.

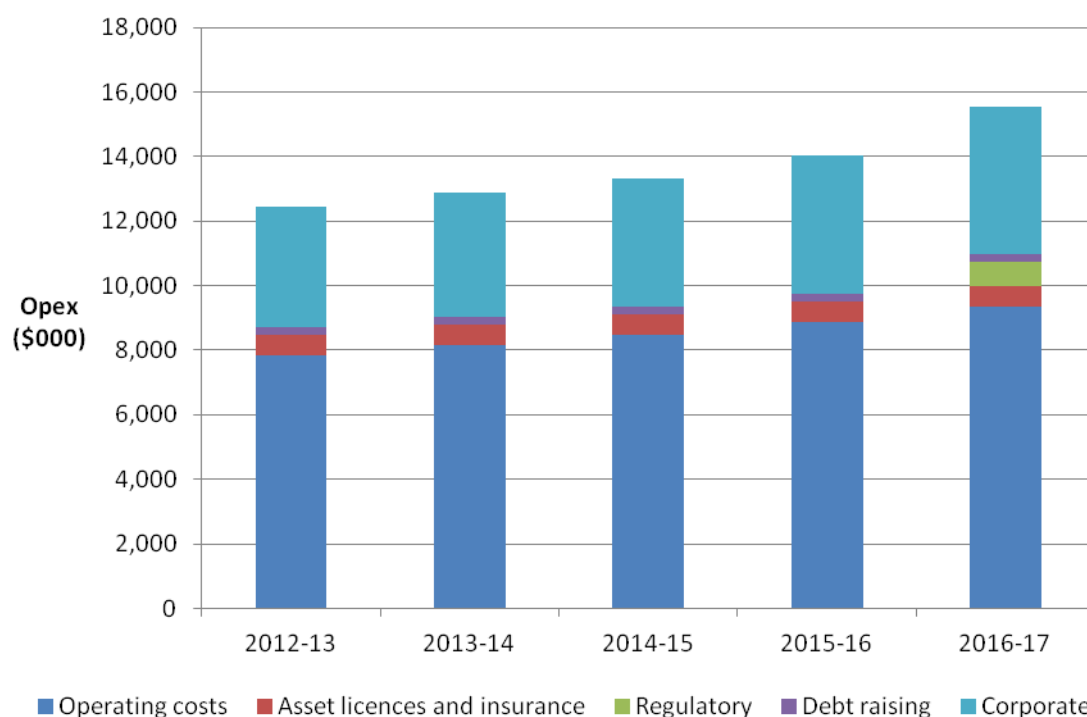
⁵⁸⁴ APTPL, *Access arrangement submission*, October 2011, p. 91–92.

⁵⁸⁵ APTPL, *Access arrangement submission*, October 2011, p. 89.

⁵⁸⁶ KPMG, *Corporate Cost Benchmarking – Roma to Brisbane Pipeline*, October 2011.

⁵⁸⁷ APTPL, *Access arrangement submission*, October 2011, p. 86.

Figure 9.3 APTPPL proposed opex (\$'000, 2011–12)



Source: APTPPL, *Access arrangement information*, October 2011, p. 13.

9.3 Assessment approach

The AER is required to assess APTPPL’s forecast opex to decide whether it is satisfied the forecast opex complies with applicable criteria prescribed by the NGL and NGR.⁵⁸⁸ If the AER is not satisfied in this regard, it must indicate the nature of the amendments that are required in order to make the proposal acceptable to the AER.⁵⁸⁹ The AER only has a limited discretion in assessing opex.⁵⁹⁰ The AER must approve each element of APTPPL’s proposed opex if satisfied it complies with and is consistent with the criteria prescribed in the NGL and NGR. The AER must accept a forecast that is arrived at on a reasonable basis and represents the best forecast or estimate possible in the circumstances.⁵⁹¹

The AER assessed APTPPL’s proposed opex against the criteria governing opex established by r. 91 of the NGR, taking into account the forecasts and estimates criteria established by r. 74 of the NGR:⁵⁹²

- 91 Criteria governing operating expenditure
- (1) Operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry

⁵⁸⁸ NGR, rr. 91 and 40(2).

⁵⁸⁹ NGR, r. 59(2).

⁵⁹⁰ NGR, rr. 91(2) and 40(2).

⁵⁹¹ NGR, r. 74.

⁵⁹² NGR, rr. 74(2) and 91(2).

practice, to achieve the lowest sustainable cost of delivering pipeline services.

- (2) The AER's discretion under this rule is limited.

74 Forecasts and estimates

(1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.

(2) A forecast or estimate:

- (a) must be arrived at on a reasonable basis; and
- (b) must represent the best forecast or estimate possible in the circumstances.

Because forecast opex can be separated into expenditure components, the AER assesses these individual components to make its decision.

Operating costs are largely recurrent. As a result, the AER's starting point is to assess actual expenditure in a base year that reflects APTPPL's recurrent operating costs of providing reference pipeline services. The AER then adjusts this base year opex to account for changes in APTPPL's circumstances that will drive changes in APTPPL's operating costs in the next access arrangement period. These adjustments include:

- removing non-recurrent costs from actual expenditure in the base year
- escalating forecast increases in the size of the network (referred to as 'scale escalation')
- escalating forecast real cost changes for labour and materials (referred to as 'real cost escalation')
- adding step changes for efficient costs not reflected in the base opex, such as costs due to changes in regulatory obligations and the external operating environment.

The above approach to forecasting and assessing opex is referred to as the *base year roll forward* methodology. The AER assessed APTPPL's application of the base year roll forward methodology for each of the above adjustment types. Where necessary, the AER amended APTPPL's proposed adjustments to conform with r. 74 and r. 91 of the NGR.

APTPPL provided its opex roll forward model to the AER. To develop its opex forecasts the AER amended elements of APTPPL's roll forward model consistent with its draft decision on individual opex components, as described in this attachment.

In assessing APTPPL's proposal, the AER examined key documents, processes and assumptions, and compared historical expenditure to that proposed, to better understand the key drivers behind APTPPL's proposed forecast opex. The AER has taken into account APTPPL's circumstances, in light of r. 91 and r. 74 of the NGR. The AER has undertaken trend analysis of RBP historic and forecast opex and engaged expert independent advice from Wilson Cook to provide engineering advice on the prudence and efficiency of APTPPL's proposed opex.

The AER did not rely solely on APTPPL's base opex as being representative of its recurrent costs. The AER referred to Deloitte Access Economics (DAE) advice on labour costs in

considering APTPPL's proposed labour and contractor cost escalation methodology. The AER also referred to a 2004 Allen Consulting Group (ACG) report commissioned by the ACCC when considering APTPPL's proposed debt raising costs.⁵⁹³ In addition, the AER referred to a 2007 report by Ross Calvert Consulting when considering APTPPL's proposed opex associated with pipeline capacity expansion.

APTPPL provided benchmarking information for the RBP against other pipelines in support of its proposed opex forecasts. However, the AER generally considers that benchmarking is best presented as an accompaniment to other substantial analyses of operating costs.⁵⁹⁴ Benchmarking across different pipelines has limitations in the context of other pipelines having varying characteristics. While benchmarking across pipelines is relevant to the AER's consideration of base year selection and adjustments, it cannot be solely relied upon.

Benchmarking against opex for the same pipeline across multiple years may provide greater insight into the merits of opex in the selected base year. The AER has undertaken such analysis in reaching its draft decision on APTPPL's proposed opex.

To determine benchmark debt raising costs the AER relies on an approach based on the 2004 ACG report commissioned by the ACCC.⁵⁹⁵ The ACG method involves two key steps. First, it identifies the types of transaction costs that an efficient and prudent operator would incur in raising debt. Second, it quantifies the level of these costs, taking into account the circumstances of the operator, with reference to market rates for the relevant services.⁵⁹⁶ The AER considers this method estimates the prudent and efficient debt raising costs likely to be incurred by a benchmark efficient operator.

The ACG method also involves calculating the benchmark bond size and the number of bond issues required to rollover the notional debt component.⁵⁹⁷ The assessment is based on the direct costs of raising debt, such as underwriting fees, legal fees and credit rating fees. The AER's standard approach is to amortise the upfront costs that are incurred using the relevant nominal vanilla WACC over a ten year amortisation period.⁵⁹⁸ This is then expressed as a unit rate in basis points per annum (bppa) as an input into the PTRM.

The AER has refined its debt raising costs forecasting approach by updating the individual costs over time and using a five year window of up to date bond data to reflect current market conditions. The AER most recently updated the model inputs in the 2011 draft decision for Powerlink's transmission determination.⁵⁹⁹

⁵⁹³ ACG, *Debt and equity raising transaction costs—Final Report*, December 2004. The AER has applied this approach to assess debt raising costs in all its determinations, updating it from time to time.

⁵⁹⁴ AER, *Draft decision: Powerlink transmission determination*, November 2011, p. 126.

⁵⁹⁵ ACG, *Debt and equity raising transaction costs—Final Report*, December 2004.

⁵⁹⁶ ACG, *Debt and equity raising transaction costs—Final Report*, December 2004, p. 51–53.

⁵⁹⁷ ACG, *Debt and equity raising transaction costs—Final Report*, December 2004, p. xix.

⁵⁹⁸ AER, *Draft decision: Queensland electricity distribution network service providers: Distribution determination 2010–2015*, 25 November 2009: *Appendices*, p. 738.

⁵⁹⁹ AER, *Draft decision: Powerlink transmission determination*, November 2011, p. 206.

Submissions

Submissions received by the AER in response to APTPPL's access arrangement proposal did not raise opex related issues.

9.4 Reasons for decision

The AER does not approve APTPPL's forecast opex in respect of several opex elements, as it considers these do not comply with the criteria governing opex taking into account the criteria for forecasts and estimates. Discussion of the AER's reasoning is presented under the following headings:

- APTPPL's historical opex
- forecasting base year
- network capacity expansions
- corporate costs
- debt raising costs.

Labour cost escalation is discussed in detail in confidential appendix I to this draft decision.

9.4.1 APTPPL's historical opex

The AER has considered APTPPL's historical opex by category in order to better understand its opex proposal. The AER's analysis of APTPPL's proposed opex by category, in the sections below, builds on the brief discussion of historical opex provided in this section.

Actual total opex over the earlier access arrangement period of \$49.6 million (\$2011–12) was seven per cent, or \$3.4 million (\$2011-12), higher than total approved opex of \$46.2 million (\$2011–12).⁶⁰⁰

APTPPL's controllable costs⁶⁰¹ over the earlier access arrangement period were three per cent, or \$1.1 million (\$2011–12) lower than approved controllable costs.⁶⁰² Non-controllable costs⁶⁰³ were 115 per cent, or \$8.3 million (\$2011–12), higher than approved. Figure 9.4 presents controllable costs (labour, operations and maintenance) and non-controllable costs (other corporate costs) over the earlier access arrangement period.

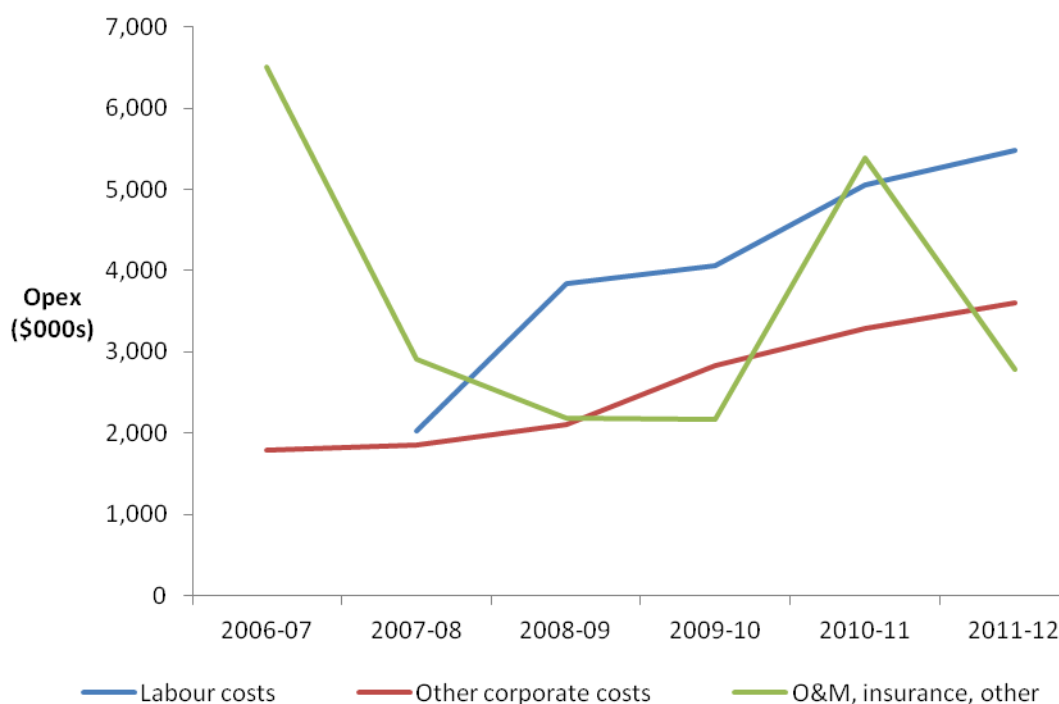
⁶⁰⁰ Analysis sets aside the first year of approved and actual opex data provided by APTPPL.

⁶⁰¹ APTPPL, *Access arrangement submission*, October 2011, p. 66.

⁶⁰² APTPPL's reported actual (and approved) controllable costs over the earlier access arrangement period incorporate insurance, inconsistent with APTPPL's definition of controllable costs. Forecast controllable and non-controllable costs are consistent with APTPPL's definitions. The discrepancy in opex categories over access arrangement periods relates to APTPPL's amended reporting methodology, as detailed on p. 81 of the APTPPL, *Access arrangement submission*, October 2011.

⁶⁰³ APTPPL, *Access arrangement submission*, October 2011, p. 67.

Figure 9.4 APTPPL actual opex by major category (\$'000, 2011–12)



Source: APTPPL, *Access arrangement submission*, October 2011, pp. 66–67, 81.

In relation to controllable costs, in 2007 APA purchased the third party RBP operator, Agility. Subsequently, APTPPL’s salaries and wages over the earlier access arrangement period were higher than approved but were more than offset by reduced PMA contract payments:

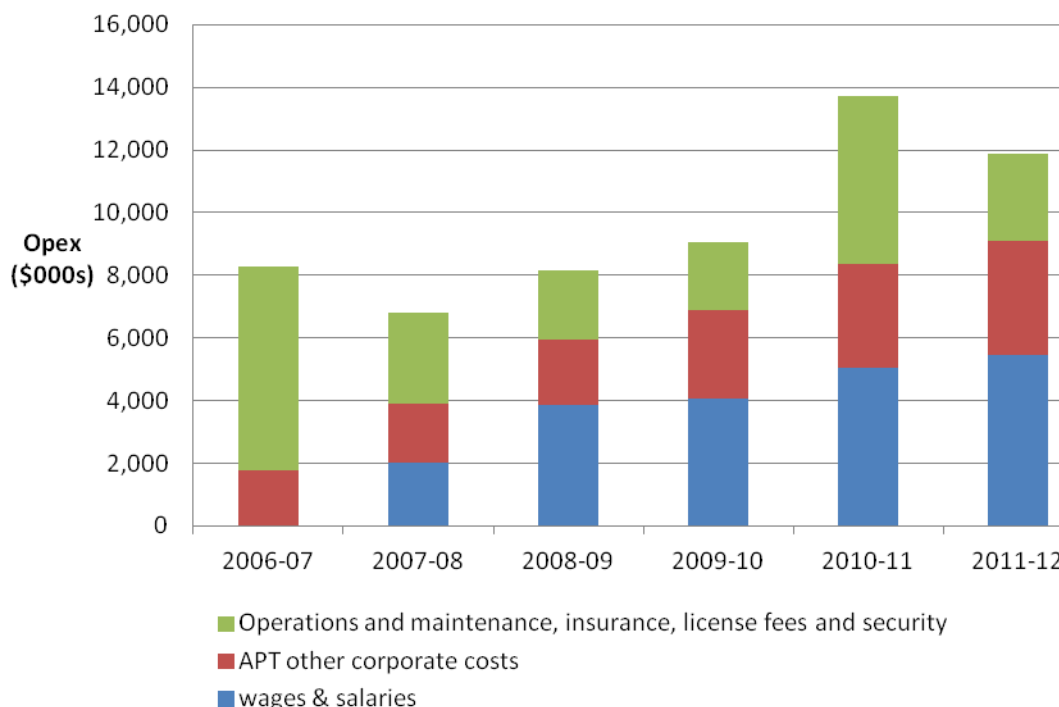
- actual salaries and wages expenditure exceeded approved expenditure by \$15.9 million (\$2011–12)
- actual operations and maintenance, insurance, licence fees and security expenditure was \$17.2 million (\$2011–12) less than approved expenditure.

In relation to non-controllable costs, the variance between approved and actual opex was driven by the allocation of APA corporate costs to APTPPL. At \$15.47 million (\$2011-12), APTPPL’s actual corporate costs were 117 per cent of approved corporate costs over the earlier access arrangement period.

Figure 9.5 illustrates annual total approved and actual opex over the earlier access arrangement period. APA corporate cost allocation to APTPPL was larger in 2011-12 than previous years. The Agility purchase is apparent in the reduction in operations and maintenance (contract) costs early in the access arrangement period and subsequent offsetting increase in salaries and wages costs. The peak in actual opex in 2010–11 is primarily driven by flood related costs incurred by APTPPL in December 2010 and January

2011.⁶⁰⁴ APTPPL submitted that flood remediation works continued to September 2011, contributing to higher contractor costs in 2011-12 than the pre-flood trend.

Figure 9.5 APTPPL actual/forecast opex earlier access arrangement (\$'000, 2011–12)



Source: APTPPL, *Access arrangement submission*, October 2011, table 8.2; AER analysis.

In its 2006–07 Final Decision on the earlier access arrangement, the ACCC did not approve APTPPL’s proposal to recover the Agility management fee through reference tariffs.⁶⁰⁵ APTPPL has not proposed any adjustment to forecast opex on the basis of the Agility purchase.

APTPPL proposed in its submission that \$30.1m (\$2007–08) associated with the purchase of Agility be capitalised on the RBP. This is discussed further in appendix D to this draft decision.

9.4.2 Forecasting base year

The AER approves APTPPL’s proposed base year for forecasting opex. The AER also approves the base year opex, as adjusted by APTPPL to account for non-recurrent expenditure items. The AER has reached this view for the following reasons relating to:

- base year selection

⁶⁰⁴ Flood damage incurred in 2010–11 is further discussed below in the context of opex roll forward base year adjustments.

⁶⁰⁵ ACCC, *Final approval: Revised access arrangement by the APT Petroleum Pipelines Ltd for the Roma to Brisbane Pipeline 2006–2011*, March 2007, p. 7.

- trend analysis
- independent technical advice.

APTPPL proposed 2010–11 as the base year from which to roll forward opex forecasts. 2010–11 is the year closest to the beginning of the new access arrangement period for which actual data is available for the full year. This is consistent with the AER's preferred approach to base year selection.⁶⁰⁶ The choice of 2010–11 as the base year reflects the AER's view that the last year of actual costs is likely to best represent APTPPL's recurrent costs in the next access arrangement period, given its circumstances.

The AER undertook trend analysis of APTPPL's proposed adjusted base year opex to form a view on its reasonableness as a basis for estimating future opex. Figure 9.6 illustrates APTPPL's actual opex over the earlier access arrangement period, with a trend line fitted to the adjusted 2010–11 base year. Non-recurrent items removed from the base year by APTPPL are represented by the red segmented 2010–11 opex.

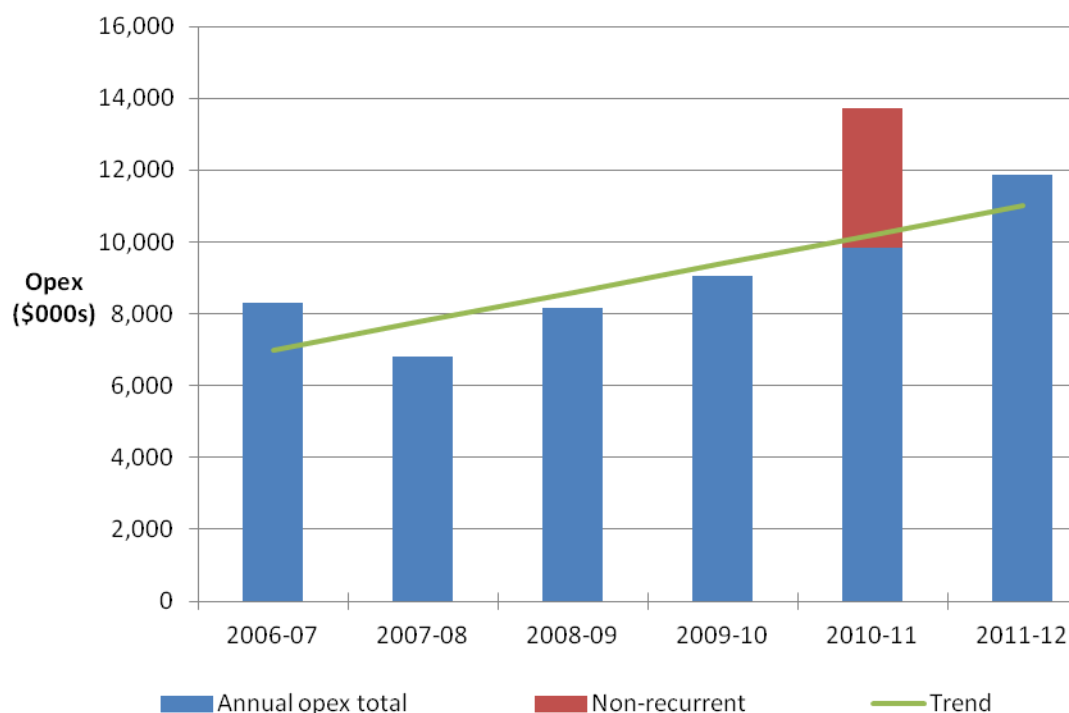
Unadjusted actual 2010–11 opex of \$13.7 million (\$2011–12) is clearly an exception to the time series. Actual adjusted opex of \$9.8 million (\$2011–12) is:

- 8 per cent higher than the previous year 2009–10
- 21 per cent lower than the following year 2011–12.

Actual 2010–11 opex, after adjustments as proposed by APTPPL, is in line with the trend for RBP opex over time. On this basis, the AER considers that APTPPL's adjustments to base year actual opex to account for non-recurrent items appear reasonable.

⁶⁰⁶ AER, *Draft decision: Powerlink transmission determination*, November 2011, p. 124.

Figure 9.6 Total actual opex - base year adjustments (\$'000, 2011–12)⁶⁰⁷



Source: APTPPL, *Access arrangement submission*, October 2011, p. 80; AER analysis.

The AER engaged Wilson Cook, engineering consultants, to review whether the technical aspects of APTPPL’s proposed opex are prudent and efficient. With respect to the benchmarking data provided by APTPPL, Wilson Cook noted:⁶⁰⁸

APTPL has provided some comparative operating expenditure benchmarking with other similar pipelines. It shows that the RBP has the lowest operating cost per km and around the average cost per mm-km (that is, taking into account the diameter as well as the length of the pipeline).

In conclusion, Wilson Cook advised the AER that APTPPL’s proposed base year and adjustments seem reasonable:

After considering the information presented, we are satisfied that the adjusted base-year represents a reasonable level of “business-as-usual” operating expenditure to use in the roll-forward calculation.⁶⁰⁹

In light of the AER’s analysis and advice from Wilson Cook, the AER considers that:

- APTPPL’s adjusted base year opex represents expenditure that would be incurred by a prudent service provider acting efficiently as required under r. 91 of the NGR.
- APTPPL’s removal of non-routine expenditure from the base year satisfies the principle that the base year should not include substantial non-recurrent expenditure.

⁶⁰⁷ Note that 2011–12 data is an APTPPL estimate.

⁶⁰⁸ Wilson Cook report, January 2012, p. 2.

⁶⁰⁹ Wilson Cook report, January 2012, p. 2.

9.4.3 Network capacity expansions

The AER does not approve APTPPL's proposed opex associated with network capacity expansions, as it is neither arrived at on a reasonable basis, nor represents the best possible forecast in the circumstances.

In relation to forecast RBP8 expansion project opex, the AER has reached this view for the following reasons:

- APTPPL's forecast RBP8 expansion project opex was not supported by a statement of its basis.
- The opex forecast methodology previously accepted by the AER provides for a lower RBP8 expansion project opex forecast than that proposed by APTPPL.
- The AER's analysis is supported by independent technical advice.
- In relation to the Lytton Lateral, incorporation of additional opex would result in double-counting. The AER considers that Lytton Lateral opex was included in APTPPL's base year under the base year roll forward methodology.

In light of its draft decision on APTPPL's proposed opex for network capacity expansions, the AER adjusted APTPPL's proposed opex for the RBP8 expansion project within APTPPL's opex roll forward model. The AER has also set to zero additional opex for the Lytton Lateral extension within APTPPL's roll forward model.

RBP8 expansion project

APTPPL did not provide with its submission a rationale for its proposed RBP8 expansion project opex, as required by r. 74(1) of the NGR. The AER subsequently provided a written question to APTPPL seeking these details.⁶¹⁰ In its response, provided to the AER on 13 December 2011, APTPPL re-provided its opex forecasts for the RBP8 expansion project.⁶¹¹ APTPPL did not, however, provide a rationale for its estimates, nor an explanation of how they were derived.

In respect of APTPPL's forecast opex for the RBP8 expansion project, Wilson Cook noted:⁶¹²

APTPPL expects to carry out pipeline capacity expansion work in 2012, prior to the commencement of the next period. APTPPL has forecast increased operating expenditure of \$800,000 p.a. from the commencement of the next period in relation to this item. The project involves 5.5 km of additional 400 mm pipe, a new compressor and other associated infrastructure. The company provided a breakdown by input cost of the proposed expenditure (labour \$350,000, contractors \$125,000, overheads \$75,000 and other costs of \$250,000). No other details on the derivation of the operating expenditure figure are given in the business case for the project or any subsequent information provided by the business.

We note that based on the benchmarking information provided by APTPPL, the expected average operating expenditure for such a length of pipeline would be expected to be in the region

⁶¹⁰ APTPPL, *Response to information request AER/029 of 6 December 2012*, received 13 December 2011.

⁶¹¹ APTPPL, *Response to information request AER/029 of 6 December 2012*, received 13 December 2011.

⁶¹² Wilson Cook report, January 2012, p. 2.

of \$100,000 p.a. This is an industry average, however, and the inclusion of a compressor in this short length of pipeline means that the marginal increase in costs would be expected to be well above the average level. However, without any detailed information on the basis of estimation of the costs, we are unable to provide an opinion on the efficacy of this element of the forecast expenditure.

The AER considers that duplicated pipeline should, under usual circumstances, be less costly to operate and maintain than a single standalone pipeline due to reduced travel time and other economies of scale. This view is supported by consultancy Ross Calvert Consulting Pty Ltd in its comments in relation to the 2007 GasNet access arrangement review:⁶¹³

...maintenance cost increases for looped pipelines will be somewhat less than for new pipelines because of lower costs for easement maintenance and reduced travelling time...

And

Accordingly, it is considered that 75 per cent of the average unit cost for pipeline maintenance is a reasonable unit rate for sections of looped pipeline.

In the absence of a rationale for its proposed opex associated with the RBP8 expansion project, the AER estimated opex attributable to the RBP8 expansion project following the Ross Calvert Pty Ltd methodology for looped pipeline.⁶¹⁴

APTPPL's actual opex per kilometre of pipeline in 2010–11, adjusted for non-recurrent expenditure items, was \$45,000. Applying the 75 per cent adjustment, as proposed by Ross Calvert Consulting, gives a per km opex allocation of \$34,000. Multiplying per km adjusted opex by the 6km of the RBP8 expansion, provides total additional opex for the looped pipeline of \$204,000 in 2010–11. Adjusting this amount again to 2011–12 dollars, provides \$209,345. This amount has then been escalated for each year of the access arrangement by the same proportional increase as APTPPL's proposed RBP8 expansion project opex, between 3.9 and 4.9 per cent year on year.

This methodology results in a forecast for RBP8 expansion project opex in 2012–13 of \$209,345, with subsequent years escalated from that base. The AER estimate of RBP8 expansion project opex is around double the estimated opex advised by Wilson Cook.

Table 9.5 details the AER's RBP8 opex forecasts. In estimating total opex over the access arrangement period, the AER has substituted APTPPL's proposed RBP8 opex with the AER's forecasts.

Table 9.5 RBP8 opex AER draft decision (\$million, 2011–12)

2012–13	2013–14	2014–15	2015–16	2016–17	Total
0.2	0.2	0.2	0.2	0.3	1.2

Source: APTPPL, *Access arrangement submission*, October 2011, table 8.9.

⁶¹³ Ross Calvert Consulting, *GasNet – Assessment of proposed operating expenditure scope and workload changes*, September 2007, p. 4.

The AER notes that because its RBP8 expansion project opex forecast is based on average pipeline opex it may understate costs associated with operation of the new compressor. As advised by Wilson Cook, inclusion of a compressor within the expansion project would be expected to add a further margin to additional opex forecast costs. However, in the absence of sufficient information from APTPPL the AER is unable to specify the appropriate additional opex margin.

Lytton Lateral

APTPPL's opex roll forward model indicates that the Lytton Lateral was commissioned in July 2010.⁶¹⁵ In terms of forecasting RBP total opex, Lytton Lateral operating costs will therefore be reflected within total RBP opex for 2010–11. The 2010–11 year was selected by APTPPL as the base year for forecasting opex under the roll forward methodology.

The AER considers that the operating costs of the Lytton Lateral extension have been incorporated within APTPPL's opex base year roll forward methodology. Incorporating the Lytton Lateral as a step change would result in double counting. The AER therefore does not approve APTPPL's proposed step change opex for the Lytton Lateral.

9.4.4 Corporate costs

Corporate costs relate to functions undertaken at corporate group level in support of the RBP's operation. APTPPL submitted that functions provided by APA to APTPPL include the CEO function, corporate finance, IT, human resource management and legal and regulatory functions.⁶¹⁶

The AER generally accepts APTPPL's approach to forecasting corporate costs as articulated in its submission. The AER undertook a reconciliation of APTPPL's reported APA corporate costs to satisfy itself that the basis for the allocation of corporate costs to the RBP was consistent with APTPPL's submission.⁶¹⁷

However, within APTPPL's opex roll forward model is a corporate cost escalation factor not discussed in its submission. The AER accepts APTPPL's application of a corporate cost escalator, but has replaced the proposed escalator to ensure consistency with other labour cost escalators approved by the AER.

9.4.5 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 assessed APTPPL's proposed benchmark debt raising costs, which were based on the method used by the AER for the 2011 NT gas access arrangement.⁶¹⁸

⁶¹⁵ APTPPL, *Opex roll forward model*, received December 2012, sheet "Lytton Lateral", cell 27A.

⁶¹⁶ APTPPL, *Access arrangement submission*, October 2011, p. 87.

⁶¹⁷ APTPPL, *Response to information request AER/028 of 6 December 2011*, received 13 December 2011.

⁶¹⁸ APTPPL, *Access arrangement submission*, October 2011, p. 86.

The AER approves APTPPL’s proposal to use the AER’s standard methodology to estimate debt raising costs. However, the unit rate should be increased from 9.9 to 11.3 bppa to reflect updated calculations (discussed below). The AER reached this draft decision for the following reasons:

- updated unit rate
- updated capital base and weighted average cost of capital (WACC).

For this draft decision, the AER estimates debt raising costs of \$1.2 million (\$2011–12) for the access arrangement period as shown in table 9.6. This is a slight increase from the amount proposed by APTPPL. The AER considers debt raising costs are in accordance with r. 74 and r. 91 of the NGR and reflect efficient and prudent costs for current market conditions. The updated debt raising costs accord with the AER’s accepted calculation method and the updated cost inputs accord with current market conditions.

Table 9.6 AER’s draft decision on debt raising costs (\$million, 2011–12)

Unit rate	2012-13	2013-14	2014-15	2015-16	2016-17	Total
11.3 bppa	0.3	0.3	0.3	0.2	0.2	1.2

Source: AER analysis.

To determine benchmark debt raising costs the AER relies on an approach based on the 2004 ACG report commissioned by the ACCC.⁶¹⁹

The AER applied updated cost inputs to the ACG method and estimated the unit rate and total debt raising costs. The individual cost components and resulting unit rates are shown in table 9.7. This draft decision is based on indicative WACC and capital base figures. The AER will therefore update the final decision for debt raising costs based on the debt component of the capital base and WACC determined at that time.

⁶¹⁹ ACG, *Debt and equity raising transaction costs—Final Report*, December 2004. The AER has applied this approach to assess debt raising costs in all its determinations, updating it from time to time.

Table 9.7 AER's indicative debt raising cost for APTPPL based on indicative nominal vanilla WACC of 8.55 per cent (bppa unless otherwise specified)

Fee	Explanation	1 issue	2 issues	4 issues
Amount raised (\$million, 2011-12)	Multiples of median MTN (\$250 million)	250	500	1000
Gross underwriting fee	Median gross underwriting spread, upfront per issue, amortised	6.9	6.9	6.9
Legal and road show	\$195,000 upfront per issue, amortised	1.2	1.2	1.2
Company credit rating	\$55,000 per annum	2.2	1.1	0.6
Issue credit rating	4.5 basis points upfront per issue, amortised	0.7	0.7	0.7
Registry fees (initial)	\$4,000 up front per issue, amortised	0.02	0.02	0.02
Registry fees (annual) (previously labelled Paying Fee)	\$9,000 per issue per annum	0.4	0.4	0.4
Total	Basis points per annum	11.3	10.2	9.7

Source: AER analysis.

The AER estimates APTPPL's opening capital base to be \$392 million. Based on the benchmark 60 per cent gearing, the notional debt component of the capital base is \$235 million corresponding to one standard bond issue size. This results in a benchmark unit rate of 11.3 bppa.

Using the PTRM, the AER applied the benchmark unit rate to APTPPL's debt component capital base to estimate total debt raising costs of \$1.2 million.

9.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 9.1:

Make all necessary amendments to reflect the AER's draft decision on opex in relation to the RBP8 expansion project, as set out in table 9.5.

Amendment 9.2:

Amend Lytton Lateral forecast opex to zero as provided in section 9.4.3, and make all other necessary changes to reflect this amendment.

Amendment 9.3:

Make all necessary amendments to reflect the AER's draft decision on corporate cost forecasts, as set out in table 9.1.

Amendment 9.4:

Make all necessary amendments to reflect the AER's draft decision on debt raising cost forecasts, as set out in table 9.6.

10 Queuing requirements

The AER's draft decision on APTPPL's proposed queuing requirements is set out in this attachment. Queuing requirements establish the priority that a prospective user has, against any other prospective user, to obtain access to spare and developable capacity on a covered pipeline.⁶²⁰ Extension and expansion requirements, on the other hand, specify the method for determining whether extensions or expansions to the covered pipeline are to be covered by the access arrangement.⁶²¹

Queuing requirements must establish a process or mechanism for establishing an order of priority between prospective users of spare and/or developable capacity.⁶²² Queuing requirements must be included in an access arrangement for a gas transmission pipeline.⁶²³

APTPL's proposal to move from a first-come-first-served approach to a mechanism based on publically notified auctions is a fundamental change to the operation of queuing requirements for the RBP. Furthermore, the potential establishment of queuing requirements based on a competitive process may have precedent effects for other gas pipeline access arrangements.

10.1 Draft decision

The AER does not approve APTPL's proposed queuing requirements. The AER requires APTPL to amend its queuing requirements to the first-come-first-served approach consistent with the earlier access arrangement.

10.2 APTPL's proposal

APTPL's proposed queuing requirements involve moving from a first-come-first-served approach to a mechanism based on publically notified auctions.⁶²⁴

In its access arrangement submission, APTPL outlined its concerns with the first-come-first-served approach, as summarised in table 10.1. It further submitted a report commissioned from NERA Economic Consulting (NERA) which discusses the relative economic efficiency of a first-come-first-served approach versus a publically notified auction.⁶²⁵ APTPL's concerns with first-come-first-served, complemented by the NERA report, led it to proposing auction-based queuing requirements for both spare and developable capacity.

⁶²⁰ NGL, s. 2.

⁶²¹ NGR, r. 104(1) and the definition of 'extension and expansion requirements' in NGL, s. 2.

⁶²² NGR, r. 103(3).

⁶²³ NGR, r. 103(1)(a).

⁶²⁴ APTPL, *Access arrangement submission*, October 2011, pp. 109–116; APTPL, *Access arrangement proposal*, October 2011, pp. 26–34.

⁶²⁵ NERA Economic Consulting, *Assessment of alternative queuing policy: A report for APA Group*, 10 October 2011 (NERA, *Report on queuing policy*, October 2011), available at the AER website at <http://www.aer.gov.au/content/index.phtml/itemId/750330>.

Table 10.1 APTPPL’s concerns with the current first-come-first-served approach

Issue	APTPPL’s submission
Existing capacity	
Queue sitting and non-genuine users	...the first-come-first-served approach can become time consuming, as the capacity needs to be offered to each prospective user in the queue sequentially, even where some users do not genuinely want that capacity. This problem is exacerbated since the queue is costless to join....and results in excessive ‘queue sitting’.
Capacity hoarding	This also demonstrates a genuine concern over capacity hoarding, whereby non-intending users can occupy positions on the queue as a strategy to discourage competitors from entering the market or planning to expand their positions in the market.
Efficiency concerns	<p>...a first-come-first-served approach has the potential to result in inefficient outcomes, where prospective users higher in the queue want to take capacity later and/or for shorter periods than those further down in the queue.</p> <p>...The current queuing arrangements also do not allow the flexibility to allow higher value projects to take precedence over lower value projects, when it is not possible to meet the needs of both.</p>
Developable capacity	
Incentives	...it has been difficult to co-ordinate Requests for developable capacity, due to the sequential nature of the discussions held under the first-come-first-served approach. APTPPL also has concerns about the ability of the current arrangements to facilitate the timely expansion of capacity.

Source: APTPPL, *Access arrangement submission*, October 2011, pp. 111–112.

For spare capacity, APTPPL proposed that users could submit non-binding registrations of interest. If less than two terajoules of spare capacity becomes available, APTPPL may place this on the spare capacity register, which remains subject to first-come-first-served allocation. Otherwise, to allocate any amount of spare capacity APTPPL may undertake an open season round where users can submit expressions of interest, which may then be followed by an auction.

For developable capacity, APTPPL proposed that users could register non-binding registrations of interest. To allocate developable capacity APTPPL may negotiate with the interested parties, or may hold an auction.

Table 10.2 and table 10.3 detail the AER’s understanding of APTPPL’s proposed queuing requirements. Each element is referenced to the relevant clause within APTPPL’s access arrangement proposal.

Table 10.2 APTPPL's proposed queuing requirements for unutilised existing capacity

		Clause
FOR	Unutilised existing capacity less than 2TJ	6.2.1
AND IF	APTPL choose not to run an open season and auction process	6.2.1
THEN	Spare capacity register	6.2.1
	Unutilised existing capacity will be made available on a first-come-first-served basis, at a rate which is at or above the reference tariff	6.2.1
FOR	Unutilised existing capacity of any amount	
THEN	Open Season for unutilised existing capacity	6.2.2
	APTPL will issue an Existing Capacity Notice and will accept expressions of interest	6.2.2 a b c
IF	All expressions of interest can be met with the available existing capacity	6.2.2 d
THEN	APTPL allocates existing capacity by entering into negotiations with all prospective users that lodge complying expressions of interest, in any order	6.2.2 d
IF	APTPL determines there is sufficient demand	6.2.3 a
AND	Available existing capacity is not sufficient to meet the expressions of interest	6.2.3 a
THEN	Auction for unutilised existing capacity	6.2.3
	APTPL issues a Notice of Auction for Existing Capacity	6.2.3 a
	APTPL may set a reserve price, which will not exceed the reference tariff, for reference services	6.2.6
	APTPL may provide the: auction application registration form; form of financial security required; and terms and conditions for the unutilised existing capacity	6.2.3 d
	To submit a complying bid users must complete and provide APTPL with the above documents or information	6.2.3 e
IF	Complying bids do not exceed unutilised existing capacity	6.2.4
THEN	Each complying bid will be deemed to be an irrevocable request for existing capacity, capable of immediate acceptance, and dealt with in any order	6.2.4 b c
IF	There is existing capacity not taken up in the auction	6.2.4 d
THEN	APTPL will place it on the spare capacity register, and it will be made available on a first-come-first-served basis	6.2.4 d
IF	All complying bids exceed unutilised existing capacity	6.2.5
THEN	APTPL will rank the applications on the basis of its assessment of the NPV of the bids, and unutilised existing capacity will be allocated on the basis of this ranking	6.2.5 b c

Source: APTPL, *Access arrangement proposal*, October 2011.

Table 10.3 APTPPL's proposed queuing requirements for developable capacity

		Clause
IF	APTPL chooses to conduct negotiations	6.3.2
THEN	Negotiations for developable capacity	6.3.3
	APTPL will conduct negotiations for developable capacity, the order of priority between prospective users will be on the basis of its assessment of the NPV of the bids	6.3.3
IF	APTPL chooses to conduct an auction	6.3.2
THEN	Auction for developable capacity	6.3.4
	APTPL will issue a Notice of Auction for Developable Capacity	6.3.4 a
	APTPL may set a reserve price, which may exceed the reference tariff	6.3.8
	APTPL may provide the: auction application registration form; form of financial security required; and terms and conditions for the unutilised existing capacity	6.3.4 c
	To submit a complying bid users must complete and provide APTPL with the above documents or information	6.3.4 d
IF	Complying bids do not exceed developable capacity	6.3.6
THEN	Each complying bid will be deemed to be an irrevocable request for existing capacity, capable of immediate acceptance, and dealt with in any order	6.3.5 b c
	IF There is developable capacity not taken up through the auction process	6.3.5 d
	THEN APTPL may enter into bilateral negotiations with any prospective users	6.3.5 d
IF	Complying bids exceed developable capacity	6.3.6
THEN	APTPL will rank the applications on the basis of its assessment of the NPV of the bids, and unutilised existing capacity will be allocated on the basis of this ranking	6.3.6 b c
ELSE	Regardless of the outcome of an auction process for developable capacity, APTPL is not bound to undertake the relevant development	6.3.7

Source: APTPL, *Access arrangement proposal*, October 2011.

10.3 Assessment approach

To reach its draft decision the AER assessed whether APTPPL's proposal met the requirements and objectives of the NGL and NGR. The AER also considered whether required amendments to APTPPL's proposal would allow it to better meet the broader requirements of the regulatory framework.⁶²⁶

The AER is of the view that APTPPL's proposed queuing requirements have implications for:

- capacity allocation
- investment incentives in terms of both pipeline capacity and within downstream markets
- tariffs paid by RBP users
- the arbitration process available under the NGL and NGR.

Rule 103 of the NGR provides the specific obligations which queuing requirements must satisfy. These obligations include:

(3) Queuing requirements must establish a process or mechanism (or both) for establishing an order of priority between prospective users of spare or developable capacity (or both) in which all prospective users (whether associates of, or unrelated to, the service provider) are treated on a fair and equal basis.

...

(5) Queuing requirements must be sufficiently detailed to enable prospective users:

- (a) to understand the basis on which an order of priority between them has been, or will be, determined; and
- (b) if an order of priority has been determined – to determine the prospective user's position in the queue.

The AER has also had regard to the NGO in s.23 of the NGL, and to the revenue and pricing principles in s.24 of the NGL.⁶²⁷ As queuing requirements affect access to the pipeline, the AER is of the view that chapter 6 of the NGL and part 12 of the NGR, which contain access dispute resolution provisions, are relevant to the AER's assessment of APTPPL's proposal.

The AER considers that it is rational for APTPPL to seek to improve the way capacity is allocated on the RBP, given that existing capacity is currently fully contracted and there is likely to be excess demand for spare and developable capacity. Providing for the efficient and fair allocation of scarce transmission capacity is also in the interest of RBP users, prospective users and the broader Australian community. APTPPL must also be provided with a reasonable opportunity to recover at least its efficient costs in accordance with the revenue

⁶²⁶ In accordance with r. 40(3) of the NGR, the AER has full discretion in determining whether it should approve APTPPL's proposed queuing requirements. The AER can reject an element of the proposed queuing requirements if it considers a preferable alternative exists that better promotes the NGL and NGR.

⁶²⁷ Section 28 of the NGL provides that the AER must perform or exercise its economic regulatory functions or powers in a manner that will or is likely to contribute to the achievement of the NGO. In addition, the AER may take into account the revenue and pricing principles when performing or exercising any other AER economic regulatory function or power, if the AER considers it appropriate to do so.

and pricing principles.⁶²⁸ The interests of APTPPL, industry and the community must be carefully balanced in the context of the regulatory framework.

The AER considers that queuing requirements must be formulated in a way that is consistent with both the specific provisions of the NGL and NGR, and the overarching intent of the regulatory framework. In reaching its draft decision the AER has had regard to:

- the NGL and NGR, and to the negotiate–arbitrate model established by their joint operation
- queuing requirements within other regulated access regimes, both domestically and abroad.⁶²⁹ The AER considered the approaches used, where applicable the process undertaken to reform those approaches and how these could inform queuing requirements on the RBP
- APTPPL’s submission and supporting material, including the NERA report
- the concepts of economic efficiency, allocative efficiency, and fairness
- recently published economic literature on network capacity allocation and auctions.

The AER undertook additional consultation on queuing requirements prior to reaching its draft decision to further its understanding of the issues raised by APTPPL regarding first-come-first-served, and to engage RBP users on APTPPL’s proposal. Cooperatively with APTPPL, the AER convened an industry workshop on APTPPL’s proposed queuing requirements on 12 January 2012 (the queuing workshop). Participation in the queuing workshop was supported by an industry paper prepared by the AER and circulated prior to the queuing workshop. Representatives from most of the major RBP users attended the queuing workshop.⁶³⁰

The AER also engaged Frontier Economics to provide additional expert views within the queuing workshop. However, the AER did not request a written report from Frontier Economics.

Under a competitive capacity allocation process, prospective or existing RBP users would face different incentives in competing for spare or developable capacity. The ultimate outcomes in terms of capacity allocation, price, and service terms and conditions may be influenced by the existence of an alternative capacity type and the likely cost to access such an alternative. To inform its draft decision, the AER sought additional details from APTPPL regarding future capacity expansions.⁶³¹

In light of the above steps taken by the AER to understand the context and potential ramifications of APTPPL’s proposed queuing requirements, the AER’s assessment of APTPPL’s proposal included an analysis of the:

⁶²⁸ NGL, s. 24.

⁶²⁹ These examples are discussed in section 10.4.9.

⁶³⁰ See the AER website at <http://www.aer.gov.au/content/index.phtml/itemId/751874>.

⁶³¹ See the AER website at <http://www.aer.gov.au/content/index.phtml/itemId/751602>.

- specific details of the proposed queuing requirements
- potential effects on incentives for APTPPL and prospective users
- potential effects on pipeline utilisation regarding capacity allocation, price, and terms and conditions.

If the AER does not approve APTPPL's proposal it must state its reasons in accordance with r.59 of the NGR. The AER must also indicate the nature of the amendments required or matters to be addressed in APTPPL's revised access arrangement revision proposal which would make it acceptable.

Where the AER has concerns with APTPPL's proposal it has carefully considered the requirements and objectives of the NGL and NGR. The AER considered the different ways that APTPPL's proposal could be amended to both meet the law and balance the goals of APTPPL and industry.

Submissions

Six of the seven written submissions on APTPPL's access arrangement proposal made comment on the proposed queuing requirements.

10.4 Reasons for decision

The AER does not approve APTPPL's proposed queuing requirements. The AER requires APTPPL to amend its queuing requirements to the first-come-first-served approach consistent with the earlier access arrangement.

The AER concludes that APTPPL's proposed queuing requirements do not comply with the requirements and objectives of the NGL and NGR. The AER's reasons for its draft decision are outlined in table 10.4. The AER has reached this draft decision, taking into account user submissions, because APTPPL's proposed queuing requirements do not maintain the role and effectiveness of the negotiate–arbitrate framework established by the joint operation of the NGL and the NGR, do not meet the queuing requirements set out in r. 103 of the NGR, and may not promote efficient outcomes in accordance with the NGL and the revenue and pricing principles.⁶³²

⁶³² NGL, ss. 23 and 24.

Table 10.4 Summary of the AER’s reasons for draft decision

Element	AER assessment of APTPPL’s proposed queuing requirements
<p>The negotiate–arbitrate model established by the joint operation of the NGL and NGR</p> <p>Chapter 6 of the NGL and part 12 of the NGR which provide the access dispute provisions</p>	<p>The AER considers that the proposed auction to allocate capacity and set the terms and conditions of access goes beyond establishing positions in a queue for prospective users to obtain access to pipeline services. Users should always be able to choose the reference tariff and reference terms and conditions when negotiating access. The AER is not satisfied that the role and effectiveness of the arbitration process will be maintained.</p>
<p>Rule 103(3) of the NGR requires that a process or mechanism for establishing an order of priority between prospective users must be established</p>	<p>The AER considers that APTPPL’s proposed queuing requirements do not satisfy r.103(3) of the NGR where there is a lack of clarity in the operation of processes. In these instances a process or mechanism for establishing an order of priority between prospective users may not always exist. Specifically, there is a lack of clarity regarding when APTPPL will hold an auction, the amount of capacity which will be offered, the terms and conditions that will apply to that capacity and when negotiations rather than auctioning will take place.</p>
<p>Rule 103(3) of the NGR requires prospective users to be treated on a fair and equal basis</p>	<p>The AER is not satisfied that prospective users will be treated on a fair and equal basis in accordance with r.103(3) of the NGR. This is because it is unclear how APTPPL will exercise its discretion in determining bid requirements prior to auction, and then whether a bid is compliant. There is also insufficient detail to determine how the NPV ranking will operate, and how users will be treated.</p>
<p>Rule 103(4) of the NGR provides the example of a publically notified auction in which all relevant prospective users are able to participate</p>	<p>The AER considers that an auction is provided as an example in r.103(4) of the NGR. Queuing requirements still need to satisfy the other relevant requirements of the NGL and NGR.</p>
<p>Rule 103(5) of the NGR requires sufficient detail to enable prospective users to understand the basis on which an order of priority between them is determined</p>	<p>The AER considers that there is insufficient detail to enable prospective users to understand the basis on which an order of priority between them is determined, in accordance with r.103(5) of the NGR. This is as there is insufficient detail to understand how the NPV ranking will operate. Furthermore, the lack of clarity in the operation of processes prevents a complete understanding of how an order of priority will be determined.</p>
<p>Section 23 of the NGL provides the National Gas Objective (NGO) which promotes efficient operation, use of, and investment in, the pipeline.</p> <p>Section 24 of the NGL provides the revenue and pricing principles which promote the efficient investment in, or in connection with, a pipeline, the efficient provision of pipeline services and the efficient use of the pipeline with respect to the reference service.</p>	<p>The AER considers that efficient outcomes may not be promoted in accordance with the NGO and the revenue and pricing principles. This is because investment decisions and efficiency may be impacted by APTPPL’s accrual of revenues from auctioning, and the potential increase in tariffs charged to access the pipeline. In turn, higher capacity tariffs may undermine incentives for pipeline users to undertake investment which would otherwise be efficient. Higher revenues from capacity may also distort incentives for APTPPL to carry out economic pipeline investment.</p> <p>Since NPV rankings would be determined by APTPPL using unclear methods, an inefficient outcome could result which may not account for users of the pipeline or the broader community.</p> <p>One-shot irrevocable bids could create an information asymmetry that may not promote effective negotiation between APTPPL and prospective users that may otherwise encourage more efficient outcomes.</p> <p>Users are required to bid for an unspecified non-homogeneous product. It is unclear what is being auctioned, as the capacity and terms and conditions must be nominated by the user. The AER considers that prospective bidders may face difficulty in forming valuations for an imprecisely defined product. Bids may not accurately reflect the relative valuations of capacity across bidders, and efficient allocations may be less likely.</p>

The AER provides reasons for its draft decision in this section, which is structured as follows:

- the negotiate–arbitrate nature of the regulatory framework
- revenues and prices associated with the proposed auction
- requirements for a compliant bid
- requirement that bids are irrevocable
- definition of the product being auctioned
- method of ranking bids
- clarity around the queuing requirement processes
- reasons for moving away from the first-come-first-served approach.

10.4.1 The context of the regulatory framework

The AER considers that APTPPL’s proposed queuing requirements raise issues regarding the role of the negotiate–arbitrate access model established by the NGL and NGR.

Under the earlier access arrangement, APTPPL had first-come-first-served queuing requirements. In accordance with that policy, when capacity became available, the party next in line in the queue had a period of time to reach agreement with APTPPL about the terms of access. If the parties were unable to reach agreement, they could seek the assistance of arbitration.

As RBP capacity is currently fully contracted, the potential for a party to access arbitration plays an important role in the regulatory scheme.⁶³³ Where the parties cannot agree to the terms of access to pipeline services an arbitrator can make an access determination, for example, imposing the reference tariff and other reference terms and conditions. This creates an important backdrop to negotiations between APTPPL and a party who is seeking pipeline services. There is always the prospect during negotiations that an access dispute may be referred to arbitration and reference terms and conditions may then be imposed on the parties.

Under APTPPL’s proposal, spare and developable capacity may be auctioned. The AER understands that accepted bids in an auction will constitute binding contracts.⁶³⁴ APTPPL proposed that prospective users are afforded a single chance to submit a bid which they consider APTPPL will find acceptable. The bid must cover all the terms of access. As demand for capacity likely to remain strong in the future, the AER is concerned that bidders may be motivated to bid their perceived maximum willingness to pay for access, in order to minimise the risk of failing to secure their desired capacity.

⁶³³ NGL, chapter 6; NGR, part 12.

⁶³⁴ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.4(b), 6.2.4(c), 6.3.5(b), 6.3.5(c), 6.2.5(b), 6.2.5(c), 6.3.6(b) and 6.3.6(c), pp. 29, 33.

The formation of a contract through the auction process may limit the significance and potential role of the arbitration process under the NGL and NGR. Where a contract exists at the time an access dispute arises, under s.188 of the NGL the arbitrator must not make an access determination that is contrary to the rights of the parties under the contract. The arbitrator may terminate an access dispute, under s.186(2) of the NGL, without making an access determination if it considers that the dispute is based on an aspect of access expressly or impliedly dealt with under a contract between the parties. APTPPL's proposed auction potentially diminishes the effect of arbitration because it removes the potential recourse to an arbitrator to set reference terms and conditions during negotiations.

Some submissions referred to other issues regarding the importance of arbitration in the overall regulatory scheme. For example TRUenergy stated:⁶³⁵

We consider that chapter 6 of the NGL provides a clear pathway for both the APA Group and any shipper to resolve an access dispute. Specifically, the NGL under section 193 states that an access determination may deal with any matter relating to the provision of a pipeline service. We can see no alternative than to rely on these provisions to provide some competitive tension and ultimately provide some protection for us in negotiating an expansion. Whilst we do not expect that our commercial negotiations to secure the expansion of the RBP will lead to an access dispute, we are comforted by the fact that this remedy is available to us.

The AER notes that queuing requirements are defined in schedule 2 of the NGL as meaning:

terms and conditions providing for the priority that a prospective user has, as against any other prospective user, to obtain access to spare capacity and developable capacity.

APTPPL's proposed auction does not merely establish positions in a queue for prospective users to obtain access to pipeline services. The proposed auction also allocates capacity and sets the terms and conditions on which access will be granted.

Potentially, all spare and developable capacity on the RBP could be open to auction under APTPPL's proposed queuing requirements. Accordingly, this could have a significant impact on the future regulation of this pipeline.

The role and effectiveness of the arbitration process established by the NGL and NGR may effectively be diminished under APTPPL's proposed queuing requirements. The AER considers that this produces a result that is not preferable to the first-come-first-served queue that has been operating for this pipeline.

10.4.2 Auction revenues and prices

The AER is not satisfied that efficient outcomes with respect to reference services are promoted by APTPPL's proposed queuing requirements in accordance with the revenue and pricing principles.⁶³⁶ The AER also considers that the proposed queuing requirements may not promote the efficient operation, use of, and investment in, the pipeline in accordance with the NGO.⁶³⁷ The AER has formed this conclusion because of the possible impact on investment decisions of:

⁶³⁵ TRUenergy, *Submission to the AER*, December 2011, p. 3.

⁶³⁶ NGL, s. 24.

⁶³⁷ NGL, s. 23.

- APTPPL's accrual of revenues from the proposed auction
- the potential increase in tariffs charged to access the pipeline.

According to the revenue and pricing principles a service provider should be provided with a reasonable opportunity to recover at least the efficient costs it incurs in providing reference services and complying with regulatory obligations. However, a service provider should also be incentivised to promote economic efficiency in the provision of reference services and regard should be had to the economic costs and risks of the potential for under and over investment in a pipeline, among other things.⁶³⁸

The revenues that APTPPL may receive from the proposed auctions are not discussed in the proposed queuing requirements. However, APTPPL indicated that the NPV assessment process for spare capacity auctions may result in bids for negotiated services at tariffs that exceed the reference tariff having priority over bids for the reference service.⁶³⁹ In developable capacity auctions APTPPL may set a reserve price which may exceed the reference tariff.⁶⁴⁰ As the proposed auctions are closed-bid auctions, it would be rational for users to bid their perceived maximum willingness to pay, so that the risk of failing to secure capacity is minimised.

Under APTPPL's auction-based proposal, the reference service at the reference tariff may be less likely to be available as a default option for users. Users may face tariffs higher than the reference tariff and revenues accruing to APTPPL may be higher than the efficient cost of providing the pipeline service.

Therefore, the AER considers that the efficient provision of pipeline services and the efficient use of the pipeline with respect to the reference service may not be promoted, in accordance with the revenue and pricing principles.⁶⁴¹ Furthermore, the efficient investment in, operation and use of the pipeline may not be promoted, as required by the NGO.⁶⁴² This is because higher capacity tariffs may distort incentives for pipeline users to undertake investment which would otherwise be efficient. Higher revenues from existing capacity may also distort incentives for APTPPL to carry out economic pipeline investment.

The AER is also of the view that allowing the accrual of revenues which are unaccounted for in setting reference tariffs, undermines the purpose of regulating revenues. The ACCC noted in its consideration of auctioning for the final decision on the Moomba to Adelaide Pipeline System (MAPS).⁶⁴³

For many users the cost of transporting gas is a relatively small part of their total costs but gas is often an essential requirement. Users are likely to value capacity just below the price of the next cheapest alternative, such as a different energy source or gas from another pipeline or expanded capacity on the MAPS. The value of existing capacity is likely to be in excess of the costs of

⁶³⁸ NGL, s. 24.

⁶³⁹ APTPPL, *Access arrangement proposal*, October 2011, clause 6.2.5(b), p. 29.

⁶⁴⁰ APTPPL, *Access arrangement proposal*, October 2011, clause 6.3.8, p. 33.

⁶⁴¹ NGL, s. 24.

⁶⁴² NGL, s. 23.

⁶⁴³ ACCC, *Final decision: Access arrangement proposed by Epic Energy South Australia Pty Ltd for the Moomba to Adelaide pipeline system 2002-2005*, 12 September 2001, pp. 187–188 (ACCC, *Final decision: Moomba to Adelaide access arrangement*, September 2001).

providing that service. This would allow the service provider to obtain economic rents and defeat the purpose of regulating the revenues that can be earned by pipeline owners.

Several industry representatives raised concerns at the queuing workshop about APTPPL's generation of revenues from its proposed auctions. RBP users expressed concerns that the scarcity of capacity would likely lead to high prices in auctions. Users observed that under APTPPL's proposed queuing requirements APTPPL stood to earn no less revenue, and was likely to earn additional revenue from the auctions. At the queuing workshop RBP users also noted that under APTPPL's proposal the market would set the price and terms and conditions of access. Hence, the role of the reference tariff and reference terms and conditions would be diminished. Users also spoke of their concerns that the cost of access may increase significantly under the proposed auction system, and that this may hinder their ability to compete in downstream markets. BP also expressed concerns in its submission about auction revenues and price uncertainty.⁶⁴⁴

Leaving aside the discussion about how an auction against this backdrop can lead to "efficient" outcomes, BP believes subsequent contracting of this capacity at auction prices rather than reference tariffs is completely unacceptable and unjustified.

...

BP is concerned that ultimately via the auction process APTPPL may derive revenue from existing capacity which is well in excess of the reference tariffs the AER has pre-determined to provide a suitable regulated rate of return on the covered RBP pipeline. Even if the auction process itself did happen to ensure capacity was made available to the party most willing to pay for that capacity, the question of the excess income remains.

If APTPPL had proposed that this additional revenue would be used specifically for the benefit of all RBP Users (in some form or another - perhaps to fund additional investment) then BP would be more supportive of the proposed pricing mechanism for constrained existing capacity.

As it stands though, the AA proposal seems to be geared towards allowing APTPPL to achieve above regulated returns, fully contradicting the intent of the Access Arrangement mechanism for covered pipelines in the NGL and NGR.

...

The concept of auctioning Developable Capacity concerns BP. Whilst we can appreciate the "market based" approach to this new capacity, the very concentrated pool of potential users of this capacity probably indicates that the outcome of the auction will simply be a last chance for APTPPL revenue maximisation rather than truly economic based outcomes for new developments.

For a prospective user, the auction creates "gazumping" uncertainty when presumably in order to participate in the auction the prospective user is already committed to new capacity for a minimum price.

Origin expressed concern that the proposed auctions may not promote efficient investment in developable capacity.⁶⁴⁵

Private investors value certainty and as a result, an auction may not be the most suitable approach to progress with the new development. It is important that the incentive for private investment is retained because without that incentive, it may prove more difficult for future developments to occur.

⁶⁴⁴ BP, *Submission to the AER*, December 2011, pp. 5–6.

⁶⁴⁵ Origin, *Submission to the AER*, December 2011, p. 4.

10.4.3 Compliant bid requirements

The AER is not satisfied that APTPPL's proposed requirements for prospective users to lodge compliant bids meet r.103(3) of the NGR, as users and prospective users may not be treated on a fair and equal basis. The AER has come to this conclusion in its draft decision because it is unclear how APTPPL will exercise its discretion in determining bid requirements prior to auction, and then whether a bid is compliant.

APTPPL has discretion to determine the form and amount of financial security required for a bid to be compliant, and to then determine whether a bid is compliant. To submit a complying bid for spare or developable capacity a prospective user must provide:⁶⁴⁶

- a completed auction application registration form
- the required financial security in the form and amount specified by the service provider (the form and amount of financial security required may reasonably vary between prospective users)
- the terms and conditions, relevant to the service to which the bid applies, in a form that is capable of immediate acceptance by the service provider.

The way in which the form and amount of financial security will be determined is not specified, nor the basis on which it may vary between prospective users. The grounds on which a bid's terms and conditions will be deemed capable of immediate acceptance are not specified. It is not clear to prospective users how APTPPL will make the assessment of whether a bid is compliant. At the time of bidding, the capacity that may be available to a prospective user is unknown. Prospective users are required to devise and submit terms and conditions relevant to their bid when the basis on which bids are assessed as compliant and then ranked is not defined.

Origin submitted concern at the information asymmetry associated with the notice of auction:⁶⁴⁷

It is unclear to prospective pipeline users how APTPPL determines the value of the tariff [in the notice of auction]. There is an information asymmetry that leaves prospective users unable to sufficiently evaluate tariff information, which places them in a poor negotiation position for that capacity. We ask that the AER consider how the auction process section of the Access Arrangement could be enhanced to alleviate any potential asymmetries between the information held by APTPPL and prospective users. Clarity and transparency around how APTPPL sets the tariff level could greatly improve user understanding of how a suggested tariff reflects the costs of a new development.

10.4.4 Irrevocable bids

The AER considers that a one-shot approach involving irrevocable bids may not promote the efficient use of the pipeline. The AER is of this view in its draft decision because one-shot irrevocable bids may create an information asymmetry that may not:

⁶⁴⁶ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.3(d), 6.2.3(e), 6.3.4(c) and 6.3.4(d), pp. 28–29, 32.

⁶⁴⁷ Origin, *Submission to the AER*, December 2011, p. 5.

- promote effective negotiation between APTPPL and prospective users, that may otherwise encourage more efficient outcomes in accordance with the revenue and pricing principles⁶⁴⁸
- ensure that the efficient investment, operation and use of the pipeline is promoted in accordance with the NGO.⁶⁴⁹

In the case that all complying bids do not exceed the capacity offered in a spare or developable capacity auction, each bid will be deemed an irrevocable request for capacity capable of immediate acceptance.⁶⁵⁰ Prospective users must formulate a bid that they cannot be sure is compliant, which may then be irrevocable. The access seeker has no information about what the service provider would have been willing to accept, or what other access seekers would have offered. Industry representatives at the queuing workshop were apprehensive regarding the inability to alter bids once they were accepted, as they could not be sure whether the outcome would be satisfactory for them. Users were of the view that removing opportunity for further negotiation would also remove the opportunity to reach an agreement that was more beneficial, and efficient, for the user as well as for APTPPL. BP expressed concerns in its submission at the irrevocability of bids.⁶⁵¹

BP is interested in understanding why APTPPL believe it is reasonable for complying bids to be irrevocable in the event that the sum of all complying bids do not exceed the unutilised existing capacity. Our concern here relates to the pricing of the subsequent contracted existing capacity, which is not clearly articulated. We have assumed pricing will be based on the auction price.

Prospective Users are forced to participate in the auction process against a background of information asymmetry, and possible large regret costs should they not be successful in accessing pipeline capacity in the auction.

...

We do believe that the bids in the auction should be irrevocable with regards to volume. However the price in this instance must be set at the reference tariff.

The revenue and pricing principles provide that the efficient investment in, or in connection with, a pipeline, the efficient provision of pipeline services and the efficient use of the pipeline should be promoted with respect to the reference service.⁶⁵² The AER considers that the information asymmetry apparent in APTPPL's proposal may prevent APTPPL and prospective users from collaborating effectively to achieve the most efficient outcomes, in accordance with the revenue and pricing principles. Furthermore the irrevocable bidding requirements remove the flexibility APTPPL and users have to negotiate with one another, hindering the efficient investment, operation and use of the pipeline as required by the NGO.⁶⁵³

⁶⁴⁸ NGL, s. 24.

⁶⁴⁹ NGL, s. 23.

⁶⁵⁰ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.4(b) and 6.3.5(b), pp. 29, 33.

⁶⁵¹ BP, *Submission to the AER*, December 2011, p. 5.

⁶⁵² NGL, s. 24.

⁶⁵³ NGL, s. 23.

10.4.5 The product being auctioned

The AER considers that it is important to precisely define what users and potential users will be bidding for in an auction. The AER is not satisfied that, under APTPPL's proposed queuing requirements, efficient outcomes with respect to reference services will be promoted in accordance with the revenue and pricing principles.⁶⁵⁴ The AER also considers that the proposed queuing requirements may not promote the efficient operation, use of, and investment in, the pipeline in accordance with the NGO.⁶⁵⁵ The AER has reached this view because of the non-homogeneous nature of the type of capacity and terms and conditions sought by users and prospective users of the RBP. Bidders may face difficulty in forming valuations for an imprecisely defined product, and efficient allocations may be less likely.

The reference service offers a consistent product across the pipeline. However, the AER understands that the reference service currently applies to only a small proportion of pipeline capacity. The majority of existing capacity is provided on negotiated terms and conditions which vary from the reference service. The AER expects the non-homogeneous nature of the type of capacity and terms and conditions sought by the market to remain a feature of the RBP. Hence, RBP capacity can vary from a homogenous to a differentiated product. The AER considers that this is an intended outcome of the regulatory framework and meets the requirements of RBP users and APTPPL now and into the future.

Under APTPPL's proposed auction design, single closed bids would be ranked according to their NPV, and other factors.⁶⁵⁶ However, the product to be allocated, pipeline capacity, would not be further defined by APTPPL prior to auction. APTPPL has proposed that it may specify some terms and conditions, but that these may subsequently require variation by bidders.⁶⁵⁷ The AER considers that users and potential users will be competing for a product defined differently across bidders. In effect, bidders are likely to be seeking different products through the same competitive process.

The non-homogeneity of the product sought means that following the proposed auction, a further round of negotiations may be required to finalise the terms and conditions of pipeline access. As such, the AER considers that prospective bidders may face difficulty in forming valuations for an imprecisely defined product. Bids may not accurately reflect the relative valuations of capacity across bidders, and efficient allocations may therefore be less likely. Equally the auction process may limit APTPPL's capacity to negotiate terms and conditions that facilitate the efficient operation of the pipeline. Hence, APTPPL's proposed auction design may not improve allocative efficiency compared to the existing first-come-first-served queuing requirements.

⁶⁵⁴ NGL, s. 24.

⁶⁵⁵ NGL, s. 23.

⁶⁵⁶ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.5(b), 6.2.5(c), 6.3.6(b) and 6.3.6(c), pp. 29, 33.

⁶⁵⁷ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.5(b), 6.2.5(c), 6.3.6(b) and 6.3.6(c), pp. 29, 33.

10.4.6 Ranking bids

The AER is not satisfied that APTPPL's proposed bid ranking method will ensure users and prospective users will be treated on a fair and equal basis as required by r.103(3) of the NGR. Furthermore the AER does not consider there to be sufficient detail to enable prospective users to understand the basis on which an order of priority between them has been, or will be, determined. Further, if an order of priority has been determined, there is not sufficient detail to allow a prospective user to determine its position in the queue. Both of these are mandatory requirements under r.103(5) of the NGR. Further, the AER considers that APTPPL's proposed ranking method may fail to promote the efficient operation, use of, and investment in, the pipeline in accordance with the NGO.⁶⁵⁸ Similarly, the AER cannot establish whether efficient outcomes with respect to the reference service are promoted by the NPV ranking in accordance with the revenue and pricing principles.⁶⁵⁹ The AER considers APTPPL's NPV ranking proposal:

- is unclear in its operation
- may create an outcome in which additional revenues accrue to APTPPL but does not account for users of the pipeline or the broader community in terms of maximising allocative efficiency.

The proposed queuing requirements allow APTPPL full discretion in ranking bids. Where complying bids exceed the capacity offered in the spare or developable capacity auction, the proposed queuing requirements provide that APTPPL will rank the applications on the basis of its assessment of the NPV of the respective bids. It will take into account all of the terms of the offers and commercial factors including risk to rank the bids from highest to lowest. Capacity will then be allocated on the basis of this ranking and the AER understands that the acceptance of a successful bid will give rise to a binding contract.⁶⁶⁰

It is not clear which terms and commercial factors APTPPL will consider in its NPV assessment, what weights they will be afforded, the process which will be applied, and generally how the ranking system will operate in practice. Industry representatives at the queuing workshop were concerned about the lack of detail regarding the operation of the NPV ranking. RBP users considered that not knowing exactly how their bid would be ranked by APTPPL, would make it difficult for them to formulate their bid effectively. Users were of the view that they could only formulate a bid in a way that would ensure maximum attractiveness to APTPPL, rather than what was necessarily optimal for them. BP also expressed concern in its submission:⁶⁶¹

The proposed method for allocating volume based on NPV of bids requires significantly more detail in order to be understood by the market, and hence be seen as robust and acceptable.

⁶⁵⁸ NGL, ss. 23–24.

⁶⁵⁹ NGL, s. 24.

⁶⁶⁰ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.5(b), 6.2.5(c), 6.3.6(b) and 6.3.6(c), pp. 29, 33.

⁶⁶¹ BP, *Submission to the AER*, December 2011, p. 5.

Similarly, TRUenergy submitted:⁶⁶²

We accept that the NPV prioritised auction process will help the APA Group optimise the size of an expansion of the RBP in the future. However, because we do not have enough information about this process, we cannot say for sure whether it will benefit all the parties that seek access to the pipeline.

Origin submitted that the NPV ranking may not preserve reference terms and conditions:⁶⁶³

While the preservation of the reference tariff is important, the preservation of the reference terms and conditions associated with the reference service is as equally important.

The Access Arrangement Proposal stipulates that if bids exceed the capacity available in an auction, then capacity will be allocated based on the net present value of the bids. ...the proposed auction process potentially allows for a participant to submit a bid for a reference service in which they are willing to accept less favourable terms and conditions than the reference service terms and conditions.

Significantly, under r.103(5), if an order of priority has been determined, queuing requirements must be sufficiently detailed to enable prospective users to determine their position in the queue. The AER understands that under the proposed ranking system, once capacity has been allocated to successful bidders, there will be no ongoing queue. When capacity again becomes available it would be dealt with afresh in accordance with the proposed queuing requirements. The AER is concerned that this would not comply with the requirements of r. 103(5). The proposed auction is one that allocates spare capacity in a manner in which no prospective user understands how they relate to any other prospective user until after the auction is over and the spare capacity has all been allocated. It does not appear to determine an order of priority allowing a prospective user to determine their position in a queue. This issue is compounded by a lack of clarity in connection with the queuing requirements which is explained in section 10.4.7.

10.4.7 Clarity around processes

There are several instances, outlined in this section, where the circumstances which lead to particular processes in APTPPL's proposed queuing requirements are not clear. In these instances where there is a lack of clarity, the AER is not satisfied that a process or mechanism for establishing an order of priority between prospective users will always exist, as required by r.103(3) of the NGR.

Nor is the AER satisfied that the proposed queuing requirements are sufficiently detailed to enable prospective users to understand the basis on which an order of priority between them has been, or will be, determined, If an order of priority has been determined – to determine the prospective user's position in the queue, as required by r.103(5) of the NGR. The AER has reached its draft decision because of the following unclear aspects of APTPPL's proposed queuing requirements:

⁶⁶² TRUenergy, *Submission to the AER*, December 2011, p. 3.

⁶⁶³ Origin, *Additional submission on the queuing requirements in the APT Petroleum Pipeline Limited (APTPL) 2012–2017 access arrangement proposal for the Roma to Brisbane Pipeline (RBP)*, 3 February 2012, p. 1 (Origin, *Additional submission to the AER*, February 2012).

- the circumstances in which APTPPL will hold an auction
- the amount of capacity which will be offered, the terms and conditions that will apply to that capacity, and according to which processes
- when negotiations rather than auctioning will take place
- inconsistencies in clauses of the access arrangement proposal.

When an auction will be held

The circumstances in which APTPPL will hold an auction are not clear. In the open season round, a spare capacity auction may not be held if expressions of interest do not exceed unutilised existing capacity. APTPPL will instead bilaterally negotiate with prospective users in any order.⁶⁶⁴ There is no process provided to allocate any spare capacity not taken up in these negotiations. Additionally, when and for what period of time APTPPL will conduct these negotiations is not specified. BP submitted that this may be inappropriate:⁶⁶⁵

If after the Open Season process, existing capacity is sufficient to meet the Prospective Users requirements, BP can see no reason why the Reference Tariffs should not apply for this existing capacity. As a result, we believe it should be stipulated that these will be the terms for contracting this capacity, unless otherwise agreed.

Spare capacity auctions are held if the available spare capacity is not sufficient to meet the expressions of interest, and if the service provider determines there is sufficient demand to proceed.⁶⁶⁶ APTPPL has not specified how it will determine whether there is sufficient demand to proceed with an auction. Furthermore, there is no alternative queuing requirement proposed for the case where expressions of interest exceed capacity, but APTPPL determines that there is not sufficient demand to proceed with an auction.

The amount of capacity to be made available

It is unclear what amount of spare capacity will be offered on the spare capacity register, made available in an open season round, or in an auction. APTPPL may place spare capacity that is less than two terajoules on the spare capacity register, which will be allocated on a first-come-first-served basis.⁶⁶⁷ APTPPL does not specify how the queue for this capacity will be established and maintained. The circumstances in which less than two terajoules of unutilised existing capacity will be placed on the spare capacity register are not clear. This is because APTPPL may apparently also make less than two terajoules of spare capacity available in an open season round or auction.⁶⁶⁸

Where it is efficient to do so, APTPPL may make any amount of spare capacity that is, or is likely to become, available at different times in the one open season round or auction. The

⁶⁶⁴ APTPPL, *Access arrangement proposal*, October 2011, clause 6.2.2, pp. 27–28.

⁶⁶⁵ BP, *Submission to the AER*, December 2011, p. 5.

⁶⁶⁶ APTPPL, *Access arrangement proposal*, October 2011, clause 6.2.3(a), p. 28.

⁶⁶⁷ APTPPL, *Access arrangement proposal*, October 2011, clause 6.2.1, p. 27.

⁶⁶⁸ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.1 and 6.2.2, pp. 27–28.

criteria for APTPPL to determine whether to offer capacity at different times and through different processes is not provided.⁶⁶⁹

Negotiations versus auctioning for developable capacity

Where APTPPL has determined that developable capacity may be made available, it has not specified how it will determine whether to negotiate with prospective users or use an auction to allocate that capacity.⁶⁷⁰ Origin expressed concern at this uncertainty.⁶⁷¹

...it is unclear whether the auction process would apply to negotiated service capacity as well as reference service capacity. This is an important distinction for pipeline users when making decisions around their participation in any auction process. For example, one scenario where the role of an auction is unclear is where a user is willing to underwrite the investment necessary for the developable capacity...APTPL may conduct negotiations with prospective users or hold an auction to determine the allocation of developable capacity following receipt of expressions of interest for that capacity. Private investors value certainty and as a result, an auction may not be the most suitable approach to progress with the new development.

Where APTPL determines to negotiate for developable capacity, it will determine the order of priority between prospective users on the basis of its assessment of the NPV of the respective bids.⁶⁷² The proposed queuing requirements do not set out a process for users to make bids that will be assessed under this clause, or if they are equivalent to the registrations of interest. Furthermore what this ranking means effectively for negotiations is unclear.

Inconsistencies

The AER considers there are inconsistencies in certain clauses of APTPPL's proposed queuing requirements. The proposed queuing requirements state that APTPPL may provide the requirements for a user to submit a compliant bid, whereas users must meet these requirements for their bid to be considered compliant.⁶⁷³ This allows for a situation where prospective users may need to comply with requirements they have not been given. It is not clear what would occur if APTPPL chose not to provide these requirements.

In order to submit a complying bid for spare or developable capacity, prospective users must submit an auction application registration form.⁶⁷⁴ What this will require is not set out in the access arrangement. The AER is therefore unable to make an assessment of whether such a form is appropriate under the NGL and NGR.

In the existing capacity open season process, expressions of interest for spare capacity are to be received by a date not less than 30 days after the date that the existing capacity notice is published in the national daily newspaper. However it is only specified that the service provider will publish a copy of the existing capacity notice on its website.⁶⁷⁵ Furthermore

⁶⁶⁹ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.2(b) and 6.2.3(b), pp. 27–28.

⁶⁷⁰ APTPPL, *Access arrangement proposal*, October 2011, clause 6.3.2(a), p. 31.

⁶⁷¹ Origin, *Submission to the AER*, December 2011, p. 4.

⁶⁷² APTPPL, *Access arrangement proposal*, October 2011, clause 6.3.3(a), p. 31.

⁶⁷³ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.3(d), 6.2.3(e), 6.3.4(c) and 6.3.4(d), pp. 28–29, 32.

⁶⁷⁴ APTPPL, *Access arrangement proposal*, October 2011, clauses 6.2.3(d), 6.2.3(e), 6.3.4(c) and 6.3.4(d), pp. 28–29, 32.

⁶⁷⁵ APTPPL, *Access arrangement proposal*, October 2011, clause 6.2.2, pp. 27–28.

APTPPL will make the existing capacity notice available to all prospective users by contacting those who submitted registrations of interest, as well as publishing the notice on its website.⁶⁷⁶ However, for developable capacity APTPPL will only advise prospective users who lodged registrations of interest that a developable capacity auction will take place.⁶⁷⁷

10.4.8 Moving away from first-come-first-served

The AER considers that the first-come-first-served approach of the earlier access arrangement is preferable to APTPPL's proposed auction-based queuing requirements. Although the first-come-first-served approach has weaknesses, it meets the requirements of the NGL and NGR. The AER has formed this view for the following reasons:

- The problems APTPPL submitted regarding the first-come-first-served approach have not been clearly demonstrated, are difficult to quantify, and have not been reiterated by industry.
- Reforming queuing requirements in other regulated access regimes has often required much time and consultation.
- There may be improvements that can be made to the first-come-first-served approach of the earlier access arrangement.

Concerns with first-come-first-served

APTPPL's access arrangement submission identified a number of potential problems with the first-come-first-served approach, as outlined in section 10.2. However, the AER notes that the drawbacks associated with first-come-first-served are difficult to quantify and have not been clearly demonstrated. The problems APTPPL identified with first-come-first-served were discussed during the queuing workshop. RBP users agreed that, in theory, these problems could occur. However none of the RBP users confirmed that these problems had been experienced.

For these reasons, the AER is not satisfied that a fundamental change to queuing requirements is justified. This view is supported by the uncertainty regarding the materiality of the problems with first-come-first-served, and the AER's other concerns with APTPPL's proposed queuing requirements as outlined in this section 10.4 reasons for draft decision.

In these circumstances, the first-come-first-served approach is preferable as it has previously been approved by the AER, meets the requirements and objectives of the NGL and NGR, and has been in operation for several years.

The process of reforming queuing requirements

The AER is of the view that developing a new approach requires effective industry consultation. New queuing requirements must also be consistent with the overarching regulatory framework and specific elements of the NGL and NGR. Furthermore, as there is a

⁶⁷⁶ APTPPL, *Access arrangement proposal*, October 2011, clause 6.2.2(a), p. 27.

⁶⁷⁷ APTPPL, *Access arrangement proposal*, October 2011, clause 6.3.4(a), pp. 31–32.

risk of unforeseen problems arising from fundamental changes to queuing requirements, adequate consultation should be undertaken. Origin submitted that:⁶⁷⁸

The proposed auction process represents a significant change from the current queuing policy. By holding the industry workshop, the AER clearly understands the importance of ensuring any new process is efficient and effective and meets the needs of both the pipeline operator and its users.

BP supports the development of alternative mechanisms while maintaining the first-come-first-served approach:⁶⁷⁹

In the absence of further justification on why this additional revenue should be retained by APTPPL, BP believes the AER should investigate alternative pricing mechanisms for Existing Capacity when this capacity becomes available and is oversubscribed. Reverting to the current queuing policy, particularly in light of new capacity trading liquidity provided by the STTM, is possibly the best outcome.

To inform its draft decision the AER has also considered how queuing requirements have been transformed in other gas transportation access regimes, and if this could inform its consideration of APTPPL's proposed queuing requirements.

Prior to coverage of the pipeline being revoked in 2007, the ACCC determined that a first-come-first-served approach was inappropriate in an environment of excess demand on the MAPS.⁶⁸⁰ Other alternative queuing requirements were considered including auctioning, public interest criteria, and pro-rata on the basis of demand. These alternatives were deemed inappropriate as they did not meet the requirements of the Code.

The auction proposed by the MAPS service provider involved prospective users bidding for the right to pay the reference tariff. Among concerns raised was that, in the circumstances, large revenues were likely to be generated from auctioning, which would defeat the purpose of regulating the service provider's revenues (as discussed in section 10.4.2).⁶⁸¹

In consultation with the service provider and industry, the ACCC approved an open season approach to allocate capacity. The service provider advertises that spare capacity is available and then allows prospective users to submit a request for the service. In cases where the demand exceeds capacity, capacity is allocated via negotiation, conciliation or arbitration.⁶⁸² The ACCC also concluded that a dispute resolution process was necessary to allow flexibility to achieve the most efficient outcome.⁶⁸³

The AER also observed complex gas transportation access regimes internationally, where a significant period of time was allowed for developing and tailoring queuing requirements to the specific circumstances of each access regime. The Nabucco gas pipeline (Turkey to Austria) proposed access regime uses an open season arrangement, where potential shippers are invited to express their interest in the project and make firm bookings for pipeline transport

⁶⁷⁸ Origin, *Additional submission to the AER*, February 2012, p. 1.

⁶⁷⁹ BP, *Submission to the AER*, December 2011, p. 6.

⁶⁸⁰ ACCC, *Final decision: Moomba to Adelaide access agreement*, September 2001, p. 186.

⁶⁸¹ ACCC, *Final decision: Moomba to Adelaide access agreement*, September 2001, p. 187.

⁶⁸² ACCC, *Final decision: Moomba to Adelaide access agreement*, September 2001, pp. 181–186.

⁶⁸³ ACCC, *Final decision: Moomba to Adelaide access agreement*, September 2001, p. 190.

capacity. Auctions then occur in a sequential order, with non-binding, binding, shareholder and non-shareholder bidding phases. These complex processes are being developed well in advance of the beginning of the pipeline's scheduled construction in 2013 and operation in 2017.⁶⁸⁴

The United Kingdom's National Transmission System gas access regime holds auctions twice annually for monthly access rights, with each auction incorporating multiple bidding rounds. These auctions have been in operation since 1999. Developing and refining this system to suit the needs of gas transportation for the entire United Kingdom gas market has taken many years.⁶⁸⁵

Changing queuing requirements on the RBP

The AER notes, NERA's conclusions that for existing capacity, auctions can overcome some of the potential problems with first-come-first-served by allocating capacity to the users who value it most. Furthermore, that for developable capacity an open season approach can be more efficient than first-come-first-served, as it allows the service provider to negotiate with multiple prospective users at once, to ensure commitment and promote economies of scale.⁶⁸⁶ Industry also expressed limited in-principle support for developing a competitive process. Origin Energy submitted:⁶⁸⁷

While Origin supports the principle of the auction process and the level of transparency of the process itself, there are a few cases where we need to understand its practical application on the RBP. We also support APTPPL detailing its auction process in the Access Arrangement, but would like to understand better the AER's views on how best to enforce the timelines and notice periods.

AGL submitted that:⁶⁸⁸

We have already seen instances of this in the Victorian gas market where APA have sought expressions of interest in order to allocate existing rights and capacity via competitive tender, albeit in the area of unregulated services. Notwithstanding that, the allocation of rights through an auction process is workable and ensures that capacity or rights go to those parties who value it most. We see this as being very much in keeping with and furthering the National Gas Objective as set out in section 23 of the National Gas Law.

Industry representatives observed at the queuing workshop that, under a first-come-first-served approach although a prospective user's position in the queue did not reflect their value of capacity, prospective users were all treated equally.

At the queuing workshop RBP users as well as APTPPL expressed strong views that, overall, queuing requirements should be simple. Simplicity was important in the operation of any queuing requirements, as well as in the ability of users, potential users and APTPPL to understand their incentives.

⁶⁸⁴ Pickl, M. and F. Wirl, 'Auction design for gas pipeline transportation capacity: The case of Nabucco and its open season', *Energy Policy*, Volume 39 Issue 4, 2011.

⁶⁸⁵ McDaniel, T. and K. Neuhoff, *Auctions to gas transmission access: The British Experience*, MIT Center for Energy and Environmental Policy Research, 23 October 2002.

⁶⁸⁶ NERA, *Report on queuing policy*, October 2011, pp. 21–26.

⁶⁸⁷ Origin, *Access arrangement proposal for the Roma to Brisbane Pipeline*, December 2011, p. 4.

⁶⁸⁸ AGL, *Submission to the AER*, December 2011, p. 1.

Several approaches were discussed at the queuing workshop to mitigate the problems of a first-come-first-served approach. One suggestion was the possibility of more active queue management. For example, this could be achieved by requiring prospective users to pay a fee to keep their spot in the queue. In the United States the Federal Energy Regulatory Commission has worked on queuing requirements with Independent Transmission System Operators, in response to high excess demand for generation interconnection in electricity access regimes. To improve queuing requirements non-refundable fees have been approved as well as a first-ready-first-served approach. A milestones approach was also implemented where pecuniary and non-pecuniary elements are used to demonstrate whether a project is commercially viable. Another proposition made in the United States was to use auctions to allocate queue positions rather than capacity.⁶⁸⁹

The AER reiterates that any queuing requirements must satisfy the NGL and the NGR. Table 10.5 discusses issues which may be considered as part of developing any new queuing requirements.

On 20 March 2012, the AER received a late submission by APTPPL of the NERA report *Assessment of Alternative Auction Designs*, which is available on the AER website. The AER has not taken this report into account in the draft decision. The report was received too late in the process of formulating the AER's draft decision for the AER to take it into account. However, the AER seeks submissions on the NERA report in the context of its draft decision, and will take the report into account in its final decision.

⁶⁸⁹ Gergen M.J. et. al., 'A Modest Proposal: A Market-Based Approach to Generation Interconnection Process Reform', *The Electricity Journal*, Volume 21, Issue 9, November 2008 ; Yarano, D.A. and Z.D. Olson, *Midwest ISO Queue Reforms Take Effect*, October 2008.

Table 10.5 Issues for consideration in developing RBP queuing requirements

Issue	Considerations
Access dispute resolution	Any queuing requirements should not preclude the service provider, users, and prospective users from accessing the arbitration process.
Allocation of a scarce resource	Many of the problems experienced with the first-come-first-served approach are a consequence of the RBP being currently fully allocated, and that the demand for capacity is likely to remain strong in the future. Queuing requirements may not be able to alleviate the issues associated with the problem of allocating a scarce resource. However, problems of efficiency and fairness should not be inherent in the design of the queuing requirements themselves.
Auction revenues	Industry and the AER have expressed concern about how revenue from any auctions will be treated. Examples for dealing with revenues include rebating revenues to users, subtracting revenues from the regulatory asset base, and using the revenues to invest in the pipeline. However, the effect of any approach on incentives for use and investment in the pipeline must be carefully considered.
Bilateral negotiations	APTPPL and industry submitted that it was important to preserve bilateral negotiations. However, it is not clear what aspects should be covered by negotiations. For example, a user may submit a bid offering the tariff, capacity, and terms and conditions sought. Consideration is needed on which aspects were negotiable, and then whether they could be negotiated within pre-defined bounds, or fully negotiable. The amount of time allocated for negotiations is also an important consideration.
Commercially sensitive information	APTPPL and industry have expressed desire to maintain the confidentiality of capacity requests and contracts. This is as the number of users on the RBP is relatively small, so even processes where information is public but anonymous may reveal too much detail.
Defining the product being auctioned	Effective auctions require the product being auctioned to be specified very tightly, so that prospective users may submit bids which accurately reflect their relative valuations. Users and APTPPL submit that this is difficult because of the non-homogeneous services required/being offered.
Existing capacity versus developable capacity	The incentives for prospective users to secure existing capacity will be affected by the availability of developable capacity. Existing capacity and developable capacity queuing requirements could be the same, similar or different.
Non-genuine requests for capacity	Discouraging non-genuine requests for capacity is important as this creates problems for genuine users who must compete to gain access as the RBP is at capacity. However, to judge if a request for capacity is non-genuine is very difficult. For example long term projects can be difficult to provide evidence for.
Reference services and negotiated services	Any queuing requirements should ensure that it is possible for all users and prospective users to have access to the reference service at the reference tariff if they choose. Care should be taken to ensure that the preference is not always for negotiated services at negotiated tariffs over the reference service at the reference tariff.
Short term trading market	As queuing requirements determine the primary allocation of capacity, the extent of secondary capacity trading markets is an important consideration. The Brisbane STTM has only been in operation since 1 December 2011. Its impact on secondary capacity trading on the RBP is yet to be seen.
Small users	Queuing requirements should not disadvantage smaller users, or users seeking smaller amounts of capacity, when establishing an order of priority. It is important to prioritise the prospective user with the highest marginal valuation of capacity, rather than the just the highest valuation.

10.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 10.1:

Make the queuing requirements for the access arrangement period identical to those in the earlier access arrangement, except for amendments 10.2, 10.3 and 10.4.

Amendment 10.2:

Delete clause 6.1(d) of the access arrangement proposal.⁶⁹⁰

Amendment 10.3:

Amend clause 6.3(a) of the access arrangement proposal to the following:

An Existing Capacity Queue will include all relevant Requests which can be satisfied from the spare capacity of the covered pipeline.⁶⁹¹

Amendment 10.4:

Replace 'queuing policy' and 'queuing', wherever occurring, with 'queuing requirements'.

⁶⁹⁰ APTPPL, *Approved access arrangement for Roma to Brisbane Pipeline*, 28 March 2007, clause 6.1(d), p. 21.

⁶⁹¹ APTPPL, *Approved access arrangement for Roma to Brisbane Pipeline*, 28 March 2007, clause 6.3(a), p. 22.

11 Non-tariff components

APTPPL's access arrangement proposal sets out 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. These are referred to by the AER as non-tariff components of the access arrangement.

This attachment sets out the AER's consideration of the non-tariff components of APTPPL's access arrangement proposal, which include APTPPL's proposed capacity trading requirements,⁶⁹² queuing policy,⁶⁹³ extension and expansion requirements,⁶⁹⁴ and commencement and review dates.⁶⁹⁵

APTPPL's proposed terms and conditions on which the reference service will be provided are also covered in this attachment and in appendix A.⁶⁹⁶

11.1 Draft decision

The AER approves the capacity trading policy and most of the terms and conditions of the access arrangement proposal. However, the AER does not approve the following elements:

- Queuing requirements
- Extension and expansion requirements
- Commencement and review dates.

APTPPL has mostly adopted the AER approved definitions and terms and conditions for the AGP access arrangement. The AER's assessment of APTPPL's proposed terms and conditions is set out in detail in appendix A and summarised in table 11.1 below. Appendix A covers only those terms and conditions where APTPPL has proposed amendments or new clauses.

⁶⁹² NGR, r. 105.

⁶⁹³ NGR, r. 103.

⁶⁹⁴ NGR, r. 104.

⁶⁹⁵ NGR, rr. 49 and 52.

⁶⁹⁶ NGR, r. 48(1)(d)(ii).

Table 11.1 AER consideration of APTPPL’s proposed terms & conditions (T&Cs):

APTPL’s proposed T&Cs	Clause number	AER consideration
Clauses same as approved by the AER for AGP	1, 2, 3, 4, 5, 6, 13, 14, 22, 23, 24, 25, 27, 29, 30, 32, 33, 24, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 46, 49, 50, 53, 54, 55, 56, 57, 58, 59, 60(a), 61, 62, 63, 65, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87(b), 87(c),, 89(b), 93(a), 93(b), 94, 95, 96, 97, 101, 102, 103.	AER accepts APTPPL’s proposed clauses
Clauses where APTPPL has proposed amendments	11, 11(c), 11(d), 12(a), 12(b), 12(c), 12(d), 15(a), 15(b), 15(c), 15(d), 16, 21, 26, 28, 31, 45, 47, 50,51, 52, 64, 68, 87(a), 88, 89(a), 90, 92, 93(c), 93(d), 99,	AER accepts amended clauses 11, 11(c), 11(d), 12(a), 12(b), 12(c), 12(d), 15(a) to 15(d), 21, 26, 28, 31, 45, 47, 50, 51, 52, 64, 64, 68. AER accepts deletion of clauses 13 and 14. AER does not accept amended clauses 16, 87a0, 88, 89(a), 90, 92, 92(a), 92(g), 93(c), 93(d).
New clauses proposed by APTPPL	7, 8, 9, 10, 17, 18, 19, 20, 48, 60(b), 66, 67, 91, 98, 100	AER accepts proposed new clauses 7, 8(a), 9, 10, 17, 18, 19, 48, 66, 67, 91, 98 and 100. AER does not accept 8(b), 20 and 91.

Source: APTPPL, *Access arrangement proposal*, October 2011; APTPPL, *Access arrangement submission*, October 2011; AER analysis.

11.2 APTPPL’s proposal

APTPL’s proposed non-tariff components for the access arrangement proposal include the following:

- Capacity trading requirements

APTPL proposed capacity trading requirements that are almost identical to that approved by the AER in respect of the AGP access arrangement 2011–16.⁶⁹⁷

- Queuing requirements

APTPL proposed new queuing requirements in its access arrangement proposal which involve moving from a first-come-first-served approach to a publically notified auction.⁶⁹⁸

⁶⁹⁷ APTPPL, *Access arrangement submission*, October 2011, p. 120; APTPPL, *Access arrangement proposal*, October 2011, pp. 23-25.

⁶⁹⁸ APTPPL, *Access arrangement submission*, October 2011, pp. 109–116; APTPPL, *Access arrangement proposal*, October 2011, pp. 26-34.

- Extension and expansion requirements

The extension and expansion requirements proposed by APTPPL are similar to those approved by the AER in respect of the AGP access arrangement 2011–16, except for the fixed principles component. The fixed principles proposed by APTPPL set out that the capital investments, operating costs, and demand associated with extensions and expansions offered as a non-reference service (referred to by APTPPL as a ‘negotiated service’) will not be considered in the calculation of the reference tariff.⁶⁹⁹

- Commencement and review dates

APTPPL has proposed that the access arrangement will commence on the date on which the approval of the AER takes effect under r. 62 of the NGR. It has also proposed that it will submit revisions to this access arrangement on or before 1 January 2016 or four years from the commencement date of the access arrangement, whichever is the later. Those revisions to the access arrangement will commence on the later of 1 July 2017 and the date on which the approval by the AER of the revisions to the access arrangement takes effect under the NGR.⁷⁰⁰

- Definitions and Interpretation

APTPPL’s proposed definitions relating to terms and conditions are set out in schedule 2 of the access arrangement.⁷⁰¹ APTPPL submitted that new and revised definitions have been included in respect of the Queensland STTM, inclusion of authorised overruns in the access arrangement, revisions to the assignment provisions, standardisation of the description of the Firm service, revisions to the liability provisions, and to address Queensland specific matters.⁷⁰²

- Terms and conditions for providing the reference service

APTPPL’s proposed terms and conditions are set out in schedule 3 of the access arrangement.⁷⁰³ The proposed terms and conditions provide the basis of the access agreement between APTPPL and a user. APTPPL’s proposed alignment of its terms and conditions with provisions in APA’s standard form terms and conditions means that it has mostly adopted the AER approved terms and conditions for the AGP access arrangement 2011–2016. APTPPL has proposed some amendments in its access arrangement, which are different from the AER approved terms and conditions for the AGP. APTPPL also proposed additional clauses to support the Queensland STTM and commencement of the Brisbane hub which became effective from 1 December 2011.

APTPPL submitted that recognising the significant benefits that APA derives from consistent arrangements, APTPPL has in large part incorporated the terms and conditions approved by the AER in respect of the AGP into the access arrangement.

⁶⁹⁹ APTPPL, *Access arrangement proposal*, October 2011, clause 7, pp. 35–36.

⁷⁰⁰ APTPPL, *Access arrangement proposal*, October 2011, pp. 2–3.

⁷⁰¹ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 3–14.

⁷⁰² APTPPL, *Access arrangement submission*, October 2011, pp. 120–121.

⁷⁰³ APTPPL, *Access arrangement proposal*, October 2011, pp. 16–37.

APTPL considers that variations to the terms and conditions approved by the AER for the AGP are limited to changes necessary to:⁷⁰⁴

- support the STTM hub in Brisbane, and other Queensland specific matters
- incorporate authorised overruns into the access arrangement
- support the specific services offered under the RBP access arrangement
- accommodate the two gas quality specifications in place for the pipeline
- address unacceptable changes to the liability and force majeure clauses imposed by the AER in respect of the AGP access arrangement
- revise assignment clauses that have proven unworkable in practice.

11.3 Assessment approach

The AER is required to assess APTPL's proposed non-tariff components of an access arrangement, including terms and conditions on which the reference service will be provided, to decide whether it approves the proposed non-tariff components or does not approve them. Where the AER does not approve the proposed non-tariff components, it must propose amendments which provide a preferable alternative that complies with the applicable requirements and criteria in the NGL and NGR.⁷⁰⁵ The AER considers a preferable alternative may include one that is more consistent with the national gas objective under s. 23 of the NGL in that it better promotes the long term interests of consumers of natural gas.

The AER's assessment of APTPL's proposed non-tariff components is set out below:

- Capacity trading requirements
- Commencement and review dates
- Terms and conditions applying to the access arrangement.

The AER assessment approach for APTPL's proposed queuing policy and extension and expansion requirements is outlined in attachments 10 and appendix B respectively.

Capacity trading requirements

In assessing APTPL's proposed trading policy, the AER must be satisfied that it meets the NGR requirements. That is, the capacity trading requirements must provide for capacity transfers in accordance with the rules or procedures of the relevant gas market.⁷⁰⁶ The AER is also required to assess the conditions under which consent will or will not be given for transfer

⁷⁰⁴ APTPL, *Access arrangement submission*, October 2011, pp. 8–9.

⁷⁰⁵ NGR, rr. 40(3) and 59(2).

⁷⁰⁶ NGR, r. 105(1).

of capacity.⁷⁰⁷ The service provider is precluded from withholding its consent unless it has reasonable grounds for doing so.⁷⁰⁸

Commencement and review dates

The AER is required to accept a service providers' review and submission dates if these are made in accordance with the general rule.⁷⁰⁹ In assessing the APTPPL's proposed commencement date for the access arrangement, the AER must ensure that the service provider has provided reference to the NGR relevant rules for both possible scenarios i.e. i) if the AER approves an access arrangement as proposed by the service provider⁷¹⁰ or if ii) the AER rejects a service provider's proposal and gives effect to its own access arrangement proposal.⁷¹¹

Terms and Conditions

There are no specific rules in the NGR that guide the AER's assessment of service provider's proposed terms and conditions applying to a reference service aside from the general requirement that they are consistent with the NGO and NGR.⁷¹²

In assessing APTPPL's proposed terms and conditions and related definitions the AER had regard to r. 100 of the NGR which requires that an access arrangement be consistent with the NGO and the rules and procedures in force when the terms and conditions of the access arrangement proposal are determined or revised. The NGO 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.⁷¹³ The AER considers that in order to achieve the NGO, the interests of both consumers and gas pipeline service providers need to be taken into account.

The AER has full discretion in assessing APTPPL'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, and
- is consistent with applicable criteria (if any) prescribed by the NGL and NGR.⁷¹⁴

The AER has assessed APTPPL's proposed clauses to ensure they are consistent with the NGO and the NGR, and comply with the changes made to the NGR by the National Gas Amendment (STTM Brisbane Hub) Rule 2011. The AER considers it desirable that there is consistency between access arrangements for similar services in the market, and this has also guided the AER's approach to assessment.

⁷⁰⁷ NGR, rr. 105(2) and 105(3).

⁷⁰⁸ NGR, r. 105(4).

⁷⁰⁹ NGR, r. 50(2).

⁷¹⁰ NGR, r. 62(1).

⁷¹¹ NGR, r. 64(1).

⁷¹² NGR, r. 100.

⁷¹³ NGL, s. 23.

⁷¹⁴ NGR, r. 40(3).

11.4 Reasons for decision

The AER approves the proposed capacity trading requirements of the access arrangement proposal as they are consistent with the NGR requirements.

The AER approves most of the terms and conditions of the access arrangement proposal. In assessing these terms and conditions the AER had regard to r. 100 of the NGR.

The AER does not approve the following non-tariff components of the access arrangement proposal:

- Queuing requirements
- Extension and expansion requirements
- Commencement and review dates

11.4.1 Capacity trading requirements

The capacity trading requirements of an access arrangement may allow a user to transfer contract capacity to another user.⁷¹⁵ In allowing this, it enables a secondary market to exist with more efficient price signals and levels of usage. As service providers receive no direct benefit from capacity trading, the NGR protects users' rights to trade flexibly, and limits the service provider's power to deny this right.⁷¹⁶

APTPPL included capacity trading requirements in its access arrangement proposal.⁷¹⁷ The AER generally accepts the capacity trading requirements as proposed by APTPPL. However, the AER considers that an additional definition of the phrase 'reasonable commercial or technical grounds' is required in clause 5.4 of the access arrangement proposal, to support its trading policy. The AER considers that users and prospective users would benefit from a definition of these terms as it is the basis on which APTPPL may withhold its consent to user requests for changing delivery and receipt points.⁷¹⁸ The meaning of the phrase 'reasonable commercial and technical' was included in the earlier access arrangement.⁷¹⁹ The AER considers that the provision of such a definition in the access arrangement proposal would better promote the NGR under s. 23 of the NGL, as it will provide clarity for end users.

The AER decision to approve the APTPPL's proposed trading policy is based on the following reasons:

- Clause 5.1 of the proposed capacity trading requirements provides for capacity transfers in accordance with the rules of the relevant market which comply with r. 105 of the NGR.

⁷¹⁵ NGR, r. 105(2).

⁷¹⁶ NGR, rr. 105(3)(b) and 105(4).

⁷¹⁷ NGR, r. 48(1).

⁷¹⁸ NGR, r. 105(6).

⁷¹⁹ APTPPL, *Access arrangement for RBP*, March 2007, p. 19.

- Clause 5.2 of APTPPL's access arrangement proposal allows users to trade the capacity they have under contract in accordance with r. 105 of the NGR. The AER considers that proposed capacity trading requirements in the access arrangement will allow users to transfer or assign all or part of their contracted capacity, without the prior consent of APTPPL.

The AER received submissions from TRUenergy and Origin that addressed the trading capacity requirements proposed by APTPPL. The AER conclusion was supported by these submissions.

- TRUenergy has submitted that the trading policy proposed by APTPPL is appropriate and allows users to trade any capacity that they do not require in the market.⁷²⁰
- Origin, in its submission, has supported more flexible arrangements around transferring or assigning the RBP capacity to others and to different delivery and receipt points. However, Origin has expressed the concern that the proposed access arrangement maintains a requirement that a user must obtain consent from APTPPL to substitute all or part of an existing receipt or delivery point MDQ for another receipt or delivery point (respectively) on the RBP. In response to this application, APTPPL has the authority to withhold consent on, or make its consent subject to, 'reasonable commercial and technical grounds'. Origin submitted that these grounds allow APTPPL excessive discretion to reject substitution requests as there is no clear definition of what constitutes reasonable commercial and technical grounds.⁷²¹

The AER acknowledges Origin's concern and requires APTPPL to provide a definition for the term 'reasonable commercial or technical grounds' in clause 5.4 of its access arrangement proposal as outlined above.

11.4.2 Queuing requirements

Queuing can be used to determine access to a pipeline that is fully, or close to being fully, utilised. Queuing requirements will establish a process or mechanism for establishing the order of priority between prospective users of any spare (or developable) capacity.⁷²²

The AER is not satisfied that APTPPL's proposed queuing requirements comply with the NGL and NGR. The AER's assessment and reasons for its conclusion are set out in detail in attachment 10.

11.4.3 Extension and expansion requirements

Extension and expansion requirements included in an access arrangement specify the method for determining whether extensions or expansions to the covered pipeline are to be covered by the access arrangement.⁷²³ When the extension or expansion is covered by the

⁷²⁰ TRUenergy, *Submission to the AER*, December 2011, p. 2.

⁷²¹ Origin, *Submission to the AER*, December 2011, p. 5.

⁷²² NGR, r. 103(3).

⁷²³ NGR, r. 104(1).

access arrangement, the requirements included in the proposal must deal with the effect of the extension or expansion on tariffs.⁷²⁴

The AER accepts the majority of the proposed extensions and expansions requirements, but does not approve clause 7.4 of the access arrangement proposal which relates to the inclusion of certain fixed principles. The AER's assessment and reasons of its conclusion are set out in detail in appendix B.

11.4.4 Commencement and review dates

A review submission date means a date on or before which an access arrangement revision proposal is required to be submitted.⁷²⁵ A revision commencement date for an applicable access arrangement means the date fixed in the access arrangement as the date on which revisions resulting from a review of an access arrangement are intended to take effect.⁷²⁶

The NGR provides that, as a general rule:⁷²⁷

- a review submission date will fall 4 years after the access arrangement took effect or the last revision commencement date; and
- a revision commencement date will fall 5 years after the access arrangement took effect or the last revision commencement date.

The review submission date advances to an earlier date if a trigger event occurs.⁷²⁸ The AER considers that a five year period between reviews provides regulatory certainty for service providers, in terms of the commercial parameters they operate within, as well as for users, in terms of the price and conditions of access to the regulated network.⁷²⁹

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.⁷³⁰

Clause 1.5 of APTPPL's access arrangement proposal states that the access arrangement will commence on the date on which the approval of the AER takes effect under r. 62 of the NGR. The AER agrees that r. 62 of the NGR will be applicable if the AER approves an access arrangement as proposed by the service provider.

The AER notes this does not cover a situation where the AER refuses to approve an access arrangement.⁷³¹ If the AER does not approve a service provider's proposal and proposes its own access arrangement (or revisions),⁷³² then r. 64(6) of the NGR will be applicable in regards to the commencement date. The AER therefore requires APTPPL to amend clause

⁷²⁴ NGR, r. 104(2).

⁷²⁵ NGR, rr. 3, 49 and 52.

⁷²⁶ NGR, r. 3.

⁷²⁷ NGR, r. 50.

⁷²⁸ NGR, r. 51.

⁷²⁹ AER, *Draft decision: N.T. Gas access arrangement*, April 2011, p. 186.

⁷³⁰ NGR, r. 50(2).

⁷³¹ NGR, r. 64(1).

⁷³² NGR, r. 64(1).

1.5 of the access arrangement proposal to include reference to r. 64(6) of the NGR as outlined in amendment 11.3.

Clause 1.6 of the APTPPL's access arrangement proposal states:

Service Provider will submit revisions to this Access Arrangement on or before 1 July 2016, or four years from the commencement date of this Access Arrangement, whichever is the later (Revisions Submission Date).

The AER does not approve clause 1.6 of the access arrangement proposal which relates to the revisions submission date. It is not clear if the service provider will submit revisions to the AER. The AER therefore requires APTPPL to amend clause 1.6 of the access arrangement proposal to insert the words 'to the AER' before the words on or before 1 July 2016 as outlined in amendment 11.4.

11.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment 11.1

Delete the text 'An example of such grounds might be if a reduction in the amount of the Delivery Point MDQ at the initial Delivery Point will not result in a corresponding increase in Service Provider's ability to provide that service to the alternative Delivery Point.' from clause 5.4 of the access arrangement proposal.

Amendment 11.2

Provide a definition of the term 'reasonable commercial and technical'

For the purposes of clause 5.4 'reasonable commercial grounds' and 'reasonable commercial conditions' include allowing APTPPL to deliver the same amount of the Service, receive the same amount of revenue and bear no additional capital or non-capital costs, as applied before the trade.

Examples of items that would be reasonable are:

- (a) APTPPL refusing to agree to a User's request to change its Delivery Point where a reduction in the amount of the Service provided to the original Delivery Point will not result in a corresponding increase in APTPPL's ability to provide Services to the alternative Delivery Point; and
- (b) APTPPL specifying that, as a condition of its agreement to a change in the Delivery Point or Receipt Point, APTPPL must receive the same amount of revenue, and bear the same or a reduced level of costs that it would have received or borne before the change.

Amendment 11.3

Amend clause 1.5 of the access arrangement proposal as below:

This Access Arrangement will commence on the date on which the approval of the AER takes effect under Rule 62 or Rule 64.

Amendment 11.4

Amend clause 1.6 of the access arrangement proposal as below:

Service Provider will submit revisions to this Access Arrangement to the AER on or before 1 July 2016, or four years from the commencement date of this Access Arrangement, whichever is the later (**Revisions Submission Date**).

The revisions to this Access Arrangement will commence on the later of 1 July 2017 and the date on which the approval by the AER of the revisions to the Access Arrangement takes effect under the National Gas Rules (**Revisions Commencement Date**).

Appendices

A Definitions and terms and conditions applying to the Firm Service

Matter	DEFINITIONS and INTERPRETATION APTPPL's proposed amendments in the AER approved definition and interpretation for AGP	APTPPL's justification for amendments	AER's consideration
Assignment	<p>Change in Control of an entity occurs if a person who did not previously do so acquires or holds, directly or indirectly:</p> <p>(a) securities conferring 50% or more of the voting or economic interests in the entity;</p> <p>(b) the power to control the appointment or dismissal of the majority of the entity's directors; or</p> <p>(c) the capacity to control the financial or operating policies or management of the entity.⁷³³</p>	<p>APTPPL submitted that new and revised definitions have been included in respect of the Queensland STTM, inclusion of Authorised Overruns in the access arrangement, revisions to the Assignment provisions, standardisation of the description of the Firm service, revisions to the Liability provisions, and to address Queensland specific matters.⁷³⁴</p> <p>APTPPL submitted that revisions to the assignment clauses introduce the need for a definition of Change in Control and Affected Party.⁷³⁵</p>	<p>The AER's consideration of the proposed Assignment definition is outlined below under consideration of the Assignment clauses 98-100.</p>

⁷³³ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, pp. 4–5.

⁷³⁴ APTPPL, *Access arrangement submission*, October 2011, p. 121.

⁷³⁵ APTPPL, *Access arrangement submission*, October 2011, p. 126.

Brisbane hub	<p>Delivery Points means the Delivery Points, as specified in the Transportation Agreement, to which the Gas will be delivered under the Transportation Agreement.</p> <p>The term includes a reference to equipment connected to, or forming part of, the Pipeline that facilitates delivery of Gas at the Delivery Points. Although the Brisbane hub is comprised of Delivery Points the Brisbane hub is not a Delivery Point.⁷³⁶</p>	<p>APTPPL submitted that new and revised definitions have been included in respect of the Queensland STTM.⁷³⁷</p>	<p>The AER accepts APTPPL's proposed amendment to add additional wording 'Although the Brisbane hub is comprised of Delivery Points the Brisbane hub is not a Delivery Point'. The AER considers that proposed amendment is appropriate in respect of the Queensland STTM.</p>
Existing reference service capacity	<p>Existing Capacity has the meaning given to it in section 1.3.⁷³⁸</p>	<p>Reference services apply to existing capacity (203 TJ/day) of the pipeline as at 1 January 2006.</p>	<p>The AER rejects the definition of Existing Capacity. The AER consideration of this issue is outlined in Pipeline Services attachment 3.</p>
Gas law	<p>Gas Law means the National Gas (Queensland) Act 2008, National Gas Law, Petroleum and Gas (Production and Safety) Act 2004, Gas Supply Act 2003, Petroleum Act 1923 and any other applicable market, industry or technical code, any licence issued under applicable law, and any other statute, regulation, ordinance, code or other law, whether territory, state or federal, including any lawfully binding determination, decree, edict, declaration, ruling, order or other similar.⁷³⁹</p>	<p>Not provided</p>	<p>The AER accepts APTPPL's proposed amendment in the definition. However, the AER considers 'QLD' should be inserted after relevant legislative references to avoid uncertainty.</p> <p>The AER therefore requires APTPPL to amend the legislative references in the access arrangement proposal as set out in amendment A.1.</p> <p>Proposed amendment A.1</p> <p>Amend the legislative references in the access arrangement proposal as under:</p> <ul style="list-style-type: none"> - Petroleum and Gas (Production and Safety) Act 2004 (QLD) - Gas Supply Act 2003 (QLD) - Petroleum Act 1923 (QLD).

⁷³⁶ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 6.

⁷³⁷ APTPPL, *Access arrangement submission*, October 2011, pp. 120–121.

⁷³⁸ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 6.

⁷³⁹ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 7.

Gross Negligence/Wilful Misconduct	Gross Negligence/Wilful Misconduct means an intentional and conscious breach of any obligation owed by the relevant person or such wanton and reckless conduct or action, or failure to act, as constitutes an utter disregard of, or wanton indifference to, the harmful, foreseeable and avoidable consequences which such person or entity knew, or should have known, would have resulted from that conduct, action or inaction, but does not include any error of judgement or mistake made in good faith. ⁷⁴⁰	APTPPL submitted that it has included a definition of Gross Negligence/Wilful Misconduct in the access arrangement to provide certainty and clarity around the meaning of this term. ⁷⁴¹	<p>The AER considers that the inclusion of the definition of Gross Negligence/Wilful Misconduct fails to provide clarity and certainty around the meaning of the term, contrary to the submission by APTPPL. The AER is of the opinion that gross negligence and wilful misconduct are two separate concepts, and the AER considers that the definition proposed by APTPPL fails to capture the two different concepts clearly.</p> <p>The AER therefore does not accept the APTPPL's proposed definition. The AER has approved a definition of 'Wilful Misconduct' in the AGP access arrangement and requires the APTPPL to adopt the same definition as set out in amendment A.2.</p> <p>Proposed amendment A.2</p> <p>Adopt the definition of Wilful Misconduct as follows:</p> <p>Wilful Misconduct means any act or omission done or omitted to be done with deliberate or reckless disregard for foreseeable, harmful and avoidable consequences which is not otherwise an act or omission done in good faith.</p>
Imbalance	Imbalance means, in respect of a period of time, the difference between the quantity of Gas received from or on account of the User at the Receipt Points during that period and the aggregate of the quantity of Gas transported to the Brisbane hub to or for the account of the User and the quantity of Gas delivered to or for the account of the User at the Delivery Points upstream of the Brisbane hub during that period. ⁷⁴²	APTPPL submitted that changes to clause 21 are necessary for the introduction of STTM in Queensland. ⁷⁴³	<p>As outlined in clause 21, the AER considers that the proposed obligation on a user to correctly forecast withdrawals/demand in Brisbane hub and upstream are reasonable and are consistent with the STTM Brisbane Hub.</p> <p>The AER accepts proposed changes in the wording of definition of imbalance.</p>

⁷⁴⁰ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 7.

⁷⁴¹ APTPPL, *Access arrangement submission*, October 2011, pp. 125–126.

⁷⁴² APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 7–8.

⁷⁴³ APTPPL, *Access arrangement submission*, October 2011, p. 123.

Non-Discriminatory Manner	Non-Discriminatory Manner means that Service Provider will act in a manner which is consistent for each Service offered and between each Service offered, subject to differences which Service Provider, in good faith, considers to arise from legitimate economic, commercial and technical considerations. ⁷⁴⁴	Not provided	The AER accepts APTPPL's proposed definition. This definition implies that the Service Provider will act in a manner which is consistent for each Service offered and between each Service offered. The AER notes that this definition is referred to under clause 2.1.3 Right to Access and under clause 2.3 Negotiated Services of the access arrangement proposal. The AER considers that this definition is consistent with the NGO and promotes efficient operation and use of gas services for the long term interests of consumers of gas with respect to reliability and security of supply of gas.
Queuing policy	Existing Capacity Notice is the notice issued by Service Provider pursuant to section 6.2.2. ⁷⁴⁵	New queuing policy	This definition pertains to the existing capacity–open season in APTPPL's proposed queuing requirements. As outlined in attachment 10, the AER rejects the APTPPL's proposed queuing policy. As such this definition is not relevant. The AER therefore requires APTPPL to delete this definition from the access arrangement proposal.
Queuing policy	Notice of Auction for Developable Capacity is the notice issued by Service Provider pursuant to section 6.3.4(a). ⁷⁴⁶	New queuing policy	This definition pertains to the negotiations for developable capacity in APTPPL's proposed queuing requirements. As outlined in attachment 10, the AER rejects the APTPPL's proposed queuing policy. As such this definition is not relevant. The AER therefore requires APTPPL to delete this definition from the access arrangement proposal.
Queuing policy	Notice of Auction for Existing Capacity is the notice issued by Service Provider pursuant to section 6.2.3(a). ⁷⁴⁷	New queuing policy	This definition pertains to the auction for unutilised existing capacity in APTPPL's proposed queuing requirements. As outlined in attachment 10, the AER rejects the APTPPL's proposed queuing policy. As such this definition is not relevant. The AER therefore requires APTPPL to delete this definition from the access arrangement proposal.

⁷⁴⁴ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 10.

⁷⁴⁵ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 6.

⁷⁴⁶ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 10.

⁷⁴⁷ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 11.

Queuing policy	Open Season Existing Capacity Closing Date has the meaning given in section 6.2.2(c). ⁷⁴⁸	New queuing policy	<p>This definition pertains to the open season existing capacity in APTPPL's proposed queuing requirements. As outlined in attachment 10, the AER rejects the APTPPL's proposed queuing policy. As such this definition is not relevant. The AER therefore requires APTPPL to delete this definition from the access arrangement proposal as set out in amendment A.3.</p> <p>Proposed amendment A.3</p> <p>Delete following definitions from definitions and interpretation schedule 2:</p> <ul style="list-style-type: none"> - Existing Capacity Notice - Notice of Auction for Developable Capacity - Notice of Auction for Existing Capacity - Open Season Existing Capacity Closing Date
Overrun Quantity	<p>Overrun Quantity means each quantity of Gas which is delivered to or on account of the User at each Delivery Point:</p> <p>(a) on a Day in excess of:</p> <p>(i) if Service Provider curtails deliveries in accordance with clause 15 of the Terms and Conditions, the quantity of Gas (if any) Scheduled for transportation on a firm basis up to the Delivery Point MDQ and not curtailed; or</p> <p>(ii) otherwise, the lesser of the Delivery Point MDQ and the quantity of Gas (if any) Scheduled for transportation on a firm basis; or</p> <p>(b) at a rate per Hour in excess of the Delivery Point MHQ for the relevant Delivery Point (or, if Service Provider curtails deliveries in accordance with clause 15 of the Terms and Conditions, at a rate per Hour in excess of the curtailed rate).⁷⁴⁹</p>	<p>APTPPL submitted that new and revised definitions have been included in respect of the Authorised Overruns in the access arrangement.</p>	<p>The AER accepts amended clauses 15(a) to (d) relevant to curtailment and overruns as outlined in the terms and conditions section. The AER also accepts amendments proposed by APTPPL in the definition of overrun quantity.</p>

⁷⁴⁸ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 11.

⁷⁴⁹ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 11.

Pipeline	Pipeline includes all facilities associated with the Pipeline, such as Receipt Points and Delivery Points and their respective facilities, Interconnection Facilities, odourisation facilities, pipeline control facilities, lateral pipelines and compressors. Where the context requires, a reference to 'Pipeline' will only relate to the part which is the Covered Pipeline. ⁷⁵⁰	Not provided	The AER accepts additional wording 'where the context requires, a reference to 'Pipeline' will only relate to the part which is the Covered Pipeline' in the definition of pipeline, as reference service applies to the covered pipeline.
Reference tariff	Reference Tariff means the Capacity Tariff and the Throughput Tariff applying to the Firm Service. ⁷⁵¹	Not provided	The AER accepts definition of reference tariff as APTPPL's proposed reference tariff to be split between capacity and throughput i.e. 95 per cent capacity and 5 per cent throughput charge, subject to amendments outlined in attachment 1 regarding the reference service being incorporated into the access arrangement.

⁷⁵⁰ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 11.

⁷⁵¹ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 12.

Relevant Tax	<p>Relevant Tax means any Tax payable by Service Provider, other than:</p> <p>(a) income tax and capital gains tax;</p> <p>(b) stamp duty, financial institutions duty and bank accounts debits tax;</p> <p>(c) penalties, charges, fees and interest on late payments, or deficiencies in payments, relating to any tax; or</p> <p>(d) any tax that replaces or is the equivalent of or similar to any of the taxes referred to in paragraphs (a) and (b) (including any State equivalent tax).⁷⁵²</p>	Not provided	<p>The AER does not accept APTPPL's proposed definition of relevant tax. The AER considers that the proposed definition excludes some of the categories of tax but it is not clear what relevant tax is included in tax payable by Service Provider. The AER has approved a definition of 'relevant tax' for the other APA companies⁷⁵³ and requires APTPPL to amend this definition as set out in amendment A.4.</p> <p>Proposed amendment A.4</p> <p>Amend definition of Relevant Tax as follows:</p> <p>'Relevant Tax' means any royalty, duty, excise, tax, impost, levy, fee or charge (including, but without limitation, any goods and services tax) imposed by the Commonwealth of Australia, any State or Territory of Australia, any local government or statutory authority or any other body (authorised by law to impose such an impost, tax or charge) on or in respect of the Network (or any part of it) or on or in respect of the operation, repair, maintenance, administration or management of the Network (or any part of it) or on or in respect of the provision of any Network Service (other than a levy, fee or charge that arises as a result of APTPPL's breach of a law or failure to pay a tax or charge by the due date for payment).</p>
Tax	<p>Tax means any tax, levy, impost, deduction, charge, rate, rebate, duty, fee or withholding which is levied or imposed by an Authority.⁷⁵⁴</p>		<p>The AER accepts the definition of tax. The AER notes that APA's other companies have a similar definition of Tax in their access arrangements which have been approved by the AER.⁷⁵⁵</p>

⁷⁵² APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 12.

⁷⁵³ AER, *Access arrangement for Envestra's Queensland gas distribution system 2011–2016*, June 2011, p. 25; AER, *Access arrangement for Envestra's South Australian gas distribution system 2011–2016*, July 2011, p. 24.

⁷⁵⁴ APTPPL, *Access arrangement proposal*, October 2011: *Schedule 2 Definitions and interpretation*, p. 13.

⁷⁵⁵ AER, *Access arrangement for APT Allgas's Queensland gas distribution network 2011-2016*, June 2011, Appendix A Glossary, p. 32.

Matter / clause	TERMS AND CONDITIONS APTPPL's proposed amendments in AGP T&Cs approved by AER	APTPPL's justification for amendments	AER's consideration
<p>Nominations Clauses 3-10</p>	<p>7. Each of Service Provider and the User must comply with its obligations under the STTM Rules as relevant to the transportation of Gas under this Access Arrangement.⁷⁵⁶</p> <p>8. The User must promptly comply with all reasonable directions of Service Provider, including by making or varying Nominations, given in order to facilitate compliance with:</p> <p style="padding-left: 40px;">(a) the STTM Rules; or</p> <p style="padding-left: 40px;">(b) any direction or requirement of an Authority.⁷⁵⁷</p> <p>9. Any Nomination by the User for Services which involve transportation of Gas to the Brisbane hub must specify the quantity of Gas to be transported to the Brisbane hub by the User on a Day in respect of that Service.⁷⁵⁸</p> <p>10. The quantity of Gas specified in the User's Nominations pursuant to clause 9 for transportation to the Brisbane hub must not exceed, in aggregate, the Firm MDQ.⁷⁵⁹</p>	<p>APTPPL submitted that clauses 3-10 set out arrangements for the User Nominations. Consistency across APA Group Pipelines in respect to this process is highly desirable. Revisions to the definition of nomination deadline to align deadline with STTM provisions.</p> <p>Clauses 7-10 are necessary inclusions in the access arrangement to support the Queensland STTM.</p> <p>New clauses also introduce definition of Brisbane Hub. Definition of STTM Rules has also been revised to describe Queensland law.⁷⁶⁰</p>	<p>The AEMC decided to make the National Gas Amendment (STTM Brisbane hub) Rule 2011 (Rule as Made). The Rule as Made reflects the Rule proposed by AEMO, with amendments, and comes into effect on 15 September 2011 in preparation for the commencement of the STTM at the Brisbane hub.</p> <p>In accordance with clause 13, Schedule 1 to the Rule 2011, the STTM commenced operation at the Brisbane hub on 1 December 2011⁷⁶¹, as specified in the Queensland Government Gazette.⁷⁶² Alternatively, it will commence on a later date as determined by AEMO. Under r. 372A (1) of the NGR, the Brisbane hub comprises the custody transfer points on the RBP specified in AEMO's STTM procedures.</p> <p>The AER's consideration of APTPPL's proposed additional clauses under STTM Brisbane hub Rule 2011 is as under:</p> <p>Clause 7 & 8</p> <p>The AER considers that clauses 7 and 8(a) proposed by APTPPL are appropriate to ensure compliance with the additional STTM Brisbane hub requirements. However, the AER considers that clause 8(b) is too broad. It creates additional obligations for the Users to comply with, which is not essential to support the Queensland STTM in the presence of clause 8(a). The AER therefore, requires APTPPL to delete clause 8(b) as set out in amendment A.5.</p>

⁷⁵⁶ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

⁷⁵⁷ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

⁷⁵⁸ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

⁷⁵⁹ APTPPL, *Access arrangement proposal*, October 2011, p. 17.

⁷⁶⁰ APTPPL, *Access arrangement submission*, October 2011, p. 122.

⁷⁶¹ AEMC, *Rule Determination, National Gas Amendment (STTM Brisbane Hub) Rule 2011*, 15 September 2011, p. 10.

⁷⁶² *Queensland Government Gazette No. 55*, 17 June 2011, p. 428.

			<p>Proposed amendment A.5</p> <p>Delete clause 8(b) from the access arrangement proposal.</p> <p>Clause 9 & 10</p> <p>The AER considers that clauses 9 and 10 are appropriate and consistent with the requirements for transportation of Gas to Brisbane hub. Also transportation of Gas needs to be Firm MDQ and available to be used in market settlement on a daily basis.</p> <p>The AER considers that additional clauses 9 and 10 are acceptable.</p>
<p>Scheduling</p> <p>Clauses 11-14</p>	<p>11. Following the receipt of the User's Nomination, Service Provider must (subject to any adjustments Service Provider (acting reasonably) deems necessary to maintain the operational integrity of the Pipeline or to comply with any laws or STTM Rules and subject to certain other exceptions specified in these Terms and Conditions) Schedule Gas transported to the Brisbane hub and Schedule for acceptance at the Receipt Points and Delivery Points the lesser of:</p> <p>in respect of Delivery Points,</p> <p>11(c) the quantity of Gas Nominated by the User for delivery at the Delivery Points; and</p> <p>11(d) the quantity of Gas confirmed for acceptance on account of the User at the Delivery Points by the Interconnect Party at the Delivery Points.⁷⁶³</p> <p>12 (a) First — quantities nominated by Users under Firm Transportation Agreements, not to exceed their respective MDQs for firm transportation services. If the capacity available is not sufficient to serve all such Users' nominated quantities, then the available capacity will be allocated</p>	<p>APTPPL submitted that Scheduling clauses sets out arrangements for scheduling of gas. Consistency across APA in respect to this process is highly desirable.</p> <p>APTPPL has retained authorised overruns in the access arrangement – this is a revision from the AGP access arrangement. Facility is valued by Users.</p> <p>Scheduling priority has quantities under Firm Transportation Agreements up to MDQ for firm services scheduled first, then other Users with a contracted MDQ (Negotiated Services with an MDQ), then Authorised overruns, then Gas</p>	<p>Clause 11, 11(c) and 11(d)</p> <p>The AER considers that amendments in clauses 11, 11(c), 11(d) proposed by APTPPL are appropriate to ensure compliance with the STTM Brisbane hub.</p> <p>The AER considers that clauses 11, 11(c), 11(d) are acceptable.</p> <p>Clause 12(a)</p> <p>The AER considers that APTPPL's proposed amendments to add the words 'for firm transportation services' after the word MDQs is appropriate as this specifies that MDQs are for firm transportation services.</p>

⁷⁶³ APTPPL, *Access arrangement proposal*, October 2011, p. 17–18.

	<p>among Users pro rata on the basis of their respective MDQs. To the extent reasonably practicable, such scheduling limitations will be applied only to the portion or portions of the Pipeline that are capacity constrained.</p> <p>12 (b) Second – quantities nominated by Users with Transportation Agreements for Negotiated Services, not to exceed their respective MDQs for Negotiated Services. If the capacity available is not sufficient to serve all Users' nominations pursuant to those Negotiated Services, then the available capacity will be allocated among those Users pro rata based on their nominations for those Negotiated Services.</p> <p>12(c) Third – quantities accepted for transportation by Service Provider from Users as an Authorised Overrun under the User's Transportation Agreement or authorised overruns under other Transportation Agreements for Firm Services or Negotiated Services (as the case may be). If the capacity available is not sufficient to serve all Users' nominations pursuant to authorised overruns, then the available capacity will be allocated among those Users pro rata based on their nominations for those authorised overruns.</p>	<p>nominated by Users that do not have a contracted MDQ (usually interruptible services or similar).</p> <p>Revision to include Authorised Overruns also requires new definitions for Authorised Overrun, Authorised Overrun Quantity, Unauthorised Overrun and Unauthorised Overrun Quantity, and revised definition for Overrun in Schedule 2.</p> <p>Change to clause 11 and revisions to definitions for Nomination, Schedule and Delivery Point necessary to support the Queensland STTM.⁷⁶⁵</p>	<p>The AER considers that an amended clause 12(a) is acceptable.</p> <p>Clause 12(b)</p> <p>APTPL has proposed deletion of wording 'other than quantities nominated by Users with Interruptible Transportation Agreements' from the AER approved clause for the AGP. The AER considers that as APTPL has not proposed to offer interruptible services, it is appropriate to delete the wording not applicable to this clause.</p> <p>The AER considers that amended clause 12(b) is acceptable.</p> <p>Clause 12(c)</p> <p>APTPL has proposed the following scheduling priorities (from high to low)</p> <ul style="list-style-type: none"> ▪ first quantities under Firm Transportation Agreements up to MDQ for firm services scheduled ▪ then other Users with a contracted MDQ (Negotiated Services with an MDQ) ▪ then Authorised overruns ▪ then Gas nominated by Users that do not have a contracted MDQ (usually interruptible services or similar). <p>The AER considers that the APTPL's proposed amendment in clause 12 (c) appears reasonable. APTPL will deliver the amount of gas nominated to the Brisbane hub unless the downstream distribution system to the hub</p>
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⁷⁶⁵ APTPL, *Access arrangement submission*, October 2011, pp. 122–123.

	<p>12(d) Fourth— quantities accepted for transportation by Service Provider from Users under Transportation Agreements for Negotiated Services in excess of their respective MDQs for Negotiated Services. If the capacity available is not sufficient to serve all Users requesting that service, then the Service Provider will allocate the available capacity first on the basis of the highest tariff being paid, second on a first-come, first served basis, based upon the date of execution of the Transportation Agreement for Negotiated Services and third on a pro rata basis among Users who have entered into a Transportation Agreement for Negotiated Services_on the basis of nominated quantities.⁷⁶⁴</p>		<p>does not accept it.</p> <p>Consistent with its earlier access arrangement, APTPPL has also proposed to include the Authorised Overruns and proposed new definitions for Authorised Overrun, Authorised Overrun Quantity, Unauthorised Overrun and Unauthorised Overrun Quantity, and revised definition for Overrun in Schedule 2.</p> <p>The AER notes that in the AGP access arrangement proposal, NT Gas proposed to remove Authorised Overruns.</p> <p>The AER considers that the provision of authorised overruns in the access arrangement proposal would better promote the NGO under s. 23 of the NGL.</p> <p>The AER considers that amended clause 12(c) is acceptable.</p> <p>Clause 12(d)</p> <p>The AER considers that the APTPPL's proposed amendment in the wording of clause 12 (d) appears reasonable. APTPPL has proposed to remove wording related to Interruptible Transportation Agreements that are not offered by APTPPL and only retained wording relating to Negotiated Services.</p> <p>The AER considers that amended clause 12(d) is acceptable.</p>
<p>Curtailement clause 15–16</p>	<p>15. If on any Day the capacity of the Pipeline or any portion of it, or the capacity of any Receipt Point or the Delivery Point, is insufficient to serve all the quantities of Gas Scheduled for all Users, then the Service Provider may curtail or interrupt the receipt, transportation or delivery of Gas (as the case may be) in accordance with the sequence and priorities set out below to the extent necessary to provide transportation services within the capacity of the Pipeline on the Day (subject to STTM Rules, other laws and the operability of</p>	<p>APTPPL submitted that clauses 15–16 set out priorities for curtailment. Priorities set are consistent with Scheduling Priorities and include Authorised Overruns.</p> <p>Changes to clause 16 clarify that failure to Schedule Gas</p>	<p>Clause 15</p> <p>Clause 15 sets out the Service provider's order of priority if on any Day the capacity of the Pipeline or any portion of it, or the capacity of any Receipt Point or the Delivery Point, is insufficient to serve all the quantities of Gas Scheduled for all Users. The Service Provider may curtail or interrupt the receipt, transportation or delivery of Gas (as the case may be) in accordance with the sequence and priorities set out in clauses 15(a) to 15(d) to the extent necessary to provide transportation services within the</p>

⁷⁶⁴ APTPPL, *Access arrangement proposal*, October 2011, p. 18–19.

	<p>applicable gas markets and pipeline networks):</p> <p>15(a) First – Unauthorised Overrun Quantities under the User’s Transportation Agreement and unauthorised overrun quantities under other Transportation Agreements.</p> <p>15(b) Second – quantities Scheduled pursuant to Transportation Agreements for Negotiated Services for Users in excess of their respective MDQs for Negotiated Services except for quantities referred to in paragraph (c). If the capacity available is not sufficient to serve all Users requesting such services, then the Service Provider will allocate the available capacity first on the basis of the highest tariff being paid, second on a first-come, first-served basis, based upon the date of execution of the Transportation Agreement for Negotiated Services and third on a pro rata basis among Users who have entered into Transportation Agreements for Negotiated Services on the basis of Scheduled quantities.</p> <p>15(c) Third – quantities accepted for transportation by the Service Provider from Users as an Authorised Overrun under the User’s Transportation Agreement or authorised overruns under other Transportation Agreements for Firm Services or Negotiated Services (as the case may be). If the capacity available is not sufficient to serve all Users’ authorised overruns then the available capacity will be allocated among those Users pro rata based on Scheduled authorised overruns.</p> <p>15(d) Fourth – quantities for transportation for Users with Transportation Agreements for Negotiated Services, up to their respective MDQs for those Negotiated Services (other than quantities referred to in paragraph (e)). If the capacity available is not sufficient to serve all Users’ Negotiated Service quantities (other than quantities referred to in paragraph (e)), then the available capacity will be allocated</p>	<p>because of allowable reasons listed is equivalent to interruption or curtailment for those reasons.</p> <p>Deletion of clauses 12 and 13⁷⁶⁸ from the standard terms and conditions as clauses covering equivalent issue in existing access arrangement body at clause 2.2.3.⁷⁶⁹</p>	<p>capacity of the pipeline on the Day subject to STTM rules, other laws and the operability of applicable gas markets and pipeline networks.</p> <p>The AER considers that amended clauses 15(a) to (d) are acceptable as proposed by APTPPL.</p>
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	<p>among those Users pro rata based on Scheduled quantities.⁷⁶⁶</p> <p>16. If Service Provider fails to Schedule or interrupts or curtails receipts or deliveries of quantities of Gas under clause 15, Service Provider is not liable to the User if the failure to Schedule, interruption or curtailment:⁷⁶⁷</p>		<p>Clause 16</p> <p>The AER does not agree with the proposed amendment in the wording of clause 16 as it will affect the substance of the clause. The original clause states that Service Provider is not liable to the User in respect of the interruption or curtailment. The proposed amendment broadens the scope of this provision so that the Service Provider can also exclude liability in circumstance where it fails to Schedule. The AER considers that the proposed amendment is not consistent with the NGO because scheduling provides reliability and security to the user for supply of gas. In case the service provider fails to schedule the gas, the user may be required to purchase the gas from the STTM market at a higher price. The AER considers that the proposed amendment does not promote efficient operation and use of gas services for the long term interests of consumers of gas with respect to reliability and security of supply of gas. The AER therefore requires APTPPL to maintain the original wording of clause 16 as set out in amendment A. 6</p> <p>Proposed amendment A.6</p> <p>Maintain the original wording of clause 16 as follows:</p> <p>If Service Provider interrupts or curtails receipts or deliveries of quantities of Gas under clause 15, Service Provider is not liable to the User in respect of interruption or curtailment if the interruption or curtailment:</p>
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⁷⁶⁸ APTPPL, *Access arrangement submission*, October 2011, p. 123. Note: APTPPL appears to have provided incorrect reference to clause numbers. The correct reference should be clause 13 and 14 not 12 and 13.

⁷⁶⁹ APTPPL, *Access arrangement submission*, October 2011, p. 123.

⁷⁶⁶ APTPPL, *Access arrangement proposal*, October 2011, p. 19–20.

⁷⁶⁷ APTPPL, *Access arrangement proposal*, October 2011, p. 20.

			<p>Clause 13 and 14</p> <p>The AER accepts APTPPL's proposal to delete clause 13 and 14⁷⁷⁰ as it is already covered in clause 2.2.3 of the access arrangement proposal.⁷⁷¹</p>
<p>Market Operator Service (MOS)</p> <p>Clauses 17-20</p>	<p>17. Clauses 18 to 20 (inclusive) apply if the transportation of Gas is to the Brisbane hub.⁷⁷²</p> <p>18. Subject to clause 20, Service Provider must on each Day during the Term:</p> <p>(a) receive any MOS Decrease Quantities at the Brisbane hub; and</p> <p>(b) supply any MOS Increase Quantities at the Brisbane hub.⁷⁷³</p> <p>19. Service Provider must deal with all MOS Decrease Quantities and all MOS Increase Quantities in accordance with the STTM Rules.⁷⁷⁴</p> <p>20. To the extent that receipts or deliveries of Gas transported to the Brisbane hub under the Transportation Agreement cause or would cause an Unauthorised Imbalance which exceeds or would exceed the Imbalance Allowance then Service Provider may determine, in its absolute discretion, not to receive any MOS Decrease Quantities from or supply any MOS Increase Quantities to the User.⁷⁷⁵</p>	<p>APTPL submitted that new clauses 17–20 in respect of the Market Operator Service necessary to support the Queensland STTM.</p> <p>Clauses also introduce need for definitions for MOS Increase Quantity, MOS increase offer, MOS Decrease Quantity and MOS decrease offer, and changes to the definition for Imbalance.⁷⁷⁶</p>	<p>MOS means the market operator service by which capacity (in GJ) is provided to balance pipeline deviations by increasing or decreasing the quantity of natural gas supplied to or withdrawn from a hub using an STTM pipeline.</p> <p>BP Submission</p> <p>The AER received submission from BP that addressed MOS (clause 20) proposed by APTPL. BP has submitted that:</p> <p>This clause in the proposed Terms and Conditions is likely to significantly impact the operation of the STTM in Brisbane should the Service Provider ever exercise their right under this clause. Due to the very tight restrictions already in existence relating to imbalance limits, which APTPL have proposed to further tighten, an RBP User wishing to provide MOS into the Brisbane STTM faces the risk of being removed from the MOS stack should they fall outside the prescribed imbalance limits, something that is likely to occur very frequently.</p> <p>It is questionable in fact how any User of the RBP could provide balancing gas into the Brisbane STTM under this clause, due to the requirements of NGR 399 pertaining to the requirements for offering MOS in the first place to the STTM.</p>

⁷⁷⁰ APTPPL, *Access arrangement submission*, October 2011, p. 123. Note: APTPPL appears to have provided incorrect reference to clause numbers. The correct reference should be clause 13 and 14 not 12 and 13 (see APTPPL, *Access arrangement proposal (marked-up version)*, October 2011, p. 21.

⁷⁷¹ APTPPL, *Access arrangement proposal*, clause 2.2.3, pp. 6–7.

⁷⁷² APTPPL, *Access arrangement proposal*, October 2011, p. 21.

⁷⁷³ APTPPL, *Access arrangement proposal*, October 2011, p. 21.

⁷⁷⁴ APTPPL, *Access arrangement proposal*, October 2011, p. 21.

⁷⁷⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 21.

⁷⁷⁶ APTPPL, *Access arrangement submission*, October 2011, p. 123.

		<p>BP request the AER adjust this clause to allow for normal operational changes in linepack, and completely remove the proposed right of APTPPL to not receive or supply MOS gas under any situation. The section of the access arrangement relating to imbalance charges already provides APTPPL with protection and income resulting from pipeline imbalances.⁷⁷⁷</p> <p>AER Consideration</p> <p>The AER considers that the daily transportation of gas on the RBP is a high proportion of pipeline capacity. Unlike some of the existing STTM pipelines, the RBP does not have spare linepack that can be offered to shippers as a storage type service⁷⁷⁸.</p> <p>The AER in principle accepts APTPPL's proposed clause 20. The AER considered confidential material provided by APTPPL in assessment of this clause. This consideration is at confidential appendix J.</p> <p>BP Australia has submitted that it is questionable in fact how any User of the RBP could provide balancing gas into the Brisbane STTM under this clause, due to the requirements of r. 399 of the NGR pertaining to the requirements for offering MOS in the first place to the STTM.⁷⁷⁹</p> <p>The AER has sought AEMO advice on the MOS issue.⁷⁸⁰ As advised by AEMO, the AER understands that the MOS solution proposed by APTPPL will allow shippers to use their imbalance accounts to meet the daily MOS requirements of the Brisbane hub. All shippers with a firm service are permitted to accrue an imbalance on the pipeline. This open approach should provide a good base for competition between shippers for the supply of MOS to the Brisbane hub.⁷⁸¹</p> <p>The AER understands the following eligibility criteria are required for the provision, offer, and allocation of MOS:</p> <ul style="list-style-type: none"> ▪ All shippers with a Firm service are permitted an imbalance on the
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⁷⁷⁷ BP, *Submission to the AER*, December 2011, p. 9.

⁷⁷⁸ AEMO, email to the AER, dated 7 December 2011.

⁷⁷⁹ BP *Submission to the AER*, December 2011, p. 9.

⁷⁸⁰ AEMO email to the AER dated 7 December 2011 regarding APTPPL's proposed terms and conditions relating to MOS.

⁷⁸¹ AEMO, email to the AER, dated 7 December 2011.

		<p>pipeline of up to 5% of their MDQ.</p> <ul style="list-style-type: none"> ▪ If a shipper's imbalance account exceeds 5% then the service provider is not required to allocate MOS to that shipper. In accordance with the STTM rules⁷⁸² if a shipper can no longer provide MOS then the pipeline operator can take steps to remove the shipper from the MOS stack. ▪ Shippers must register a facility service in the STTM. <ul style="list-style-type: none"> ▪ The approach for existing shippers for the commencement of the Brisbane hub is for MOS increase to be allocated to a shipper's firm service. ▪ All shippers (including those who did not offer MOS) have registered a backhaul service to facilitate the allocation of MOS decrease. <p>MOS offer process</p> <ul style="list-style-type: none"> ▪ Shippers submit MOS increase and MOS decrease offers to AEMO based on their permitted imbalance quantities. ▪ AEMO prepares and publishes a MOS stack. <p>Allocation of MOS</p> <ul style="list-style-type: none"> ▪ The service provider (APTPPL) will determine the 'pipeline deviation' for a gas day in accordance with the STTM rules. ▪ The service provider will allocate the 'pipeline deviation' to the MOS stack in accordance with the STTM rules. ▪ The service provider will allocate a MOS allocation to a shipper's imbalance account. The allocation of MOS is then subject to the rules relating to imbalances. ▪ Overrun MOS is allocated to shippers as a proportion of their pipeline. As such, rules relating to MOS apply to all shippers that transport gas to the Brisbane hub.
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⁷⁸² AEMO email to the AER dated 7 December 2011 regarding APTPPL's proposed terms and conditions relating to MOS.

			<ul style="list-style-type: none"> ▪ The treatment of MOS by the APTPPL must be in accordance with the STTM rules.⁷⁸³ <p>As advised by AEMO, APTPPL operated according to the new allocation methodology during the recent QLD STTM Market Trial.⁷⁸⁴</p> <p>The AER therefore requires APTPPL to amend this clause 20 as outlined in amendment A.7.</p> <p>Proposed amendment A.7</p> <p>Amend clause 20 as follows:</p> <p>If the provision of a Transportation Service under the Gas Transportation Agreement causes or would cause an imbalance which exceeds or would exceed the Cumulative Imbalance Limit then Transporter may, in its absolute discretion, cease to provide or suspend the MOS Decrease Service and/or the MOS Increase Service to Shipper.</p>
<p>Imbalances</p> <p>Clause 21–25</p>	<p>21. The User must use reasonable endeavours to ensure that receipts of Gas at Receipt Points are equal to the aggregate of the Gas transported to the Brisbane hub and Gas delivered at Delivery Points upstream of the Brisbane hub, adjusted for any Authorised Imbalances.⁷⁸⁵</p>	<p>APTPL submitted that clause 21 creates obligation on Users to use reasonable endeavours to match receipts and deliveries, except to the extent that they have an Authorised Imbalance, as well steps to be taken to correct an Unauthorised Imbalance.</p> <p>Changes to clause 21 are necessary for the introduction of STTM in Queensland.⁷⁸⁶</p>	<p>APTPL has submitted that the purpose of the proposed amendment to the clause approved for the AGP is to create an obligation on Users to use reasonable endeavours to match receipts and deliveries on the RBP, except to the extent that they have an Authorised Imbalance.</p> <p>The AER considers that proposed obligation on user to correctly forecast withdrawals/demand in Brisbane hub and upstream are reasonable and are consistent with the STTM Brisbane Hub.</p> <p>The AER considers that amended clause 21 is acceptable.</p> <p>Definition</p> <p>The AER also accepts proposed changes in the wording of definition of imbalance.</p>

⁷⁸³ AEMO, email to the AER, dated 7 December 2011.

⁷⁸⁴ AEMO, email to the AER, dated 7 December 2011.

⁷⁸⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 21.

⁷⁸⁶ APTPPL, *Access arrangement submission*, October 2011, p. 123.

<p>Adjustments to Rates and Charges/ Additional Payments</p> <p>Clause 20, 26</p>	<p>26. The Reference Tariff payable under a Transportation Agreement may be varied in accordance with the Reference Tariff Adjustment Mechanism set out in section 4 of this Access Arrangement.⁷⁸⁷</p>	<p>APTPPL proposed deletion of clause 20 on GST as this is repeated in the access arrangement body.</p> <p>APTPPL submitted that clause 26 provides that the Reference Tariff varies as per the Reference Tariff Adjustment Mechanism.⁷⁸⁸</p>	<p>The AER accepts APTPPL's proposal to delete clause 20⁷⁸⁹ as it is already covered in GST clause 4.4 of the access arrangement proposal.</p> <p>The AER accepts addition of the word 'section' in clause 26 as it provides correct reference to section 4 of the access arrangement proposal.</p> <p>The AER considers that amended clause 26 is acceptable</p>
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⁷⁸⁷ APTPPL, *Access arrangement proposal*, October 2011, p. 22.

⁷⁸⁸ APTPPL, *Access arrangement submission*, October 2011, p. 123.

⁷⁸⁹ APTPPL, *Access arrangement submission*, October 2011, p. 123. Note: APTPPL's reference to clause 20 relates to AER approved access arrangement for the AGP, see AER, *Access arrangement for AGP*, July 2011, p. 41.

<p>System Use Gas and Line Pack</p> <p>Clauses 27–32</p>	<p>28. Service Provider will make this determination by reference to the proportion that the aggregate of the quantity of Gas transported to the Brisbane hub and the quantity of Gas delivered to Delivery Points upstream of the Brisbane hub under the User's Transportation Agreement during the relevant period bears to the aggregate of the quantity of Gas transported to the Brisbane hub and the quantity of Gas delivered to Delivery Points upstream of the Brisbane hub under Transportation Agreements with all Users (including with the User) during the relevant period.. The Service Provider will provide all Users a monthly statement showing the amount of gas used for System Use Gas.⁷⁹⁰</p> <p>31. The User will provide Line Pack in addition to the Base Line Pack provided by Service Provider on the first Day the User uses the Firm Service and otherwise when advised by Service Provider from time to time, in such proportion, as determined by Service Provider from time to time, equal to the proportion that the Firm MDQ bears to the total of all Users' MDQs (including the Firm MDQ). The Service Provider will provide all Users a monthly statement showing the amount of User's Line Pack.⁷⁹¹</p>	<p>APTPPL submitted that clauses 28–32 set out provisions for System Use Gas and Line Pack, including ownership.</p> <p>Changes to these clauses are necessary to support the Queensland STTM, as well as alignment with access arrangement in respect of the definition of the Firm Service.⁷⁹²</p>	<p>Clause 28</p> <p>The AER considers that proposed amendments in clause 28 are appropriate and required due to the introduction of STTM Brisbane hub.</p> <p>The AER considers that amended clause 28 is acceptable.</p> <p>Clause 31</p> <p>The AER considers that deletion of the word 'Delivery' and addition of word 'Firm' is appropriate to align this clause with the definition of 'Firm' service in the access arrangement.</p> <p>The AER considers that amended clause 31 is acceptable.</p>
<p>Quality</p> <p>Clause 45–52</p>	<p>45. The Gas delivered by or on behalf of the User at the Receipt Point must be in accordance with the quality required by the Gas Specification, any lawful additional parameters agreed between the User and the Service Provider or any other quality as the law in the relevant jurisdiction requires. The Service Provider may, by notice to the User, vary the above specifications if it is authorised or required to do so by law or any Authority.⁷⁹³</p>	<p>APTPPL submitted that clauses 45–52 set out the Users and Service Provider's obligations with respect to the Gas Specification.</p> <p>Revisions to these clauses</p>	<p>APTPPL submitted that revisions to these clauses from those approved by the AER for the AGP access arrangement are necessary to support the two Gas Specifications currently in operation on the RBP.</p> <p>Clause 45</p> <p>The AER considers that addition of proposed wording "any lawful additional parameters agreed between the User and the Service Provider"</p>

⁷⁹⁰ APTPPL, *Access arrangement proposal*, October 2011, p. 22.

⁷⁹¹ APTPPL, *Access arrangement proposal*, October 2011, p. 22.

⁷⁹² APTPPL, *Access arrangement submission*, October 2011, p. 124.

⁷⁹³ APTPPL, *Access arrangement proposal*, October 2011, p. 24.

	<p>47. Provided the gas delivered by the Users for transportation on the Pipeline complies with clause 45, the gas delivered by Service Provider to the User at the Delivery Points must meet the quality specifications set out in clause 45, subject to the Service Provider's obligations under Prior Agreements.⁷⁹⁴</p> <p>48. The gas delivered by Users to Service Provider at the Receipt Points will be commingled with gas received under other Transportation Agreements, including pre-existing Transportation Agreements (as renewed or extended) (Prior Agreements). During the currency of the Prior Agreements:</p> <p>(a) Service Provider must use its reasonable endeavours in accordance with Good Engineering and Operating Practice and as the Service Provider is obliged under those Prior Agreements to maintain the quality of the gas stream comingled in the Pipeline as close as possible to the Gas Specification; and</p> <p>(b) despite paragraph (a), the quality specification of gas delivered at a Delivery Point may, as a result or that commingling, vary from the Gas Specification but will in no event be of a lesser quality than the Prior Gas Specifications.⁷⁹⁵</p> <p>50. The Service Provider may refuse to accept or transport all or any portion of Off-Specification Gas and must advise the User as soon as is practicable after such refusal. Such refusal, or the Service Provider not transporting Off-Specification Gas after acceding to an instruction or request from the User to reject receipts of such gas, does not relieve the User from its obligation to pay any Charge.⁷⁹⁶</p> <p>51. Subject to the responsibilities of the Service Provider in clause 52, if the User requests that Service Provider agrees to transport Off-Specification Gas, and Service Provider accedes to that request, then the User is responsible for and indemnifies and holds harmless the Service Provider from and against any loss or damage suffered or incurred by the</p>	<p>from those approved by the AER for the AGP access arrangement are necessary to support the two Gas Specifications currently in operation on the RBP. This situation arises because of Prior Agreements that set the Gas Specification at a different level to the current specification. Revisions to these clauses (including additional clause 48) reinstate aspects of the prior RBP access arrangement into Service Provider's standard terms and conditions. Additional and revised definitions associated with these provisions relate to Prior Agreements, Prior Gas Specifications, and the inclusion of two Gas Specifications in the Schedules.</p> <p>Clauses 50–52 have been revised to include reference to the transportation of Gas, as APTPPL has little ability not to accept receipt of Off-Specification Gas.⁷⁹⁹</p>	<p>proposed by APTPPL" in clause 45 are reasonable. The original clause 45 requires that the Gas delivered by or on behalf of the User at the Receipt Point must be in accordance with the quality required by the Gas Specification, or any other quality as the law in the relevant jurisdiction requires. The proposed wording broadens the Users and Service Provider's obligations with respect to the Gas Specifications and covers any lawful additional parameters to be mutually agreed User and the Service Provider.</p> <p>The AER considers that amended clause 45 is acceptable.</p> <p>Clause 47</p> <p>The AER considers that proposed amendments in clause 47 in the AER approved clauses for AGP are reasonable to support the two Gas Specifications currently in operation on the RBP. As submitted by APTPPL these revisions are required because of Prior Agreements that set the Gas Specification at a different level to the current specification.</p> <p>The AER considers that amended clause 47 is acceptable.</p> <p>Clause 48</p> <p>APTPL has proposed to include additional clause 48 to reinstate aspects of the RBP earlier access arrangement. As submitted by APTPPL, revisions to above clauses including additional clause 48 reinstate aspects of the prior RBP access arrangement into Service Provider's standard terms and conditions.</p> <p>The AER accepts APTPPL's proposal regarding inclusion of additional clause 48. The AER agrees with APTPPL that this clause is necessary to support the two Gas Specifications currently in operation on the RBP. This is because of Prior Agreements that set the Gas Specification at a different level to the current specification. The AER notes that the earlier access arrangement approved by the ACCC also cover the provisions relating to Prior Agreements, Prior Gas Specifications, and the inclusion of two Gas</p>
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⁷⁹⁴ APTPPL, *Access arrangement proposal*, October 2011, p. 25.

⁷⁹⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 25.

⁷⁹⁶ APTPPL, *Access arrangement proposal*, October 2011, p. 25.

	<p>Service Provider to the extent it results from the receipt, transportation and delivery of that gas by the Service Provider.⁷⁹⁷</p> <p>52. If the User instructs the Service Provider in writing not to transport Off-Specification Gas and the Service Provider continues to transport and deliver the Off-Specification Gas notwithstanding the instruction, the Service Provider is responsible for any loss or damage suffered or incurred by itself, the User or any other person as a result of the continued transportation or delivery of the gas after the time at which the Service Provider, in accordance with Good Engineering and Operating Practice, could reasonably have stopped transportation or deliveries.⁷⁹⁸</p>		<p>Specifications in the Schedules.⁸⁰⁰</p> <p>Definitions</p> <p>The AER also accepts additional and revised definitions associated with these provisions which relate to Prior Agreements, Prior Gas Specifications, and the inclusion of two Gas Specifications in the Schedules.</p> <p>Clause 50</p> <p>APTPPL submitted that clauses 50–52 have been revised to include reference to the transportation of Gas, as APTPPL has little ability not to accept receipt of Off-Specification Gas.⁸⁰¹</p> <p>The AER accepts addition of the words ‘or transport’ in the AER approved clause for the AGP to clarify that the Service Provider may refuse to accept or transport any portion of Off-Specification Gas and must advise the User as soon as is practicable after such refusal.</p> <p>The AER considers that amended clause 50 is acceptable.</p> <p>Clause 51</p> <p>The AER accepts the proposed amendment as it does not affect the substance of clause.</p> <p>The AER considers that amended clause 51 is acceptable.</p> <p>Clause 52</p> <p>The AER accepts the proposed amendment as it does not affect the substance of clause.</p> <p>The AER considers that amended clause 52 is acceptable.</p>
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⁷⁹⁹ APTPPL, *Access arrangement submission*, October 2011, p. 124.

⁷⁹⁷ APTPPL, *Access arrangement proposal*, October 2011, p. 25.

⁷⁹⁸ APTPPL, *Access arrangement proposal*, October 2011, p. 25.

⁸⁰⁰ APTPPL, *Access arrangement for RBP*, March 2007, clause 29, p. 39.

⁸⁰¹ APTPPL, *Access arrangement submission*, October 2011, p. 124.

<p>Warranties & Representations</p> <p>Clause 60</p>	<p>60 The User warrants and represents (among other things set out in the Transportation Agreement) that:</p> <p>(a) at the time of supply of Gas to the Service Provider at the Receipt Points the User has unencumbered title to, and the right to supply, that Gas at the Receipt Points for transportation by the Service Provider under the Transportation Agreement; and</p> <p>(b) any contract reference information provided by or on behalf of the User to Service Provider or AEMO is accurate.⁸⁰²</p>	<p>APTPPL submitted that these clauses set out the User's responsibilities in respect of title to Gas at the time of supply to the Receipt Point, as well as the accuracy of contract reference information provided to Service Provider.</p> <p>Revisions to these clauses are necessary to support the Queensland STTM.⁸⁰³</p>	<p>APTPPL submitted that the additional clause 60(b) places an additional onus on participants to provide correct information. The AER does not accept this clause as it absolves the service provider from verifying the authenticity and correctness of information. The AER considers that it is not consistent with the NGO because it does not promote efficient operation and use of natural gas service services for the long term interest of consumers of gas with respect to safety, reliability and security of supply gas.</p> <p>The AER therefore require APTPPL to amend clause 60(b) as outlined in amendment A.8.</p> <p>Proposed amendment A.8</p> <p>Delete clause</p>
<p>Allocation of receipts and deliveries</p> <p>Clauses 64-68</p>	<p>64 If the quantities of Gas actually received at the Receipt Points or delivered at the Delivery Points do not equal the quantities Scheduled by the Service Provider in accordance with the Transportation Agreement on any Day, then those quantities actually received or delivered by the Service Provider (as the case may be) must be allocated among Users for a particular Hour or on a particular Day on a pro rata basis according to the User's Scheduled receipts for a Receipt Point or Scheduled deliveries for a Delivery Point (as the case may be) as a proportion of all Users' Scheduled receipts at the relevant Receipt Point or Scheduled deliveries at the relevant Delivery Point (as the case may be).⁸⁰⁴</p> <p>66. Service Provider will, for each Day and each Hour, allocate quantities of Gas transported to the Brisbane hub in the following manner and in the order set out below:</p> <p>(a) based on quantities of Gas Scheduled by Service</p>	<p>APTPPL submitted that these clauses set out arrangements for allocation of Gas received or delivered on a Day that is not equal to the quantities Scheduled on any Day.</p> <p>Revisions to these clauses are necessary to support the Queensland STTM. These revisions introduce new definitions for STTM Shippers, MOS gas and overrun MOS.⁸⁰⁸</p>	<p>Clause 64</p> <p>The AER accepts APTPPL's proposal to delete wording 'other than deliveries to a Delivery Point which is a hub' in the AER approved clause for the AGP. The AER agree that revision to this clause is necessary to support Queensland STTM.</p> <p>The AER considers that amended clause 64 is acceptable.</p> <p>Clause 66 and 67</p> <p>APTPPL submitted that these clauses set out arrangements for allocation of Gas received or delivered on a Day that is not equal to the quantities</p>

⁸⁰² APTPPL, *Access arrangement proposal*, October 2011, p. 26–27.

⁸⁰³ APTPPL, *Access arrangement submission*, October 2011, p. 125.

⁸⁰⁴ APTPPL, *Access arrangement proposal*, October 2011, p. 27–28.

⁸⁰⁸ APTPPL, *Access arrangement submission*, October 2011, p. 125.

	<p>Provider under clauses 11 to 14 (inclusive) for the User for transportation to the Brisbane hub;</p> <p>(b) in accordance with the STTM Rules, to the extent that quantities of Gas, including MOS gas (whether positive or negative), are allocated to STTM Shippers under the STTM Rules; and</p> <p>(c) for any overrun MOS (whether positive or negative) or any other remaining quantities of Gas, on a pro rata basis according to the quantity of Gas Scheduled by Service Provider under clauses 11 to 14 (inclusive) for the User for forward haul transportation to the Brisbane hub on that Day or Hour (as the case requires) as a proportion of the aggregate quantity of Gas Scheduled by Service Provider for all STTM Shippers on the Pipeline for forward haul transportation under Transportation Agreements to the Brisbane hub on that Day or Hour (as the case requires).⁸⁰⁵</p> <p>67. Without limiting its other rights under this Access Arrangement, Service Provider may, contrary to User's Nomination (if any) and without liability to User comply with the STTM Rules or any lawful directions or requirements of an Authority, including to act or refrain from acting in a particular manner.⁸⁰⁶</p> <p>68 The Service Provider may revise its allocation methodology set out above from time to time to reflect, as far as reasonably possible, any allocation methodologies imposed on the Service Provider by a third party in respect of a particular Receipt Point or Delivery Point or the Brisbane hub.⁸⁰⁷</p>		<p>Scheduled on any Day. Revisions to these clauses are necessary to support the Queensland STTM. These revisions introduce new definitions for STTM Shippers, MOS gas and overrun MOS.</p> <p>The AER accepts additional clauses 66 and 67 to support the Queensland STTM.</p> <p>Clause 68</p> <p>The AER accepts APTPPL's proposal to add wording 'or the Brisbane hub' in clause 68. The AER agrees that revisions to this clause are necessary to support Queensland STTM.</p> <p>The AER considers that amended clause 68 is re acceptable.</p>
<p>Limitation of Liability &</p>	<p>Clauses 87-90 APTPPL has proposed to amend wording in clause 87(a), 88, 89(a) and 90 by replacing the phrase 'gross negligence or wilful misconduct' with 'Gross Negligence/Wilful</p>	<p>APTPL submitted that clauses 87–91 set out liability and indemnity arrangements</p>	<p>Clauses 87–90</p> <p>The AER does not accept APTPPL's proposed amendment in the clauses</p>

⁸⁰⁵ APTPPL, *Access arrangement proposal*, October 2011, p. 28.

⁸⁰⁶ APTPPL, *Access arrangement proposal*, October 2011, p. 28.

⁸⁰⁷ APTPPL, *Access arrangement proposal*, October 2011, p. 28.

<p>Indemnity</p> <p>Clause 87–91</p>	<p>Misconduct' and defining this term in schedule 2 of access arrangement proposal.⁸⁰⁹</p> <p>91. Nothing in this Access Arrangement limits Service Provider's rights under any laws from time to time which limit or avoid Service Provider's liability to the User or any other person.⁸¹⁰</p>	<p>in the Gas Transportation Agreement.</p> <p>Liability for Gross Negligence was included by the AER in the AGP access arrangement. APTPPL has included a definition of Gross Negligence/Wilful Misconduct in the access arrangement to provide certainty and clarity around the meaning of this term.</p> <p>Additional clause 91 is necessary to support the Queensland STTM.⁸¹¹</p>	<p>87(a), 88, 89(a) and 90 as the meaning of the term Gross Negligence/Wilful Misconduct defined in schedule 2 of the access arrangement proposal does not provide certainty or clarity in the meaning of the term. The AER considers that gross negligence and wilful misconduct are two separate concepts and should not be merged into one definition. APTPPL's proposed amendment is likely to cause uncertainty in the operation of the clauses and the circumstances in which liabilities of the parties may arise. This uncertainty does not promote the efficient investment and operation of natural gas services, and is inconsistent with the NGO.</p> <p>The AER therefore rejects the proposed amendment in clauses 87–90 and requires APTPPL to retain the phrase 'gross negligence or wilful misconduct' consistent with its earlier access arrangement. Consistent with the approved access arrangement for AGP, the AER requires APTPPL to adopt a definition for wilful misconduct as provided in amendment A.9.</p> <p>The AER also seeks submissions from stakeholders / users on its draft decision relating to APTPPL's proposal to amend these clauses.</p> <p>Proposed amendment A.9</p> <p>Amend clauses 87(a), 88, 89(a) and 90 to replace Gross Negligence/Wilful Misconduct with the phrase 'gross negligence or wilful misconduct'</p> <p>Clause 91</p> <p>APTPPL has submitted that additional clause 91 is necessary to support the Queensland STTM.</p> <p>The AER considers that this clause protects Service Provider's rights under any laws from time to time which limit or avoid Service Provider's liability to the User or any other person and is not limited to changes introduced to support the Queensland STTM as proposed by APTPPL.</p>
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⁸⁰⁹ APTPPL, *Access arrangement proposal*, October 2011, p. 32–33.

⁸¹⁰ APTPPL, *Access arrangement proposal*, October 2011, p. 33.

⁸¹¹ APTPPL, *Access arrangement submission*, October 2011, pp. 125–126.

			<p>The AER therefore considers that this clause should be limited to preserving Service Provider's rights under Queensland STTM and should not limit or avoid Service Provider's liability to the User or any other person.</p> <p>The AER requires APTPPL to amend this clause 91 as outlined in amendment A.10.</p> <p>Proposed amendment A.10</p> <p>Amend clause 91 as follows:</p> <p>Nothing in this Access Arrangement limits Service Provider's rights under Queensland STTM from time to time which limit or avoid Service Provider's liability to the User or any other person.</p>
<p>Force Majeure Clauses 92-97</p>	<p>92. Force Majeure Event means any event or circumstance, or combination of events or circumstances, which is beyond the reasonable control of a Party, which by the exercise of due diligence, that Party is not reasonably able to prevent or overcome and which has the effect of preventing a Party from performing an obligation under the Transportation Agreement, including, without limitation (provided that they meet the foregoing criteria):</p> <p>(a) acts of God, including without limitation, earthquakes, floods, washouts, landslides, lightning, storms and the elements;</p> <p>(g) in respect of the Pipeline, and any lateral pipelines owned or operated by the Service Provider and related machinery, equipment or facilities (including Interconnection Facilities), accidents, or breakdown, loss or damage or the necessity to undertake alterations, repairs or maintenance</p>	<p>APTPL submitted that clauses 87–91 set out arrangements for Force Majeure Events.</p> <p>The AER imposed changes to these provisions in respect of the AGP access arrangement that APTPPL considers introduces unacceptable risk to APTPPL.</p> <p>Service Provider has inserted the word 'reasonable' in relation to the test for the 'control' of a Party. Service</p>	<p>Clause 92</p> <p>APTPL has proposed to include the word 'reasonable' in clause 92. The AER noted that the term 'force majeure' was defined in the previous Terms and Conditions as</p> <p>'...not within the control' of a Party rather than "not within the reasonable control..." of a Party as is the case here.⁸¹⁵</p> <p>The AER understands that such an event is typically one over which a party to a contract has no control, for example, an event such as a cyclone. The AER notes that the qualifying phrase 'that Party is not reasonably able to prevent or overcome' adds the necessary element of reasonableness to the test. The AER therefore requires that the word 'reasonable' be deleted from clause 92.</p> <p>The AER also considered this issue in the NT Gas draft decision and</p>

	<p>(other than routine maintenance for which notice has not been given)⁸¹²</p> <p>93. The following events:</p> <p>(a) lack of finances;</p> <p>(b) changes in market conditions for the transportation, purchase or sale of Gas;</p> <p>(c) the inability of the User or a person supplying Gas at or upstream of the Receipt Points to provide gas at a Receipt Point for transportation under the Transportation Agreement; or</p> <p>(d) the inability of the User or a person, consuming <u>the Gas</u> at or downstream of the Delivery Points to take gas, will under no circumstances constitute or cause a Force Majeure Event.⁸¹³</p>	<p>Provider submits that Force Majeure should include events which may be within the 'control' of a party but not its 'reasonable' control. An example of this is a strike or lockout. Service Provider notes that there are other protections from a Party calling FM unnecessarily.</p> <p>Service Provider has included in 92 (g) loss and damage to machinery and facilities which otherwise meet the test for Force Majeure.</p> <p>Service Provider's changes to clauses 92 and 93 reflect Service Provider's standard gas transportation agreement.⁸¹⁴</p>	<p>required deletion of the word 'reasonable' from clause 92.⁸¹⁶</p> <p>The AER requires APTPPL to amend clause 92 as outlined in amendment A.11.</p> <p>Proposed amendment A.11</p> <p>Delete the word 'reasonable' from clause 92</p> <p>Clause 92(a)</p> <p>The AER considers that originally the clause includes two types of acts: acts of god (earthquakes, floods, washouts, landslides, lightning, storms) and other acts caused by the elements but not necessarily the acts of the elements. With the deletion of the phrase 'other acts caused by', other acts caused by the elements are no longer covered by Force Majeure Events themselves in the amendment proposed by APTPPL. The AER does not accept the amendment as it will reduce the scope of the clause and potentially increase the liability of the parties. The AER requires APTPPL to keep the words 'other acts caused' in clause 92(a).</p> <p>The AER therefore require APTPPL to amend clause 92(a) as outlined in proposed amendment A.12.</p> <p>Proposed amendment A.12</p> <p>Amend clause 92(a) to include the words "other acts caused" as per original clause.</p> <p>Clause 92(g)</p>
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⁸¹⁵ APTPPL, *Access arrangement for RBP*, March 2007, p. 30.

⁸¹² APTPPL, *Access arrangement proposal*, October 2011, p. 33–34.

⁸¹³ APTPPL, *Access arrangement proposal*, October 2011, p. 34.

⁸¹⁴ APTPPL, *Access arrangement submission*, October 2011, p. 126.

⁸¹⁶ AER, *Draft decision: N.T. Gas access arrangement*, April 2011, p. 246.

		<p>APTPPL has proposed to insert the wording 'loss or damage' in clause 92(g). The AER does not accept addition of 'loss or damage' because Force Majeure Events may cause loss or damage. The inclusion of loss or damage as Force Majeure Events themselves is illogical and unnecessary. The AER therefore requires APTPPL to delete the words 'loss or damage' from clause 92(g). The AER considered a similar amendment in the AER final decision for AGP and required deletion of the wording 'loss or damage' from the clause.⁸¹⁷</p> <p>The AER therefore requires APTPPL to amend clause 92(g) as outlined in amendment A.13.</p> <p>Proposed amendment A.13</p> <p>Delete the word 'loss or damage' from clause 92(g).</p> <p>Clause 93 (c)</p> <p>The AER considers that the replacement of the phrase 'a supply of Gas' with 'provide gas at a Receipt Point' arguably broadens the scope of the clause and may have been intended to pick up situations where the User or a person supplying the gas can obtain a supply of Gas but for some reason may still be unable to provide gas at a Receipt Point for transportation. This may potentially increase the liability of the User or a person supplying the gas since it reduces the scope of clause 92. Therefore, the AER does not accept the amendment as it will affect the substance of clause 93(c). The AER requires APTPPL to maintain the original wording of clause 93(c)</p> <p>The AER therefore require APTPPL to amend clause 93(c) as outlined in amendment A.14.</p> <p>Proposed amendment A.14</p> <p>Amend clause 93(c) as follows:</p> <p>the inability of the User or a person supplying Gas at or upstream of the Receipt Points to obtain a supply of Gas for transportation under the</p>
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⁸¹⁷ AER, *Final decision: N.T. Gas access arrangement*, July 2011, p. 215.

		<p>Transportation Agreement; or</p> <p>Clause 93 (d)</p> <p>The original clause 93(d) excludes the inability of a person other than the user consuming the Gas at or downstream of the Delivery point to take gas from being a Force Majeure Event or the cause of a Force Majeure Event. The proposed amendment extends this exclusion to the inability of the user to take gas.</p> <p>The AER considers that deletion of the phrase 'due to any event or circumstance within the control of that person' effectively means that the inability to take gas by the User or a person consuming the gas will be excluded from the consideration of a Force Majeure Event even if the circumstances giving rise to this inability are outside the control of the person. The proposed amendment appears to broaden the scope of clause 93(d), so that a Force Majeure Event does not apply to the inability to take gas at all. The AER does not accept deletion of phrase 'due to any event or circumstance within the control of that person' as it will affect the substance of clause 93(c) and appears to increase the liability of the User or other persons consuming the gas.</p> <p>The AER considers that the qualification 'due to any event or circumstance within the control of that person' is reasonable for the exclusion to clause 92, for both the User and other persons consuming the gas. The AER therefore accepts the first part of the proposed amendment which changes the phrase 'a person other than the User' to 'the User or a person'.</p> <p>The AER does not accept the second part of the proposed amendment because it attempts to increase the liability of the User and other persons consuming the gas, which is not in the long term interest of consumers with respect to price, reliability and security of the supply of gas.</p> <p>The AER therefore requires APTPL to amend clause 93 (d) as outlined in amendment A.15.</p> <p>Proposed amendment A.15</p> <p>Amend clause 93(d) as follows:</p> <p>the inability of a person, other than the User, consuming the Gas at or downstream of the Delivery Points to take gas due to any event or</p>
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			circumstance within the control of that person.
<p>Assignment Clauses 98-100</p>	<p>98. A Party must not assign, novate, transfer or otherwise dispose of (in this section 98, "assign") the whole or part of its rights or obligations under the Transportation Agreement without the prior written consent of the other Party, which consent must not be withheld unreasonably in the case of an assignee that is technically and financially capable of performing the assigned rights and obligations. Nothing in this clause 98 limits or affects the User's rights in respect of capacity trading under section 5 of this Access Arrangement.⁸¹⁸</p> <p>100 If:</p> <p>(a) there is a Change in Control of a Party (Affected Party) or its ultimate holding company;</p> <p>(b) neither the Affected Party or its ultimate holding company is listed on a recognised public securities exchange; and</p> <p>(c) the Change in Control is not imposed by law,</p> <p>then:</p> <p>(d) the Affected Party cannot enforce the Transportation Agreement unless and until it procures the written consent of the other Party (which consent must not be unreasonably withheld);</p> <p>(e) paragraph (d) does not affect the Affected Party's obligations under the Transportation Agreement; and</p> <p>(f) the other Party may terminate the Transportation Agreement if consent under paragraph (d) is not obtained within 60 Business Days of the earlier of the date on which the Affected Party first notifies the other Party of the Change in Control and the date on which</p>	<p>APTPL submitted that Assignment clause provides for reciprocal assignment restrictions.</p> <p>Changes include more detail regarding when consent cannot be unreasonably withheld. Provision is also made with respect to change in control in recognition that this is a common occurrence in the industry.</p> <p>Revisions to these clauses introduce the need for a definition of Change in Control and Affected Party.⁸²⁰</p>	<p>APTPL submitted that changes to the Assignment clauses provide more detail regarding when consent cannot be unreasonably withheld. Provision is also made with respect to change in control in recognition that this is a common occurrence in the industry.</p> <p>The APTPL proposed clause 98 refers to 'assign, novate, transfer or otherwise dispose of (in this section 98 'assign') the whole or part of its rights or obligations under the Transportation Agreement. In contrast, the existing clause simply uses the word 'assign'. The AER considers that the proposed changes would broaden the application of the provisions. However, clause 98 does not limit or affect the User's rights in respect of capacity trading under section 5 of this access arrangement.</p> <p>The AER considers that APTPL's amended clause 98 seems to cover off the obligations covered by clauses 89, 90, 91 and 92 although there are some minor changes. For example, any assignment under the proposed clause 98 must be accompanied by the other Party's prior written consent. This is in contrast to the provisions in clauses 90 and 91 which did allow assignment without consent in some circumstances (clauses 90 & 91). The AER considers that proposed amended clause is acceptable.</p> <p>APTPL's proposed clause 100 is new and relates to the assignment of the Transportation Agreement when there is a change in control of a party. "Change in Control" is expressly defined in section 2.1. This provision provides that in certain circumstances if there is a change in control of a party (affected party) the Transportation Agreement cannot be enforced until consent has been obtained from the other party. If the affected party does not seek consent within 60 Business Days then the other party can terminate.</p> <p>The AER accepts additional clauses 100 as it is consistent with the NGO.</p> <p>Definition</p> <p>The AER also accepts definition of change in control and affected party as</p>

⁸¹⁸ APTPL, *Access arrangement proposal*, October 2011, p. 35.

	the other Party becomes aware of the Change in Control. ⁸¹⁹		proposed by APTPPL.
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⁸²⁰ APTPPL, *Access arrangement submission*, October 2011, p. 126.

⁸¹⁹ APTPPL, *Access arrangement proposal*, October 2011, p. 35–36.

B Extension and expansion requirements

Extension and expansion requirements specify the method for determining whether extensions or expansions to the covered pipeline are to be covered by the access arrangement.⁸²¹ Once it is determined that an extension or expansion is covered by the access arrangement, the queuing requirements can then be applied to establish an order of priority to access between prospective users.⁸²²

When the extension or expansion is covered by the access arrangement, the extension and expansion requirements must deal with the effect of the extension or expansion on tariffs.⁸²³

An extension relates to an augmentation of the pipeline infrastructure which extends the pipeline such that it can receive or deliver gas to or from new locations. An expansion relates to an augmentation to the capacity of the pipeline infrastructure to deliver an increased volume of gas to users.⁸²⁴

B.1 Draft Decision

The AER is satisfied that clauses 7.1, 7.2 and 7.3 of APTPPL's access arrangement proposal meet APTPPL's obligations under r. 48(1)(g) of the NGR to set out the extension and expansion requirements in its access arrangement proposal.

The AER does not approve the inclusion of a fixed principle as proposed by APTPPL. To address this issue the AER considers that it will be necessary for APTPPL to delete clause 7.4 of the access arrangement proposal which relates to the inclusion in the extension and expansion requirements of fixed principles.

B.2 APTPPL's proposal

The extension and expansion requirements proposed by APTPPL are set out in clause 7 of the access arrangement proposal and summarised in table B.1 below.⁸²⁵

⁸²¹ NGR, r. 104(1) and the definition of "extension and expansion requirements" in NGL, s. 2.

⁸²² NGR, r. 103.

⁸²³ NGR, r. 104(2) and the definition of "extension and expansion requirements" in NGL, s. 2.

⁸²⁴ AER, *Access arrangement guideline*, March 2009, p. 47. See also NGR, r. 118 which refers to expansions in the context of expanding capacity of the pipeline and extensions in the context of extending the geographical range of the pipeline.

⁸²⁵ APTPPL, *Access arrangement proposal*, October 2011, clause 7, p. 36.

Table B.1 Extension and expansion requirements proposed by APTPPL

Matter	New RBP access arrangement period 2012-2017
Extension: Requirement to determine coverage	If APTPPL propose an extension of the Covered Pipeline it must apply to the AER in writing to decide whether the proposed extension will form part of the Covered Pipeline and whether the access arrangement will apply to the incremental services provided by the proposed extension (Clause 7.1(a)).
Covered Extension: Type of service and tariff	Where the access arrangement applies to the incremental services provided by a covered extension, APTPPL can elect whether the incremental services provided through that extension will be offered as part of the reference service at the reference tariff or a negotiated service at a negotiated tariff (Clause 7.1 (b)).
Expansion: Requirement to determine coverage	If APTPPL expand the capacity of the pipeline the access arrangement will apply to the incremental services provided as a result of the expansion unless APTPPL proposes and the AER agrees that the access arrangement will not apply to the incremental services provided as a result of that expansion (Clause 7.2(a)).
Covered Expansion: Type of service and tariff	Where the access arrangement applies to the incremental services provided by an expansion, APTPPL will elect whether access to the incremental services provided using that capacity will be offered as part of the reference service at the reference tariff or a negotiated service at a negotiated tariff (Clause 7.2 (b)).
Reference tariffs	Reference tariffs in the access arrangement period will not be affected by any extension or expansion made (Clause 7.3).
Fixed principles	Clauses 7.1(d) and 7.2 (c) are fixed principles for the purpose of rule 99 for a period of 20 years in respect of the capital investment, operating costs and demand associated with extensions or expansions made in reliance of this provision (Clause 7.4).

Source: APTPPL, *Access arrangement proposal*, October 2011.

Clauses 7.1(d) and 7.2(c) set out that the capital investment, operating costs, and usage associated with extensions and expansions and offered as a negotiated service, will not be considered in the calculation of the reference tariff.⁸²⁶ Clause 7.4 of the access arrangement proposal proposes that clauses 7.1(d) and 7.2(c) are fixed principles for the purpose of r. 99 of the NGR, from the commencement of the access arrangement for a period of 20 years, or such other date as advised.

APTPPL argued that a period of 15 years of certainty is essential to support the investment in extensions and expansions.⁸²⁷ Without the protection of fixed principles, APTPPL submitted that the AER could determine in the following access arrangement that the incremental services provided by the extension are part of the reference service. This would mean these services would need to be offered at the reference tariff for any spare capacity available

⁸²⁶ APTPPL, *Access arrangement proposal*, October 2011, p. 36.

⁸²⁷ APTPPL, *Access arrangement submission*, October 2011, pp. 11–13. It should be noted that although the APTPPL submission refers to a proposed fixed principle of 15 years, clause 7.4 of the APTPPL access arrangement proposal refers to a fixed period of 20 years.

through the extension or expansion. APTPPL submitted this outcome was unlikely to provide sufficient return to APTPPL for the investment.⁸²⁸

To address this risk, APTPPL maintained it would need to ensure it recovered all the incremental costs of the extension (that which would not be recovered at the reference tariff) in the remaining years of the access arrangement. APTPPL argued this was likely to increase the costs of extensions to prospective users of those services, thereby undermining incentives to invest in the pipeline. Alternatively, APTPPL would not proceed with the extension.⁸²⁹

APTPPL submitted that if the AER did not accept the inclusion of clauses 7.1(d) and 7.2(c) as fixed principles then these clauses would need to be varied. The variation would allow APTPPL to incorporate relevant costs in the calculation of the reference service if the AER later determines that the services provided through a relevant extension or expansion of the pipeline makes up part of the reference service.⁸³⁰

B.3 Assessment approach

The AER must be satisfied that the service provider has included in a full access arrangement the extension and expansion requirements (r. 48(1)(g) of the NGR).

This will involve the AER considering if the extension and expansion requirements in APTPPL's access arrangement proposal meet the other relevant regulatory requirements relating to extensions and expansions set out in the NGR and NGL.⁸³¹ Under r. 104, the extension and expansion requirements may state whether the access arrangement will apply to incremental services, or alternatively it may allow for later resolution of that question on a basis that is stated in the requirements. If the access arrangement does apply to incremental services offered over an extension or expansion, the requirements must deal with the effect this may have on tariffs.⁸³²

The AER must also consider whether APTPPL's proposal to include fixed principles in the extension and expansion requirements complies with r. 99 of the NGR which governs the use of fixed principles in access arrangements.⁸³³ Under r. 99(4)(a) of the NGR the AER may vary or revoke a fixed principle at any time with the service provider's consent. Under r. 99(4)(b), if a rule is inconsistent with a fixed principle the rule operates to the exclusion of the fixed principle.

In assessing the proposed extension and expansion requirements, the AER has also considered the overall purpose of the regulatory regime and the way it has dealt with extension and expansion requirements in the past.

⁸²⁸ APTPPL, *Access arrangement submission*, October 2011, p. 12.

⁸²⁹ APTPPL, *Access arrangement submission*, October 2011, p. 12.

⁸³⁰ APTPPL, *Access arrangement submission*, October 2011, p. 13.

⁸³¹ NGL, s. 2; NGR, r. 104.

⁸³² NGR, r. 104(2).

⁸³³ NGR, r. 99 allows a full access arrangement to include a principle fixed for a stated period. This period can extend over two or more access arrangement periods.

If the AER considers that APTPPL's proposed extension and expansion requirements do not comply with the NGR or NGL it can propose under r. 40(3) of the NGR a preferable alternative that is consistent with the requirements of the NGL and NGR.

B.4 Reasons for decision

The AER is satisfied that clauses 7.1, 7.2 and 7.3 of APTPPL's access arrangement proposal meet APTPPL's obligations under r.48(1)(g) of the NGR to set out the extension and expansion requirements in its access arrangement proposal. However, the AER does not approve the inclusion of fixed principles in clause 7.4 as proposed by APTPPL on the basis that:

- The nature of expansions is such that they should generally form part of a covered pipeline and not be excluded from regulatory coverage through the application of a fixed principle.
- APTPPL is likely to receive sufficient returns where the services offered over the extension or expansion are offered as a reference service.
- It is sufficient to support APTPPL's investment to allow developed capacity to be offered as a negotiated service during the access arrangement period.
- Contracts which are entered into to underpin the viability of commencing the extension or expansion will not be affected by future access arrangements.
- APTPPL can utilise the NGR provision to establish a speculative capital expenditure account for non-conforming capital expenditure.⁸³⁴ This will cover expenditure which APTPPL incurs that is not recoverable through a surcharge on users or capital contribution.

These factors are discussed further below.

To reflect this decision, the AER considers that it will be necessary for APTPPL to delete clause 7.4 of the access arrangement proposal which relates to the inclusion in the extension and expansion requirements of the proposed fixed principle.

Extension and expansion requirements

The AER is satisfied that clauses 7.1, 7.2 and 7.3 of APTPPL's access arrangement proposal meet APTPPL's obligations under r. 48(1)(g) of the NGR to set out the extension and expansion requirements in its access arrangement proposal. Further, the AER accepts APTPPL's proposal that access to incremental services during the access arrangement will be provided at a negotiated service if the service provider should so elect.

Clauses 7.1, 7.2 and 7.3 set out the circumstances under which the incremental services offered over an extension or expansion under the access arrangement will be covered. They also indicate whether incremental services over the extension or expansion will be subject to

⁸³⁴ NGR, r. 84.

the applicable access arrangement and, if so, the effect this will have on reference tariffs during the access arrangement period.⁸³⁵

APTPPL has proposed that where the access arrangement applies to incremental services, the service provider will elect whether access to those services will be provided as a reference service or a negotiated service.⁸³⁶ In circumstances where the service provider elects to offer the incremental services as a negotiated service then the terms and conditions of access including the tariff will be determined through commercial negotiation.

In determining whether to accept APTPPL's proposal, consideration was given to the success of commercial negotiations in determining access to the RBP. The AER notes there are different terms and conditions in the transportation contracts APTPPL entered into with various users which may be indicative of users exercising countervailing market power. Similar views were expressed by the ACCC during its consideration of the last RBP access arrangement in 2006.⁸³⁷

Further, the AER acknowledges the importance of parties having the option to access arbitration in circumstances where they cannot agree to the terms of access to pipeline services.⁸³⁸ Arbitration will be available where the applicable extension or expansion is part of the covered pipeline. The ability of parties to seek an access determination creates an important backdrop to negotiations between APTPPL and a party who is seeking pipeline services.

During the course of the earlier access arrangement, no access disputes have been notified under chapter 6 of the NGL. This suggests that commercial negotiation over access to the pipeline has generally been successful.

The AER has therefore come to the view that it will accept APTPPL's proposal that access to incremental services during the access arrangement will be provided at a negotiated service if the service provider should so elect.

Fixed Principles

The AER does not approve the inclusion of fixed principles in clause 7.4. The AER requires APTPPL to delete this clause from the access arrangement proposal.

Extension and expansion requirements can exclude pipeline services, or deal with the effects of the extension or expansion on tariffs, for a period of more than one access arrangement by including these requirements as a fixed principle (see r. 99 of the NGR). APTPPL has sought, through clause 7.4 of the access arrangement proposal, to include fixed principles in its proposed extension and expansion requirements.

APTPPL has submitted that, without the fixed principles:

⁸³⁵ See NGL, s. 2 and NGR, r. 104. Under NGR, r. 3, any pipeline services provided by means of an extension to, or expansion of, the pipeline are known as 'incremental services'.

⁸³⁶ APTPPL, *Access arrangement proposal*, October 2011, clause 7.1(b), p. 35.

⁸³⁷ See ACCC, *Draft decision: APTPPL access arrangement*, August 2006; ACCC, *Final decision: APTPPL access arrangement*, December 2006.

⁸³⁸ NGL, chapter 6; NGR, part 12.

'...the AER could determine in the following access arrangement that the incremental services provided by the extension are part of the reference service. This would mean that the incremental services would need to be offered at the reference tariff. For pipeline extensions offered as negotiated services, this outcome is unlikely to provide sufficient return to APTPPL for that investment.....'⁸³⁹

Under s.321 of the NGL, an access arrangement must not have the effect of depriving a person of certain contractual rights. The effect of this provision is that if contracts for incremental services on an extension or expansion are negotiated during the access arrangement period, those contracts will continue according to their own terms. They will not be affected by future access arrangements. Accordingly, if, in a future access arrangement, services provided over the extension or expansion are taken to be reference services, any pre-existing contracts for access would nevertheless continue to operate until they expired or were terminated.

Only when spare capacity became available would the reference tariff and other reference conditions become relevant in negotiating the allocation of that capacity to an interested party.⁸⁴⁰ As APTPPL's submission points out, additional capacity created by the Lytton Lateral and RBP8 expansion project has already been substantially contracted under long term transportation agreements.⁸⁴¹ These pre-existing contractual rights would not be affected by this or future access arrangements.

APTPL states in its submission that if the AER determines that the incremental services provided by an extension are part of the reference service and reference tariff, it is unlikely to provide sufficient return to APTPL.⁸⁴² To address this risk, APTPL states it:

'...would need to ensure that it recovered all of the incremental cost of the extension (that which would not be recovered at the reference tariff) in the remaining years of the existing access arrangement. This is likely to increase costs of extensions to prospective users of those services, thereby undermining incentives to invest in the pipeline. Alternatively, APTPL would not proceed with the extension.'⁸⁴³

The AER does not agree with APTPL's submission that where the pipeline service is offered as a reference service, rather than a negotiated service, it is unlikely to provide sufficient return to APTPL. The AER takes capital investment, operating expenditure, and demand for the additional capacity into account when calculating the reference tariff.⁸⁴⁴ For this reason, the AER is of the view APTPL is likely to receive sufficient returns for spare capacity available on the extension or expansion even where that spare capacity is offered as a reference service. This eliminates the need for APTPL to seek to recover the incremental costs of an extension in the remaining years of the existing access arrangement, as suggested in its submission. The AER is also of the view that APTPL is unlikely to seek full recovery over the remaining years of an access arrangement in practice, given that RBP shippers generally enter into long term contracts that extend well beyond the end of the access arrangement period. Such contracts often underwrite pipeline augmentations over similarly long periods.

⁸³⁹ APTPL, *Access arrangement submission*, October 2011, p. 12.

⁸⁴⁰ NGL, s. 2 defines 'spare capacity' as the unutilised capacity of a pipeline.

⁸⁴¹ APTPL, *Access arrangement submission*, October 2011, pp. 37–38.

⁸⁴² APTPL, *Access arrangement submission*, October 2011, p 12.

⁸⁴³ APTPL, *Access arrangement submission*, October 2011, p 12.

⁸⁴⁴ This is a requirement of NGR, r. 95(1) and the revenue and pricing principles discussed earlier in this section.

Rule 84 of the NGR specifically makes provision for the establishment of a speculative capital expenditure account for non-conforming capital expenditure. This covers expenditure that is not recoverable through a surcharge on users or capital contribution. The AER is of the view APTPPL could consider utilising this provision as it will allow APTPPL to include any speculative capital expenditure that subsequently meets the criteria for conforming capital, in the capital base at the commencement of the next access arrangement period.

The AER received a submission from Origin that addressed the extension and expansion requirements proposed by APTPPL. The submission expressed support for extensions or expansions undertaken as a negotiated service to deliver new capacity for commercial ventures but recognised there are occasions where an extension or expansion needs to be regulated and form part of the reference service.⁸⁴⁵

The AER accepts that offering services on expanded or extended capacity of the pipeline for a period is necessary for APTPPL to support the investment in, and expansion or extension of, the pipeline. However, the AER considers it is sufficient to allow developed capacity to be offered as a negotiated service during the applicable access arrangement period in which the extension or expansion is undertaken.⁸⁴⁶ That provides an opportunity for contractual negotiations underpinning the extension or expansion to be entered into to ensure its viability.

Agreeing to a fixed principle to exclude an aspect of the operation of the regulatory scheme is clearly a significant step in the context of regulating a covered pipeline. The AER would need convincing reasons to agree to such exclusions, especially where they are intended to operate for significant periods of time.

Generally, the AER considers that pipeline services provided over an expansion should be subject to the access arrangement for the following reasons:

- By subjecting expansions to regulatory coverage any incremental services offered on the expansion would potentially be specified as reference services in the access arrangement and the calculation of the reference tariff. This would therefore maintain the effectiveness of using the reference tariff as a reliable benchmark in negotiations between the service provider and users.
- Expansions to a pipeline operate to balance any decay which would ordinarily impact on the regulatory asset base.
- By including expansions as part of the covered pipeline service providers, users and prospective users will continue to be able to access the dispute resolution mechanisms contained in chapter 6 of the NGL and part 12 of the NGR. This point was made clearly by TRUenergy in its submission on the access arrangement proposal.⁸⁴⁷
- Expansions are an integral part of a pipeline's operation as they impact on the overall capacity of the pipeline. Therefore, it is generally not appropriate for some of a pipeline's capacity to be covered and subject to regulation and other parts of the capacity generated through an expansion to be excluded from regulation.

⁸⁴⁵ Origin, *Submission to the AER*, December 2011, p. 4.

⁸⁴⁶ For a further discussion of these issues please refer to the pipeline services attachment 3.

⁸⁴⁷ TRUenergy, *Submission to the AER*, December 2011, p. 3.

The AER is of the view that the proposed extension and expansion requirements for the pipeline remove the need to apply a fixed principle. This is because under the extension and expansion requirements, when the service provider proposes an extension it must apply to the AER for a decision on whether the proposed extension will be taken to form part of the covered pipeline and if the access arrangement will apply. Generally, the AER is of the view that an extension should form part of the covered pipeline and be subject to the access arrangement when it forms an integral part of the pipeline. This will occur when the incremental services offered on the extension will potentially open up new markets for a range of existing and prospective users. In such circumstances, the AER considers it is important for the extension to be subject to regulatory coverage as it ensures that covered pipeline service providers, users and prospective users will continue to be able to access the dispute resolution mechanisms contained in chapter 6 of the NGL and part 12 of the NGR. Under these circumstances the AER would need convincing reasons to agree to a fixed principle.

On the other hand, if the AER decides that an extension will not be covered and therefore the access arrangement does not apply, no fixed principle will be required.

Construction of extensions by users

The AER received a submission from TRUenergy that addressed the extension and expansion requirements proposed by APTPPL. TRUenergy submitted that chapter 6 of the NGL provides a clear pathway for both APTPPL and any shipper to resolve an access dispute and it relies upon these provisions to provide competitive tension and protection when negotiating an expansion.⁸⁴⁸ TRUenergy stated it was happy with a commercially negotiated outcome between APTPPL and itself for the delivery of an extension with the significant proviso that TRUenergy is able to build and connect its own extension to the RBP.⁸⁴⁹

TRUenergy proposed that the AER and APTPPL should determine reasonable technical and operating standards that would apply to the construction of an extension. If in the AER's view a proponent meets these standards then APTPPL must facilitate connection and gas supply to the extension.

The NGL and NGR allow service providers and users to negotiate an extension based upon mutually agreeable terms and conditions. This does not necessarily preclude TRUenergy from constructing its own RBP extension.⁸⁵⁰ The AER does not consider it is necessary for it to determine reasonable technical and operating standards that would apply to the construction of an extension. Further, the AER does not agree with TRUenergy's proposal that APTPPL must facilitate connection and gas supply to the extension if a proponent reasonably meets reasonable technical and operating standards. The AER considers that parties negotiating any extension will negotiate the terms and conditions relating to the construction of any extension.

⁸⁴⁸ TRUenergy, *Submission to the AER*, December 2011, pp. 2–4. Throughout this submission TRUenergy refer to the APA Group rather than APTPPL.

⁸⁴⁹ TRUenergy, *Submission to the AER*, December 2011, p. 3.

⁸⁵⁰ NGR, r. 118(3) provides that a user or prospective user acquires no interest in a pipeline by funding an expansion of capacity of the pipeline in accordance with an access determination unless the service provider agrees. There is no such requirement in relation to extensions.

For the reasons outlined above, the AER does not approve the inclusion of fixed principles in clause 7.4 as proposed by APTPPL. This decision is consistent with the recent 2011 AGP decision. The AER does not consider any variation to clauses 7.1(d) or 7.2(c) is necessary given there is already a requirement to incorporate relevant costs in the calculation of the reference tariff if the services provided through a relevant extension or expansion make up part of the reference service.⁸⁵¹

B.5 Proposed amendments

The AER requires the following revisions to make the access arrangement proposal acceptable:

Amendment B.1

Delete clause 7.4 of the access arrangement proposal which relates to the inclusion in the extension and expansion requirements of certain fixed principles.

⁸⁵¹ APTPPL, *Access arrangement submission*, October 2011, p. 13.

C Rate of return - technical analysis

C.1 Market risk premium

In attachment 7, the AER presented its considerations on why adopting a MRP of 6% is appropriate. The AER also noted that some matters would be addressed in more detail in the appendix C. Those matters are addressed in this section. Those matters are:

- the use of arithmetic and geometric averages of historical excess market returns
- the volatility of historical excess returns
- the assessment of survey evidence against the criteria suggested by the Tribunal
- the dividend growth model (DGM) estimates
- the adoption of a conditional MRP
- the financial market indicators of implied volatility, dividend yields and debt spreads

C.1.1 Arithmetic and geometric averages of historical excess returns

Historical excess market returns are highly sensitive to the method of averaging returns over multiple periods. For example, Brailsford, Handley and Maheswaran found that, relative to bonds, the historical excess market return over 1958-2005 was 4.0 per cent using a geometric average or 6.3 per cent using an arithmetic average.⁸⁵²

If returns vary over time, a geometric average will always be less than an arithmetic average.⁸⁵³ The greater the volatility in returns, the greater the difference between an arithmetic average and a geometric average. With the level of volatility present in historical stock market returns, a difference of around 200 basis points (2 per cent) is common.

WACC review

In the WACC review, the AER stated that in estimating a forward looking parameter from historical data some experts argue for an arithmetic average, some for a geometric average, and some for a weighted average of the two.⁸⁵⁴

The AER noted that in Australian regulatory practice, the use of an arithmetic average of historical excess market returns had been standard, and that this was based on two assumptions:

⁸⁵² Brailsford, T.J., Handley, J.C. and K. Maheswaran, 'A Re-examination of the historical equity risk premium in Australia', *Accounting and Finance*, vol. 48, 2008, p. 90.

⁸⁵³ For example, if an index starts at 100, falls to 80 and then increases again to 100, the arithmetic average return is 2.5 per cent (the average of the initial 20 per cent fall and subsequent 25 per cent rise) and the geometric average return is zero (because the value of the index at the end of the second period is the same as at the beginning of the first period).

⁸⁵⁴ AER, *Final decision: WACC review*, May 2009, p. 198.

- that investors ‘think’ in terms of arithmetic, rather than geometric, averages and therefore investors’ expectations will be influenced by arithmetic averages of historical returns, and
- that all returns are independent from each other, in a statistical sense. That is, the MRP in a given year is not influenced by the MRP in a prior year.⁸⁵⁵

Officer and Bishop noted that the arithmetic average is usually used and stated this is appropriate ‘if’ all historical observations are treated as independent draws from the same distribution.⁸⁵⁶ The AER considered this second assumption may be questionable.

The AER noted that a geometric average is usually adopted when measuring historical performance, whereas an arithmetic average is commonly adopted when estimating a forward looking estimate from historical data. The AER further noted that some experts had argued that the use of an arithmetic average for estimating forward looking parameters is biased up and a geometric average is biased down and had proposed various methods to average the two. Specifically, the AER noted that:

- Blume had developed an averaging technique where the arithmetic average is adjusted downwards where there are more return intervals in the estimation period than the forecast period, which Blume argued would otherwise lead to an arithmetic average being biased upwards as a measure of a forward looking estimate,⁸⁵⁷ and
- Dimson, Marsh and Staunton had developed an averaging technique where historical arithmetic averages are adjusted based on the relative historical volatility compared to expected future volatility.⁸⁵⁸

The AER considered there was some merit in the alternatives proposed by Blume, Dimson et al and other experts. However the AER acknowledged that there is no one alternative that is universally accepted and that each method involved a certain level of complexity. The AER concluded in the WACC review that:

Therefore on balance, the AER maintains its position that the use of an arithmetic average is reasonable. However these estimates should be interpreted with the understanding that they may to some degree overestimate a forward looking MRP.⁸⁵⁹

Developments since the WACC review

Since the WACC review, the AER has developed a deeper understanding of the issue of averaging historical excess returns over multiple periods. This has led the AER to form a firmer position on the upward bias in the use of an arithmetic average of historical estimates as typically calculated. The AER held this position in its recent Envestra SA access arrangement decision, and consequently had regard to both arithmetic and geometric averages in considering the appropriate value for the MRP. Among other matters, Envestra

⁸⁵⁵ AER, *Final decision: WACC review*, May 2009, p. 198.

⁸⁵⁶ Officer, B. and S. Bishop, *Market risk premium: A review paper*, August 2008, p. 6.

⁸⁵⁷ Blume, ‘Unbiased estimators of long run expected rates of return’, *Journal of the American Statistical Association*, September 1974, Vol.69, No.347.

⁸⁵⁸ Dimson, Marsh and Staunton, ‘Global evidence on the equity risk premium’, *The journal of applied corporate finance*, Vol.15, No.4, Summer 2003.

⁸⁵⁹ AER, *Final decision: WACC review*, May 2009, p. 198.

sought review by the Tribunal of the AER's reliance on geometric averages in *Application by Envestra Ltd [2012] ACompT3* (the 'Envestra matter'). In that matter, the AER considered:

- The arithmetic average of 10 year historical excess returns would likely be an unbiased estimator of a forward looking 10 year return (the appropriate benchmark).
- However, historical excess returns are conventionally estimated as the arithmetic or geometric average of one year returns. This convention was adopted in the historical excess return evidence available to the AER. Accordingly, the AER interpreted this (one year return) data based on the strengths and weaknesses of how closely this reflected the relevant benchmark (being a 10 year rate, expressed in annual terms).
- Mathematically, if there is variability in the one year historical excess returns, the arithmetic average of one year historical excess returns will overstate the arithmetic average of 10 year historical excess returns. This is because the process of averaging one year returns does not take into account the cumulative effect of returns over a 10 year time horizon.
- Also mathematically, if there is variability in the one year historical excess returns, the geometric average of one year historical excess returns will understate the arithmetic average of 10 year historical excess returns.
- The AER concluded that the arithmetic average of the data it considered was an overestimate of the relevant benchmark and the best estimate of historical excess returns over a 10 year period was likely to be somewhere between the geometric and arithmetic average of annual excess returns.⁸⁶⁰

The Tribunal stated that while it did not have to decide this matter, that some comments should be made. The Tribunal appeared to agree with the AER's view on both the upwards and downwards biases as it commented that:

It may be accepted that an arithmetic mean of historical excess returns is an unbiased estimate of expected future one year returns. It is not, however, an unbiased estimate of expected future returns over longer time horizons. A geometric mean of historical annual returns does not provide an unbiased estimate of expected returns over longer time horizons, either.⁸⁶¹

SFG, in its October 2011 report, submitted that it is wrong to place any reliance on geometric averages, and that to the extent that reliance is (incorrectly) placed on geometric averages, the resulting estimate of the MRP will be downwards biased. In support of this position SFG presented a Harvard Business School case note.⁸⁶²

The AER sought McKenzie and Partington's review of the SFG report and Harvard Business School case note. In their February 2012 supplementary MRP report, McKenzie and Partington explained how the Harvard case study, by construction "assumes away the source

⁸⁶⁰ Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraphs 150–153.

⁸⁶¹ Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 154.

⁸⁶² SFG, *MRP*, October 2011, p. 16.

of bias in arithmetic averages".⁸⁶³ Accordingly, the AER does not find the evidence presented by SFG to be compelling.

SFG also submitted that the MRP in the CAPM is an expected return and consequently the arithmetic average, not the geometric average, 'must' be used.⁸⁶⁴ The Tribunal has previously dismissed this argument when it was presented by Envestra:

Envestra's submission that, because the CAPM model uses expected returns, only the arithmetic mean may be used cannot be accepted once it is understood that the arithmetic mean of annual historic returns is not an unbiased estimate of expected ten-year returns.⁸⁶⁵

After a review of the academic literature on arithmetic and geometric averages, McKenzie and Partington concluded in their February 2012 MRP report:

The evidence solidly supports the AER's position that over the ten year regulatory period the unbiased MRP lies somewhere between the arithmetic average and the geometric average of annual returns.⁸⁶⁶

NERA agreed with the AER that the arithmetic average of historical annual returns is a biased estimate of a forward looking 10 year MRP. It states:

While the arithmetic mean of a sample of returns will always provide an unbiased estimate of the expected return to an asset over a single period, the use of arithmetic means and the use of geometric means can provide biased estimates of expected multi-period returns.⁸⁶⁷

However, NERA raised a new argument against using geometric averages which was based on the way in which the WACC is used to determine regulated revenues:

While we agree that an estimate of the expected 10-year excess return that uses the arithmetic mean will be upwardly biased, at no stage in the regulatory process is the WACC compounded over 10 years—or indeed over more than one year. In other words, a regulated utility is not given the opportunity of reinvesting its earnings at the WACC. The utility can only earn the WACC on the regulated asset base and the evolution of the regulated asset base does not depend on the WACC.⁸⁶⁸

The AER understands NERA's contention as follows:

- Annual revenue requirements are determined using the building block equation (equation 3 in NERA's report)
- This equation deals with one year returns

The AER notes that, as discussed in the AER's final decision on Aurora's distribution determination, the building block model is a tool to achieve an outcome whereby the present value of expected revenue equals the present value of expected expenditure over the life of

⁸⁶³ McKenzie, M. and G. Partington, *Supplementary report on the equity market risk premium*, 22 February 2012, December 2011, pp. 5–6.

⁸⁶⁴ SFG, *MRP*, October 2011, p. 18.

⁸⁶⁵ Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 154.

⁸⁶⁶ McKenzie, M. and G. Partington, *Supplementary report on the equity market risk premium*, 22 February 2012, December 2011, pp. 5–7.

⁸⁶⁷ NERA, *The market risk premium*, 20 February 2012, p.12.

⁸⁶⁸ NERA, *The market risk premium*, 20 February 2012, p.12..

the regulated assets (the net present value (NPV)=0 condition or 'present value principle').⁸⁶⁹ Accordingly, the AER considers that when there are questions about the operation of the building block model it is useful to address or consider these as questions over whether or not the NPV=0 condition still holds.

From this perspective, while the issues are technical and complex, the AER considers NERA's concerns are no longer valid. To determine a profile of revenues in which the NPV=0 outcome holds, an appropriate discount rate must be used, which requires the evaluation of an expected multi-period cost of equity. As NERA states in its report, there is a bias when the arithmetic average of annual returns is used to determine expected multi-period returns.

On a further matter, the Tribunal in the Envestra matter also queried whether there was a method to produce an unbiased estimate. The Tribunal said it could not form a conclusion on that issue based on the material before it.

The AER sought McKenzie and Partington's advice on whether such a method was available. After examination of a number of alternative estimators proposed in the literature, McKenzie and Partington concluded that there is no indisputable single best estimator for long run excess returns and the common practice is to use unadjusted geometric and arithmetic averages. Given the current state of knowledge, McKenzie and Partington found no strong case to depart from the common practice and recommended the use of both of these metrics, tempered by an understanding of their inherent biases.⁸⁷⁰

C.1.2 The volatility of historical excess returns

NERA observed that Australian excess market returns were less volatile prior to the 1950s than after this time. NERA suggested this lower historical volatility indicated that the MRP should have been lower before 1958 than after. NERA suggested that if the pre-1958 data were adjusted to reflect the volatility observed post-1958, then the historical estimates over the full period of over 100 years would support an MRP estimate above 6 per cent.⁸⁷¹

In the WACC review, the AER considered arguments for adjusting the historical data for unexpected or one-off events that could make the historical data 'unrepresentative'.⁸⁷²

In considering whether or not to make those adjustments, the AER considered, among other evidence, advice from Officer and Bishop. Reflecting on that advice, the AER stated:

...comments in Officer and Bishop (in their current advice to the JIA) substantially reflected these earlier views. In both cases, the authors argued against the proposed adjustments, arguing they are 'ad hoc' and may themselves be a source of bias.

...

Bishop argued that a lack of a well developed theory behind what drives the MRP makes events that might lead to bias in the historical data difficult to identify. Each set of authors also note that, except for Hathaway's acknowledgement of the relationship between the MRP and imputation

⁸⁶⁹ AER, Final decision: Aurora distribution determination, April 2012, section A.1.3.

⁸⁷⁰ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 7–9.

⁸⁷¹ NERA, *The market risk premium*, 20 February 2012, pp.13-20.

⁸⁷² The AER considered specific adjustments proposed by Hathaway, Hancock, and Officer and Bishop.

credits, only events that might bias the historical MRP upwards had been considered, and not events that might do the reverse.

The JIA and Officer and Bishop stated that their general position on adjustments was that a longer estimation period that includes both positive and negative shocks should be used rather than making 'ad hoc' adjustments to historical estimates.⁸⁷³

Given the lack of a well developed guiding theory, and the potential for the introduction of bias, the AER concluded in the WACC review that explicit adjustments should not be made to the historical data. This was in the context of 'unrepresentative' events in one or a few years of historical data. In contrast, NERA has, in effect, submitted that all of the data pre-1958 is 'unrepresentative'.⁸⁷⁴ While not exactly the same circumstances, the AER considers that similar reasoning is applicable in this case.

It may be that NERA is right, and that the pre-1958 data is, in effect, 'too low'. On the other hand, the AER is aware of other arguments that would suggest that data in the first half of last century is, in effect, 'too high'. For example, some authors have stated that the transactions costs of trading shares has decreased over time. As a result the (pre-transaction cost) required return by investors has decreased.⁸⁷⁵

The lack of a well developed theory behind what drives the MRP makes the AER cautious of excluding large periods of data on the basis that it is unrepresentative of a forward looking MRP. For this and the other reasons set out in chapter 10, the AER considers it is reasonable to take into account historical excess returns from each of the periods beginning in 1883, 1937 and 1958.

Further, as shown in chapter 7, the arithmetic average of historical excess returns over 1883-2011 and 1958-2011 (grossed up for a 0.35 value of distributed imputation credits) both result in a historical MRP of 6.1 per cent. Accordingly, even if the AER were to only rely on the post-1958 data this would not change the AER's position on the appropriate value of the MRP.

C.1.3 Survey evidence

WACC review

At the time of the SRI, the AER considered the following survey evidence to inform the value of the forward looking MRP:

- KPMG (2005) surveyed 33 independent expert reports on take over valuations from January 2000 to June 2005. It found that the MRP adopted in valuation reports ranged

⁸⁷³ AER, *Electricity transmission and distribution network service providers, Statement of regulatory intent on the revised WACC parameters (distribution)*, May 2009, pp.209-214.

⁸⁷⁴ NERA has also not explicitly adjusted the pre-1958 data, but rather made a conclusion on the basis of what that data would show if it were adjusted.

⁸⁷⁵ Siegel J., *The shrinking equity premium*, the journal of portfolio management fall 1999, p.13. For example, Siegel noted that lack of low cost index funds in the US prior to 1975 might overestimate the real returns. The AER understands the rising popularity of managed funds and the increasing use of online trading would have reduced the transaction costs in Australia. According to Siegel, if transaction costs are a factor which drives the MRP, then high transaction cost in the past indicates the long term historical MRP estimates that includes the data from early last century might be 'too high'.

from 6–8 per cent. KPMG reported that 76 per cent of survey respondents adopted an MRP of 6 per cent.⁸⁷⁶

- Capital Research (2006) found that the average MRP adopted across a number of brokers was 5.09 per cent.⁸⁷⁷
- Truong, Partington and Peat (2008) in the last quarter of 2004 surveyed chief financial officers, directors of finance, corporate finance managers, or similar finance positions of 365 companies included in the All Ordinaries Index as of August 2004. From the 87 responses received, 38 were relevant to MRP. They found 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.⁸⁷⁸

The AER noted that the above survey measures strongly indicated that an MRP of 6 per cent is by far the most commonly adopted value by market practitioners. However, these surveys were conducted prior to the onset of the GFC. Given the uncertainty surrounding the on-going impact of the GFC, the AER considered that the following two scenarios could explain the market conditions at the time:

- 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 was above the long-term MRP that previously prevailed.

Due to the uncertainty about the effects of the GFC on future market conditions, the AER exercised its judgment and departed from the previous consensus MRP estimate of 6 per cent and increased it to 6.5 per cent. This is despite other evidence such as survey measures which supported a forward looking estimate of 6 per cent.⁸⁷⁹

Developments since the WACC review

Following from the SRI final decision, new survey evidence has become available. The AER has considered this evidence in recent regulatory reviews. The latest surveys conducted after the on-set of the GFC indicate that the forward looking MRP expected to prevail has not changed. In fact, the survey evidence did not indicate a structural break in the MRP employed by market practitioners even at the height of the GFC. In chronological order, these surveys include the following:

- Bishop (2009) reviewed valuation reports prepared by 24 professional valuers from January 2003 to June 2008. It found that the average MRP adopted is 6.3 per cent and 75 per cent of these experts adopted an MRP of 6 per cent.⁸⁸⁰

⁸⁷⁶ KPMG, *Cost of capital – market practice in relation to imputation credits*, August 2005, p. 15.

⁸⁷⁷ Capital Research, *Telstra's WACC for network ULLS and the ULLS and SSS businesses – Review of reports by Prof. Bowman*, March 2006, p. 17.

⁸⁷⁸ Truong, G., Partington, G. and M. Peat, 'Cost of capital estimation and capital budgeting practices in Australia', *Australian Journal of Management*, Vol. 33, No. 1, June 2008, p. 155.

⁸⁷⁹ AER, *Final decision: WACC review*, 1 May 2009, pp. 221–225.

⁸⁸⁰ Bishop, S., *IERs - a Conservative and Consistent Approach to WACC Estimation by Valuers*, Value Advisor Associates, 2009.

- Fernandez (2009) surveyed university finance and economic professors around the world in the first quarter of 2009. The survey received 23 responses from Australia and found that the required MRP used by Australian academics in 2008 ranged from 2–7.5 per cent with an average of 5.9 per cent.⁸⁸¹
- Fernandez and Del Campo (2010) surveyed analyst around the world and in April 2010. The survey received 7 responses from and 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.⁸⁸²
- A further survey by Fernandez et al (2011) in April 2011 reported that average MRP used by 40 Australian respondents ranged from 5–14 per cent, with an average of 5.8 per cent.⁸⁸³
- Asher (2011) surveyed 2,000 members of the Institute of Actuaries of Australia. Asher reported that 33 out of a total of 58 Australian analysts responded to the survey expects the 10 year MRP to be between 3 to 6 per cent. The most commonly adopted MRP value is 5 per cent. The report also illustrated that expectations of an MRP much in excess of 5 per cent were extreme.⁸⁸⁴

The key findings of the surveys are summarised below.

Table C.1 Results of relevant MRP surveys

	Numbers of responses	Mean	Median	Mode
KPMG (2005)	33	7.5%	6.0%	6.0%
Capital Research (2006)	12	5.1%	5.0%	5.0%
Truong, Partington and Peat (2008)	38	5.9%	6.0%	6.0%
Bishop (2009)	27	NA	6.0%	6.0%
Fernandez (2009)	23	5.9%	6.0%	n/a
Fernandez and Del Campo (2010)	7	5.4%	5.5%	n/a
Fernandez et al (2011)	40	5.8%	5.2%	n/a
Asher (2011)	49	4.7%	5.0%	5.0%

For the surveys under consideration, the most commonly used MRP was 6 per cent with an average of 5.8 per cent across all surveys. The AER has placed some weight on this result to

⁸⁸¹ Fernandez, P., *Market Risk Premium used by Professors in 2008: A Survey with 1400 Answers*, IESE Business School Working Paper, WP-796, May 2009, p. 7.

⁸⁸² Fernandez, P. and J. 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.

⁸⁸³ Fernandez, P., Arguirreamalloa, J. and L. Corres, *Market Risk Premium used in 56 Countries in 2011: A Survey with 6,014 Answers*, IESE Business School Working Paper WP-920, May 2011, p. 3.

⁸⁸⁴ Asher, A., 'Equity Risk Premium Survey – results and comments', *Actuary Australia 2011*, July 2011, Issue 161, pp. 13–14.

inform the forward looking MRP in recent regulatory reviews including, most recently, the final decision for 2011-15 Envestra gas distribution access arrangement review.

The final decision for Envestra was appealed and the issue regarding the use of survey evidence to inform the value of MRP was brought before the ACT.⁸⁸⁵ Although the Tribunal did not make a ruling on this issue, it made the following comments:

Surveys must be treated with great caution when being used in this context. Consideration must be given at least to the types of questions asked, the wording of those questions, the sample of respondents, the number of respondents, the number of non-respondents and the timing of the survey. Problems in any of these can lead to the survey results being largely valueless or potentially inaccurate.

When presented with survey evidence that contains a high number of non-respondents as well as a small number of respondents in the desired categories of expertise, it is dangerous for the AER to place any determinative weight on the results.

NERA also raised questions over the use of survey evidence. Specifically, NERA stated that:

- the surveys that the AER cites typically do not explain how those surveyed were chosen
- a majority of those surveyed in the surveys the AER cites did not respond
- it is unclear what incentives were provided to individuals contacted by the surveys that the AER cites to ensure that respondents would provide accurate responses
- it is unclear whether respondents are supplying estimates of the MRP that use continuously compounded or not continuously compounded returns
- it is unclear what risk-free rate respondents use, and
- is it unclear how relevant some of the surveys that the AER cites are because of changes in market conditions since the time at which the surveys were conducted.⁸⁸⁶

In light of the Tribunal's comments, the AER engaged McKenzie and Partington to apply a set of criteria that are consistent with those highlighted by the Tribunal to the surveys considered in this final decision. The main findings of the McKenzie and Partington assessment and the AER's own review are set out below. These findings similarly apply to much of the comments from NERA.

Timing of the survey

The timing of the surveys is reasonably clear. They ranged from periods prior to the onset of the GFC (over 2000 to 2008), to the latest survey which was conducted in February 2011, around 2 to 3 years after the height of the GFC. Comparison of survey results over different time periods will provide some information on the likelihood of a structural break in the MRP following from the on-set of the GFC.

⁸⁸⁵ Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT3*, 11 January 2012, paragraphs 150–154.

⁸⁸⁶ NERA, *The market risk premium*, 20 February 2012, p. 31.

Sample of respondents

The target population for the surveys listed above are senior financial managers (CFOs), expert valuers, actuaries, and finance academics. For this reason, the AER considers that the target populations selected by the surveys are in a position to make informed judgements about the MRP.⁸⁸⁷

Wording of survey questionnaires

The quality of the wording of the questionnaires is essential to control bias and improve accuracy of survey results. The AER accepts McKenzie and Partington's view that there is a subjective element in judging whether the given wording in a survey is adequate and that it often relies on the quality of the authors. However, the AER agrees that it can be expected that confidence can be enhanced when the work is published in a refereed academic journal, or when the survey is repeated. In the former case, the work has been subject to peer review. In the latter case, a stable set of questions allows comparisons of response through time. With repeated surveys, the observed changes through time are less susceptible to issues in the wording of the questions. Furthermore, in the event of significant problems with wording and interpretation of questions by respondents this may be detected and corrected over time.⁸⁸⁸ The AER notes that most of the surveys considered here are published in refereed journals and/or repeated through time. Therefore, on balance, the AER is reasonably confident about the wording in the survey questionnaires.

Adjustment for imputation credits

The AER acknowledges that apart from the Asher (2001) survey, in which 27 out of 49 respondents indicated that they have made adjustments to their MRP estimates for imputation credits, other survey evidence suggests that imputation credit are not typically allowed for. It is also unclear the extent of adjustments made to the MRP estimate in other surveys considered here. The AER acknowledge that this uncertainty around the extent survey respondents have included imputation credits is a limitation of surveys as a measure, and has taken this into account in the interpretation of the numeric results on MRP from survey evidence.

Survey response rate and representativeness, and non-response bias

A sufficient level of response rate is important for survey evidence, but it is a subjective judgement on what constitutes a sufficiently large sample. McKenzie and Partington suggests that a sample size of around 30 is statistically sufficiently large and therefore a representative sample of 30 respondents is expected to be adequate.⁸⁸⁹ The AER notes that most of surveys considered here received responses of around 30.⁸⁹⁰ However, the AER agrees with McKenzie and Partington's view that although the numbers of response in a survey is important, the main concern is the presence of representativeness and non-response bias. That is whether there might be a reason for non-respondents to systematically favour a higher or lower MRP than the respondents to the survey.

⁸⁸⁷ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 17.

⁸⁸⁸ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 17–18.

⁸⁸⁹ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 17–18.

⁸⁹⁰ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 18.

A direct assessment of response bias is difficult as by definition the responses of the non-respondents are unknown. One investigation technique McKenzie and Partington use to address this issue is the triangulation of survey evidence. The idea behind this is that suppose surveys under consideration systematically understate the market risk premium due to some form of bias. This may include non-response bias, or some other form of response bias, or due to the target population of the survey, or the way the survey was conducted. Downward bias might be the case for a specific survey, although there is no compelling demonstration of it. However, it is much less likely that this would be a consistent problem across surveys with diverse methods and different target populations.

Applying this technique to investigate the representativeness and non-response bias in the surveys, McKenzie and Partington found that the Australian surveys conducted using different methods and different target populations all support a MRP of about 6 per cent.⁸⁹¹ For example, for surveys prior to the high of the GFC, KPMG (2005) survey looks at the market risk premiums used in expert reports. The representativeness bias may arise under this survey method because the same expert might have produced many reports and thus that one expert's views are overweighted. Bishop (2009) addresses this problem by surveying experts' reports and collecting the MRP by expert, so each expert's opinion is equally weighted. Since both studies suggest the MRP used by most experts is 6 per cent, this triangulation leads to greater confidence in the results.⁸⁹²

The results from KPMG (2005) and Bishop (2009) surveys combined with survey results from Fernandez (2011) and Asher (2011), which both indicates that the MRP used by analysts and actuaries in Australia is around 6 per cent, also provides triangulation of the survey evidence that the MRP has not increased following the GFC.⁸⁹³

Conclusion on survey evidence

For the reasons set out above, McKenzie and Partington concluded that despite the potential problems, it is appropriate to place significant weight to the survey evidence.

The AER carefully examined McKenzie and Partington's findings on the advantages and the potential problems of survey evidence against the criteria noted by the Tribunal. On balance, the AER accepts McKenzie and Partington conclusion and considers the survey evidence reasonably met the criteria.

Based on its own review and the advice from McKenzie and Partington, the AER considers that survey based estimates of the MRP are relevant for consideration to inform the forward looking MRP. Survey estimates provide some indication that expectations of the forward looking long-term MRP have not been affected by the GFC. They also show that the likelihood of a step change in MRP of the type considered at the time of the WACC review has reduced. Moreover, this evidence supports the view that a forward looking MRP of 6 per cent is the best estimate in the current circumstances.

⁸⁹¹ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 20.

⁸⁹² McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 19.

⁸⁹³ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 20.

C.1.4 DGM estimates

The AER has considered submissions advocating the use of DGM inferred estimates of the MRP. Both Aurora and NERA noted that applying a risk free rate of 4.28 to the assumptions used by the AER in the draft distribution determination would support a DGM based MRP estimate above 6 per cent.⁸⁹⁴ NERA further submitted that the current Bloomberg and IBES forecasts support DGM based MRP estimates above 6 per cent and these estimates are conservative as they use a forecast of long-run DPS growth number.⁸⁹⁵

As discussed in attachment 7, the AER considers the DGM based estimates of the MRP are highly sensitive to the assumptions made. This view is supported by McKenzie and Partington in their December 2011 MRP report:

Clearly valuation model estimates are sensitive to the assumed growth rate and a major challenge with valuation models is determining the long run expected growth rate. There is no consensus on this rate and all sorts of assumptions are used: the growth rate in GDP; the inflation rate; the interest rate; and so on. A potential error in forming long run growth estimates is to forget that this growth in part comes about because of injections of new equity capital by shareholders. Without allowing for this injection of capital, growth rates will be overstated and in the Gordon model this leads to an overestimate of the MRP.⁸⁹⁶

The AER considers that DGM based analysis of the MRP can provide some information on the expected MRP. However, due to the sensitivity of results to input assumptions in the model, the DGM analysis should be limited to providing a general point of reference for assessing the reasonableness of MRP. This is consistent with McKenzie and Partington's recommendation that little weight should be attached to the use of implied MRP in regulatory determinations.⁸⁹⁷

The AER has also considered the DGM estimates proposed by Capital Research (CR). CR developed its own DGM analysis and estimated DGM implied MRP in the range of 6.6 to 7.5 per cent. In estimating this range, CR assumed a compound average growth rate of 7 per cent based on analysts' forecast, and a theta value of between 0 and 0.5.⁸⁹⁸ As discussed above, the AER considers the DGM analysis is very sensitive to the assumptions made. This is supported by CR's own analysis - an increase of 0.5 in the theta assumption translates to a 0.8 to 1.2 per cent increase in the implied MRP.⁸⁹⁹ The DGM assumes growth at a constant rate in perpetuity. The AER considers that analysts' forecast is often based on short to medium terms and therefore using analysts' forecast growth rate is likely to result in an upward bias in the DGM implied MRP estimate. McKenzie and Partington further noted in their December 2011 MRP report:

Since analysts only cover a subset of firms, whether we get a representative estimate for the market is an open question. Another problem is that analyst's forecasts are known to be biased

⁸⁹⁴ Aurora, Revised proposal—Supporting information: Return on capital (WACC), January 2012, p. 23.

NERA, *The market risk premium*, 20 February 2012, p.29.

⁸⁹⁵ NERA, *The market risk premium*, 20 February 2012, pp.21-28.

⁸⁹⁶ McKenzie, M. and G. Partington, Equity market risk premium, 21 December 2011, p. 25.

⁸⁹⁷ McKenzie, M. and G. Partington, Equity market risk premium, 21 December 2011, p. 27.

⁸⁹⁸ CR, *Forward estimate of the market risk premium: update*, February 2012, pp.19-23.

⁸⁹⁹ CR, *Forward estimate of the market risk premium: update*, February 2012, Table 2, p.21.

(generally upwards) and subject to gaming (see Scherbina, 2004, and Easton and Sommers, 2006).⁹⁰⁰

C.1.5 Conditional estimates of the MRP

This section discusses the various proposals for estimating a 'conditional MRP', that is, an MRP estimate that is conditioned on (determined by) the value of particular financial market indicators, labelled conditioning variables. It focuses on the validity and relevance of this approach to the determination of the MRP. The individual merits of the three financial market indicators proposed as conditioning variables—implied volatility, dividend yields and relative debt spreads—are discussed after this section.

CEG suggested that the AER presumes the MRP is stable over time.⁹⁰¹ The AER considers such an assertion is inappropriate as the AER acknowledges that the MRP will vary and considers the prevailing market conditions that are relevant at each regulatory decision.⁹⁰² This overarching methodology has been called an 'implicit conditional CAPM', because the conditioning variables are not set out by the AER in the manner of an explicit formula.⁹⁰³ Rather than mechanistically determine the MRP on the basis of three short term financial market indicators, the AER considers the full range of qualitative and quantitative evidence available across numerous different areas. In this broader context, the AER does give weight to the three variables put forward by SFG (implied volatility, dividend yields, relative debt spreads) in accordance with their relevance to the 10 year, forward looking MRP.

The AER does not consider that SFG's conditional MRP approach is a relevant basis to estimate a forward looking 10 year MRP. This is because there is insufficient evidence to establish a quantifiable relationship between the three conditioning variables and the MRP. Though SFG cites several academic papers as support for this general approach, broader consideration of the academic literature reveals that the merits of conditional MRP models are disputed. This point is echoed by McKenzie and Partington who state:⁹⁰⁴

We do not claim this evidence is conclusive, but it does indicate the ongoing question mark over predictive regressions. Until this is resolved we consider it premature to adjust the MRP using conditioning variables.

Further, even general results in favour of a conditional MRP would not necessarily apply to the particular implementation proposed by SFG. As detailed later in this appendix, there are specific problems with the conditioning variables chosen, the selective application of data and the interpretation of those results.

In a report for the Victorian electricity businesses, SFG stated that using the longest data series of historical excess returns provided an unconditional MRP estimate.⁹⁰⁵ Rather than adopt this unconditional MRP, SFG stated that current financial market indicators provided

⁹⁰⁰ McKenzie, M. and G. Partington, Equity market risk premium, 21 December 2011, p. 26.

⁹⁰¹ CEG, *A report on the cost of equity in Aurora's revised regulatory proposal*, February 2012, p.8.

⁹⁰² In this instance, the relevant market conditions are those expected to prevail across the 10 years commencing at the start of the access arrangement period.

⁹⁰³ AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 171.

⁹⁰⁴ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 25.

⁹⁰⁵ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 26.

information which allowed the derivation of a conditional MRP estimate. This was a preferable estimate because the MRP estimate would then align with current market conditions.⁹⁰⁶

SFG suggested that the distribution of unconditional MRP estimates have a mean of 6 per cent with a standard deviation of 1.5 per cent.⁹⁰⁷ The distribution of conditional MRP estimates is then derived by taking the expected value of the unconditional MRP conditioned on latest point estimate of conditioning variables. Citing several academic papers, SFG stated that conditioning variables explain about 50 per cent of variation in excess returns.⁹⁰⁸ Based on this assumption, SFG derived the distribution for the conditional MRP as a mean of 6 per cent with a standard deviation of 1 per cent.

Three financial market indicators were used by SFG as conditioning variables: implied volatility, dividend yields, and relative debt spreads.⁹⁰⁹ SFG estimated that on average, these conditioning variables were one standard deviation above their long run values. Hence, the conditional MRP proposed by SFG was one standard deviation (1 per cent) above the mean (6 per cent), for an MRP of 7 per cent.⁹¹⁰

Though the MRP varies, the AER considers that there is no consensus on which factor or factors could be used to predict this variation, nor on the appropriate mathematical representation of such a relationship. SFG stated that the conditioning variables could explain 50 per cent of the variation in excess returns, and referenced studies by Fama and French (1988, 1989) and Kleim and Stambaugh (1986).⁹¹¹ The AER considers that this interpretation does not accurately represent the academic literature on this subject. While it is true that some regressions studies have found conditioning relationships of this magnitude,⁹¹² many find no statistically significant relationship at all. Further, even those results that seem (at face value) to present a strong relationship have been questioned by other academics, concerned that these might be spurious regressions with no underlying relationship at all.

This view is supported by the conclusion reached by McKenzie and Partington on this matter:⁹¹³

there are good reasons for regulators to use the unconditional market risk premium. Not least of which is the impossibility of knowing what that conditional market risk premium should be. In our opinion, therefore, there needs to be a very compelling case to switch to a conditional MRP. Also, as the required adjustment is uncertain, a switch to a conditional risk premium takes us onto dangerous ground. Consequently, while it takes a compelling case to switch to a conditional

⁹⁰⁶ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 2–3, 26–30.

⁹⁰⁷ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 26.

⁹⁰⁸ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 27–28.

⁹⁰⁹ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 7–13,

⁹¹⁰ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 28–30.

⁹¹¹ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 7, 27.

⁹¹² For clarity, none of the cited academic papers actually implement the three conditioning variables in the manner suggested by SFG.

⁹¹³ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 25.

MRP, in our opinion much less evidence is required to justify a retreat to the safer ground of the unconditional MRP.

A secondary concern is the volatile nature of the conditional MRP generated in the manner suggested by SFG. The conditioning variables are short term financial market indicators and vary substantially over short periods. As a result, the conditional MRP will also substantially over a period of months. The AER considers that the underlying 10 year forward looking MRP is unlikely to move so dramatically in a short period of time. The core of this problem is that the term of the conditional MRP is intrinsically linked to the term of the conditioning variables. Such an approach does not aid regulatory consistency.

A final point concerns the choice of baseline averaging period. The conditional MRP assessment relies upon the comparison of the current values for each conditioning variable against their 'baseline' value—usually defined as the long run average. Hence, the selection of a particular long run averaging period can have a material impact on the outcome of the analysis. The clear theoretical preference is for an averaging period that matches the entire estimation period for the unconditional MRP underlying the approach. Unfortunately, data limitations mean it is often not possible to have such an extensive history for these conditioning variables, in which case the longest possible period should be selected.

Across recent reports, the conditioning variables presented by SFG have been relatively high. Table C.2 summarises the SFG results by presenting one key figure for each variable, the standardised difference between the current value and the long run average. 'Standardised' means that the difference is expressed in terms of the standard deviation for that data series. For example, a standardised value of +1.5 means that the current value is above the average value by 1.5 times the standard deviation for that series.

Table C.2 Conditioning variables presented by SFG in recent reports

SFG report date	Implied volatility	Dividend Yield	Relative debt spread
March 2011	+0.80	+0.44	+0.87
October 2011	+2.17	+1.59	+0.77
February 2012	+2.17	+1.02	+1.95

Source: SFG.

In the latest SFG report, the three conditioning variables are all more than one standard deviation above their mean. On this basis, SFG proposed that the conditional MRP should be one standard deviation above its baseline value of 6 per cent.

As set out in the individual sections of the appendix, the AER considers that the implied volatility and dividend yield figures should use updated data and a baseline that encompasses the longest available data series. The AER considers that there is no reasonable data available for the relative debt spread; but presents the uncorrected SFG figures for comparative purposes. Table C.3 shows the standardised difference between the

Table C.3 Conditioning variables after correction

Data period	Corrected implied volatility	Corrected dividend yield	Uncorrected relative debt spread
To 15 March 2011	+0.10	+0.10	+0.87
To 23 September 2011	+2.25	+1.17	+0.77
To 31 January 2012	-0.12	+0.53	+1.95
To 31 March 2012	-0.48	+0.46	n/a

Source: SFG figures provided to the AER, Bloomberg, AER analysis

Notes: The dates of the first three rows coincide with the data presented in the three SFG reports. The Datastream data on the relative debt spread (used by SFG) is not available to the AER and so cannot be updated. The Datastream data on dividend yields is not available to the AER, but an alternative series from Bloomberg has been used (correlation of 0.97).

As is evident in table C.3, based on recent data, neither the implied volatility nor the dividend yield figures differ substantially from their long run average. The implied volatility series is below the long run mean. Even if the relative debt spread figure (1.95 standard deviations above the mean) were reliable, there is no consistent pattern across the conditioning variables.

The AER considers that the conditional MRP approach is not reliable and does not apply weight to this approach. However, even if weight were to be given to this approach, it would support an MRP of 6 per cent as correct.

C.1.6 Implied volatility

Implied volatility is calculated from observing the price of put or call options over a broad share market index, such as the S&P/ASX 200. Applying a mathematical formula allows the calculation of the level of market volatility expected by market participants over the life of the underlying options.⁹¹⁴ Hence, the term of the implied volatility will accord with the option term—usually three months, but ranging between one year and one month.⁹¹⁵

Both CEG and SFG stated that higher implied volatility indicates higher risk and consequently a higher market risk premium.⁹¹⁶ In the WACC attachment, the AER sets out the reasons why it is not reasonable to directly link these implied volatility measures to the 10 year forward looking MRP. In brief, the relationship between the two is tenuous and encompasses several contested assumptions that on current evidence cannot be resolved.

As further background on this point, McKenzie and Partington set out several key reasons why they consider that implied volatility is not a reliable technique for estimating the MRP:

⁹¹⁴ The Black-Scholes option pricing model is most often used, but other methods are possible.

⁹¹⁵ To clarify, options are sold with different maturities beyond this range, but the implied volatility calculations are found only at these short term horizons.

⁹¹⁶ CEG, *A report on the cost of equity in Aurora's revised regulatory proposal*, February 2012, pp. 6–7; SFG, *SFG, MRP*, October 2011, pp. 9–11.

- Merton (1980) used a volatility modelling approach to estimating the MRP. Merton pointed out that the implementation of this approach should be via a time series regression model of a return variable on volatility with non-negativity restrictions on the slope coefficient and corrections for heteroscedasticity. Merton tested three formulations of this model using U.S. data, and found that the approach added little to using a simple historical average MRP.⁹¹⁷
- While implied volatility is a reasonable proxy for the short term expectations of the market, they may not provide any real forecast of future volatility. For example, Carr and Wu (2003) show that implied volatilities are very similar across different maturities. Moreover, they show that the shape of the implied volatility smirk does not flatten out for longer maturities but stays similar to that for short maturities. This does not accord with the expectations that the true volatilities are expected to change over time.⁹¹⁸
- It is questionable that whether the implied volatility during financial crises is a good proxy for the rational market expectations of longer term returns. In another words, it is unclear that whether the marginal participants in the options market during a crisis are likely to be the marginal participants during more usual market conditions.⁹¹⁹
- Certain options contracts are known to trade at a premium in the market, in which case the implied volatility estimates will be overstated.⁹²⁰
- The non-stationarity problem is often provided as an argument in favour of using a long time series for MRP estimation. Proponents of this view maintain that a shorter time series of more relevant data will have a standard deviation that is too high to provide useful estimates of the MRP. It seems somewhat inconsistent to argue in favour of the use of adjusted current market estimates of volatility when they exhibit the same high level of volatility.⁹²¹

The WACC attachment also sets out that, even if implied volatility were directly related to the MRP, it would not support an estimate above the long run average (6 per cent). The current level of implied volatility is below the long run average.

In several recent regulatory processes, SFG has submitted arguments for an elevated MRP based on implied volatility analysis.⁹²² In general, SFG updates the data each time to show recent market developments. Figure C.1 shows the dates of three recent reports by SFG, together with the implied volatility data included by SFG in each report.

⁹¹⁷ McKenzie, M. and G. Partington, *Report on MRP*, December 2011, p. 32.

⁹¹⁸ McKenzie, M. and G. Partington, *Report on MRP*, December 2011, p. 32.

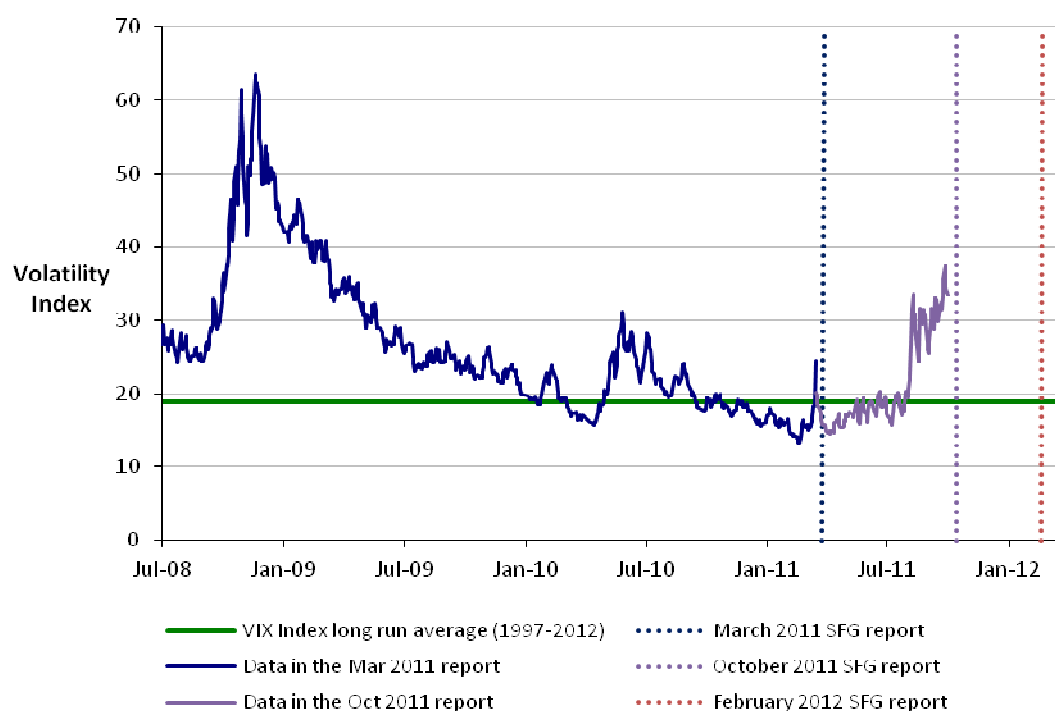
⁹¹⁹ McKenzie, M. and G. Partington, *Report on MRP*, December 2011, p. 32.

⁹²⁰ McKenzie, M. and G. Partington, *Report on MRP*, December 2011, pp. 32–33.

⁹²¹ McKenzie, M. and G. Partington, *Report on MRP*, December 2011, p. 33.

⁹²² SFG, *Issues affecting the estimation of MRP: Report for Envestra*, 21 March 2011, pp. 9–10; SFG, *MRP*, October 2011, pp. 9–11, 23–25; SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 7–9, 28–29.

Figure C.1 Implied volatility data and SFG report dates



Source: SFG, Issues affecting the estimation of MRP, Report for Envestra, 21 March 2011, pp. 9–10; SFG, Market risk premium, Report for APT Petroleum Pipelines Ltd, 11 October 2011, pp. 9-11; SFG, Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates, Report for the Victorian electricity distribution businesses, 20 February 2012, pp. 7–9; Underlying data file provided by SFG; AER analysis.

Notes: The March 2011 SFG report includes a sudden uptick ('spike') in implied volatility (to around 24.5) just before the reported data ends (15 March). This spike has been removed by SFG in its subsequent reports, and does not exist in current data downloaded from Bloomberg.

There is necessarily a short practical delay between the observation of data and the completion of a report. The first report, dated March 2011, included data up until 15 March 2011.⁹²³ The second report, dated October 2011, included data up until 23 September 2011. The most recent report, dated 20 February 2012, does not update the implied volatility series, but only repeats the data from the preceding report (ending 23 September 2011).

Hence, the latest report by SFG breaks the pattern of updating the implied volatility analysis to include the latest available data. Given the evident variability in this measure, use of data that was five months old would appear to be a concern. SFG has previously stated that the latest available data should always be used to estimate parameters.⁹²⁴

The omission of updated data is even more puzzling in the context of the two other financial market indicators presented by SFG: dividend yields and relative debt spreads. In both cases, the March 2011 report included data up to February 2011, and the October 2011 report

⁹²³ This date was inferred from a graph and so may be out by one or two days.

⁹²⁴ SFG, *The required return on equity commensurate with prevailing conditions in the market for funds: Response to draft decision: Report prepared for Envestra*, 23 March 2011, p. 3 (see also p. 12).

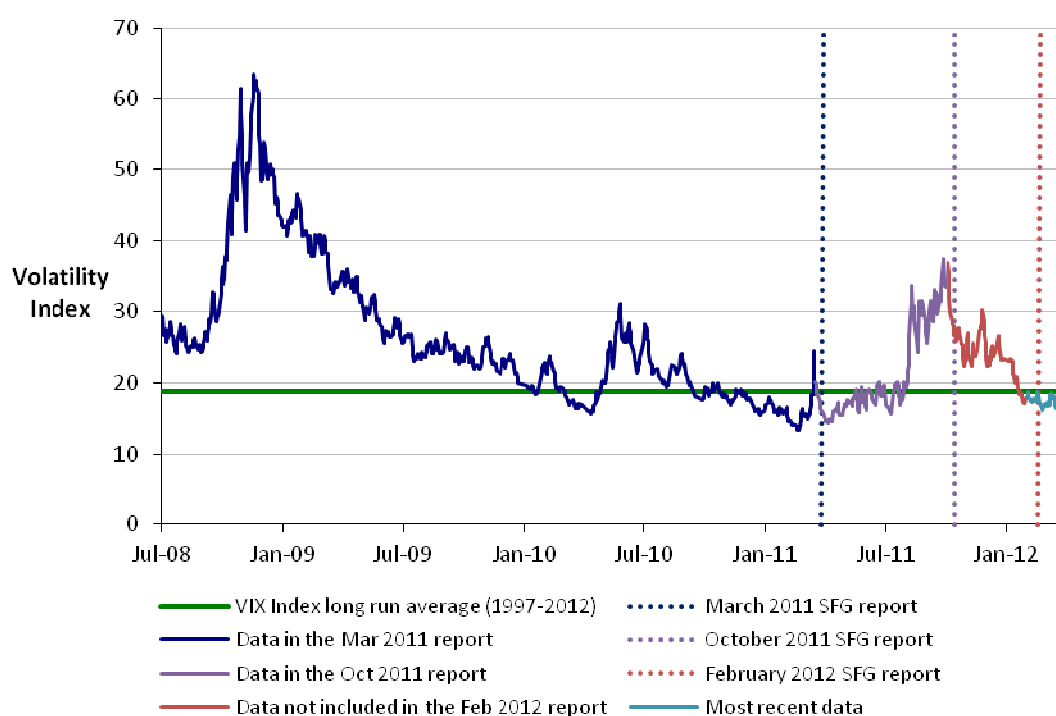
included data updated to September 2011.⁹²⁵ However, the February 2012 report updated both the dividend yield data and the relative debt spread data to 31 January 2012.⁹²⁶ This updated data was presented alongside the out-of-date implied volatility data.⁹²⁷

All the SFG reports included a declaration that they adhered to the Federal Court Guidelines for Expert Witnesses:⁹²⁸

In preparing this report, I have made all the enquiries that I believe are desirable and appropriate and no matters of significance that I regard as relevant have, to my knowledge, been withheld from the Court.

Figure C.2 highlights the implied volatility data series that was not submitted by SFG in its February 2012 report.

Figure C.2 Implied volatility series showing data omitted by SFG



Source: As per previous figure; Bloomberg; AER analysis.

Notes: As per previous figure, this graph shows an implied volatility spike in mid March 2011 that was later removed by SFG.

⁹²⁵ SFG, *Issues affecting the estimation of MRP: Report for Envestra*, 21 March 2011, pp. 11–12; and SFG, *MRP*, October 2011, pp. 11–14, 23–25.

⁹²⁶ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 10–13, 28–29.

⁹²⁷ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 28–29.

⁹²⁸ SFG, *Issues affecting the estimation of MRP: Report for Envestra*, 21 March 2011, p. 19; SFG, *MRP*, October 2011, p. 3; SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 2.

The AER considers that this was a significant omission from the February 2012 report. SFG's conditional MRP estimate relied upon three financial market indicators. One of those, implied volatility, was reported by SFG as being very high relative to its long run average (2.17 standard deviations above the mean).⁹²⁹ In fact, this indicator was slightly below its long run average.

A final point concerns the choice of baseline averaging period. The conditional MRP assessment relies upon the comparison of the current values for each conditioning variable against their 'baseline' value—usually defined as the long run average. Hence, the selection of a particular long run averaging period can have a material impact on the outcome of the analysis. The clear theoretical preference is for an averaging period that matches the entire estimation period for the unconditional MRP underlying the approach. Unfortunately, data limitations mean it is often not possible to have such an extensive history for these conditioning variables, in which case the longest possible period should be selected.

In the February 2012 report, SFG selects the period post 2000 as its long run averaging period. No justification is provided for starting the average at this point. The available data goes back to 1997, and including the longer period would raise the baseline average. In turn, this would decrease the conditional MRP estimate in all scenarios.

C.1.7 Dividend yields

In the context of a conditional MRP estimate, dividend yield refers to the forecast dividends (or other distributions) for all shares in a broad based market index divided by the current price of all shares in that index. The dividend forecasts are generally aggregated by a data provider from reports by different equity analysts, with the forecast horizon generally one year. Hence, the dividend yield is a simple indicator of the expected return to equity holders through dividends (though with no allowance for capital gains/losses or imputation credits) over the next year. The consideration of dividend yields as a direct MRP indicator should be distinguished from the use of dividend growth models (though the two are closely related).⁹³⁰

SFG stated that higher dividend yields indicate a higher market risk premium.⁹³¹ This claim was based on several academic studies that found a statistically significant relationship when using dividend yields to predict equity market returns.⁹³² The intuitive explanation was that when dividend yields were high, a given set of cash flows was being discounted at a higher rate, indicating a higher MRP. SFG estimated that at 31 January 2012, the dividend yield for the Australian share market was 4.69 per cent, elevated above the normal level (1.02 standard deviations above the mean) supporting an MRP of 7 per cent.⁹³³

⁹²⁹ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 29.

⁹³⁰ More specifically, the DGM includes consideration of changes in dividends beyond the immediate dividend forecast horizon.

⁹³¹ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 12.

⁹³² SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 7.

⁹³³ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 29.

The primary reason why the AER does not use the dividend yield approach to inform its MRP estimate is that there is insufficient evidence of a relationship between the two. The AER acknowledges the three reports cited by SFG which did report this finding.⁹³⁴ However, a broader consideration of the academic literature, as undertaken by McKenzie and Partington, does not indicate that this is a statistically reliable relationship.⁹³⁵ The AER agrees with the conclusion of McKenzie and Partington on this matter.⁹³⁶

SFG presents the dividend yield as a conditioning variable as though it were established fact. In contrast, in our main report we begin by excluding consideration of predictive models based on dividend yield. This is because in our view, this is still a developing area of research, rather than a well developed practical tool. We are not alone in this view as it is shared by others such as Dimson, Marsh and Staunton (2011), who are leading scholars in the area of the MRP.

The AER considers that the underlying mechanism relating dividend yields and the MRP (as presented by SFG) is not persuasive. SFG appears to overlook a number of other factors that could result in a higher observed dividend yield even where the MRP was unchanged (or lower).⁹³⁷ The forecast horizon for the dividends is short (generally one year); so a reduction in expected dividends beyond this point will result in a lower price and a higher dividend yield. That is, a change in expected cashflow (not the discount rate or MRP) explains the result. This point is explained by McKenzie and Partington.⁹³⁸ The dividend yield calculation takes no account of expectations concerning capital gain or loss. Hence, a change to expect relatively more of the total return from dividends instead of capital appreciation would also result in a higher dividend yield. This would occur even if the MRP was unchanged.

Finally, as with the other conditioning variables, the assessment of a higher-than-average dividend yield is predicated on an accurate assessment of exactly what the baseline figure should be. SFG calculates their long run average using data from 2000 onwards, but provides no justification for the use of this time period.⁹³⁹ In this instance, the relevant data series is available back to 1973.⁹⁴⁰ Using the longer data series would result in a higher baseline dividend yield. In turn, this would reduce the extent to which the current dividend yield was above the average and so support a lower MRP (relative to that proposed by SFG).

C.1.8 Debt yield spread

The AER has review the use of debt yield spread to inform the forward looking MRP. The argument behind this is that the difference between an index of the yield to maturity on BBB-rated bonds and a corresponding index of AAA-rated bonds proxies for credit or default risk.

⁹³⁴ Fama and French (1988, 1989) and Keim and Stambaugh (1986); see also Cochrane (2011) cited by McKenzie and Partington.

⁹³⁵ For example, papers by Stambaugh (1999); Fisher and Statman (2000); Goyal and Welch (2003); Armitage (2011), Dimson, Marsh and Staunton (2011); Jun, Gallagher and Partington (2011); and Min (2011). Papers cited in McKenzie, M. and G. Partington, *Report on MRP*, December 2011, p. 4; and McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 13–14, 23–25.

⁹³⁶ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, p. 23.

⁹³⁷ Other techniques build on the dividend yield approach in an attempt to address these shortcomings. The DGM projects dividend movements beyond the immediate dividend forecast horizon. The SFG 'market based assessment' using dividend yields combines the dividend yield with a forecast for capital gain/loss.

⁹³⁸ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 12–13.

⁹³⁹ SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, p. 12.

⁹⁴⁰ That is, the data series used by SFG and provided by them to the AER commences at this point.

During recessions, this debt yield spread widens, commensurate with an increase in risk premiums generally which implies a higher risk premium for equity.⁹⁴¹

The AER considers that a direct comparison of yield on debt and the MRP is problematic. This is supported by M&P's review and the reasons are as follows⁹⁴²

- M&P expects that the widening credit spreads during the GFC were substantially driven by increasing concern about the risk of default and this concern dries up the liquidity in debt markets. Thus, it was a combination of default premiums and liquidity premiums that drove up returns in debt markets.
- As a consequence of the GFC it might reasonably be expected that the default risk component of the credit spread increased. Consequently, it is expected that much of the change in debt yields during and consequent to the GFC is due to a changed assessment of default risk.
- A key element of the GFC was increasing credit risk, with a widespread perception that default risk had increased sharply. Consequently, the expected cash flow on risky debt declined, which caused the price of the debt to fall. Since the yield is calculated on the promised cash flow relative to the price, the yield on risky debt went up and the credit spread widened. This would have happened even if there was no change in the MRP, or debt betas.
- Increase in credit spreads due to increased default risk does not automatically require a shift in the MRP. It is important point to note that the MRP is an expected return and the yields on debt are a promised return. The promised return is only the same as the expected return for debt where there is no default risk. For all other debt the promised return is higher than the expected return. Because the debt yield and the MRP measure different things, effectively they are measured in different dimensions, they are not constrained to move in a similar fashion and comparisons between them can be misleading.

Similarly the AER noted CEG's view that finance theory predicts a higher DRP will be associated with a higher MRP, therefore a more than 2 per cent increase in the MRP is required.⁹⁴³ As noted above, the AER considers a direct comparison of debt risk premium and equity risk premium is problematic.

The AER further noted that it is not impossible that expected return on a stock could be less than the yield on its debt contrary the claim by APTPPL's consultant SFG.⁹⁴⁴ This is because:⁹⁴⁵

- An increase in default risk will show up in higher promised yields on debt and will likely also show up as a reduction in share prices as expected cash flows to equity are likely to be revised downwards. However, there need not necessarily be any change in the MRP applied to those equity cash flows.

⁹⁴¹ SFG, *MRP*, October 2011, p. 11; See also CEG, *A report on the cost of equity in Aurora's revised regulatory proposal*, February 2012, pp.5-6.

⁹⁴² See McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 21–23.

⁹⁴³ CEG, *A report on the cost of equity in Aurora's revised regulatory proposal*, February 2012, p.6.

⁹⁴⁴ SFG, *MRP*, October 2011, p. 13.

⁹⁴⁵ McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 21–23.

- To make the debt yield and the MRP comparable the promised return on debt must be converted to an expected return by adjusting the promised cash flows to debt holders for the probability of default. For highly rated firms in normal times the promised and expected returns are not much different, particularly at shorter maturities. However, for lower rated debt, in bad times and for longer maturities the difference between the expected and promised cash flows can be substantial. The more so during the GFC when confidence in credit ratings was likely to have been somewhat shaken. Indeed, consequent to the GFC it is possible that the expected return on a stock could be less than the yield on its debt. This would be an unusual situation, but it would not be unreasonable provided that after adjusting for default risk the expected return on the debt was less than the expected return on the stock.
- For these reasons, M&P recommend and the AER accepts that given there is no well developed and reliable way to isolate and quantify the exact relationship between changes in debt yield spread and the MRP, little weight should be placed on this evidence when determining the MRP.⁹⁴⁶

C.2 Equity beta

This appendix sets out further reasons for the AER's draft decision on the equity beta, in three general categories:

- conceptual analysis
 - the AER's analysis in the WACC review
 - SFG's conceptual starting point of 1.0
 - comparison against the business risk of the average firm
- empirical analysis
 - alternative analysis suggested by the McKenzie and Partington report
 - specific SFG criticisms of the AER's empirical analysis
- cross checks
 - cross checks against other data sets
 - cross checks proposed by SFG

Conceptual analysis

The WACC attachment sets out the key finding relating to the conceptual analysis of the equity beta for the benchmark firm. The key finding is that there are strong conceptual grounds to expect that the equity beta will be below 1.0. This appendix deals with three related issues:

⁹⁴⁶ McKenzie, M. and G. Partington, *Report on MRP*, December 2011, pp. 30–31; and McKenzie, M. and G. Partington, *Supplementary report on the MRP*, February 2012, pp. 21–23.

- conceptual analysis in the WACC review
- SFG's conceptual expectation that the starting point is 1.0
- SFG's comparison against the business risk of the average firm

Conceptual analysis in the WACC review

In the WACC review explanatory statement (November 2008), the AER identified the countervailing factors for the benchmark firm:⁹⁴⁷

- The benchmark firm has higher financial risk than the market average,⁹⁴⁸ which suggests an equity beta above 1.0.
- The benchmark firm has lower business risk than the market average, which suggests an equity beta below 1.0.

The AER considered that the lower business risk was likely to more than offset the higher financial risk.⁹⁴⁹ Hence, the conceptual expectation in the WACC review explanatory statement was that the equity beta for the benchmark firm would be below 1.0.⁹⁵⁰

The AER received a number of submissions in response to this issue.⁹⁵¹ After reviewing all the available evidence, in the WACC review final decision the AER concluded that the quantum of these factors was unclear.⁹⁵² Therefore no conceptual expectation regarding the (net) equity beta of the benchmark firm could be formed:⁹⁵³

However, these two effects (i.e. business risk and financial risk) may well act to offset each other, and the AER acknowledges that the net effect on the equity beta of a benchmark efficient NSP is unclear. Accordingly, the AER considers conceptual considerations do not give grounds to form a conclusive view on the equity beta of a benchmark efficient NSP.

On this basis, in the WACC review final decision the AER assessed the equity beta on the empirical evidence.

However, the AER continued to investigate this issue. As explained in the attachment, the AER requested expert advice from Professor Michael McKenzie and Associate Professor

⁹⁴⁷ AER, *Explanatory statement: WACC review*, December 2008, pp. 192–194.

⁹⁴⁸ In the explanatory statement the AER also stated that financial risk should not be directly equated with financial leverage. This was not meant to imply that the benchmark firm would not have above average financial risk. This point was clarified in AER, *Final decision: WACC review*, May 2009, pp. 252–254.

⁹⁴⁹ AER, *Explanatory statement, WACC review*, December 2008, pp. 190–195

⁹⁵⁰ To prevent misinterpretation, the WACC review explanatory statement did not propose to set the equity beta on the basis of this theoretical and conceptual analysis. Rather, the AER considered that this conceptual hypothesis should be tested against the empirical evidence, which was the primary determinant of the equity beta in the explanatory statement (and the final decision).

⁹⁵¹ These responses included a report by SFG as a consultant to the Joint Industry Associations. SFG, *The reliability of empirical beta estimates, Response to AER proposed revisions of WACC parameters, Report prepared for ENA, APIA and Grid Australia*, 1 February 2009 [SFG, *Empirical beta estimates, Response to the AER WACC parameters*, February 2009].

⁹⁵² AER, *Final decision: WACC review*, May 2009, pp. 249–254.

⁹⁵³ AER, *Final decision: WACC review*, May 2009, p. 254.

Graham Partington on the conceptual expectations for equity beta, and explicitly asked that they review and respond to the position expressed in the WACC review.⁹⁵⁴

McKenzie and Partington stated that the equity beta for the benchmark firm should be below 1.0 and amongst the lowest possible.⁹⁵⁵ Consistent with the WACC review explanatory statement, the lower business risk will outweigh the higher financial (and operational) risk, such that the net effect is an equity beta below the market average. The AER considers that the advice from McKenzie and Partington supports the AER equity beta estimate of 0.8.⁹⁵⁶

SFG's conceptual starting point of 1.0

In contrast, SFG considered that an equity beta of 1.0 should be the conceptual expectation for the benchmark firm. At first, SFG's analysis was similar to that in the WACC review final decision. SFG identified the conflicting impact of lower business risk and higher financial risk, and concluded.⁹⁵⁷

There is no compelling a priori reason to suggest which of these effects should dominate the other.

SFG then asserted that, given the unknown magnitude of each effect, the appropriate expectation is that the two effects are exactly equal such that the equity beta for the benchmark firm is 1.0.⁹⁵⁸

As noted above, the new evidence from McKenzie and Partington suggests that there are conceptual grounds to conclude that lower business risk will dominate the higher financial (and operating) risk.

However, even if this evidence was put to the side, there appears to be an error of logic in the SFG approach. SFG stated that the offsetting effects were each of unknown magnitude. While it is possible that the effects will be exactly equal, it is also plausible that lower business risk will outweigh higher financial risk (or vice versa). There are no logical grounds to conclude that the scenario where the two are exactly equal is more likely than the numerous alternative scenarios where they differ. If, on the best available conceptual analysis, the relative magnitude of the offsetting effects cannot be determined, the correct conclusion is that there is no conceptual expectation for equity beta, not that there is a conceptual expectation and that it is exactly 1.0.⁹⁵⁹

This is a key issue because of the structure of the SFG argument. SFG emphasised that the 'starting point' equity beta of 1.0 should only be departed from if there was robust evidence that proves it incorrect.⁹⁶⁰ Yet the evidence for such a starting point is weak. The observation

⁹⁵⁴ As per the terms of reference listed in McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 3–4.

⁹⁵⁵ Further detail on this point is presented in the WACC attachment. See McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 3

⁹⁵⁶ To prevent misinterpretation, the primary determinant of the equity beta remains the empirical evidence. As in the WACC review explanatory statement, the AER does not set the equity beta on the basis of the conceptual or theoretical analysis, even where there is a strong conceptual expectation.

⁹⁵⁷ SFG, *Equity beta*, October 2011, p. 11 (paragraph 38).

⁹⁵⁸ SFG, *Equity beta*, October 2011, pp. 11–12 (paragraph 40).

⁹⁵⁹ Hence, in the WACC review final decision, the AER concluded that it had no conceptual expectation for the benchmark firm. AER, *Final decision, WACC review*, May 2009, pp. 249–54.

⁹⁶⁰ SFG, *Equity beta*, October 2011, pp. 3, 4, 6, 12.

that there are offsetting risks of unknown magnitude does not provide strong support for an equity beta of 1.0.

SFG provided two other reasons why the appropriate starting point should be adopted.

First, SFG broadly asserted that the starting point for the benchmark firm should accord with the market average firm.⁹⁶¹ This argument appears to have little relevance. The benchmark firm is specifically defined in a way that differs from the market average firm on the two key factors relevant to systematic risk: the capital structure of the firm and the business risk of its operations.

Second, SFG asserted that the starting point should be 1.0 because the regulatory precedent before the WACC review was 1.0.⁹⁶² This statement is incorrect. The regulatory precedent prior to the WACC review was either 0.9 or 1.0, depending on the particular jurisdiction.⁹⁶³ This range considers only electricity decisions, since this was the initial frame of reference for the WACC review. The WACC review also examined gas distribution decisions, where the relevant regulatory precedent extended from 0.7 to 1.1.⁹⁶⁴ As is evident from these ranges, there is not strong support for the use of 1.0 as a starting point. If anything, the starting point based on this regulatory precedent would be below 1.0.

A final point relates to the precedent for the Roma to Brisbane Pipeline (RBP) itself. In its 2006 access arrangement decision, the ACCC set the equity beta for this pipeline at 1.0.⁹⁶⁵ In the absence of considering the written reasons in that decision, this might be counted as evidence for a starting point of 1.0. However, the analysis in that decision makes clear that the available empirical evidence pointed to a much lower value:⁹⁶⁶

The comparator group consisted of APT, Envestra, AGL, United Energy, Alinta Gas and GasNet. The draft decision figure 2.5.5.1 demonstrated that the equity beta measurement has been relatively stable below 0.3 from the end of 2002 to 2005.

That is, the best empirical evidence suggested that an equity beta estimate of 0.3 was appropriate. Other methodological variations considered by the ACCC produced a higher equity beta, but still suggested an equity beta below 0.8.⁹⁶⁷ The ACCC then concluded:⁹⁶⁸

The ACCC analysed APTPPL's equity beta by considering a possible range of values as well as an appropriate point within that range. While the ACCC has suggested that an equity beta of 1.0 would be appropriate, its analysis indicates that this is at the upper end of the range of values that is supported by market data. There is a case for arguing that the upper end of this range should be even lower.

⁹⁶¹ SFG, *Equity beta*, October 2011, pp. 3, 12.

⁹⁶² SFG, *Equity beta*, October 2011, pp. 4, 12.

⁹⁶³ Specifically, the precedent for Queensland, Tasmania and South Australian electricity distribution networks was 0.9; the precedent for other electricity networks was 1.0. AER, *Final decision, WACC review*, May 2009, p. 241.

⁹⁶⁴ AER, *Final decision: WACC review*, May 2009, p. 241.

⁹⁶⁵ ACCC, *Final decision: APTPPL access arrangement*, December 2006, pp. 118, 120.

⁹⁶⁶ Although the quote mentions 2005, extension of the analysis through to March 2006 still generated an equity beta below 0.3. ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. 102.

⁹⁶⁷ Specifically, the assessment of weekly estimation intervals.

⁹⁶⁸ ACCC, *Final decision: APTPPL access arrangement*, December 2006, p. 116.

The ACCC adopted an equity beta estimate higher than suggested by the evidence, further labelling it a conservative decision and noting that it was concerned about regulatory consistency.⁹⁶⁹ This is weak evidence that the starting point of 1.0 is appropriate. Rather, the AER considers that there is now a decade of empirical evidence that suggests that the equity beta should not be higher than 0.8. As for regulatory consistency, the AER's decision to move the RBP equity beta from 1.0 to 0.8 aids this goal because it aligns with every other electricity and gas decision made by the AER in the last three years. Further, the 2006 decision on the RBP foreshadowed this occurrence:⁹⁷⁰

In the future, however, the ACCC noted that it may place greater weight on contemporary market information in deriving a best estimate of equity beta in accordance with s. 8.2(e) of the code, noting that this may lead to an equity beta value of less than one.

Comparison against the business risk of the average firm

Another piece of largely conceptual analysis is presented by SFG as support for an equity beta of 1.0. SFG used the de-levering process to analyse just how low the business risk of the benchmark firm has to be, relative to the business risk of the average firm in the market, to justify a given equity beta.⁹⁷¹ The AER considers that the premise of this analysis is questionable, because it relies on being able to accurately de-lever the entire market (and the benchmark firm).⁹⁷² As set out later in this appendix, the nature of such an adjustment is unknown and contentious.⁹⁷³

However, leaving aside this concern for the moment, SFG stated:

- It is reasonable to expect that the benchmark firm has 57 per cent of the business risk of the average firm, leading to an equity beta of 1.0 for the benchmark firm.⁹⁷⁴
- It is unreasonable to expect that the benchmark firm has 46 per cent of the business risk of the average firm, which is required to arrive at an equity beta of 0.8.⁹⁷⁵

Given that this assessment is based on broad conceptual analysis, it is difficult to understand why the decline from 57 per cent to 46 per cent moves from an appropriate expectation to an unreasonable one. SFG advanced no reason why this might be the case.

⁹⁶⁹ ACCC, *Final decision: APTPL access arrangement*, December 2006, p. 101, 103, 107.

⁹⁷⁰ ACCC, *Final decision: APTPL access arrangement*, December 2006, p. 115.

⁹⁷¹ To prevent misinterpretation, the AER does not endorse this as the correct application of the leverage formula. The WACC review noted the circumstances where this formula could be appropriately applied. Further, the attachment sets out at a later point the new evidence from McKenzie and Partington on the use of linear and nonlinear leverage formula.

⁹⁷² The exact leverage formula used is $\beta_e = \beta_a \times (1+D/E)$, where β_e is the equity beta, β_a is the asset beta (business risk), D is the value of debt and E is the value of equity.

⁹⁷³ For clarity, SFG justified the leverage adjustment by stating that it is following the AER's approach. This is incorrect. The AER does not apply the leverage adjustment in this way and has stated that it would be inappropriate to do so. This matter is discussed later in the appendix.

⁹⁷⁴ The average firm has an equity beta of 1.0 and gearing of 30 per cent, leading to an asset beta of 0.7 (if the debt beta is zero). If the benchmark firm has an equity beta of 1.0 and a gearing of 60 per cent, it will have an asset beta of 0.4. $0.4/0.7 = 57$ per cent. SFG, *Equity beta*, October 2011, pp. 11 (paragraph 39 and 40), 14–15 (paragraph 51–53).

⁹⁷⁵ From the previous footnote, the average firm has an asset beta of 0.7. If the benchmark firm has an equity beta of 0.8 and a gearing of 60 per cent, it will have an asset beta of 0.32. $0.32/0.7 = 46$ per cent. SFG, *Equity beta*, October 2011, pp. 11 (paragraph 39 and 40), 14–15 (paragraph 51–53).

More fundamentally, McKenzie and Partington showed that with a more accurate de-levering process (where debt beta is equal to 0.2 instead of zero):⁹⁷⁶

- If the benchmark firm has 68 per cent of the business risk of the average firm, the equity beta will be 1.0.⁹⁷⁷
- If the benchmark firm has 58 per cent of the business risk of the average firm, the equity beta will be 0.8.⁹⁷⁸

As with the first comparison, there is little difference between these two figures such that if one is a reasonable conceptual expectation, it is difficult to see how the other would not be as well. Further, SFG has already stated that it is reasonable to consider that the benchmark firm has 57 per cent of the business risk of the average firm. With a more accurate de-levering formula, this level of relative business risk actually leads to an equity beta just below 0.8.⁹⁷⁹

Hence, to the extent that it has any merit, the AER considers that this conceptual analysis by SFG supports an equity beta of 0.8 as much as it supports an equity beta of 1.0.

Empirical analysis

The WACC attachment sets out the key empirical analysis of the equity beta for the benchmark firm. This appendix deals with related issues, including the specific criticisms made by APTPPL of the AER's empirical analysis. Since the APTPPL criticisms are based on a consultant report by SFG,⁹⁸⁰ the AER engages directly with the content of the SFG report.

The AER acknowledges that there is considerable debate over the correct empirical estimation procedure for equity beta.⁹⁸¹ Even where a particular econometric technique is selected, there might be alternative implementations or differing ways to present and interpret the results. At the highest level, SFG's key concern is that certain methodological choices made by the AER are incorrect and that this results in a flawed empirical estimate of equity beta.⁹⁸² The AER assesses each of these concerns and finds that there is no reasonable basis to this criticism.

More importantly, the SFG approach fails to engage with the breadth of support for the equity beta estimate set by the AER. The AER considers this pattern of support is extensive such

⁹⁷⁶ The exact leverage formula used is $\beta_e = \beta_a + D/E \times (\beta_a - \beta_d)$, where β_d is the debt beta and all other symbols are as previously defined. If $\beta_d = 0$ this simplifies to the previous formula. McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 8, 11.

⁹⁷⁷ With a debt beta of 0.2, the average firm has an equity beta of 1.0 and gearing of 30 per cent, leading to an asset beta of 0.76. If the benchmark firm has an equity beta of 1.0 and a gearing of 60 per cent, it will have an asset beta of 0.52. $0.52/0.76 = 68$ per cent.

⁹⁷⁸ From the previous footnote, the average firm has an asset beta of 0.76. With a debt beta of 0.2, if the benchmark firm has an equity beta of 1.0 and a gearing of 60 per cent, it will have an asset beta of 0.44. $0.44/0.76 = 58$ per cent.

⁹⁷⁹ In its consultant report for Sydney Water, SFG uses a debt beta of 0.2 – matching the second approach. Hence, it would appear that SFG considers the second approach to be more reliable.

⁹⁸⁰ Compare APTPPL, *Access arrangement submission*, October 2011, pp. 57–59 with SFG, *Equity beta*, October 2011, p. 2–7, 15–17, 33–34.

⁹⁸¹ AER, *Final decision: WACC review*, May 2009, pp. 239–311.

⁹⁸² APTPPL, *Access arrangement submission*, October 2011, pp. 57–59.

that, whatever the merit of the specific concerns raised by SFG,⁹⁸³ it is reasonable to conclude that an equity beta of 0.8 is appropriate for the benchmark firm. Further, the AER's approach compares favourably with that taken by SFG in another recent report that includes equity beta estimates.

This appendix includes:

- alternative analysis suggested by the McKenzie and Partington report
- specific SFG criticisms of the AER's empirical analysis
 - data reliability and other errors
 - consideration of R² statistics
 - consideration of confidence intervals
 - consideration of inherent measurement bias

Alternative analysis suggested by the McKenzie and Partington report

The McKenzie and Partington report includes several statements relevant to the choice between particular econometric techniques for estimating equity beta. In general, even where the position taken by McKenzie and Partington does not accord with the AER's preferred position, the alternative analysis has already been undertaken and the results reported by the AER. In particular:

- McKenzie and Partington indicated that, although the use of OLS regressions is standard, the use of LAD regression is 'uncommon'.⁹⁸⁴ Though such a statement does not necessarily imply that use of LAD regressions is inappropriate, the AER's analysis separately reports each regression form, as noted in the attachment. The results across both OLS and LAD regressions converge on the range 0.4 to 0.7.
- McKenzie and Partington stated that they would consider a portfolio-based approach to estimating equity beta less reliable than examining (the average of) individual firm estimates.⁹⁸⁵ The AER's analysis includes both types of data aggregation, each reported separately, as noted in the attachment. The results across both individual and portfolio estimates converge on the range 0.4 to 0.7.

Another relevant result arises from the McKenzie and Partington report on the treatment of leverage.⁹⁸⁶ In the WACC review the AER de-levered firms from their individual gearing and then re-levered them to the benchmark gearing of 60 per cent.⁹⁸⁷ The AER used a particular formula (Brealey and Myers) to do this, acknowledging that while the formula had limitations,

⁹⁸³ For clarity, the AER does consider the merit of the specific concerns in detail later in the attachment.

⁹⁸⁴ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 19.

⁹⁸⁵ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 20.

⁹⁸⁶ McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 7–13.

⁹⁸⁷ AER, *Final decision: WACC review*, May 2009, pp. 265–267.

the particular circumstances in which it was being used meant that the results would still be reliable.⁹⁸⁸

McKenzie and Partington discussed the relationship between leverage and equity beta at length.⁹⁸⁹ They considered the particular formula used by the AER as one of a class of linear models, but also considered more complicated nonlinear models. They stated:⁹⁹⁰

Both M&M [Modigliani and Miller] and the neo-traditionalist view find that the equity beta of the firm increases as the leverage of the firm, and hence its financial risk, increases. While the nature of this relationship could be linear or nonlinear, given the existence of bankruptcy costs and the tax shield of debt, our view is that the latter is more likely the case. The type of nonlinearity, however, is unclear given the differing theories governing the nature of the nonlinearity. This is true whether the firm is a regulated energy network, a regulated gas pipeline or an unregulated firm in a competitive market.

McKenzie and Partington considered that a nonlinear relationship is preferable to the linear adjustment made by the AER, but that it is not clear exactly what formula should be used for the nonlinear translation. They indicated that as an input into the leverage formula, the debt beta should be set above zero.⁹⁹¹ However, there are a large number of candidate formulae with differing theoretical and empirical support, and so McKenzie and Partington were not able to recommend a specific adjustment:⁹⁹²

In short, there are so many twists and turns that the de-leveraging and re-levering exercise can take you to a range of different destinations depending on what you assume.

In light of the foregoing discussion the sort of comparisons proposed by SFG must be treated with extreme caution.

However, McKenzie and Partington also considered that the overall evidence indicates that financial leverage has relatively little impact on overall equity beta:⁹⁹³

Thus, although a theoretical trade off exists between (operational and financial) leverage and economic risk, in practical terms, the empirical evidence suggests that it is the intrinsic risk of the firm which is the primary, if not sole, driver of its systematic risk.

In short, attempting to adjust for the different leverage of individual firms using an inaccurate formula might be doing more harm than good. If financial leverage has relatively little influence on the benchmark firm, it might be more appropriate to simply estimate the equity beta without de-levering and re-levering the comparator set. Though this was not undertaken at the time of the WACC review, the Henry report provides sufficient information for this

⁹⁸⁸ AER, *Final decision: WACC review*, May 2009, pp. 252–254, 265–267; see also AER, *Final decision: Queensland distribution determination*, May 2010, pp. 263–265.

⁹⁸⁹ McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 7–15.

⁹⁹⁰ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 10.

⁹⁹¹ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 10–12.

⁹⁹² For clarity, the ‘sort of comparison proposed by SFG’ involved de-levering (but not re-levering) the entire market and the benchmark firm. This particular comparison is discussed later in the appendix. However, the general point about the unreliability of leverage formula is relevant to the current discussion. McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 11.

⁹⁹³ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 14.

analysis to be done.⁹⁹⁴ The core equity beta estimates are those for the 2002 to 2008 period, using OLS and LAD, at weekly and monthly intervals:⁹⁹⁵

- 0.38 to 0.50 as the average of individual firms
- 0.55 to 0.70 as the average of fixed-weight portfolios
- 0.50 to 0.51 as the average of time-varying-weight portfolios
- 0.38 to 0.49 as the median of time-varying-weight portfolios.

The overall range for point estimates extends from 0.38 to 0.70, a range that does not differ materially from the range after leverage adjustment presented in the attachment. This further supports the AER's range of 0.4 to 0.7 for the point estimate of the equity beta.

Specific SFG criticisms of the AER's empirical analysis

SFG has submitted a number of consultant reports on equity beta to the AER, across a large number of regulatory processes. Although there are exceptions, the content of these reports is generally not updated by SFG and does not appear to engage with the content of AER responses. Of most relevance to the current process is the SFG report dated 1 February 2009 for the ENA, APIA and Grid Australia.⁹⁹⁶ This February 2009 SFG report was in response to the AER's WACC review explanatory statement and accompanying expert advice from Associate Professor Henry.⁹⁹⁷ The WACC review final decision was released in May 2009, together with a second consultant report by Henry.⁹⁹⁸

The majority of the new SFG report for APTPPL appears to be a direct copy of the February 2009 SFG report.⁹⁹⁹ This is significant, since many of the arguments and observations in the SFG report for APTPPL have already been assessed and responded to by the AER. Statements in the new SFG report for APTPPL referred to the analysis in the explanatory statement and do not appear to accurately describe the AER's analysis since this time. Although the new SFG report for APTPPL included the WACC review final decision in its reference list, the body of the report does not appear to refer to the content of that decision document.¹⁰⁰⁰

⁹⁹⁴ It is not possible to undertake this conversion for the ACG reports which were also reported in the WACC review.

⁹⁹⁵ These figures are calculated from the relevant tables in the Henry report, removing the leverage adjustment in accordance with the ω adjustment factor reported there.

⁹⁹⁶ In turn, the February 2009 report includes most of an earlier SFG report, dated 15 September 2008. See SFG, *The reliability of empirical beta estimates: Report prepared for ENA, APIA, and Grid Australia*, 15 September 2008 (SFG, *Empirical beta estimates*, September 2008); and SFG, *Empirical beta estimates: Response to the AER WACC parameters*, February 2009.

⁹⁹⁷ AER, *Explanatory statement: WACC review*, December 2008, and Henry, O., *Econometric advice and beta estimation*, 28 November 2008.

⁹⁹⁸ AER, *Final decision: WACC review*, May 2009, and Henry, O., *Estimating β* , April 2009.

⁹⁹⁹ Approximately three quarters of paragraphs in the body of the report are immaterially different from the earlier report.

¹⁰⁰⁰ For clarity, the SFG report does refer to the 2009 Henry report at one point, when discussing the R^2 statistics printed in that report. This is distinct from references to the WACC review final decision itself, which appear to be entirely absent.

The most recent report from SFG for APTPPL stated:¹⁰⁰¹

As part of its Review of WACC parameter estimates, the AER commissioned a consultant report in relation to the empirical estimation of equity betas from the available data. The empirical evidence on which the AER's 0.8 estimate is based is set out in that report, Henry (2008). In this sub-section, I summarise the empirical analysis that was performed by Henry (2008) and how the AER evaluated and interpreted that evidence.

This statement appears to be incorrect. The empirical evidence on which the AER's estimate is based is set out in Henry (2009), and the AER's evaluation and interpretation of that analysis is set out in the 1 May 2009 final decision for the WACC review.¹⁰⁰²

With this context, the AER considers the specific criticisms made by SFG of the AER's empirical analysis.

Data reliability and other errors

SFG stated that the data set used by the AER was too small to be reliable:¹⁰⁰³

The sample of data that forms the basis of the AER's empirical estimates of beta consists of returns for only six firms, none of which is a pure play gas distribution or transmission business, and for only two of which is data available for the (short) period specified by the AER.

This statement appears to be out-of-date. Consistent with the WACC review *Explanatory statement*, in the final decision the AER does place weight on the portfolio estimates using six firms—which is the approach that appears to be criticised here by SFG.¹⁰⁰⁴ However, the AER also places weight on point estimates using nine firms, not six, which are reported in Henry (2009).¹⁰⁰⁵ Further the AER also considers estimates using a longer period, from 1990 to 2008 (but excluding the technology bubble), as per estimates submitted by ACG.¹⁰⁰⁶

SFG stated that inspection of the empirical estimates produced by Henry demonstrated that they were unreliable, in four ways.¹⁰⁰⁷

First, several estimates are so low that they are 'clearly implausible and could not possibly be taken seriously as estimates that one would use in the CAPM to estimate the required return on equity'.¹⁰⁰⁸ The specific example is the Envestra estimate of 0.13, taken from Henry

¹⁰⁰¹ SFG, *Equity beta*, October 2011, p. 15.

¹⁰⁰² To prevent misinterpretation, this statement does not imply that the content of the AER's Explanatory Statement or Henry (2008) is entirely incorrect or irrelevant. Much analysis in these earlier documents remains reliable (and was referred to in the AER final decision). However, in many areas the later work significantly advances on the earlier such that it is imperative to engage with the later documents.

¹⁰⁰³ SFG, *Equity beta*, October 2011, p. 16.

¹⁰⁰⁴ The SFG statement also implies that there was data for only two firms during the selected period. While only two firms had data for the entire period (APA and ENV), two other firms had significant return histories – DUE (48 months) and HDF (44 months). The final two firms had shorter data periods – SPA (32 months) and SKI (18 months). See AER, *Final decision, WACC review*, May 2009, p. 322–324.

¹⁰⁰⁵ Henry, O., *Estimating β* , April 2009, pp. 10–11 and AER, *Final decision: WACC review*, May 2009, p. 255, 318.

¹⁰⁰⁶ AER, *Final decision: WACC review*, May 2009, pp. 318, 320.

¹⁰⁰⁷ SFG, *Equity beta*, October 2011, p. 17.

¹⁰⁰⁸ SFG, *Equity beta*, October 2011, p. 17.

(2008), which SFG considered to be so low that it indicated the AER approach was unreliable.¹⁰⁰⁹

It is not readily apparent how this SFG position can be reconciled with SFG's recent report on the Sydney Desalination Plant (SDP) for IPART. In that report, SFG calculated the equity beta for a comparator set, and several examples have equity beta values (re-levered to 60 per cent gearing) below 0.13:¹⁰¹⁰

- In positive markets:¹⁰¹¹
 - the Artesian Res. 'A' equity beta is -0.01 (i.e. negative);
 - the Pennon Group equity beta is 0.08.
- In negative markets:
 - the Cal Water Services equity beta is 0.07;
 - the Penninchuck equity beta is -0.01 (i.e. negative).¹⁰¹²

Rather than dismiss these estimates as 'clearly implausible', SFG took them seriously and used these individual equity beta in forming its estimate. Just as in the AER approach, the very low individual equity betas are included in the determination of the average and median equity beta. Hence, the actions of SFG in the SDP report appear to indicate that the AER's approach is reasonable.

Second, SFG criticised the AER data because it differed between firms, pointing out that some estimates were more than five times other estimates,¹⁰¹³ and that the range of estimates 'which are all supposed to be estimates of the same thing' was from 0.3 to more than 1.0.

This position appears difficult to reconcile with the SFG report on SDP, where (in the standard regression form) the highest estimate is eight times the lowest estimate and the range is from 0.21 to 1.66.¹⁰¹⁴ Further, in that report SFG's preferred regression form was to split the analysis into up-markets and down-markets. For negative markets, the highest estimate (Consolidated Water, 1.72) was more than eighty times the lowest estimate (Artesian Res. 'A',

¹⁰⁰⁹ To clarify, although SFG makes this criticism with regard to the 2008 Henry report, similarly low individual firm estimates are also present in the 2009 Henry report.

¹⁰¹⁰ SFG, *Cost of capital parameters for Sydney Desalination Plant*, 10 August 2011, p. 12 (SFG, *Cost of capital for SDP*, August 2011).

¹⁰¹¹ SFG splits the equity beta estimates based on whether the market as a whole is moving upward or downward. This split has no implications for the (im)plausibility of the equity beta estimates.

¹⁰¹² SFG also considered the re-levered equity beta estimates after implementing a Vasicek adjustment to correct for estimation bias; in all cases shown here the bias-corrected estimate is still below 0.13: Artesian Res. 'A' (0.02), Pennon group (0.11), Cal Water Ser. (0.09) and Penninchuck (0.05).

¹⁰¹³ For clarity, this statement by SFG is made with regard to estimates from the Henry 2008 report. However, a similar claim could be made with regard to the estimates from the Henry 2009 report. SFG, *Equity beta*, October 2011, p. 17

¹⁰¹⁴ After re-gearing to 60 per cent and applying the Vasicek adjustment, Consolidated Water (1.66) is approximately eight times Penninchuck (0.21). SFG, *Cost of capital for SDP*, August 2011, p. 12.

0.02).¹⁰¹⁵ For positive markets, the highest estimate (Cadiz, 2.44) was almost fifty times the lowest estimate (Pennichuck, 0.05). Of course, the absolute ranges are also greater than those found by the AER. The disparity between the highest and lowest individual estimates receives no particular mention, and all estimates are included when SFG took an average and recommended an equity beta on the basis of the reported data. The SFG recommended equity beta included consideration of all these firms. Hence, the actions of SFG in the SDP report appear to indicate that the AER's approach is reasonable.

Third, SFG also criticised the AER because there was substantial variation in individual estimates using different approaches, particularly the difference between weekly and monthly estimation periods, and between OLS and LAD regression types.¹⁰¹⁶ The direct implication is that the AER estimates would only be reliable if the individual firm estimates were unchanged across different econometric techniques.

This is somewhat difficult to reconcile with the SFG report on SDP, which only implemented OLS regressions at the monthly frequency. SFG treats these estimates as reliable without reporting on any work done to establish whether or not the individual estimates were stable across alternative regression forms, estimation intervals or periods.¹⁰¹⁷ In effect, SFG appears to be criticising the AER for being more thorough than SFG felt was required when it attempted to empirically estimate equity beta.

Most importantly, notwithstanding the movement of several individual firm estimates, the overall results for the entire Henry comparator set are consistent across these variations. Regardless of whether weekly or monthly estimates are used, the range of 0.4 to 0.7 is supported. Regardless of whether OLS or LAD regressions are used, the range of 0.4 to 0.7 is supported. Regardless of whether the estimation period starts in 2002 or 2003 (or 1990 but excluding the technology bubble), the range of 0.4 to 0.7 is supported.

Fourth, SFG criticised the AER because the estimates varied over time, referring to the recursive estimates included in the appendix to Henry 2008. Without referencing a particular graph, SFG stated that 'it is common for the equity beta estimates for the same firm to double or triple over the course of several months'.¹⁰¹⁸

Henry (2009) included the recursive estimates considered by the AER in the final decision.¹⁰¹⁹ There are two broad types of recursive estimates presented: those using a one-year rolling window, and those using an expanding window that begins at one year and gradually increases to encompass the entire sample period (six years). The first type is designed to maximise any variation across time and so highlight any instability in the estimates. The AER WACC review final decision clearly stated that a longer time period is preferable for a reliable

¹⁰¹⁵ That is, splitting the regression based on overall market movement (up or down), re-gearing to 60 per cent and applying the Vasicek adjustment. SFG, *Cost of capital for SDP*, August 2011, p. 12.

¹⁰¹⁶ SFG, *Equity beta*, October 2011, p. 17.

¹⁰¹⁷ SFG undertook a split regression using up-markets and down-markets, but this is not the same type of variation (SFG advanced theoretical reasons why it is not expected that the equity beta should be equivalent in the two approaches). However, the individual estimates for some firms vary so significantly between these two regression states—for instance Cadiz has an equity beta of 0.02 in up markets but 2.44 in down markets—that this might suggest the split regression form is inappropriate.

¹⁰¹⁸ SFG, *Equity beta*, October 2011, p. 18.

¹⁰¹⁹ Henry, O., *Estimating β* , April 2009, pp. 51–83.

estimation of equity beta, and so the AER's empirical estimate is not based on any of these one-year estimates.¹⁰²⁰ This is also true for the expanding window, though to a lesser extent as the window expands to include years of data.

While it is true that some estimates triple in a number of months (for instance, the movement from 0.01 to 0.03 is a tripling in the estimate), the AER considers that the correct interpretation is that the equity beta estimates do not vary unduly across time.¹⁰²¹ Henry summarised the recursive estimates as follows:¹⁰²²

First, irrespective of the construction of the recursion, the evidence for each portfolio is consistent. Second, there is only weak visual evidence of time variation in the estimates of β across the plots in the appendix. That is, there are no occasions when the recursive estimates display sudden substantial jumps across all the cases considered. Moreover, there is no systematic evidence of regression to unity. In short, there is no strong evidence of instability in the estimate of β .

Consideration of R² statistics

One of the reasons that SFG considered the AER empirical analysis to be flawed was that it did not consider R² statistics. SFG stated:¹⁰²³

The AER's estimate ignores important information about the reliability and informativeness of beta estimates (i.e., the AER does not consider R² statistics, which is inconsistent with standard statistical and econometric practice);

This statement appears in the executive summary, the overview of analysis, and in the body of the SFG report.¹⁰²⁴ It appears that these are out-of-date statements left over from the 2009 SFG report. The WACC review final decision (and the accompanying consultant advice from Henry) report and consider the implications of the R² statistics.¹⁰²⁵ The AER discussed this specific issue over twelve pages, in large part because of the concerns raised in the 2009 SFG report.

Notwithstanding the statements to the contrary elsewhere, the body of the SFG report has been updated to acknowledge that R² statistics are presented in the 2009 Henry report.¹⁰²⁶ SFG printed a summary table showing the R² statistics for the Henry regressions.¹⁰²⁷ SFG considered that these R² statistics were 'uniformly very low', indicating that the underlying analysis was unreliable, and concluded that 'one should be very cautious about affording any material weight to that estimate'.

¹⁰²⁰ AER, *Final decision: WACC review*, May 2009, pp. 271–275.

¹⁰²¹ Further, SFG stated that the (Explanatory statement) recursive estimates 'illustrate the tremendous width of the confidence intervals, which in almost every case contain the value of 1.0'. This statement does not accurately describe the Explanatory statement figures. More relevantly, in the final decision recursive estimates, 20 out of 32 figures using an expanding window do not include 1.0; and 9 out of 32 figures using a fixed (one year) window do not include 1.0. Henry, O., *Estimating β* , April 2009, pp. 50–83.

¹⁰²² Henry, O., *Estimating β* , April 2009, p. 51.

¹⁰²³ SFG, *Equity beta*, October 2011, p. 5.

¹⁰²⁴ SFG, *Equity beta*, October 2011, pp. 5, 13, 19, 22 .

¹⁰²⁵ AER, *Final decision: WACC review*, May 2009, pp. 278–286, 289–291, 318–319, 342; and Henry, O., *Estimating β* , April 2009, p. 3–8, 15–16, 50.

¹⁰²⁶ For clarity, the SFG report does not acknowledge the WACC review final decision, even though at this point it referred to the 2009 Henry report. SFG, *Equity beta*, October 2011, p. 20.

¹⁰²⁷ SFG, *Equity beta*, October 2011, p. 20, source document is Henry, O., *Estimating β* , April 2009, p. 15–16.

SFG quantified the extent to which the equity beta had been underestimated through a monte carlo simulation. This simulation was presented in the 2009 SFG report,¹⁰²⁸ and Henry responded in his 2009 report, noting that the assumptions used in the simulation were unreasonable.¹⁰²⁹ SFG has amended the monte carlo simulation in response.¹⁰³⁰

Consistent with the position in the WACC review, the AER considers this entire line of reasoning from SFG is unsupported.¹⁰³¹ The R^2 statistic is not a measure of the precision or stability of the beta point estimate. Observing a low R^2 statistics does not lead to the conclusion that the equity beta has been underestimated, nor does it indicate the regression results are unreliable. In any case, the obtained R^2 statistics are not unreasonably low for this type of analysis.

McKenzie and Partington referred to the issue of whether low R^2 statistics indicate the equity beta estimates are unreliable in their recent report:¹⁰³²

SFG (2011, p. 19) claims that, “Estimates are statistically unreliable when the R^2 is low”. This claim is spurious. The R^2 is informative about the proportion of variation in the dependent variable that is explained by the model. It is well known that the statistical reliability of OLS estimates is independent of R^2 .

This clearly supports the AER interpretation of these R^2 figures, although McKenzie and Partington noted that the way the AER attempted to express some points was unclear. Further, McKenzie and Partington addressed the issue of whether low R^2 statistics indicate the equity beta estimates are systematically biased downwards.¹⁰³³

On page 20 of the SFG report, the claim is made that, “Mis-estimation is material when the R^2 is low.” This statement is incorrect. As long as the assumptions underlying the OLS approach are satisfied then there is no mis-estimation. The counter-factual that mis-estimation is immaterial when the R^2 is high is equally invalid.

Further, the statements made by SFG in the report for APTPPL appear difficult to reconcile with the approach taken by SFG in its report for IPART on the SDP. In that report for IPART, SFG produced its own empirical estimates of equity beta and lists the R^2 statistics for the series of regressions it completed. The R^2 statistics reported by SFG are lower than those in the Henry analysis, as evident in table C.4:

¹⁰²⁸ For clarity, the simulation was also presented in the 2008 SFG report. See SFG, *Empirical beta estimates*, September 2008, p. 10–12; SFG, *Empirical beta estimates: Response to the AER WACC parameters*, February 2009, pp. 25–26.

¹⁰²⁹ Henry, O., *Estimating β* , April 2009, p. 3–8.

¹⁰³⁰ SFG, *Equity beta*, October 2011, p. 20

¹⁰³¹ AER, *Final decision: WACC review*, May 2009, 281–286.

¹⁰³² McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 16.

¹⁰³³ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 17.

Table C.4 Comparison of R² statistics in the SFG analysis and Henry analysis

	SFG analysis for IPART	Henry analysis for AER
Average R ² statistic	0.076	0.126
Median R ² statistic	0.066	0.117
Proportion of individual R ² statistics > 0.10	25%	58%
Proportion of individual R ² statistics > 0.15	0%	22%

Source: Henry, O., *Estimating β* , April 2009, p. 15–6; and SFG, SFG, *Cost of capital for SDP*, August 2011, pp. 11–12, 16–17.

Compared to the estimates used by the AER, the R² statistics reported by SFG have a lower average, a lower median, and fewer individual R² statistics above the minimum thresholds (0.10 or 0.15) proposed by SFG. However, no mention is made of the R² statistics in the body of the SFG report for IPART. SFG used these empirical estimates in recommending an equity beta for SDP. Hence, the actions of SFG in the SDP report appear to indicate that the AER’s approach is reasonable.

Based on the above, the AER considers that there is no substance to the claim that the empirical estimates are unreliable or biased because they have low R² statistics.

Consideration of confidence intervals

SFG stated that the AER’s empirical analysis was flawed because it ignored confidence intervals (derived from standard errors), which contain information about the imprecision of those estimates.¹⁰³⁴ SFG stated:¹⁰³⁵

However, the AER ultimately concludes that it will not use standard errors and the resulting confidence intervals when determining the appropriate equity beta. The Explanatory Statement sets out the AER’s rejection of confidence intervals in relation to estimates of equity beta...

SFG appears to incorrectly treat the WACC review explanatory statement as the ‘final’ analysis, entirely overlooking the WACC review final decision. In the final decision, the AER has explicit regard to confidence intervals. The AER discussed the ways in which confidence intervals should (and should not) be interpreted.¹⁰³⁶ When reporting the empirical estimates for the various portfolios, the AER also reported confidence intervals and discussed whether they include 0.9 or 1.0.¹⁰³⁷ The majority do not.

¹⁰³⁴ SFG, *Equity beta*, October 2011, p. 18–19.

¹⁰³⁵ SFG, *Equity beta*, October 2011, p. 18.

¹⁰³⁶ AER, *Final decision: WACC review*, May 2009, pp. 286–291.

¹⁰³⁷ AER, *Final decision: WACC review*, May 2009, pp. 321–325, 330

Consideration of inherent measurement bias

One of the reasons that SFG considered the AER empirical analysis to be flawed was that it did not correct for the 'demonstrated bias in beta estimates'.¹⁰³⁸ SFG stated:¹⁰³⁹

That is, all equity beta estimates that are less than 1.0 are downwardly biased – when we obtain a beta estimate that is less than 1.0 we know that it is more likely to have been affected by negative estimation error than by positive estimation error. Consequently, our best estimate of the true value of beta is higher than the estimated value. This effect is well-known in the relevant literature and the use of methods to adjust for this bias is commonplace among commercial providers of beta estimates.

To demonstrate this bias and quantify the extent of underestimation, SFG conducted a monte carlo simulation.¹⁰⁴⁰ SFG has previously submitted this simulation (and accompanying arguments) to the AER.¹⁰⁴¹

The AER considers that there is no reasonable basis to conclude that the estimates it uses are downward biased in the manner described by SFG. This is consistent with previous AER statements on this issue.¹⁰⁴² In brief:

- The underestimation proof relies on the starting assumption that the true beta distribution has a mean of 1.0. This assumption might be appropriate if the relevant beta was randomly selected from the market at large. However, the relevant population is not the entire market but a small set of businesses (regulated energy networks) that are comparable to the benchmark.¹⁰⁴³ The benchmark firm differs from the average market wide distribution by definition.¹⁰⁴⁴
- There is strong conceptual and empirical evidence that the mean of the true beta distribution for the relevant population will be below 1.0. For instance, McKenzie and Partington concluded that the equity beta for the relevant industry sectors is 'very low' and 'among the lowest possible'.¹⁰⁴⁵ SFG's own estimate for Australian water utilities would support a 'true' beta of 0.65.¹⁰⁴⁶ If a lower mean was adopted for the beta distribution in the SFG monte carlo simulation, (for example, 0.7), then all estimates above this value would be biased upwards and should be adjusted downwards.
- The AER appropriately considers the two possible theoretical justifications for implementing adjustments that eliminate this 'downward bias' (the Vasicek or Blume adjustments).¹⁰⁴⁷ The first justification is that the underlying business risk of the firm changes over time through conscious management decisions (e.g. diversification into new activities).¹⁰⁴⁸ This rationale would not apply to the benchmark firm, which by definition

¹⁰³⁸ SFG, *Equity beta*, October 2011, pp. 22–23.

¹⁰³⁹ SFG, *Equity Beta*, October 2011, p. 23.

¹⁰⁴⁰ SFG, *Equity beta*, October 2011, pp. 22–23.

¹⁰⁴¹ See SFG, *Empirical beta estimates, Response to the AER WACC parameters*, February 2009, pp. 30–33.

¹⁰⁴² AER, *Final decision: WACC review*, May 2009, pp. 293–306.

¹⁰⁴³ AER, *Final decision: WACC review*, May 2009, pp. 300–301.

¹⁰⁴⁴ Specifically, the benchmark firm differs from the market average with regard to the business activities of the firm and its financial structure. AER, *Final decision: WACC review*, May 2009, p. 300.

¹⁰⁴⁵ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 15.

¹⁰⁴⁶ This statement relies on the rough parity between energy and water network equity betas, as discussed earlier in the appendix.

¹⁰⁴⁷ AER, *Final decision: WACC review*, May 2009, pp. 294–295, 300–301.

¹⁰⁴⁸ AER, *Final decision: WACC review*, May 2009, pp. 294,

does not change its business activities. The second justification is often labelled 'order bias' and derives from the expectation that the lowest observed estimates will have the largest negative estimation error. This second source of error aligns with the SFG criticism. The AER examined the magnitude of this error and noted it was not material in the context of the benchmark firm.¹⁰⁴⁹

- SFG stated that the demonstrated bias is well-known in the relevant academic literature and that adjustments to correct for the demonstrated bias are commonly applied by market practitioners.¹⁰⁵⁰ However, in academic literature and market practice it is the combined effect of the two sources of error that is acknowledged.¹⁰⁵¹ Where the two causes are disaggregated, it is only the first justification, change in business activities, that persists.¹⁰⁵² This first rationale will not apply to the benchmark firm. Hence, there appears to be no support for SFG's position that the AER estimates are unreliable.

The AER instructed McKenzie and Partington to review the SFG submission and the monte carlo simulation. Their key conclusion is as follows:¹⁰⁵³

The final question asked if all equity betas below one are downwards biased. The answer to this question is that the point estimate of beta in a correctly specified CAPM type regression is unbiased irrespective as to whether the estimate is above or below one. Further, as we can never know the cross-sectional distribution of the true beta, the simulation results and associated discussion by SFG amounts to little more than an interesting thought experiment.

Cross checks

The AER implements several cross checks on the equity beta to ensure that the value it adopts is reasonable.¹⁰⁵⁴ In general, this analysis uses evidence that is less directly relevant to the circumstances of the benchmark firm or that requires additional assumptions before it can be interpreted. Accordingly, this evidence is given less weight than the empirical or conceptual evidence presented above.

This section considers:

- cross checks against other data sets
 - comparison against the Australian water sector
 - comparison against overseas electricity and gas networks.
- cross checks proposed by SFG:¹⁰⁵⁵

¹⁰⁴⁹ AER, *Final decision: WACC review*, May 2009, pp. 305–306.

¹⁰⁵⁰ SFG cited one academic paper, by Vasicek (1973). SFG, *Equity beta*, October 2011, p. 23.

¹⁰⁵¹ AER, *Final decision: WACC review*, May 2009, pp. 304–305.

¹⁰⁵² See McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 19–20.

¹⁰⁵³ McKenzie and Partington, *Estimation of equity beta*, April 2012, p. 23.

¹⁰⁵⁴ The AER also cross checks the overall WACC estimate to ensure that the overall estimate it sets accords with prevailing conditions in the market for funds and the risks involved in providing reference services. This analysis is presented earlier in the appendix.

¹⁰⁵⁵ For clarity, the market based assessment is for the overall cost of equity, considering the combined effect of the risk free rate, MRP and equity beta as inputs into the CAPM. However, SFG focuses on the implications of this approach for equity beta.

- applying the equity beta approach to other industries
- market-based assessment using dividend yield.

Cross checks using other data sets

The benchmark firm is an Australian gas transmission network. The primary empirical evidence is based on a data set that includes other Australian energy networks—electricity transmission, electricity distribution and gas distribution. The AER considers that these firms are close comparators to the benchmark firm and that an equity beta estimate determined from this comparator set will be a reasonable proxy for the benchmark firm.

However, this is still a relatively small data set. One way to obtain additional information is to consider firms that are not as close to the benchmark. In particular, the AER examines the Australian water industry and overseas energy networks. The AER has regard to the limitations of these data sets when interpreting these equity beta estimates, and only uses them as cross checks.

Overall, the AER considers that these cross checks suggest the equity beta set by the AER (0.8) is reasonable. If anything, the cross checks indicate the AER's equity beta estimate might be a little high. This supports the AER's position that setting the equity beta at 0.8 provides APTPPL with a reasonable opportunity to recover at least its efficient costs.

Comparison against the Australian water sector

The AER considers the relationship between energy (electricity and gas) utilities and other essential services utilities such as water to be a viable cross check of its equity beta. At the highest level, both involve the monopolistic provision of an essential service with inelastic demand characteristics and tariff structures that mirror the high fixed costs. Notwithstanding these broad similarities, it is important to undertake detailed analysis of the extent to which exposure to systematic risk (equity beta) might differ. The ACCC recently engaged Frontier Economics (Frontier) to provide expert advice on the cross sectoral application of equity betas between energy and water sectors.¹⁰⁵⁶ Frontier examined seven different factors that could influence the relative exposure to systematic risk and concluded:¹⁰⁵⁷

Frontier has found that equity betas for network energy utilities (those engaged in distribution and transmission activities), while not perfect, are adequate proxies for the purpose of helping to establish a benchmark equity beta for regulating rural water businesses.

Frontier considered that although there were differences between the two sectors, these were in offsetting directions such that the overall equity beta should be similar. If anything, the equity beta for energy businesses would be below that of a rural water business.¹⁰⁵⁸ Based on Frontier's comparison of systematic risk in the energy and water industries, the ACCC considered it was reasonable to use the AER's energy betas to inform its equity beta for water service providers.

¹⁰⁵⁶ Frontier Economics, *The cross sectoral application of equity betas: energy to water, A report prepared for the Australian Competition and Consumer Commission*, April 2010 (Frontier Economics, *Equity betas: energy to water*, April 2010).

¹⁰⁵⁷ Frontier Economics, *Equity betas: energy to water*, April 2010, p. iv, see also p. 31.

¹⁰⁵⁸ Frontier Economics, *Equity betas: energy to water*, April 2010, pp. 11–29.

The Queensland Competition Authority (QCA) recently engaged NERA Economic Consulting (NERA) to provide advice on the WACC for a water infrastructure company. NERA considered the relationship between equity beta for the water sector and equity beta for the energy sector. The report discussed in detail the differential impact of firm characteristics and regulatory frameworks between water and energy. NERA concluded:

In our opinion, the equity beta of an Australian water business should be set at a value that is no different from the equity beta of an Australian energy utility. This is because:

- there are no systematic differences between estimates of the equity betas of energy and water utilities; and
- regulators in Australia, the UK and the US set equity costs for energy and water utilities at similar levels, after adjusting for differences in financial leverage.

Based on the same logic as Frontier and NERA, the AER considers it is reasonable to cross-check its energy betas against water betas.

The QCA's recent draft decision on the prices charged by SunWater provides support for the equity beta set by the AER.¹⁰⁵⁹ The QCA set the equity beta for this water infrastructure company at 0.55 (based on an asset beta of 0.3).¹⁰⁶⁰ This decision was informed by the NERA report mentioned above, which presented empirical evidence using overseas water firms (amongst other evidence).¹⁰⁶¹ For the approximately ten year period from January 2000 to March 2011,¹⁰⁶² NERA estimated that the point estimate for equity beta was:

- using the AER's leverage adjustment from the WACC review, weekly estimation intervals, and both equal-weighted and value-weighted portfolios:¹⁰⁶³
 - 0.54 to 0.69 for UK water firms
 - 0.98 to 1.02 for US water firms
- using an alternative leverage adjustment in the same estimation procedure:¹⁰⁶⁴
 - 0.49 to 0.62 for UK water firms
 - 0.79 to 0.91 for US water firms.

Overall, NERA recommended that an equity beta of 0.8 be adopted for the water industry. The recent determination by the Independent Pricing and Regulatory Tribunal (IPART) on the prices charged by the Sydney Desalination Plant Pty Ltd (SDP) also provides support for the equity beta set by the AER.¹⁰⁶⁵ The IPART set the equity beta for SDP at the range 0.6 to 0.8. This decision was informed by a report on the cost of capital parameters by SFG, which

¹⁰⁵⁹ QCA, *Draft report: SunWater irrigation price review: 2012–2017, Volume 1*, November 2011.

¹⁰⁶⁰ QCA, *Draft report: SunWater irrigation price review: 2012–2017, Volume 1*, November 2011, pp. 385–386.

¹⁰⁶¹ Specifically, empirical evidence for Australian energy networks (presented earlier in the attachment) and for overseas energy networks (presented later in the attachment) as well as conceptual analysis.

¹⁰⁶² NERA also included estimates for a shorter period, from 2009 to 2011. As noted earlier in the attachments, the AER considers that this short estimation period is substantially influenced by the GFC and so does not constitute a reliable basis for equity beta estimation.

¹⁰⁶³ NERA, *Cost of capital for water infrastructure*, March 2011, pp. 36–37.

¹⁰⁶⁴ NERA, *Cost of capital for water infrastructure*, March 2011, p. 60.

¹⁰⁶⁵ IPART, *Final report: Review of water prices for Sydney Desalination Plant Pty Limited: From 1 July 2012: Water 9* December 2011, p. 80 (IPART, *Review of prices for SDP*, December 2011).

included empirical analysis of equity beta based on US and UK water firms.¹⁰⁶⁶ In that report, SFG advocated an equity beta of 0.7 (in the context of 60 per cent gearing and a gamma of 0.25) which lay above its own empirical estimates.¹⁰⁶⁷

- Assuming constant risk exposure (as is standard)¹⁰⁶⁸
 - the point estimate from individual firm estimates was 0.55 and the 90% confidence interval extended from 0.40 to 0.70;
 - the point estimate from an equal weighted index was 0.52 and the 90% confidence interval extended from 0.45 to 0.58.
- Assuming (non-standard) asymmetrical risk exposure:¹⁰⁶⁹
 - in up-markets, the point estimate was 0.38 (individual) or 0.43 (index), with confidence intervals extending from 0.27 to 0.55;
 - in down-markets, the point estimate was 0.69 (individual) or 0.61 (index), with confidence intervals extending from 0.42 to 0.97.

Overall, SFG concluded that the best point estimate was 0.65, in recognition of the asymmetrical risk.¹⁰⁷⁰

The AER considers that there are reasonable grounds to cross check the equity beta for energy networks against the equity beta for water businesses. The equity beta point estimates recommended by SFG (0.7) and NERA (0.8) for the water sector indicate that the equity beta set by the AER (0.8) is reasonable. Similarly, the equity beta figures applied by IPART (0.6–0.8) and QCA (0.55) indicate that the AER's equity beta estimate provides APTPPL a reasonable opportunity to recover at least its efficient costs. If anything, this analysis suggests a 0.8 equity beta might be on the high end of what could be considered reasonable.

Comparison against overseas electricity and gas networks

By definition, the benchmark firm is Australian. The AER considers that it is appropriate to use overseas estimates only as a cross check.¹⁰⁷¹ It is not appropriate to use this as the primary determinant of the equity beta, because it is not possible to correctly adjust for the differing environment between countries.¹⁰⁷²

¹⁰⁶⁶ SFG, *Cost of capital for SDP*, 10 August 2011.

¹⁰⁶⁷ The SFG report makes clear that, if the IPART were to adopt a gamma of 0.4, they would recommend an equity beta of 0.8 on grounds of internal consistency. The IPART applied a gamma value of 0.25 (as does the AER) and so the SFG recommendation of 0.7 is the relevant figure. SFG, *Cost of capital for SDP*, August 2011, pp. 26–27 and 38–39; and IPART, *Review of prices for SDP*, December 2011, p. 90.

¹⁰⁶⁸ SFG, *Cost of capital for SDP*, August 2011, p. 19

¹⁰⁶⁹ SFG, *Cost of capital for SDP*, August 2011, p. 19.

¹⁰⁷⁰ To prevent misinterpretation, this statement does not imply that the AER considers this to be the correct interpretation of these results. SFG, *Cost of capital for SDP*, August 2011, p. 21.

¹⁰⁷¹ AER, *Final Decision: WACC Review*, 1 May 2009, pp. 260–264.

¹⁰⁷² This issue was also discussed in AER, Final decision: *Envestra access arrangement SA*, June 2011, pp. 48, 176–184.

The AER considers that the analysis of overseas energy networks in the WACC review remains relevant for this purpose. This includes equity beta estimates for a set of US electricity networks (but not gas networks) as prepared by Henry. For the period 1990 to 2008 (but excluding the technology bubble),¹⁰⁷³ the average point estimates are:

- 0.54 to 0.71 for individual firms (monthly/weekly by Henry)¹⁰⁷⁴
- 0.47 to 0.71 for fixed-weight portfolios (weekly/monthly by Henry)¹⁰⁷⁵

ACG also calculated equity beta estimates, using a comparator set that included electricity and gas networks. For the same period, these point estimates are:

- 0.65 to 0.73 as the average of individual firms (OLS, re-OLS and LAD by ACG)¹⁰⁷⁶
- 0.54 to 0.68 as the average/median of portfolios (OLS, re-OLS and LAD by ACG)¹⁰⁷⁷

Recognising the inherent uncertainty caused by the inability to quantify differences between the United States and Australia, the AER considers that these estimates are compatible with an equity beta of 0.4 to 0.7.¹⁰⁷⁸

Separate from the WACC review, but still considering the same data window (that ends with the GFC), other evidence on overseas equity betas provides some support for the AER's equity beta estimate:

- Analysis by the Essential Services Commission (ESC) in 2008 presented equity beta estimates for United States energy networks together with analysis for equivalent Australian networks. The ESC's key conclusion is that US estimates are slightly above the Australian estimates. The ranges observed by the ESC are:¹⁰⁷⁹
 - 0.5 to 0.7 for Australian firms
 - 0.6 to 0.8 for United States firms.
- PricewaterhouseCoopers (PwC) produced international equity beta estimates for Ofgem in 2009.¹⁰⁸⁰ These estimates include five years of data up until the onset of the GFC. The

¹⁰⁷³ For the Australian data, the AER's preferred period commenced in 2002 because data from before the technology boom was less unreliable. For US data, no such concern existed and the AER preferred to examine the longer time period (though still excluding the technology boom). The AER also examined results for shorter periods, from 2002 or 2003 to 2008.

¹⁰⁷⁴ Henry, O., *Estimating β* , 23 April 2009, pp. 40–46; and AER, *Final decision: WACC review*, May 2009, p. 330.

¹⁰⁷⁵ Henry, O., *Estimating β* , 23 April 2009, pp. 40–46; and AER, *Final decision: WACC review*, May 2009, p. 330.

¹⁰⁷⁶ ACG, *Beta for regulated transmission and distribution*, September 2008, p. 48; and AER, *Final decision: WACC review*, May 2009, pp. 329–331.

¹⁰⁷⁷ ACG, *Beta for regulated transmission and distribution*, September 2008, p. 48; and AER, *Final decision: WACC review*, May 2009, pp. 329–331.

¹⁰⁷⁸ In the WACC review, the AER stated that the ACG results were less relevant because they included gas businesses. Here, the reverse is the case. Regardless, the two ranges converge on a point estimate of 0.7.

¹⁰⁷⁹ AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 182. Source document is Essential Services Commission, *Final decision: Gas access arrangement review 2008–2012*, 7 March 2008, p. 476.

¹⁰⁸⁰ AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 182–183. Source document is PricewaterhouseCoopers, *Final report: Office of the Gas and Electricity Markets, Advice on the cost of capital analysis for DPCR5*, 1 December 2009, pp. 37–45 (figures 13, 16–19).

sample included gas and electricity distribution and transmission firms in the USA, UK and Europe. The average equity beta is 0.55 (to December 2007) or 0.78 (to September 2008).

- The recent McKenzie and Partington report referred to estimates of equity beta by Professor Damodoran of the Stern School of Business at New York University. Damodoran has calculated equity beta estimates for the various United States industry sectors each year since 1999, using a five year data window.¹⁰⁸¹ The pattern across this analysis is that the electricity and gas network equity beta estimates are amongst the lowest observed.¹⁰⁸² The results that are most comparable to the WACC review analysis are those ending in January 2007 and January 2008. The point estimates are:¹⁰⁸³
 - 0.86 in January 2007 (average gearing 61 per cent)¹⁰⁸⁴
 - 0.85 in January 2008 (average gearing 62 per cent)¹⁰⁸⁵

Given the inherent uncertainty in converting from the United States to the Australian environment, the AER considers that these estimates are compatible with an Australian equity beta estimate range of 0.4 to 0.7. As a cross check, this evidence suggests that the equity beta set by the AER is reasonable.

New estimates of equity beta for overseas electricity and gas networks—that is, estimates that consider data after the onset of the GFC—have been relatively sparse. As with Australian data, estimates taken during the GFC may have little relevance to the determination of the benchmark equity beta. Once a sufficient period of time after the GFC has elapsed, this may be a source of additional estimates. With this context, there is limited support for the AER's equity beta estimate in the following reports:

- The CEG report for Envestra Ltd examined United States electricity networks over the five year period ending in June 2010. The average of individual firm point estimates is 0.99.¹⁰⁸⁶
- The Damodoran equity beta estimates for United States industry groups have been updated across this time:¹⁰⁸⁷

¹⁰⁸¹ This data is available at <http://pages.stern.nyu.edu/~adomodar/> and then clicking on the link 'Updated Data' at top left, accessed 19 March 2012.

¹⁰⁸² Specifically, the relevant industry sectors are Natural Gas (Distribution) which becomes Natural Gas Utility in 2008, Electric Utility (East), Electric Utility (West) and Electric Util (Central).

¹⁰⁸³ These averages are calculated as the average of the four relevant categories listed above, each weighted by the number of firms in that category. The equity beta for each firm is unadjusted for leverage. That is, it has not been de-levered and re-levered to the benchmark gearing (60 per cent), though there is minimal difference between the average leverage (61 or 62 per cent) and the benchmark in this case.

¹⁰⁸⁴ The range is from 0.73 (Natural Gas Distribution) to 0.97 (Electric Utility West).

¹⁰⁸⁵ The range is from 0.78 (Natural Gas Distribution) to 0.93 (Electric Utility Central).

¹⁰⁸⁶ CEG also included one New Zealand firm and one UK firm. CEG. *Estimating the cost of capital under the NGR, A report for Envestra*, September 2010, p. 49–50.

¹⁰⁸⁷ As with the previous Damodoran results, these averages are equal weighted across firms in the four categories that contain electricity and gas networks. The equity beta for each firm is unadjusted for leverage. That is, it has not been de-levered and re-levered to the benchmark (60 per cent). In this instance, the average gearing levels are above the benchmark. Conventional finance theory states that greater leverage increases financial risk which in turn increases systematic risk, although the exact relationship is contentious (and discussed later

- 0.74 in January 2010 (average gearing 87 per cent)
- 0.72 in January 2011 (average gearing 79 per cent)
- 0.71 in January 2012 (average gearing 75 per cent)
- The NERA report for the QCA included equity beta estimates for UK and US energy networks for the ten years ending in March 2011.¹⁰⁸⁸ NERA implemented two leverage adjustments, and used both equal-weighted and value-weighted portfolios to produce point estimates of:
 - 0.87 to 1.09 for UK firms
 - 0.70 to 0.88 for US firms.

Overall, the AER considers that this cross check against overseas data, including data from before and after the GFC, suggests the equity beta set by the AER is reasonable.

Cross checks proposed by SFG

SFG applied two cross checks in its report on the equity beta for APTPPL. The first was designed to cross check the AER's approach to estimating equity beta, rather than the equity beta estimates directly. The second used share prices and forecast dividends to examine the return to equity holders from comparable firms. SFG stated that these cross checks indicate that an equity beta of 0.8 is implausible and that an equity beta of 1.0 is reasonable.

The AER considers that these cross checks have significant flaws and limitations. The AER considers that these problems are such that they are not a reliable basis on which to cross check the AER's equity beta estimates. Hence, the AER considers that these cross checks do not indicate that the equity beta set by the AER is unreasonable.

Applying the equity beta approach to other industries

SFG stated that the AER approach was unreliable because, when applied to a different data set, it did not produce equity beta estimates that were economically reasonable or stable across time.¹⁰⁸⁹ Specifically, SFG derived an asset beta for five industries other than electricity/gas networks—commercial services, energy, materials, media and metals/mining—for the period from 1993 to 2010. The estimates of asset beta for each industry varied substantially across the period, and SFG concluded that the results indicated that the AER approach was unreliable.¹⁰⁹⁰

The AER considers that the SFG analysis differs from the AER approach such that it has little relevance to the AER's equity beta estimates. If the variability in asset beta observed by SFG arises from differences in the two approaches, there are no grounds to consider that the

in the attachment). To the extent that this relationship holds, the equity beta for the benchmark firm (with 60 per cent gearing) would be below the estimates given here.

¹⁰⁸⁸ NERA, *Cost of capital for water infrastructure*, March 2011, pp. 36–37, 60.

¹⁰⁸⁹ SFG, *Equity beta*, October 2011, pp. 26–28.

¹⁰⁹⁰ SFG, *Equity beta*, October 2011, p. 28.

AER's equity beta estimates are unreliable. The key differences that could explain the variability include SFG's consideration of:

- share prices that are affected by merger and acquisition speculation
- firms that have changed their underlying business activity over time
- data from abnormal market periods
- too few firms in the data set
- inappropriate leverage adjustments to obtain asset betas.

Before these differences are examined in turn, it is helpful to elaborate exactly how SFG constructed its data set. First, SFG sorted ASX firms using the GICS industry classification scheme, which is a commonly used method to identify the major business activities of a firm.¹⁰⁹¹ The GICS scheme includes four hierarchical levels: Sector, Industry Group, Industry and Sub-Industry. SFG selected five comparator sets, each with five firms in them, and labelled the sets as 'industry' groupings—Commercial services, Energy, Materials, Media and Metals & Mining.¹⁰⁹² In practice, the SFG 'industry' sets related to disparate levels of the GICS hierarchy. One set included firms from two different GICS Industry Groups (the level above GICS Industry in the hierarchy).¹⁰⁹³ Another set included firms from two different GICS Industry classifications.¹⁰⁹⁴ Most of the sets included firms from multiple GICS Sub-Industry classifications.¹⁰⁹⁵ Hence, it is not clear to what extent the sets used by SFG share an underlying business activity.

This is in marked contrast to the approach taken by the AER. The AER selected a firm for the comparator set after careful consideration of its business activities, rather than starting with the GICS classification system.¹⁰⁹⁶ The AER would not consider a firm suitable for inclusion in the comparator set simply because it was from the relevant GIC Industry Group (Utilities). The result is that the AER comparator set is composed exclusively of firms with exposure to the same core underlying business activities. It is difficult to see how the same statement could be made about the industry groupings used by SFG. If the variability in asset betas observed by SFG is related to the disparate construction of the 'industry' groupings, the findings are of little relevance to the AER's equity beta estimates.

¹⁰⁹¹ SFG, *Equity beta*, October 2011, p. 26.

¹⁰⁹² SFG did not explain why it selected these particular firms – for instance, if they were randomly chosen from all possible candidates, if those with the highest market capitalisation were chosen, or whether another method was used. SFG, *Equity beta*, October 2011, p. 27.

¹⁰⁹³ The set labelled by SFG as 'Commercial Services' includes ZEL (GICS Sector – Industrials; GICS Industry Group – Capital goods) and ESI (GICS Sector–Industrials, GICS Industry group–Commercial and professional services).

¹⁰⁹⁴ The set labelled by SFG as 'Materials' includes BKW (GICS Industry Group - Materials; GICS Industry - Construction Materials) and GNS (GICS Industry Group - Materials; GICS Industry - Paper & Forest products).

¹⁰⁹⁵ For instance, the set labelled by SFG as 'Metals & Mining' includes RIO (GICS Sub-Industry- Diversified metals & Mining), OXR (GICS Sub-Industry - Gold) and AMS (GICS Sub-Industry - Steel).

¹⁰⁹⁶ AER, *Final decision: WACC review*, May 2009, pp. 104–110.

SFG stated that the 25 firms it selected had stock return and annual report data from 1988 to 2010.¹⁰⁹⁷ This appears to mean that it was possible to identify a chain of companies which had some link of corporate ownership across the 22 year period.¹⁰⁹⁸ By concatenating the different entities (with different share market listings) a 'firm' was formed across the required period. For example, the SFG report listed 'PBL' as one of the five firms in the 'Media' set.¹⁰⁹⁹ This appears to be an aggregation of four different entities:¹¹⁰⁰

- Bond Media Limited (BML) from 1988 to 1990
- Nine Network Australia (NNA) from 1990 to 1994
- Publishing and Broadcasting Limited (PBL) from 1994 to 2007
- Consolidated Media Holdings Limited (CMJ) from 2007 to 2010.

There is no simple way to tell if the change between two ASX listings is just a name change (with no underlying change in the business activities) or if it reflects a more substantial event such as a merger or acquisition. The equity beta of the firm might change substantially if the change in corporate identity involves a change of underlying business activities. Even if the core activity is unchanged, share market speculation around merger or acquisition activity can distort the measurement of equity beta.

Consider the PBL chain of companies listed above. Both the transition from BML to NNA in 1990 (which occurred as part of the collapse of the Bond empire) and the transition from NNA to PBL in 1994 (which joined the Nine Network with Australian Consolidated Press) provide reasonable grounds to consider that the share price would be affected by merger and acquisition activity. The usual adjustment is to remove data from the affected periods, but SFG reported monthly asset betas throughout this time.¹¹⁰¹ It appears that SFG has not made any assessment of these factors, nor accounted for them in its results.¹¹⁰²

In contrast, in preparing the set of comparator firms for the AER analysis, care was taken to only consider firms with a clear history of relevant business activity (even where this involved a change of company names).¹¹⁰³ The AER took particular care to identify instances of merger or acquisition speculation and assessed the likely impact on the share price (and therefore equity beta estimate).¹¹⁰⁴ The AER considers that the instability in asset betas observed by SFG could be a direct result of the concatenation of different firms without accounting for share price distortions. Hence, the difference between the SFG approach and

¹⁰⁹⁷ SFG, *Equity beta*, October 2011, p. 26.

¹⁰⁹⁸ SFG did not provide the underlying data series that would have allowed the AER to understand exactly which firms were used.

¹⁰⁹⁹ SFG, *Equity beta*, October 2011, p. 27.

¹¹⁰⁰ See the list of previous share codes maintained by the ASX at: www.asx.com.au/asx/statistics/announcements.do?by=asxCode&asxCode=cmj&timeframe=D&period=W, accessed 12 March 2012.

¹¹⁰¹ SFG provided to the AER the data graphed in Figure 1 of SFG, *Equity beta*, October 2011, p. 27.

¹¹⁰² SFG did not provide the underlying data files that would have allowed the AER to make a definitive statement on this matter.

¹¹⁰³ AER, *Final decision: WACC review*, May 2009, pp. 255–260.

¹¹⁰⁴ AER, *Final decision: WACC review*, May 2009, pp. 255–260, 268–270.

the AER approach is material and the SFG results appear to have little relevance for the AER equity beta estimates.

This aggregation of different ASX listings is closely related to the most contentious assumption made by SFG. SFG stated that it expected the asset beta for each industry to be relatively constant over time.¹¹⁰⁵

...the true systematic risk of the business activities of a particular industry is expected to be stable with very little variation from quarter to quarter.

The AER agrees that the asset beta of most industries—such as regulated electricity or gas networks—are expected to be stable across time.¹¹⁰⁶ However, it is not the case that the underlying asset beta for an individual company is expected to be stable across time. Many firms change their business activities over time, even to the point of changing their effective industry of operation.¹¹⁰⁷ There is also a general empirical finding that an individual firm is likely to regress toward the market average beta (1.0) across time, as it diversifies its business activities.¹¹⁰⁸ It is therefore critical to ascertain whether the firms used in the analysis have changed their core business activities.

As an example, consider again the chain of PBL companies listed above. In 1994 PBL was a relatively pure media company, but it gradually established considerable interests in casinos and other gambling activities. In the years prior to 2007, gaming revenue constituted just under half of the total revenue for the firm.¹¹⁰⁹ In 2007, PBL split into two companies, Crown Limited (which took all the gaming assets) and CMJ, which retained a media focus.¹¹¹⁰ Hence, it is difficult to claim that the underlying business activities of the firm have been constant across the estimation period.

In contrast, the AER was careful to consider the underlying business activities of the firms in its data set.¹¹¹¹ The AER ensured that, across the estimation period, the relevant business activity (gas or electricity transportation) was a principal activity for the firm. The AER considers that the instability in asset betas observed by SFG could be a direct result of changes in the business activities of these firms over time. Hence, the difference between the SFG approach and the AER approach is material and the SFG results appear to have little relevance for the AER equity beta estimates.

¹¹⁰⁵ SFG, *Equity beta*, October 2011, p. 26 (footnote 36).

¹¹⁰⁶ It is possible that over a 25 year period (the time scale examined by SFG) the true industry-wide asset beta could change in line with large scale structural and technological change. In any case, such change should be gradual—though this might be an argument in favour of using recent data.

¹¹⁰⁷ Further to the discussion on GICS classification above, the GICS code for a particular firm will often change across time in keeping with the changed business activities.

¹¹⁰⁸ As per Blume (1975), cited in McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 19–20.

¹¹⁰⁹ From 2002 to 2006 between 42 and 48 per cent of the firms' annual revenue came from gaming. Publishing and Broadcasting Limited, *Concise annual report 2006*, p. 12.

¹¹¹⁰ As part of the demerger, \$5 billion worth of media assets was sold to CVC capital partners, so the media exposure of CMJ was quite different to that of PBL. Publishing and Broadcasting Limited, *Concise annual report 2007*, pp. 2–5.

¹¹¹¹ AER, *Final decision: WACC review*, May 2009, pp. 104–110, 255–260.

While the AER has not made an exhaustive study of the firms in SFG's analysis, the PBL example is not isolated. Consider the following changes in underlying business activity:¹¹¹²

- SFG included the firm AMS in its 'Mining' set. This appears to be a chain of four firms, including Allied Mining and Processing (AMS) from 1998 to 2003, and Fortescue Metals Group (FMG) from 2003 to 2010.¹¹¹³ Despite its name, Allied Mining and Processing was heavily involved in medical technology and medical services. Prior to the change to FMG in 2003, revenue from this sector constituted the majority of income for the firm.¹¹¹⁴
- SFG included the firm HAH in its 'Materials' set. This was the ASX code for James Hardie Industries until 2001.¹¹¹⁵ At that point, reflecting the changing focus and activities of the firm, James Hardie Industries departed Australia to domicile in the Netherlands, though it relisted on the ASX under the code JHX.¹¹¹⁶
- SFG included the firm BOR in its 'Materials' set. This code corresponds to Boral Limited, and was delisted from the ASX in 2000. This coincided with a demerger, splitting its (substantial) energy interests into Origin Energy and the remaining building and construction assets staying with the 'new' Boral (listed under ASX code BLD).¹¹¹⁷
- SFG included the firms STV (Sunraysia Television) and SBC (Southern Cross Broadcasting) in its 'Media' set. Both were delisted from the ASX in 2007 and it is not clear what firms have been used to extend the data series.
- SFG included the firm ZEL in its 'Commercial Services' set. This appears to be a chain of four firms where the core activities evolved across time. Though originally involved in mining (as Mount Gipps Limited, MTG, prior to 1992) the firm moved into water purification and then other commercial services (as Zeolite Australia Limited, ZEL).¹¹¹⁸ In 2004 the firm changed name again to Envirozel Limited (EVZ), sold down its interest in zeolite assets and moved the firm further into construction and engineering activities.¹¹¹⁹

SFG examined the entire period from 1988 to 2010 in its analysis, using a five year rolling data window.¹¹²⁰ This differs from the AER, which excluded from its analysis period of market disturbance such as the GFC (post 2008) or the technology bubble (1999–2001).¹¹²¹ The AER excluded such periods because it was likely that market conditions were such that equity beta estimates would be distorted. The AER considers that the instability in asset betas observed

¹¹¹² Firm codes are taken from SFG, *Equity beta*, October 2011, p. 27.

¹¹¹³ The other two firms are American Boulder (ABE) from 1988 to 1994, Pharaoh Metals Corporation (PHC) from 1994 to 1998. See the list of previous share codes maintained by the ASX at: www.asx.com.au/asx/statistics/announcements.do?by=asxCode&asxCode=FMG&timeframe=D&period=W, accessed 12 March 2012.

¹¹¹⁴ In 2001, 68% of total revenue was from Medical operations. In 2002, 83% of total revenue was from medical operations. See Fortescue Metals Group, *Annual Report 2003*, p. 33.

¹¹¹⁵ See the list of previous share codes maintained by the ASX at: www.asx.com.au/asx/research/companyInfo.do?by=asxCode&asxCode=JHX, accessed 13 March 2012.

¹¹¹⁶ James Hardie, *Annual report 2002*, pp. 2–7.

¹¹¹⁷ See the list of previous share codes maintained by the ASX at: www.asx.com.au/asx/statistics/announcements.do?by=asxCode&asxCode=BOR&timeframe=D&period=W

¹¹¹⁸ Envirozel Limited and controlled entities, *Annual report 2005*, pp. 4–5.

¹¹¹⁹ As noted above, EVZ is now classified in the GICS Industry 'Construction and Engineering'. The fourth company name was EVZ Limited, from 2009 to 2010. EVZ Limited, *Annual report 2010*, pp. 2–3, 7.

¹¹²⁰ SFG, *Equity beta*, October 2011, p. 26.

¹¹²¹ AER, *Final decision: WACC review*, May 2009, pp. 257–260, 269–271.

by SFG could be a direct result of the consideration of these periods.¹¹²² Hence, the difference between the SFG approach and the AER approach is material and the SFG results appear to have little relevance for the AER equity beta estimates.

SFG examined five firms for each industry.¹¹²³ This differs from the AER, which uses nine firms in its (equivalent) analysis of individual beta point estimates.¹¹²⁴ The AER considers that the instability in asset betas observed by SFG might be related to the use of a smaller data set. Hence, the difference between the SFG approach and the AER approach is material and the SFG results appear to have little relevance for the AER equity beta estimates.

SFG examined the de-levered asset beta for the firms in each industry.¹¹²⁵ This differs from the AER, which considers equity (not asset) betas that have been de-levered and re-levered to the benchmark gearing.¹¹²⁶ SFG considered this comparison appropriate because it used the same leverage formula as the AER in the WACC review.

The AER does not consider that this was an appropriate leverage adjustment.¹¹²⁷ The AER in the WACC review acknowledged that this leverage formula was inaccurate, and that considerable care should be taken with its use.¹¹²⁸ However, it was reasonable for the AER to use this leverage formula in the particular circumstances of the comparator set from the WACC review, because any bias in the formula would not have a material effect.¹¹²⁹ The recent advice from McKenzie and Partington supports this position.¹¹³⁰ Three aspects were particularly important to this conclusion:

- The formula was used both to de-lever and then re-lever.
- The individual firms had gearing both above and below the benchmark (in other words, some were moved downwards but others moved upwards).¹¹³¹
- The magnitude of difference between the gearing of any individual firm and the benchmark gearing was relatively small.¹¹³²

¹¹²² For clarity, this concern is based on the time period considered as well as the length of the estimation period. For example, a five year data window ending in 2002 includes three years affected by the technology bubble and just two years outside this period that are unaffected. A longer estimation period would be less affected by the abnormal market conditions.

¹¹²³ Consideration of five firms was consistent with SFG's statements on the sample size used by the AER. As previously noted, these SFG statements were incorrect.

¹¹²⁴ The AER does use six firms in its portfolio analysis (which was in addition to the individual analysis), but SFG did not construct portfolios.

¹¹²⁵ SFG, *Equity beta*, October 2011, p. 26–27.

¹¹²⁶ AER, *Final decision: WACC review*, May 2009, pp. 265–267.

¹¹²⁷ This discussion is relatively brief because the AER has already responded in some detail to a previous SFG report that misapplied the leverage formula in this same way. AER, *Final decision: Queensland distribution determination*, May 2010, pp. 264–266.

¹¹²⁸ AER, *Final Decision: WACC review*, May 2009, p. 253, 265.

¹¹²⁹ AER, *Explanatory Statement: WACC review*, December 2008, p. 202; and AER, *Final Decision: WACC review*, May 2009, p. 253–254, 265.

¹¹³⁰ McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 10–11.

¹¹³¹ For example, HDF was moved upward from its observed gearing of 47 per cent to the benchmark 60 per cent, while ENV was moved downward from its observed gearing of 71 per cent to the benchmark of 60 per cent.

The de-levering done by SFG used the same formula but in a different way, such that there is no reason to conclude that it is reliable or comparable to the AER approach. In particular:

- SFG used the formula in one direction only, by de-levering.
- The effective benchmark is zero per cent gearing, such that all firms are being moved in one direction (downwards).
- The magnitude of difference between the gearing of any individual firm and the final gearing is relatively large.¹¹³³

These aspects make it likely that the bias in this formula will be material.¹¹³⁴ The advice from McKenzie and Partington further emphasised that the leverage formula was inaccurate.¹¹³⁵

The AER considers that the instability across time observed by SFG could be a direct result of the inappropriate application of this leverage formula. Hence, the difference between the SFG approach and the AER approach is material and the SFG results appear to have little relevance for the AER equity beta estimates.

Market-based assessment using dividend yield

In several recent regulatory processes, SFG has presented analysis described as ‘market based assessment’ which is based on the current dividend yield for a set of firms that are close comparators to the benchmark.¹¹³⁶ The underlying principle is that the benchmark return on equity should meet or exceed the return on equity for these comparator firms. SFG stated that if an investor could receive higher returns from these comparable firms, this cross check would indicate that the regulatory return was unreasonable.¹¹³⁷

In essence, the SFG assessment was based around the observed dividend yield for the comparator set, with a small additional allowance for capital gains. In the most recent report, SFG estimated the return on the comparable firms as 11.5–12.5 per cent, comprising 9 per cent dividend yield and 2.5–3.5 per cent capital gains.¹¹³⁸ SFG stated that since the regulated

¹¹³² The average movement was just 7 per cent; the maximum upward movement was AGK (27 per cent) and the maximum downward movement was DUE (76 per cent). See Henry, O., *Estimating β* , April 2009, pp. 10–11 and 14–15.

¹¹³³ The average movement is 17 per cent. The maximum movement (from gearing of 92 per cent down to 0 per cent) is for PRT in December 1992.

¹¹³⁴ This is particularly the case for the Media and Materials sectors, which have the highest gearing levels.

¹¹³⁵ This is discussed in more detail earlier in the appendix. See McKenzie and Partington, *Estimation of equity beta*, April 2012, pp. 7–13.

¹¹³⁶ See for example SFG, *The required return on equity commensurate with current conditions in the market for funds: Report prepared for Envestra*, 27 September 2010, pp. 7–10; SFG, *The required return on equity commensurate with current conditions in the market for funds: Response to draft decision: Report prepared for Envestra*, 23 March 2011, pp. 5–13 (SFG, *Required return on equity for Envestra: Draft decision response*, March 2011); SFG, *Equity beta*, October 2011, pp. 28–32.

¹¹³⁷ SFG, *Equity beta*, October 2011, p. 28.

¹¹³⁸ SFG, *Equity beta*, October 2011, pp. 29–30.

return on equity was below this level, the AER's assessment was incorrect and (in particular) this meant that the equity beta was too low.¹¹³⁹

This particular approach should be distinguished from the use of dividend yields as a conditioning variable for the MRP, where the reference is to the dividend yield across the entire market. It should also be distinguished from the use of a dividend growth model (instead of the CAPM) as a means to estimate the cost of equity.

The AER considers that the market based assessment using dividend yields is flawed and is not a reasonable basis to assess the cost of equity (or the equity beta) for the benchmark firm. This consideration is consistent with previous analysis of the SFG approach.¹¹⁴⁰ In summary, the reasons for this assessment (described in more detail in earlier AER decision documents) are:

- The dividend yield is not a lower bound on the return to equity holders, since the relevant consideration is the total return encompassing dividends and capital gains. For example, if dividends are stable but price depreciation occurs then the return to equity will be below the dividend yield.
- The observed dividend yield is not a reliable proxy for the ongoing return from dividends. It considers only a short dividend horizon (one or two years). Further, in several cases the observed dividend levels exceed the profit of the firm, so the dividends (or more technically distributions) are not sustainable in the long term. In effect, the SFG approach confuses return on capital with return of capital when the two have very different implications for the ongoing capital structure of the firm.
- The SFG assessment inappropriately combines the observed dividend yield with a nominal 2.5–3.5 per cent capital gain (or a 0–1 per cent capital gain in real terms, with inflation expected to be 2.5 per cent). This combination is unreasonable because it takes no account of the capital structure of the firm. If distributions exceed profit (as noted above) then the maintenance of high levels of distributions will necessarily result in a capital loss. Further, the source data (equity broker reports) itself indicates that a capital loss (in real terms) is a likely outcome.

The recent report by McKenzie and Partington provided corroborating evidence that high dividend yields are often unsustainable, including evidence of this relationship in UK water utilities.¹¹⁴¹

There are also problems with the use of out-of-date data to derive the dividend yield forecasts. SFG has previously stated that the most recent data should always be used in this type of procedure.¹¹⁴² However, SFG did not update the sample set of broker reports from its

¹¹³⁹ Note that since this assessment is for the overall cost of equity as it considers the combined effect of the risk free rate, MRP and equity beta as inputs into the CAPM. However, SFG linked this cross check to the equity beta estimate applied by the AER.

¹¹⁴⁰ For example, see AER, *Draft decision: Envestra access arrangement SA*, February 2011, p. 64–65, 68–69, 257–262; and AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 42–45, 153–158, 164–66.

¹¹⁴¹ See papers by Jun, Gallagher and Partington (2011) and Armitage (2011) cited in McKenzie and Partington, *Report to the AER, Supplementary report on the Equity Market Risk Premium*, 22 February 2012, pp. 13–14.

¹¹⁴² SFG, *Required return on equity for Envestra: Draft decision response*, March 2011, p. 12

earlier report, which were dated between November 2010 and February 2011.¹¹⁴³ SFG did refer to data from Morningstar that was obtained more recently (September 2011). There is still some uncertainty about this source, however, since Morningstar simply aggregates the results from various broker reports and it was not clear when the underlying reports were written.¹¹⁴⁴

The SFG report continued to misquote the AER by stating that the AER endorsed the use of a capital gain of 2.5–3.5 per cent on top of the observed dividend yield.¹¹⁴⁵ In the Envestra draft decision, the observed dividend yield was 10.5 per cent (not 9 per cent as it is in the latest report) and the AER discussed in some detail why maintenance of this high dividend yield would entail price depreciation in the future. The AER then stated:¹¹⁴⁶

The AER considers that if a nominal price appreciation is to be considered (2 – 3 per cent), the dividend yield must be reduced by 5.5 per cent, so that the dividend reflects pure return expectations. Accordingly, the most appropriate return on equity that can be derived from analyst reports is 7.5 – 8.5 per cent and can be derived in two equivalent ways:

- a 5 per cent dividend yield (10.5 minus 5.5) and a 2.5 – 3.5 per cent nominal price appreciation, or
- a 10.5 per cent dividend yield and 2 – 3 per cent nominal price depreciation.

That is, the AER explicitly stated that the 2.5–3.5 per cent capital gain expectation was incompatible with the 10.5 per cent dividend yield staying at this elevated level. While SFG has selectively quoted the AER to support the opposite position, the full paragraph makes clear that this interpretation is incorrect.

The previous SFG report also justified the expectation of a small nominal capital gain by reference to the price forecasts in broker reports. The AER has previously set out why this analysis was incorrect.¹¹⁴⁷ The latest SFG report makes no reference to broker price forecasts.¹¹⁴⁸ Instead, SFG dismissed the possibility that share prices might be expected to fall by noting that the majority of equity broker analysts rate the firms as hold, buy or strong buy.¹¹⁴⁹ SFG stated that this confirmed that it was conservative to assume that prices will remain constant (in real terms).

The AER considers that there are several problems with this reasoning:¹¹⁵⁰

¹¹⁴³ Compare table 1 (page 12) of the March 2011 SFG report with table 6 (page 29) of the October 2011 SFG report. The row entries for each firm in 2012 and 2013 are identical (though the average differs because it was incorrectly calculated in the earlier report to exclude SPN). SFG, *Required return on equity for Envestra, Draft decision response*, March 2011, p. 12; and SFG, *Equity beta*, 11 October 2011, p. 29.

¹¹⁴⁴ The AER asked for these underlying source documents but APTPPL/SFG did not identify the reports or provide them.

¹¹⁴⁵ SFG, *Required return on equity for Envestra: Draft decision response*, March 2011, p. 3, 6, 13; SFG, *Equity beta*, 11 October 2011, p. 29.

¹¹⁴⁶ AER, *Draft decision: Envestra access arrangement SA*, February 2011, pp. 259–260.

¹¹⁴⁷ AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 155–158.

¹¹⁴⁸ The AER does not assume that the absence of a response on this matter indicates that SFG accepts the AER position. However, in the absence of any further engagement, the AER maintains its previous position.

¹¹⁴⁹ SFG, *Equity beta*, October 2011, p. 30.

¹¹⁵⁰ The following section does not refer to the specific equity broker reports used by Morningstar because APTPPL/SFG were not able to identify the reports or provide them. However, the AER refers to recent equity broker reports that demonstrate the AER's concerns.

- There is no inherent incompatibility between a neutral or positive recommendation and the expectation of a capital loss because equity broker reports are concerned with the overall return provided from an investment. Hence, if the analyst expected a capital loss combined with a large dividend return, it might recommend buy or hold because the overall (net) return was sufficient to offset the risk in holding that share. For example, a recent report by Deutsche Bank covering SP AusNet explained their 'buy' rating in this way:¹¹⁵¹

Buy: Based on a current 12- month view of total shareholder return (TSR = percentage change in share price from current price to projected target price plus projected dividend yield), we recommend that investors buy the stock.

- In that report Deutsche Bank predicted a capital loss of 14 per cent, but maintained a hold rating on SP AusNet shares.¹¹⁵²
- Equity broker reports are concerned with relative investment opportunities. Hence, the (absolute) assessment of capital gain or loss is secondary to the (relative) assessment of a stock against the market (or sector) more generally. If the analyst expected that a particular share price would decline, but that the market would decline more, this would in fact be a positive factor for that firm's assessment (all else equal). Again, there is no inherent inconsistency between a neutral or positive recommendation and expectations of a capital loss. For example, a recent report by Macquarie Equities Research covering APA Group explains their ratings in this way:¹¹⁵³

Outperform – return >3% in excess of benchmark return

Neutral – return within 3% of benchmark return

Underperform – return >3% below benchmark return

- In that report, Macquarie Group had a hold rating on APA Group in conjunction with an expected 3 per cent price decline.¹¹⁵⁴
- Equity broker reports are often described as 'buy side' analysis because they only issue reports for those firms they recommend investors buy. For example, Deutsche Bank disclosed that they rate 98 per cent of the firms they cover as hold or buy.¹¹⁵⁵ JP Morgan disclosed that they rate between 89 and 92 per cent of the firms they cover as hold or buy.¹¹⁵⁶ Macquarie Research placed 90 per cent of all firms in these categories, and Credit Suisse placed 88 per cent as hold or buy.¹¹⁵⁷ In this context, to note (as SFG did) that 88 per cent of the comparator set are rated as hold or better is not an endorsement of these firms relative to the background rating spread.

Overall, the AER considers that the SFG market based assessment using dividend yields is not a reasonable basis to assess the cost of equity (or the equity beta) for the benchmark

¹¹⁵¹ The sell and hold categories are similarly defined with regard to total shareholder return. Deutsche Bank, *SP Ausnet, 1HFY12: Solid result*, p. 12.

¹¹⁵² The current share price is \$0.99 and the 12 month target share price is \$0.85. Deutsche Bank, *SP AusNet, 1HFY12: Solid result*, p. 1.

¹¹⁵³ Macquarie Equities Research, *APA Group, Debt refi provides flexibility*, 3 November 2011, p. 3.

¹¹⁵⁴ Macquarie Equities Research, *APA Group, Debt refi provides flexibility*, 3 November 2011, p. 1.

¹¹⁵⁵ Deutsche Bank, *Spark Infrastructure, CY11 result - Distribution growth guidance of 3–5%*, 27 February 2012, p. 15.

¹¹⁵⁶ JP Morgan, *Spark Infrastructure Group, FY11 Result Review*, 27 February 2012, p. 10.

¹¹⁵⁷ Macquarie Equities Research, *DUET Group, Stable predictable and sound*, 14 February 2012, p. 6; Credit Suisse, *Spark Infrastructure Group, Stronger distributions support cashflow thesis*, 27 February 2012, p. 15.

firm. This cross check does not demonstrate that the observed dividend yields are inconsistent with the cost of equity (and the equity beta) set by the AER.

D PMA contract buyout

Prior to 2007, the planning, design, capex project management, and operation and maintenance of the RBP were contracted to Agility under an agreement (the PMA).¹¹⁵⁸ In June 2007, APA terminated that agreement and acquired the Agility business from Alinta. Among other things, the acquisition was intended to internalise the construction, management and services functions by acquiring Agility's various asset management contracts as well as its employees, and items of property, plant and equipment.¹¹⁵⁹

The total cost to APA to acquire the Agility business was \$206.2 million (\$nominal), which included a goodwill component of \$190.1 million (\$nominal). APTPPL proposed that \$30.1 million (\$nominal) of the goodwill be included as stay in business capex for the RBP in the earlier access arrangement period.¹¹⁶⁰

D.1 Draft decision

The AER does not approve the inclusion of the proposed capital expenditure (capex) associated with the PMA contract buyout in APTPPL's opening capital base. The AER is not satisfied that the PMA expenditure meets the definition of capex in r. 69 of the NGR because APTPPL has not substantiated that the expenditure was incurred to provide or in providing pipeline services. The AER also considers that the proposed expenditure is not conforming capex for the purposes of r. 79 of the NGR. The AER requires APTPPL to remove \$30.1 million (\$nominal) from its opening capital base.

D.2 Background

The parties to the PMA have changed over time. The PMA was entered into in April 2000 between two related businesses under the control of AGL. AGL subsequently vested ownership of its pipelines, including the RBP, in APA, which was listed on the Australian Stock Exchange in June 2000. At the time the PMA was entered into, it was an agreement between related parties. Over time, the names of the parties to the PMA changed with changes in ownership of the relevant businesses. However, for ease of reference, in this appendix the parties to the PMA are referred to simply as APA and Agility.

Agility received payment under the PMA for the costs of direct operations, operations support, engineering support, pipeline maintenance and easement management, amongst other things. To acquire the Agility business, APA paid \$206 million to Alinta (Agility's parent company), including \$190 million identified by APA simply as goodwill. Table D.1 sets out the assets acquired by APA.

¹¹⁵⁸ KPMG, *APA Group Regulatory accounting treatment of Pipeline Management Agreement termination payment*, October 2011, (KPMG report, October 2011) p. 6.

¹¹⁵⁹ APTPPL, *Access arrangement submission*, October 2011, pp. 36–37.

¹¹⁶⁰ APTPPL, *Access arrangement submission*, October 2011, p. 36.

Table D.1 Net assets acquired

Assets	(\$million)
Non-current assets	
Property, plant and equipment	4.6
Deferred tax asset	1.7
Intangible assets ^a	15.4
Other non-current assets	0.6
Non-current provisions	
Employee entitlements ^b	(5.7)
Current provisions	
Employee entitlements ^b	(0.6)
Goodwill	
Goodwill on acquisition ^c	190.1
Total acquisition consideration	206.2

Source: The KPMG report, October 2011, p. 13.

- a APTPPL has submitted that intangible assets are those representing the value derived from 13 third party operating and maintenance contracts novated to APA by Agility as part of this transaction, and relating mainly to the Ethane Pipeline at the Goldfields Gas Transmission Pipeline. As neither of these pipelines was subject to the PMA, these intangible assets do not relate to the PMA and are not relevant to the premium.
- b APTPPL submitted that APA explains the non-current and current liabilities disclosed in Note 41 to the 2008 audited statutory financial statements represent liabilities for the entitlement of employees transferred from the Alinta Group.
- c APA accounted for the excess of purchase consideration over the other net assets set out in table D.1 above, as an asset (goodwill) in its 2008 audited statutory financial statements (and subsequent years). Note 41 to the 2008 financial statements indicates that for . . .the operating and maintenance services previously provided by Alinta, the Consolidated Entity has paid a premium for the acquiree as it believes the acquisitions will create synergistic benefits to the existing operations.” This has been termed as ‘the premium’.

The goodwill component (\$190.1 million) arising from this transaction was allocated by APA across various pipelines in proportion to the present value of the expenditure savings it anticipated would accrue to each pipeline. The resulting allocation to the RBP is set out in confidential appendix H. This allocation was then adjusted to:¹¹⁶¹

- remove any benefit from savings in management fees payable to Agility on the basis that the management fee was not recoverable by a reference tariff; and
- discount future cash flows by using a WACC of 8.84 per cent, being the nominal vanilla WACC for the RBP, approved at its 2006 Access Arrangement revision, rather than APA’s internal WACC.

¹¹⁶¹ The KPMG report, October 2011, p. 15.

After these adjustments, the ultimate allocation of goodwill to RBP was \$30.1 million (\$nominal).¹¹⁶²

APTPPL submitted that the expenditure was of a capital nature incurred to provide pipeline services. However, a confidential APA Board paper dated 26 February 2007 (the 2007 Board Paper) noted that there were various strategic and other reasons for purchasing the business operations of Agility. These are discussed in confidential appendix H.

To support its access arrangement proposal, APTPPL included a 2011 report prepared by KPMG (the KPMG report) that submits that the net benefit of the capex attributable to the RBP exceeds the net costs which would otherwise be needed for the RBP, in present value terms.¹¹⁶³

Table D.2 sets out a detailed timeline of the events leading up to the PMA termination.

¹¹⁶² APTPPL, *Access arrangement submission*, October 2011, attachment 4.3 (confidential).

¹¹⁶³ KPMG report, October 2011, p. 27–34.

Table D.2 Timeline of the PMA contract

Date	Event
April 2000	AGL Pipelines Ltd forms PMA with a related party, AGL Infrastructure Management Pty Ltd, outsourcing pipeline construction, maintenance and operations services Contract signed on 13 April 2000, for an initial term of 20 years
June 2000	The Australian Pipeline Trust (trading as APA) lists on the Australian Stock Exchange
2000-07	APA acquires various businesses, a number of which have substantial in house operating functions Business model changes from having a relatively small staff base to a larger one with superior cost effectiveness and economies of scale
30 June 2005	End of the Initial Period, after which Agreed Costs were to be determined over a rolling three year process
October 2006	Alinta acquired the Agility business from AGL through a combination of merger and demerger transactions.
September/October 2007	APTPPL terminates PMA and acquires Agility management business A Contract Termination and Contract Novation Agreement between APTPPL, Alinta Limited and Alinta Asset Management is entered into
2008	Statement from Director's Report in APA Group's 2008 Annual Report: "The arrangements between APA, Alinta and the Babcock & Brown/Singapore Power Consortium to terminate or transfer to APA the operating and maintenance services previously provided by Alinta for many of APA's gas transmission pipelines were completed on 2 October 2007. APA paid \$206.2 million, resulting in the elimination of all fees and margins that were paid to Alinta and the transfer to APA of associated property, plant and equipment and Alinta personnel involved in the provision of services."
30 June 2008	APA's audited statutory financial statements for the year ending 30 June 2008 list \$190,094,000 in goodwill (provisional figure using best available information at the time)
2009	Purchase consideration is known with certainty when 2009 audited financial statements are prepared Additional \$5,000 was accounted for in 2008-09
26 September 2011	APA provides KPMG with terms of reference
2012	Access arrangement review of RBP is due to take effect
2012-17	Access arrangement period for which the access arrangement applies
2020	Minimum year APA would have been committed to the PMA if it was not terminated. Five year renewal periods were to be in effect after 2020

Source: APTPPL, *Access arrangement submission*, October 2011, attachment 4.3 (confidential).

D.3 Initial comments about goodwill in the regulatory context

The AER is unaware of expenditure on goodwill being previously included in a regulatory capital base in an Australian jurisdiction.

Accordingly, as this is an unusual aspect of APTPPL's proposal, the AER believes it is important to set out some initial general comments about the regulatory treatment of goodwill. This sets a context for the more detailed analysis of the APTPPL proposal under the NGR which follows.

In this initial discussion, the AER has considered:

- the treatment of expenditure on goodwill by other regulators
- goodwill in the building block model
- the potential to capitalise inefficiencies by including goodwill in a capital base.

Treatment of expenditure on goodwill by other regulators

The AER is aware of various guidelines released by jurisdictional regulators¹¹⁶⁴ and the ACCC¹¹⁶⁵ that specifically require the exclusion of expenditure on goodwill from a regulatory capital base.

In a regulatory framework, a regulated business's own goodwill is not given any value in the regulatory capital base. It is not an asset that provides any additional services or which justifies a regulated return of itself. To include the goodwill of a purchased business in a regulatory capital base may therefore present a significant anomaly. It could potentially provide an incentive for regulated businesses to structure their affairs in order to earn a return on and of goodwill, an asset which itself does not provide any additional services or basis for a return in the regulatory framework. The AER is of the view that this is because goodwill is not an asset that is purchased to provide, or in providing, regulated services. Rather, it is a premium that is paid by a purchaser to derive some additional benefit above the identified assets of a business. In the current context, for instance, once Agility had been purchased by APA and folded into its own operations, the goodwill of Agility had, it seems to the AER, a realisable value of nil, at least in the context of the regulated services provided by the RBP.

Further, goodwill for a regulated business is influenced by the value of future net earnings, which in turn depend on future revenue streams and the value of assets. If regulated revenue streams include returns on and of goodwill, it potentially creates a never-ending circle of increasing asset values and the revenue streams that flow from those increasing asset values.

¹¹⁶⁴ Including the Queensland Competition Authority (QCA) and the Independent Pricing and Regulatory Tribunal (IPART).

¹¹⁶⁵ ACCC, *Draft Statement of Principles for the Regulation of Transmission Revenues*, 27 May 1999; KPMG, *The treatment of net working capital in establishing the regulatory asset base for AGL Gas Networks Limited*, 27 October 1999; QCA, *Electricity Distribution: Regulatory Reporting Guidelines*, November 2005.

Goodwill values unidentified benefits and it is therefore inherently difficult to value as 'efficient'. As it relates to unidentified benefits it is also inherently difficult to appropriately attribute it to regulated services. A range of valuation methods are generally available for valuing identifiable assets. This provides a constraining or comparative valuation within which efficiency and comparisons for assessing whether expenditure is prudent, and can be properly tested. The same is not true for goodwill.

Further, goodwill represents an amount paid for something that is unidentified and may contain a premium a business is willing to pay for various goals or purposes that may not be directly related to the regulated service. For example, a business may pay a premium in order to access monopoly rents. In the absence of appropriate identification of what the goodwill is for, it is impossible to know for certain whether it is expenditure incurred to provide or in providing regulated services.

When an external business is purchased and folded in to the operations of an existing regulated business, the premium attached to the goodwill of the former external business—that is, its standing as a business in the eyes of other customers—may have value to the purchaser. However, this value would not appear to be value that is relevant in the context of the regulated activities of the existing regulated business. Any benefits or income the purchasing company can derive from the purchased business' customer base will be related to a new revenue stream for the purchasing company or the general operations of the purchasing company. They will not necessarily be benefits or income that are attributable to regulated services. In this sense, while expenditure to purchase the goodwill of another business may make good business sense, and may create value or opportunities for the purchaser, it is not clear that that expenditure is expenditure incurred to provide, or in providing, regulated services. It is expenditure that is incurred for other reasons and purposes.

These issues of concern, among others, have been raised previously by other Australian and New Zealand regulators as summarised in table D.3 below. In making a draft decision on this issue, the AER is conscious of the fact that it may be departing from accepted practice in other jurisdictions if it were to accept that a payment for the goodwill of a purchased business was properly regarded as expenditure that is incurred to provide, or in providing, regulated services.

Table D.3 Goodwill discussion in various regulatory publications

Regulator	Treatment of goodwill in a regulated capital base
ACCC	<ul style="list-style-type: none"> goodwill will not be included in the regulatory capital base of the TNSP's as it does not provide any additional services that warrant a regulated return
Queensland Competition Authority (QCA)	<ul style="list-style-type: none"> goodwill is not to be permitted in <i>Regulatory Reports</i>. Further, goodwill should be eliminated as an adjustment between <i>Statutory Accounts</i> and regulatory reports ¹¹⁶⁶
Independent Pricing and Regulatory Tribunal (IPART) through the KPMG report prepared for IPART.	<p>Purchased goodwill would not form part of the capital base of a business because:</p> <ul style="list-style-type: none"> to provide returns on and of goodwill would provide investors with returns on investment made in excess of the fair value of the underlying identifiable assets. This would not provide incentives for efficient investment and could result in customers funding inefficient investment it is difficult to determine an 'efficient' value of goodwill as the underlying assets are unidentifiable there is no constraint on the value of goodwill for regulatory purposes however, because it values unidentified assets, it has a net realisable value of zero which provides an appropriate constraint. Goodwill for a regulated business is influenced by the value of future net earnings, which in turn depend on future regulated revenue streams. If regulated revenue streams include returns on and of goodwill, it would initiate a self-fulfilling circle of increasing asset values and revenue streams. While circularity may exist in certain valuation methods for some assets such as plant, a range of valuation methods is generally available for identifiable assets to provide a constraining or comparative valuation.
New Zealand Commerce Commission	<ul style="list-style-type: none"> regulated suppliers must exclude goodwill from their RAB values in markets subject to workable competition suppliers are generally unable to earn an additional rate of return simply as the result of the goodwill included in their payments to acquire assets even if such payments were justifiable, the process of separating out the portion of those payments which reflect specific factors (such as potential efficiency gains) would be subjective and arbitrary

¹¹⁶⁶ The QCA report defines statutory accounts as the audited set of accounts prepared in accordance with Australian Securities and Investments Commission (ASIC) requirements submitted to the ASIC by statutory entities. The QCA report defines regulatory reporting as financial records derived from the Statutory Accounts of the Licensee and the Statutory Accounts of Related Parties of the Licensee that are involved in the activities of a DNSP.

- the inclusion of goodwill in the RAB value may encourage inefficient consolidations
- excluding goodwill from the RAB value will help to produce outcomes consistent with those observed in workably.¹¹⁶⁷

Source: ACCC, *Draft statement of principles for the regulation of transmission revenues*, 27 May 1999, p. 149; QCA, *Electricity distribution: Regulatory reporting guidelines*, November 2005, p. 35; KPMG, *The treatment of net working capital in establishing the regulatory asset base for AGL Gas Networks Limited*, 27 October 1999, p. 9; Commerce Commission, *Input methodologies (electricity distribution and gas pipeline services): reasons paper*, December 2010, pp. 306–307.

¹¹⁶⁷ Commerce Commission, *Input methodologies (electricity distribution and gas pipeline services): reasons paper*, December 2010, pp. 306–307.

Goodwill and the building block model

There are particular problems in fitting the notion of goodwill in the building block model.

In the regulatory context, the service provider's total revenue is calculated using the building block methodology. The building block methodology allows for the service provider to recover an appropriate return of and return on capital, operating expenditure (opex) and tax costs. When revenue is set this way, the present value of future revenue (net of future costs) equates to the regulatory capital base. The regulatory capital base is tied to the depreciated actual incurred capex, which resembles the service provider's book value of its assets.

In the context of the NGL, the role of the regulator is to ensure that a service provider is provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in providing reference services.¹¹⁶⁸ Limiting the service provider to its efficient costs results in the market value of the service provider (which is the present value of its future revenues net of future costs), equalling the service provider's book value. This results in no goodwill being created.

Economic rents are only permitted in a regulatory context in the short term. This is where a service provider can outperform its regulatory forecasts in the access arrangement period and demonstrate that its:

- actual opex is less than the regulator's approved forecast opex
- actual capex is not equal to the regulator's approved forecast capex
- actual demand is higher than the forecast demand.¹¹⁶⁹

These short term economic rents are accounted for in the regulated business's cash flows and not in its capital base. Short term economic rents are not removed by the regulator because they provide the regulated business with an incentive to reduce its costs and operate its network more efficiently. The resulting efficiency benefits are retained by the service provider in the short term through higher total revenue. In subsequent access arrangement periods, these efficiency benefits are passed on to users.

Including goodwill in a regulatory capital base is equivalent to allowing the regulated entity to earn positive economic rents in the longer term. Including goodwill in circumstances such as this will increase the risk that service providers will be compensated over and above efficient costs, and move away from the efficient cost based nature of the regulatory regime.

Depreciation of goodwill

Ordinarily, capital assets are either depreciated, if they are tangible assets, or amortised, if they are intangible assets. It is essential to the efficient and appropriate construction of a regulatory capital base that assets are depreciated or amortised, as relevant, over time. This is apparent from the structure and terms of the NGR. Depreciation is a building block for

¹¹⁶⁸ NGL, s. 24.

¹¹⁶⁹ Economic rents may also occur due to other factors such as incentive mechanisms that may be in place.

determining total revenue¹¹⁷⁰ and it is expressly included as a deduction in calculating the capital base.¹¹⁷¹

In its access arrangement information, APTPPL applied a definite life to the cost of the PMA buyout and proposed that it be fully 'depreciated' by 2020.¹¹⁷² As Bird Cameron submitted, this is inconsistent with the accounting treatment of purchased goodwill, which only allows for the carrying value of goodwill to be remeasured if it is 'impaired'. AASB 136 *Impairment of Assets* requires goodwill to be tested for impairment annually. This testing process compares whether the carrying amount of the goodwill exceeds the recoverable amount expected to be generated from the goodwill as an asset. If the amount expected to be recovered from the asset results in a value lower than the amount of goodwill, then an impairment loss must be recognised, reducing the value of goodwill on the balance sheet.

APTPPL has not proposed that the goodwill be subject to an annual impairment test. Rather, it has proposed the PMA expenditure as a new asset class in its depreciation schedule with a standard economic life of 12 years. This treatment of goodwill is therefore inconsistent with the accounting treatment of purchased goodwill. The concept of an annual 'impairment test' is also foreign to the gas regime, which requires that the value of the capital base be determined every five years. This further indicates that the recognition of expenditure on goodwill in a regulatory capital base does not fit well in the regulatory scheme.

The potential to capitalise inefficiencies

In its 2006 final decision, the ACCC considered the efficiency of the Agility outsourcing arrangement. With the information then available, the ACCC considered that only the management fee should be excluded. Agility's actual costs of providing the outsourced services were considered to be reflective of efficient costs. If, in 2006 the ACCC had been aware that APTPPL could provide services to itself at a cost less than Agility's actual costs, it would have set APTPPL's expenditure based on APTPPL's actual cost and not Agility's actual cost. If the proposal by APTPPL is correct, the PMA was not efficient in terms of achieving the lowest sustainable cost of providing services. This is because:

- the KPMG report submitted that APA could provide the outsourced services in-house at a cost substantially less than charged by Agility at around the time the ACCC made its decision
- demonstrating that services can be performed in house at a lower cost shows that the PMA did not result in an outcome that achieved the lowest sustainable cost of providing services
- although the termination payment does not contain management fees, there is a substantial amount of goodwill.

Goodwill reflects that the value of a viable business may be more than the sum of its identified assets and liabilities. The residual value is termed goodwill. In the case of the PMA contract buyout, goodwill is valued at over twelve times the value of Agility's identified assets, seven years after the PMA was entered into.

¹¹⁷⁰ NGR, r. 76.

¹¹⁷¹ NGR, rr. 77 and 78.

¹¹⁷² APTPPL, *Access arrangement submission*, October 2011, p. 47.

According to the KPMG report, the expenditure associated with the PMA contract buyout is a cost that has been incurred to achieve future cost savings and increases in cash flows. If it is true that the PMA was not reflective of efficient costs, effectively this indicates that at least part of the expenditure associated with the PMA contract buyout was incurred by APA in order to avoid inefficiencies in its own contract. By seeking to include this expenditure in the opening capital base, it may be the case that APTPPL is capitalising the inefficiencies in its own contract and passing the cost of this expenditure on to end users.

D.4 Assessment approach

In the section above, the AER has provided some contextual comments about goodwill in an economic regulatory context. However, the AER is required to assess APTPPL's proposal under the provisions of the NGR and NGL. In assessing whether the PMA expenditure should be included in APTPPL's opening capital base, the AER first considered whether the expenditure meets the definition of capex for the purposes of r. 69 of the NGR. Capex is defined as:

costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services.

There are two basic elements to the definition of capital expenditure. Firstly, the expenditure must be expenditure of a capital nature. Secondly, the expenditure must be incurred to provide, or in providing, pipeline services. The AER has analysed each of these two requirements in its reasons.

If the PMA expenditure is capex for the purposes of r. 69 of the NGR, the AER must then consider whether the expenditure is conforming capex for the purposes of r. 79 of the NGR. In order to be conforming capex, r. 79 of the NGR requires that:

- the capex must be such as would be incurred by a prudent service provider, acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services (r. 79(1)(a) of the NGR); and
- the capex must be justifiable under one of the subrules in r. 79(2) of the NGR.

The AER has had regard to whether the submitted information in the nature of a forecast or estimate is supported by a statement of the basis of the forecast or estimate which conforms with r. 74(1) of the NGR. Any forecast or estimate:

- must be arrived at on a reasonable basis; and
- must represent the best forecast or estimate possible in the circumstances.¹¹⁷³

In addition, as the overall expenditure on the PMA contract buyout is only partly allocated to the RBP component of APA's business, the basis on which an amount is to be attributed to the RBP is necessarily inferred or derived from other information. Under r. 75 of the NGR, information in the nature of an extrapolation or inference must be supported by the primary information on which the extrapolation or inference is based.

¹¹⁷³ NGR, r. 74(2).

This point is also relevant in the context of rr.42 and 72 of the NGR. Under r. 42 of the NGR, access arrangement information is, amongst other things, information that is reasonably necessary for users and prospective users to understand the basis and derivation of the various elements of the proposal. Under r. 72 of the NGR, such access arrangement information must be provided for capex.

In undertaking its assessment, the AER performs its function and powers in a manner that will or is likely to contribute to the achievement of the National Gas Objective (NGO). The AER has also taken into account the Revenue and Pricing Principles, as required by the NGL.¹¹⁷⁴

Summary of the AER's approach

As this is the first time an assessment of this type of expenditure has been undertaken under the NGR, the AER has assessed the expenditure against all the requirements in the NGR as follows:

- first the AER considered whether the proposed expenditure came within the definition of capex in r. 69 of the NGR.

With the information available to it, the AER is of the view that it does not. However, since it may be possible for the AER to ultimately be satisfied on this point, on the provision of further information, the AER has gone on to consider:

- whether the expenditure is such as would be incurred by a prudent service provider, acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing services for the purposes of r. 79(1)(a) of the NGR

and if so:

- whether the expenditure is justifiable under one of the grounds in r. 79(2)(b).

D.5 Reasons for draft decision

The AER is of the view that the PMA expenditure is expenditure of a capital nature. However, the AER is not satisfied that the PMA expenditure meets the definition of capex in r. 69 of the NGR because APTPPL has not substantiated that the expenditure was incurred to provide or in providing pipeline services.

On this basis, the AER's draft decision is that no amount should be included in the opening capital base for the goodwill component of the PMA buyout.

However, this is a very complex issue and the AER has multiple concerns about the proposed PMA contract buyout. Some of those concerns relate to whether any amount of the expenditure can be included in the regulatory capital base, while other concerns may only relate to a portion of the expenditure. To ensure that APTPPL is properly informed about the AER's concerns, and in a position to make submissions to address them, the AER has provided a comprehensive summary of its various concerns with the proposal. This summary is contained in table D.4.

¹¹⁷⁴ NGL, ss. 23–24 and 28.

Table D.4 Summary of the AER's reasons for its draft decision

Element	AER assessment of APTPPL's proposed PMA contract buyout costs
<p>Rule 69 of the NGR requires that capex is costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services.</p>	<p>A number of different regulators have considered that goodwill should not be attributed to the capital base of regulated assets because it is not expenditure that has the relevant nexus with the capital base of the regulated services. In the context of this decision, the AER considers that it is not clear that expenditure on the goodwill of a purchased business is incurred to provide or in providing pipeline services. Furthermore, the AER considers that APTPPL has not demonstrated that the expenditure being submitted in the access arrangement proposal was incurred for the provision of pipeline services for the RBP.</p>
<p>Rule 79(1)(a) of the NGR requires that conforming capex is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.</p>	<p>Analyses by both the AER's consultant and AER staff indicate that the overall expenditure on the PMA contract attributed to the RBP is greater than the cost of continuing with the PMA contract. It is therefore not expenditure to achieve the lowest sustainable cost of providing services. The AER also notes that a portion of the PMA expenditure was the result of a 'terminal value' attributed to the PMA contract for the years beyond 2020 when the contract would have expired. The AER is of the view that this portion of the PMA contract buyout could not be incurred to achieve the lowest sustainable cost of providing pipeline services, and therefore does not meet the criteria set out in r. 79(1)(a) of the NGR.</p>
<p>Rule 79(1)(b) of the NGR requires capex to be justifiable on a ground stated in r. 79(2) of the NGR. APTPPL has justified the PMA contract buyout capex specifically using r. 79(2)(a) of the NGR which requires that the overall economic value of the expenditure is positive.</p>	<p>The AER considers that the expenditure associated with the PMA contract buyout does not result in a positive NPV and is therefore not conforming capex for the purposes of r. 79(2)(a) of the NGR. The AER does not accept the approach for calculating expected savings over the life of the PMA contract as set out in the KPMG report.</p> <p>The AER also considers that the PMA contract buyout capex is not justifiable under any other test under r. 79(2) of the NGR.</p>

D.5.1 Expenditure incurred in providing pipeline services (r. 69 of the NGR)

Expenditure of a capital nature

When considering the PMA expenditure against the definition of capex as set out in r. 69 of the NGR, the AER firstly considered whether the expenditure on goodwill was of a capital nature.

Various Australian court and tribunal judgements have considered the question of whether expenditure is or is not in the nature of capital. The Tribunal has recently considered many of these cases in the context of the NGL and NGR in *Application by Jemena Gas Networks (NSW) Ltd (No 3)* [2011] ACompT 6. In its judgment, the Tribunal referred approvingly to the test expounded by Dixon J in *Sun Newspapers Ltd v Federal Commissioner of Taxation* [1938] HCA 72; (1938) 61 CLR 337. The Tribunal also referred approvingly to a decision of the High Court which held that the fact that no tangible asset or benefit of an enduring kind is acquired as a result of expenditure does not in itself preclude a finding that the expenditure is

on capital account.¹¹⁷⁵ These cases suggest that expenditure on goodwill associated with the purchase of an external business may be considered expenditure of a capital nature.

While not definitive, the AER notes Australian Accounting Standard (AAS) AASB 3 *Business Combinations*, provides a definition of goodwill as:

an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised.

The AER engaged Bird Cameron to provide advice on the KPMG report's assessment of the PMA contract buyout. Bird Cameron considered that an acquisition such as this needs to be assessed on whether it is a business combination¹¹⁷⁶ (where goodwill can be recognised at acquisition), or merely an asset purchase.

Bird Cameron concluded that the PMA expenditure was in fact a business combination and was capital in nature, correctly classified as goodwill under AASB 3.¹¹⁷⁷ The AER is satisfied with Bird Cameron's assessment of the transaction.

The AER agrees that these precedents, and the submissions by APTPPL, support the view that the PMA expenditure is capital in nature.

Expenditure incurred in providing pipeline services

Given that the expenditure associated with the PMA contract buyout is of a capital nature, the AER considered whether this expenditure is properly regarded as expenditure incurred to provide or in providing the Roma-Brisbane pipeline services for the purpose of r. 69 of the NGR.

Almost 92 per cent of the payment associated with the PMA contract buyout was identified merely as 'goodwill'.¹¹⁷⁸ It was a payment for unidentified benefits associated with the purchase of the Agility business. However, it does not appear that APTPPL is continuing to trade on the Agility business name or the goodwill associated with its potential customer base. It would appear that the goodwill represents an amount that APTPPL was willing to pay over and above the value of the business' identified assets. For that reason, it is both relevant and important to consider what the intention and motivation was for paying the amount that was finally agreed for the purchase price.

On the basis of the information included in the 2007 Board Paper, it is clear that the purchase was motivated by many purposes, and it was intended to address a number of factors, other than maintenance and operations for existing pipeline services that would be properly attributable to the RBP. The key advantages of the PMA contract buyout as outlined in the 2007 Board Paper are outlined in confidential appendix H.

¹¹⁷⁵ *Mount Isa Mines Ltd v Federal Commissioner of Taxation* (1992) 176 CLR 141 at 147.

¹¹⁷⁶ A business combination can be defined as the bringing together of separate entities or businesses into one reporting entity.

¹¹⁷⁷ Bird Cameron, *Report to the AER: Review of capex for the RBP access arrangement*, February 2012, pp. 5–9 (Bird Cameron report).

¹¹⁷⁸ AER analysis; KPMG report, October 2011, p. 13.

It would appear from the 2007 Board Paper that APTPPL was motivated by factors other than securing operating and maintenance services for its pipelines. This appears to be reflected in the disproportionality between the amount representing goodwill and the amount representing the actual assets from which future economic benefits would be expected to accrue.

APTPL, however, has attributed the entire purchase price to its existing pipeline services in the access arrangement proposal,¹¹⁷⁹ and the most significant proportion of the purchase price has been allocated to its regulated pipelines.

The onus is on APTPL to substantiate that expenditure it has incurred for the RBP is properly attributable to pipeline services for the RBP (just as the AER is not obliged to accept an amount of other expenditure that is not properly accounted for or substantiated in claims for opex and capex). If APTPL submitted a receipt for operating expenditure that indicated who the expenditure was being paid to but did not indicate what the payment was actually for, the AER would be entitled to reject that expenditure unless APTPL substantiated that the expenditure was indeed for the operation of pipeline services. In a similar manner, the AER requires APTPL to substantiate that the proposed goodwill amount, being a premium paid for unidentified benefits, is actually attributable to providing Roma-Brisbane pipeline services as set out in r. 69 of the NGR.

By definition, if a payment is for something unidentified, then it is not for the identified purpose of providing particular services. Rule 69, however, requires that identified nexus. This is because the capex must be incurred to provide, or in providing, pipeline services. As discussed in section D.3 above, this appears to be one reason that regulators in Australia have maintained that goodwill cannot be included in a regulated capital base. Given the multiple purposes behind the purchase of Agility and the intended use of the business operations of Agility, the AER is of the view that APTPL has not provided sufficient evidence to support the inference that the entire amount of the purchase price can be allocated to existing pipelines.¹¹⁸⁰ To the contrary, the information provided by APTPL indicates that only a portion of the purchase price, if any, is properly attributable to pipeline services for existing pipelines at the time of the purchase and a smaller portion of that amount would be properly attributable to RBP's pipeline services.

D.5.2 If the proposed PMA expenditure fulfilled the capex requirements, does it fulfill the requirements under the new capital expenditure criteria (r. 79 of the NGR)?

The AER is not satisfied that APTPL has substantiated that the expenditure incurred in purchasing Agility is expenditure that is incurred to provide, or in providing, pipeline services.¹¹⁸¹ If APTPL is able to address these concerns to the satisfaction of the AER, the AER has further concerns about whether the expenditure to purchase Agility would meet the requirements of conforming capex in r. 79 of the NGR. Accordingly, the AER has carried out an assessment of the proposed expenditure against the requirements of r. 79 of the NGR.

¹¹⁷⁹ Subsequently adjusted to exclude management fees.

¹¹⁸⁰ See rr. 75, 42 and 72 of the NGR.

¹¹⁸¹ As required by r. 69 of the NGR.

The PMA capex assessed under r. 79(1) of the NGR

Rule 79(1)(a) of the NGR requires that capex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services. In the following sections, the AER assesses whether the termination of the PMA was efficient and necessary to achieve the lowest sustainable cost of providing services.

Nature of the Agility termination payment

As discussed, APTPPL has not substantiated its claim that the expenditure associated with the PMA contract buyout was wholly incurred for the purpose of providing pipeline services. For this reason, it is also not clear that the expenditure was incurred to achieve the lowest sustainable cost of providing pipeline services. It seems to the AER that it would only be incurred to achieve the lowest sustainable cost of providing pipeline services to the extent that it actually reduces overall costs for consumers and potential consumers.

Terminal value as part of PMA expenditure

When assigning a value to the PMA contract in 2007, APA included a terminal value when calculating the remaining value of the contract. This is discussed further in confidential appendix H.

The fact that the PMA expenditure includes a 'terminal value' suggests that APA Group included in the purchase price savings that would not have accrued under the PMA contract. Therefore, in capitalising part of the goodwill in APTPPL's capital base, users will be compensating APA over and above the expected savings under the life of the contract. The AER is of the view that in assessing the PMA expenditure, only cost savings during the life of the existing contract could potentially be compensated by users for the purposes of r. 79 of the NGR.

The AER considered the 'terminal value' in the context of the NPV analysis of the PMA expenditure in the KPMG report. The KPMG report does not assign any value to the terminal value and further proposes that the goodwill component of the PMA contract buyout be depreciated to \$0 value by 2020. Depreciating the goodwill by 2020 indicates that there is no value in the contract after 2020 and that APA should not be recovering any expected savings that would have accrued beyond the life of the PMA contract through regulated revenues.

In its own analysis of the overall economic value following the PMA buyout, the AER removed the savings that would have accrued beyond the life of the PMA contract. The AER's analysis shows that the PMA expenditure did not result in the expected savings proposed by APTPPL, and therefore the PMA expenditure did not achieve the lowest sustainable cost as required by r. 79(1)(a) of the NGR. This is discussed in more detail below.

The PMA capex assessed under r. 79(2)(a) of the NGR

Finally, the AER does not consider that the PMA contract buyout cost is justifiable under r. 79(2)(a) of the NGR (as proposed by APTPPL) or on any other ground set out in r. 79(2) of

the NGR.¹¹⁸² The AER is of the view that the overall economic value of the expenditure proposed by APTPPL is negative. This is because the forecast capex, opex and tax savings used by APTPPL to calculate the net economic benefit from the PMA contract buyout have not been arrived at on a reasonable basis.¹¹⁸³

In deciding whether the overall economic value of capex is positive under r. 79(2)(a) of the NGR, the AER must give consideration only to economic value directly accruing to the service provider, gas producers, users and end users.¹¹⁸⁴ The AER considers that the economic value of the PMA contract buyout would be positive if the present value of the PMA contract buyout is less than:

- i. the present value of the charges that would have otherwise been payable by APTPPL under the PMA less
- ii. the net increase in the present value of APTPPL's directly-incurred costs due to the PMA buyout.¹¹⁸⁵

The AER has come to the view that the economic value of the PMA buyout expenditure is negative following its consideration of the capex, opex and subsequent tax savings proposed by APTPPL. The AER conducted a review of the 2011 NPV analysis submitted in the KPMG report and also conducted its own 2007 NPV analysis based on information proposed by APTPPL. The AER has taken into account Frontier Economics Pty. Ltd's report on the review of the PMA in conducting its analysis. The AER's analysis is discussed below.

Capital expenditure savings

The AER is of the view that the 2011 estimate of capital cost savings arising from the PMA contract buyout in the KPMG report is over estimated as it averages the past five years' of incurred capex in order to determine a value on which to base future capex savings. The KPMG report calculated the capex benefits of the PMA buyout as the avoided profit margins and overheads on capital costs that would have otherwise been payable under the PMA. It based its analysis on two principal assumptions:

- the average capex over the earlier access arrangement period is a reasonable indicator of likely capex over the period 2012–13 to 2019–20
- termination of the PMA would avoid payment to Agility of a 9 per cent profit margin and a 10 per cent overhead margin on capital costs.¹¹⁸⁶

The Frontier report calculated the NPV of capex on the RBP based on the proposed margins and real discount rate set out in the KPMG report. This is shown in table D.5.

¹¹⁸² NGR, r. 79(1)(b).

¹¹⁸³ NGR, r. 74(2)(a).

¹¹⁸⁴ NGR, r. 79(3).

¹¹⁸⁵ Frontier Economics, *Report for the AER: Review of capex on the RBP access arrangement*, April 2012, p. 8 (The Frontier report, April 2012)

¹¹⁸⁶ KPMG report, October 2011, p. 28–29. KPMG submitted that the recovery of profit and overhead margins was allowed by the AER under the outsourcing arrangements entered into by the Victorian electricity distribution businesses.

Table D.5 Present value of capex on the RBP (\$million, 2006–07)

	(\$million, 2006–07)
KPMG proposed profit margin savings	10.5
KPMG proposed overhead margin savings	11.6
KPMG proposed real discount rate (%)	5.4
Total present value of capex	116.3

Source: The KPMG report, October 2011, pp. 31–32; The Frontier report, April 2012, p. 9.

The ACCC approved ‘stay in business’ capex in the earlier access arrangement period was only \$10.9 million (\$nominal) and APTPPL’s actual expenditure was \$15.8 million (\$nominal).¹¹⁸⁷ Based on these numbers, the Frontier report projected APTPPL’s actual expenditure value across the whole 13-year period of 2007–08 to 2019–20 which resulted in total capex of \$38.8 million (\$2006–07),¹¹⁸⁸ with a present value of \$27.3 million (\$2006–07). The Frontier report sets out that \$27.3 million (\$2006–07) is widely divergent from the \$116.3 million (2006–07) calculated using data set out in the KPMG report.¹¹⁸⁹

The Frontier report submitted that the discrepancy arises due to the inclusion of ‘growth’ as well as ‘stay-in-business’ capex when calculating average capex over the earlier access arrangement period. The Frontier report considered two issues with the inclusion of growth capex in the estimation of capex savings from the PMA contract buyout:

- there is no material growth capex proposed over the access arrangement period. Therefore, the inclusion of past growth capex as part of the capital base for estimating future capex is inappropriate
- the Lytton Lateral and RBP8 expansion projects were proposed to provide negotiated services and the costs associated with these expansions were excised from the capex in its RFM. Therefore these costs were not proposed to be recovered through reference tariffs.¹¹⁹⁰

The AER generally agrees with the issues raised in the Frontier report. In particular, the AER agrees that basing future capex on an average of the past five year’s capex is a poor basis on which to estimate capex for the years 2012–20. This is especially the case in the context of transmission pipeline augmentation, where capex is generally very ‘lumpy’. In the earlier access arrangement, for example, almost three-quarters (\$46 million) of the \$60.8 million (\$nominal) expenditure on growth capex is expected to be incurred in 2011–12, with the remainder in 2007–2011. Less than \$0.5 million growth capex was incurred over the three

¹¹⁸⁷ APTPPL’s actual expenditure of \$15.8 million (\$nominal) is equivalent to \$14.9 million in 2007 dollars. ACCC, *Final decision: APTPPL access arrangement*, December 2006; APTPPL, *Access arrangement submission*, October 2011.

¹¹⁸⁸ This is calculated as $14.9 \times 13/5$.

¹¹⁸⁹ Frontier report, April 2012, p. 9.

¹¹⁹⁰ APTPPL, *Access arrangement submission*, October, 2011, pp. 38, 99.

year period 2006–07 to 2008–09. The AER is of the view that where possible, capex savings arising from the PMA contract buyout should be based on actual and forecast capex over the earlier and future access arrangement periods.

In attachment 3 (Pipeline Services) the AER has proposed that the Lytton Lateral and RBP8 expansion projects be covered by the access arrangement and therefore included in the calculation of reference tariffs. For this reason, it would be inconsistent not to include the capex associated with the Lytton Lateral and RBP8 expansion project in the calculation of APTPPL’s NPV total capex savings. Although APTPPL proposed the Lytton Lateral and RBP8 expansion projects as negotiated services, the AER considers that these projects should be included as growth capex in its calculation of APTPPL’s NPV total capex saving.¹¹⁹¹ After adding the expenditure of the Lytton Lateral and RBP8 expansion project as one off expenses, the NPV of the total capex savings is \$13.4m.

Despite not forecasting any growth capex over the access arrangement period, APTPPL has indicated in its access arrangement proposal that future capex (the Metro Loop) may be required late in the access arrangement period or early in the following access arrangement period.¹¹⁹² APTPPL has estimated the cost of the Metro Loop capex at \$50 million. The AER has also considered the impact this capex will have on future capex savings, in addition to those contributed by Lytton Lateral and RBP8 expansion project. Assuming the capex takes place in 2017–18, the capex savings arising from the PMA buyout will total \$18.6 million, still less than the \$22.1 million as calculated in the KPMG report.

For these reasons, the AER considers that the capex savings submitted in the KPMG report are not reasonable and should be lower than the value proposed. The capex savings as submitted in the APTPPL proposal and as assessed in the Frontier Report and the AER’s own analysis are set out in table D.6 below.

Table D.6 Capex savings

	The KPMG report	The Frontier report	AER NPV analysis (including Lytton Lateral and RBP8 expansion project)	AER NPV analysis (including Metro Loop project)
Profit margins	10.5	2.5	6.3	8.8
Overhead savings	11.6	2.7	7.0	9.8
Capex savings	22.1	5.2	13.4	18.6

Source: The KPMG report, October 2011, pp. 31–32; the Frontier report, April 2012, p. 11.

Opex savings

The opex savings submitted in the KPMG report are based on the differences between the opex allowed by the ACCC under the PMA and actual historical costs over the earlier access arrangement period.¹¹⁹³ Following further enquiries of APTPPL, KPMG provided an

¹¹⁹¹ This is discussed in more detail in the Pipeline Services attachment 3.

¹¹⁹² APTPPL, *Access arrangement submission*, October 2011, p. 44.

¹¹⁹³ Frontier report, April 2012, p. 11.

explanation of how its estimate of \$7.7 million (\$2007) could be reconciled with the opex figures incorporated in APTPPL's access arrangement submission.¹¹⁹⁴

Consistent with the capex savings, the AER is of the view that basing future opex savings on an average of the four years from 2007–11 is a poor basis on which to estimate opex savings for the years 2012–20. This is because the opex numbers for 2007–11 fluctuate considerably and include a year in which an opex adjustment has been made due to the Queensland floods. Further, when averaged over such a short period the opex numbers are likely to give an inaccurate picture of opex savings going forward.

As part of its assessment, the AER conducted an analysis of figures provided by APA in its 2007 Board Paper. This is discussed in confidential appendix H. For the purposes of a 2011 NPV analysis to illustrate these points, however, the AER has used the opex numbers provided by KPMG and retained a net economic benefit arising from the opex savings of \$7.7million.

Estimated tax savings

A result of the capex savings is a reduced value for both tax deductions foregone and tax deduction benefits on the termination payment. Applying the same methodology as submitted in the KPMG report, table D.7 sets out the Frontier report's and the AER's calculations.

Table D.7 Tax savings

	The KPMG report	The Frontier report	AER NPV analysis (including Lytton Lateral and RBP8 expansion project)	AER NPV analysis (including Metro Loop project)
Tax deductions forgone	4.2	2.7	2.7	2.9
Tax deductions benefits	7.6	3.3	4.0	5.1
Net tax benefit	3.4	0.6	1.3	2.2

Source: The KPMG report, October 2011, p. 32; the Frontier report, April 2012, p. 13.

Net economic value

From the findings above, it is clear that the NPV of future economic benefits is less than the \$33.2 million submitted by APTPPL and the KPMG. Under a 2011 NPV analysis using the assumptions outlined in this appendix, the NPV of economic benefits accruing to APTPPL would be no more than \$22.4 million taking into account actual capex or \$28.5 million with forecast capex. This is illustrated in table D.8.

¹¹⁹⁴ APTPPL, *Response to information request AER/052 of 11 January 2012*, received 27 January 2012.

Table D.8 Net economic value under a 2011 NPV analysis

	The KPMG report	The Frontier report	AER NPV analysis (including Lytton Lateral and RBP8 expansion project)	AER NPV analysis (including Metro Loop project)
Capex savings	22.1	5.2	13.4	18.6
Opex savings ^a	7.7	7.7	7.7	7.7
Tax savings	3.4	0.6	1.3	2.2
Economic value of savings	33.2	13.5	22.4	28.5
PMA expenditure	30.1	30.1	30.1	30.1
Net economic value	3.1	- 16.6	- 7.7	- 1.6

Source: The KPMG report, October 2011, pp. 15, 31–32; the Frontier report, February 2012, p. 12.

a: The Frontier report accepted KPMG’s estimate for opex savings conservatively; however it does note that this estimate is likely to be significantly less.

2007 NPV analysis conducted by the AER

The AER also conducted a 2007 NPV analysis of the PMA contract buyout. The AER conducted this analysis for a number of reasons:

- KPMG’s 2011 analysis uses opex and capex information for the years 2008–12 that was not available in 2007. In 2007, APA had not forecast any growth capex and therefore a cost benefit analysis undertaken at that time may have generated significantly different results to the one conducted in 2011 using all available information
- the KPMG report indicates that APA estimated the present value of future benefits arising from the PMA buyout,¹¹⁹⁵ however the KPMG NPV analysis did not take this into account. The APA estimated NPV of future benefits arising from the PMA buyout is disclosed in confidential appendix H
- KPMG is not consistent in its approach for calculating its NPV. For example, KPMG uses year-on-year opex and capex outcomes that were only known in 2011, but uses a 2007 discount rate.

The AER conducted its 2007 analysis using expected savings figures as submitted in the confidential 2007 Board Paper. The expected savings figures were presented to the APA board prior to terminating the PMA contract. Those figures included a terminal value for most of the proposed savings under the PMA contract as noted in confidential appendix H. In calculating the NPV of future savings under the PMA contract buyout, the AER does not agree that post contract savings should be taken into account. This is because once the contract is at an end no future savings can accrue.

For illustrative purposes, an AER NPV analysis based on available 2007 information (excluding the terminal values) would result in an NPV of \$21.5 million, again significantly less than the \$30.1 million of expenditure that has been attributed to the RBP. Therefore, the PMA

¹¹⁹⁵ KPMG report, October 2011, p. 15

expenditure is NPV negative under both a 2011 and 2007 NPV analysis and is not justifiable under r. 79(2)(a) of the NGR.

Conclusion

In its access arrangement proposal, APTPPL relied on the KPMG report to show that the present value of net economic benefits that would flow to APTPPL as a result of the PMA contract buyout was \$33.2 million. Given that APTPPL has proposed that \$30.1 million be added to the RBP capital base, APTPPL relies on the material set out in the KPMG report to demonstrate that the overall economic value of the expenditure is positive, and is therefore justifiable as required by r.79(2)(a) of the NGR.

As outlined above, the AER is of the view that the net economic benefits to APTPPL are considerably less than the \$33.2 million proposed by KPMG. This is because the assumptions on which that figure is based have not been made on a reasonable basis as required by r. 74 of the NGR. Having regard to the information that has been provided, the AER is of the view that the overall economic value of the expenditure is negative and not justifiable under r. 79(2)(a) of the NGR.

Consideration of the other tests under r. 79(2) of the NGR

APTPPL did not submit that the capex was justifiable under any test other than the overall economic value test in r. 79(2)(a) of the NGR. That test sets out that capex is justifiable if the overall economic value of the expenditure is positive. The AER has also considered whether the capex is justifiable under the other tests in r. 79(2) of the NGR. The AER has come to the view that the capex is not justified under any of the other tests for the following reasons.

Rule 79(2)(b) of the NGR sets out that capex is justifiable if the present value of the expected incremental revenue to be generated as a result of the expenditure exceeds the present value of the capex. When considering this rule, it is also necessary to refer to r. 79(4)(b) of the NGR which provides that in determining the present value of incremental revenue:

incremental revenue will be taken to be the gross revenue to be derived from the incremental services less incremental operating expenditure for the incremental services.

As submitted in the Bird Cameron report, *incremental* is key in this rule and is defined in the dictionary as 'increasing or adding on, especially in a regular series'.¹¹⁹⁶ Rule 79(4) of the NGR therefore implies that the incremental revenue should be generated from incremental (increased) services provided by the service provider in incurring conforming capex. Given that no incremental services were provided by APTPPL following its acquisition of Agility, the Bird Cameron report concluded that there is no incremental revenue for the purposes of r. 79(2)(b) of the NGR, therefore the capex is not justified.

The AER also considered whether the capex is justifiable under r. 79(2)(c) of the NGR. The AER is of the view that the capex is not justifiable under this rule as it was not expenditure made for the purposes of that rule.

¹¹⁹⁶ Bird Cameron report, February 2012, p. 13.

Likewise, the expenditure did not meet the requirements of r. 79(2)(d) of the NGR. Rule 79(2)(d) makes certain expenditure justifiable if the capital expenditure is an aggregate amount divisible into two parts and one part is justifiable under r. 79(2)(b) and the other part is justifiable under r. 79(2)(c).