Access arrangement final decision

APA GasNet Australia (Operations) Pty Ltd

2013–17

Part 2: Attachments

March 2013

AUSTRALIAN ENERGY REGULATOR

Contents

Shortened forms

Shortened form	Full title
2008-12 access arrangement	Access arrangement for APA GasNet effective from 1 January 2008 to 31 December 2012
2013-17 access arrangement	Access arrangement for APA GasNet effective from 1 January 2013 to 31 December 2017
2018-22 access arrangement	Access arrangement for APA GasNet effective from 1 January 2018 to 31 December 2022
ACCC	Australian Competition and Consumer Commission
access arrangement information	APA GasNet Australia (Operations) Pty Ltd, Access arrangement information, 31 March 2012
revised access arrangement information	APA GasNet, Revised access arrangement information, 9 November 2012
access arrangement submission	APA GasNet Australia (Operations) Pty Ltd, Access arrangement submission, 31 March 2012
revised access arrangement proposal	APA GasNet, Revised access arrangement proposal, 9 November 2012
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMDQ CC	authorised maximum daily quantity credit certificates
APA GasNet	APA GasNet Australia (Operations) Pty Ltd (ACN 083 009 278)
AWOTE	average weekly ordinary time earnings
capex	capital expenditure
CAPM	capital asset pricing model
Code	National Third Party Access Code for Natural Gas Pipeline Systems
CPI	consumer price index
DRP	debt risk premium
ESC	Essential Services Commission (Victoria)
GFC	global financial crisis
GPG	gas powered generation
MRP	market risk premium
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
opex	operating expenditure
ORC	optimised replacement cost

PTRM	post tax revenue model
RAB	regulatory asset base
RFM	roll forward model
RPP	revenue pricing principles
SEAGas	South East Australia Gas
VTS	Victorian transmission system
WACC	weighted average cost of capital
WORM	western outer ring main

1 Review framework

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 is currently conducting a review of the revised access arrangements of the three Victorian gas distribution networks and the Victorian gas transmission network, which is operated by APA GasNet. The National Gas Law (NGL) and National Gas Rules (NGR) provide the overarching regulatory framework for the gas distribution and transmission sectors.

The Victorian gas transmission network is subject to full regulation, which requires the service provider[1] to submit an initial access arrangement to the AER for approval, and to revise it periodically (typically every five years). The access arrangement sets out the terms and conditions on which third parties can access the transmission pipeline.[2]

1.1 Overview of the service provider

The Victorian Transmission System (VTS) transports gas to more than 1.4 million residential consumers and 43 000 industrial and commercial users throughout Victoria. The VTS is 1993 km in length and consists of 45 licensed pipelines and associated facilities supplying the Melbourne metropolitan area, country Victoria, New South Wales and South Australia (see figure 1.1 below). The VTS primarily transports gas from Esso's Longford gas treatment plant in south east Victoria (which processes gas from offshore Bass Strait gas fields), the Otway Basin gas field and underground storage in south west Victoria.

APA GasNet is entirely owned by APA Group (APA). APA is Australia's largest natural gas infrastructure business, owning and operating approximately $9 billion of energy infrastructure assets. APA's pipelines span every Australian state and territory, delivering about half of the nation's gas usage. APA also holds minority interests in a number of energy infrastructure enterprises.

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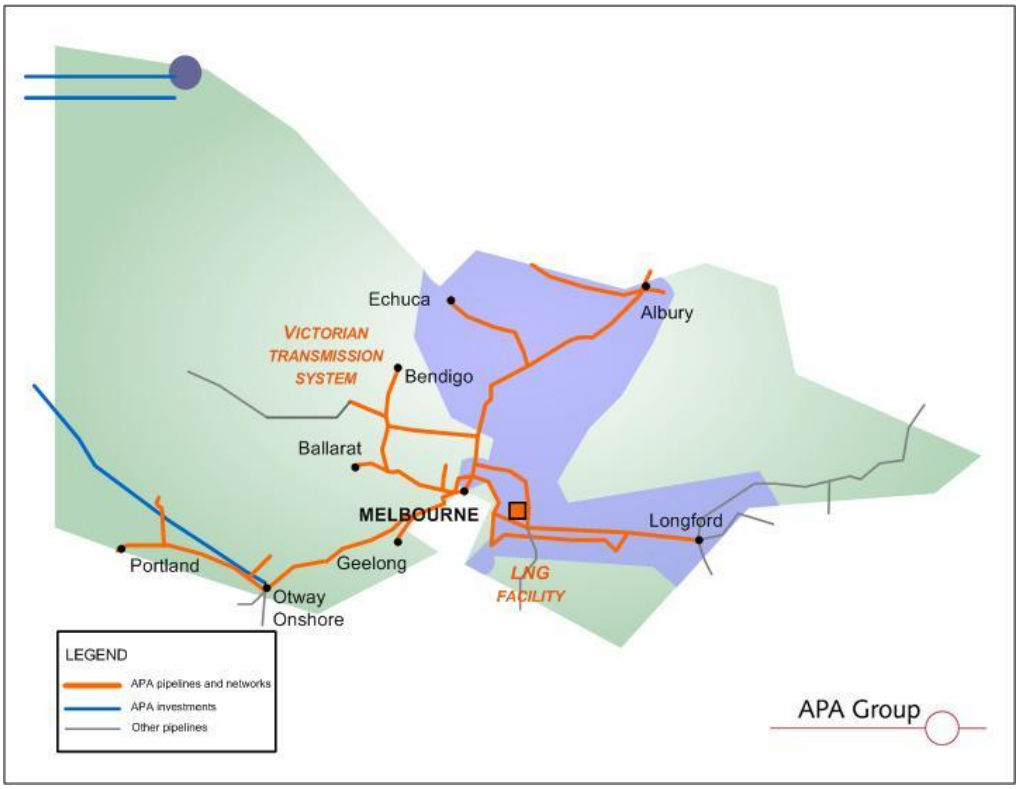
1 Under s. 8 of the NGL a service provider is a person who owns, controls or operates a gas pipeline.

2 In Victoria, the Australian Energy Market Operator manages the Victorian Transmission System, and users are not required to enter into commercial contracts with their transmission network service provider/s. Instead, a user's daily gas flow is determined by its injection bids into the wholesale gas market. The injection bids enter into a market clearing engine, which dispatches the lowest priced injection bids to meet demand. The access arrangement approved by the AER sets the reference tariff that users pay for gas haulage services based on the actual gas flows following this dispatch process.

Figure 1.1 Map of Victorian transmission system



1.1.1 Regulation prior to 1 July 2008

The Australian Competition and Consumer Commission (ACCC) made the previous determination on APA GasNet's access arrangement for the period 1 January 2008 to 31 December 2012. The ACCC made its determination in accordance with the provisions of the National Third Party Access Code for Natural Gas Pipeline Systems.

Responsibility for the regulation of gas transmission networks outside of Western Australia transferred from the ACCC to the AER on 1 July 2008. This current determination process is the first full assessment by the AER of the access arrangements of the Victorian gas transmission under the NGL and the NGR.

1.2 The relevant requirements of the NGL and the NGR

The elements of APA GasNet's revised access arrangement proposal have been assessed against the relevant NGL and NGR requirements specific to each element. These assessments are set out in separate attachments in this final decision.

Under the NGR, the AER has a certain type of discretion—full, limited or no discretion—when making decisions on particular elements of an access arrangement proposal. These forms of discretion are set out in rule 40 of the NGR as follows:

> No discretion
>
> (1) If the Law states that the AER has no discretion under a particular provision of the Law, then the discretion is entirely excluded in regard to an element of an access arrangement proposal governed by the relevant provision.
>
> Limited discretion

(2) If the Law states that the AER's discretion under a particular provision of the Law is limited, then the AER may not withhold its approval to an element of an access arrangement proposal that is governed by the relevant provision if the AER is satisfied that it:

(a) complies with applicable requirements of the Law; and

(b) is consistent with applicable criteria (if any) prescribed by the Law.

Full discretion

(3) In all other cases, the AER has a discretion to withhold its approval to an element of an access arrangement proposal if, in the AER's opinion, a preferable alternative exists that:

(a) complies with applicable requirements of the Law; and

(b) is consistent with applicable criteria (if any) prescribed by the Law.[3]

Apart from the specific criteria that applies to any one element of an access arrangement proposal, there are two overarching requirements that apply to the assessment of an access arrangement proposal as a whole.

First, the AER must make an access arrangement decision that is in the long term interests of consumers. Specifically, the AER must do so in a manner that will or is likely to contribute to the NGO.[4] The NGO in section 23 of the NGL relevantly provides:

The objective of this Law 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.

Rule 100 of the NGR further provides:

The provisions of an access arrangement must be consistent with:

(a) the national gas objective; and

(b) these rules and the Procedures as in force when the terms and conditions of the access arrangement are determined or revised.

Second, the AER must take into account the revenue and pricing principles (RPP) when exercising a discretion in approving or making those parts of an access arrangement relating to a reference tariff, or otherwise where it considers it appropriate to do so.[5] Section 24 of the NGL relevantly provides:

(1) The revenue and pricing principles are the principles set out in subsections (2) to (7).

(2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in-

(a) providing reference services; and

(b) complying with a regulatory obligation or requirement or making a regulatory payment.

(3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes-

(a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and

(b) the efficient provision of pipeline services; and

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3 NGR, r. 40.
4 NGL, s. 28(1).
5 NGL, s. 28(2).

(c) the efficient use of the pipeline.

(4) Regard should be had to the capital base with respect to a pipeline adopted-

(a) in any previous-

(i) full access arrangement decision; or

(ii) decision of a relevant Regulator under section 2 of the Gas Code;

(b) in the Rules.

(5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.

(6) 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) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services.

Interlinkages between different elements of an access arrangement must be taken into account in order to ensure that all of the elements of an access arrangement work together as a whole. This is so that the terms and conditions, including prices, will, among other things, contribute to achieving efficient investment in, and efficient operation and use, of APA GasNet's gas distribution network for the long term interests of consumers, in accordance with the NGO. Further, in providing reference services, APA GasNet should, amongst other factors, be provided with a reasonable opportunity to recover at least its efficient costs and with effective incentives in order to promote economic efficiency.

1.2.1 Access arrangement proposal to be approved in its entirety or not at all

The AER's approval of an access arrangement proposal implies approval of every element of the proposal.[6] It follows that, if the AER withholds its approval to any element of an access arrangement proposal, the proposal cannot be approved.[7]

The AER's final decision is not to approve APA GasNet's revised access arrangement proposal. This is because it does not approve a number of elements of APA GasNet's proposal.

1.3 Access arrangement review process

Under the NGL a service provider must submit an access arrangement proposal to the AER for approval under the NGR.[8] An access arrangement proposal contains the terms, including prices, under which the service provider proposes to provide access to the services provided by their networks to users and prospective users.

When submitting an access arrangement proposal, the service provider must submit 'access arrangement information' for the proposal. The term 'access arrangement information' is defined by r. 42(1), which provides:

Access arrangement information for an access arrangement or an *access arrangement proposal* is information that is reasonably necessary for users and prospective users:

(a) to understand the background to the access arrangement or the *access arrangement proposal*; and

6 NGR, r. 41(1).
7 NGR, r. 41(2).
8 NGL, s. 132.

(b) to understand the basis and derivation or the various elements of the access arrangement or the *access arrangement proposal*.

Rule 42(2) provides that access arrangement information must include the information reasonably required by the NGL and the NGR. Rule 48 sets out general requirements including that the service provider must describe the pipeline services it proposes to offer by means of the pipeline and must specify the reference services and reference tariffs. Rule 72 lists specific information relevant to price and revenue regulation that also must be included in an access arrangement. This includes detailed forecasting information and the service provider's proposed approach to the setting of tariffs.

Following the service provider's submission of an access arrangement proposal, the AER conducts a preliminary assessment of the proposal and access arrangement information against the requirements of the NGR.[9] The AER must publish a notice (initiating notice) on its website and in a newspaper notifying receipt of, and describing the access arrangement proposal, giving a website where it can be inspected, and inviting written submissions on the proposal by a specified date.[10] The AER may defer the initiating notice if, on a preliminary inspection, the AER considers that the proposal or related information is deficient in some respect.[11]

After considering the access arrangement proposal, any submissions in response to the service provider's access arrangement proposal, and any other matters the AER considers relevant, the AER must make an access arrangement draft decision.[12] The AER must include a statement of the reasons for the draft decision.[13] An access arrangement draft decision indicates whether the AER is prepared to approve the service provider's access arrangement proposal as submitted and, if not, the nature of the amendments that are required in order to make the proposal acceptable to the AER.[14]

1.3.1 Revision of access arrangement proposal and commencement of public consultation following draft decision

If an access arrangement draft decision indicates that revision of the access arrangement proposal is necessary to make the proposal acceptable to the AER, the decision must fix a period for revision of the proposal.[15] This is known as the revision period. In the revision period, the service provider may submit additions or other amendments to the access arrangement proposal to address matters raised in the access arrangement draft decision.[16] The amendments must be limited to those necessary to address matters raised in the access arrangement draft decision unless the AER approves further amendments.[17]

After the AER makes an access arrangement draft decision, it must notify stakeholders, establish a procedure for stakeholders to make written submissions on the draft decision, and make the draft decision available. It must do this by publishing the decision on its website, and publishing a notice on its website and in a national newspaper.[18] Pursuant to r. 59(5)(c), the notice must invite written submissions. The due date for written submissions must be at least 20 business days after the end of the revision period.

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9 The AER assessed APA GasNet's access arrangement proposal and access arrangement information and considered that it complies with the requirements of the NGR.
10 NGR, r. 58(1).
11 NGR, r. 58(2).
12 NGR, r. 59(1); r. 71(2).
13 NGR. r. 59(4).
14 NGR, r. 59(2).
15 NGR, r. 59(2).
16 NGR, r. 60(1).
17 NGR, r. 60(2). For example, the AER might approve amendments to the access arrangement proposal to deal with a change in circumstances of the service provider's business since submission of the access arrangement proposal.
18 NGR, r. 59(5)(b) & (c).

1.3.2 Final decision

After considering the submissions made in response to the access arrangement draft decision within the time allowed, and any other matters the AER considers relevant, the AER must make an access arrangement final decision.[19]

An access arrangement final decision is a decision to approve, or to refuse to approve, an access arrangement proposal.[20] An access arrangement final decision, like an access arrangement draft decision, must include a statement of the reasons for the decision.[21] The final decision must also be published on the AER's website.

If, in an access arrangement final decision, the AER does not approve an access arrangement proposal, the AER must itself propose an access arrangement or revisions to the access arrangement for the relevant pipeline.[22] The AER's proposal for an access arrangement or revisions is to be formulated with regard to:

- the matters that the NGL requires an access arrangement to include
- the service provider's access arrangement proposal
- the AER's reasons for refusing to approve that proposal.[23]

In this final decision, the AER has set out its proposed revisions to make APA GasNet's proposal acceptable. These revisions have been identified by assessing each element of APA GasNet's revised access arrangement proposal in accordance with the relevant requirements set out in the NGL and NGR.

1.3.3 Further final decision

The AER must make a decision giving effect to its proposed access arrangement or revisions within two months of its final decision not to approve a business' access arrangement proposal.[24] The AER may, but is not obliged to, consult on its proposal.[25] Once a further final decision is made, the access arrangement takes effect on a date fixed in the determination or, if no date if fixed, 10 business days after the date of the decision.[26]

1.4 Time limits on AER decision making

The AER is required to make an access arrangement final decision to approve or not approve the access arrangement proposal within six months of receipt of the access arrangement proposal.[27] For the purpose of calculating elapsed time in the making of a decision under the NGL and NGR, certain periods may be disregarded, such as a period allowed for public consultation and a period taken by the service provider to respond to a request for information from the AER.[28]

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19 NGR, r. 62(1).
20 NGR, r. 62(2).
21 NGR, r. 62(4).
22 NGR, r. 64(1).
23 NGR, r. 65(2).
24 NGR, r. 64(4).
25 NGR, r. 64(3).
26 NGR, r. 64(6).
27 NGR, r. 62(7).
28 NGR, r. 11.

For instance, when calculating the six month period, the AER may disregard any period allowed for public submissions on the proposal or on a draft decision.[29] The time taken for a service provider to remedy a deficiency in their access arrangement information under r. 43(3) of the NGR can also be disregarded for the purposes of calculating the six month period. However, the access arrangement review must be completed within an absolute overall time limit of 13 months between the date on which the service provider submits its access arrangement proposal and the AER's final decision.[30]

The AER has made its final decision within this timeframe. As noted above, the AER has a further two months from the date of its final decision to make its further final decision.

1.5 Public consultation

The AER under the NGR is required to consult with interested parties at various stages during an access arrangement review. Effective consultation and engagement with stakeholders is essential to the AER's performance of its regulatory functions.

The AER invited interested parties to make submissions on the AER's draft decision and APA GasNet's revised access arrangement proposal. The AER considered all submissions in making this draft decision.

The AER also hosted a consumer group roundtable. The purpose of the roundtable discussion was to explain the gas review process and the AER's assessment approach, to inform participants and to seek their comments on consumer specific issues, and to encourage submissions on the AER's draft decision.

Table 1.1 below outlines the various stages of public consultation that the AER has undertaken as part of the review process.

Table 1.1 Key stages in the decision making process

Key stages in the decision making process	Scheduled date
AER received APA GasNet proposal	31 March 2012
APA GasNet proposal published	17 April 2012
AER draft decision released	10 September 2012
APA GasNet revised proposal submitted	9 November 2012
Consumer group roundtable	27 November 2012
Closing date for submissions on revised proposal	7 January 2013
AER final decision released	15 March 2013

1.5.1 Protected information submitted to the AER

As part of the review process the AER receives protected information from the businesses and other stakeholders. The AER is committed to treating protected information responsibly and in accordance with the law.

29 NGR, r. 11(1)(c).
30 NGR, r. 13.

Division 1 of Part 2 of Chapter 10 of the NGL deals with disclosure of confidential information held by the AER. The NGL authorises the AER to disclose confidential information in specified circumstances.[31] This includes authorisation to disclose confidential information where it is of the opinion that:

- disclosure would not cause detriment to the person who gave the information, or
- although disclosure would cause detriment, the public benefit in disclosing the information outweighs the detriment to the disclosing person.[32]

If disclosing information under s. 329 of the NGL, the AER must undertake the process set out in s. 329(2) of the NGL. It provides that the AER must: give a notice to the person who gave the information of the intended disclosure; give the person an opportunity to address the AER's case for disclosure; and properly consider that person's case for nondisclosure in making its decision.

The AER undertook the appropriate NGL process to disclose information where it was of the opinion that the information would be relevant to stakeholder submissions or would need to be referred to in its decision, and after it had satisfied itself of the matters required under the NGL.

31 NGL, ss. 324 to 329 (Division 1 of Part 2 of Chapter 10 of the NGR).
32 NGL, s. 329(1).

2 Pipeline services

APA GasNet's revised access arrangement proposal describes the type and nature of pipeline services to be provided. This includes those services likely to be sought by a significant part of the market (reference service) and non-reference services.

Rule 48(1) of the NGR provides that a full access arrangement must specify certain information for pipeline services, including reference services. Pipeline services include haulage services, interconnection services and ancillary services.[33] Reference services are defined as pipeline services that are likely to be sought by a significant part of the market.[34] An access arrangement must:

- identify the pipeline to which the access arrangement relates and a website at which a description of the pipeline can be inspected[35]
- describe the pipeline services the service provider proposes to offer to provide by means of the pipeline[36]
- specify the reference services, and the reference tariff for each reference service.[37]

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

2.1 Final decision

The AER considers that APA GasNet has not met the requirement to describe the pipeline services or the requirement to specify all reference services that are likely to be sought by a significant part of the market.

The AER considers that in addition to the Tariffed Transmission Service identified by APA GasNet, AMDQ CC is a pipeline service and a reference service. As a pipeline service that is likely to be sought by a significant part of the market, at least for the 2013–17 access arrangement period, it is a reference service to which the AER has applied a reference tariff.

2.2 Revised proposal

APA GasNet did not adopt the AER's draft decision to classify AMDQ CC service as a pipeline service and a reference service. APA GasNet submitted that the benefits provided by AMDQ CCs means they are more "akin to a financial product" rather than a service provided by "means of a pipeline". APA GasNet further submitted that AMDQ CC could not be characterised as an "ancillary" service.

2.3 Assessment approach

The AER's assessment approach for pipeline services is set out in its draft decision[38].

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33 NGL, s. 2.
34 NGR, r. 101(2).
35 NGR, r. 48(1)(a).
36 NGR, r. 48(1)(b).
37 NGR, r. 48(1)(c) and r. 48(1)(d).
38 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, attachment A, section 1.3.

The AER received submissions from EnergyAustralia, AGL, Origin and Australian Power & Gas (APG) on the AMDQ CC service.

2.4 Reasons for decision

The AER does not approve the revised proposal. The AER has concluded that AMDQ CC is a pipeline service because AMDQ CC is a service provided by APA GasNet by means of a pipeline and, in the alternative, a service ancillary to the haulage transmission service. It is a pipeline service that is likely to be sought by a significant part of the market, at least for the 2013–17 access arrangement period. This is evidenced by the fact that all AMDQ CC for the 2013-17 have been allocated through a tender process. As such, the AER considers that AMDQ CC is a reference service under r. 101. Accordingly, the AER must apply a reference tariff. The tariff is based on the costs of issuance of the AMDQ CC.

2.4.1 AEMC Rule Change

In its draft decision, the AER noted that the AEMC was to make a final determination on the AER's proposal for a rule change to address certain issues related to AMDQ CC that it foresaw would arise in the context of this review of APA GasNet's access arrangement for 2013-17.[39] The AER considered that the AEMC's final rule determination could impact upon the AER's final decision.

On 5 August 2011, the AER submitted a rule change proposal to the AEMC seeking to amend the requirement under the current NGR that a reference tariff be applied to all pipeline services that were likely to be sought by a significant part of the market. The AER also sought a change to the definition of a rebateable service. The AER submitted that these changes were required in part to address unregulated revenue from AMDQ CC. Specifically, the AER submitted that it would be difficult to determine an efficient tariff for AMDQ CC for commercial and/or technical reasons, and it sought the discretion not to apply such a tariff.

On 1 November 2012, in its final determination on the rule change proposal, the AEMC concluded that it was "satisfied that the AER requires greater flexibility in specifying pipeline services as reference services to ensure that it is only required to set a reference tariff where it is practicable and efficient to do so."[40] The AEMC therefore determined that it was necessary for the AER to have discretion as to whether a service should be a reference service. The AEMC concluded that "this will mean that a regulatory determination will not be required to determine a reference tariff for a pipeline service that is not cost reflective."[41]

The AEMC further stated:

> This approach will be, or is likely to be, consistent with meeting the NGO as the setting of non-cost reflective reference tariffs may encourage inefficient investment in, or use of, gas services. This outcome would not be in the long term interests of consumers as they may find that:
>
> They could be paying more than is necessary if the reference tariff is in excess of the efficient costs of providing the service; and
>
> They could lose certainty of supply if the reference tariff does not recover an efficient level of investment for the provision of this pipeline service.[42]

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39 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, attachment, p. 4.
40 AEMC, *Rule change determination, reference and rebateable service definitions,* 1 November 2012, p. 6.
41 AEMC, *Rule change determination, reference and rebateable service definitions,* 1 November 2012, p. 27.
42 AEMC, *Rule change determination, reference and rebateable service definitions,* 1 November 2012, p. 27.

The AEMC noted that this change would "restore the discretion to the regulator to what it was under the Gas Code."[43] The AER notes the ACCC exercised this discretion in 2008 when it determined not to regulate AMDQ CC despite finding that, under the Gas Code provisions, it was a pipeline service that was likely to be sought by a significant part of the market.[44]

The AEMC determined that the amended rule should not apply to the current access arrangement review for APA GasNet.[45] The rule change is to commence on 2 May 2013 and therefore does not affect this final decision which is made under the current NGR.[46]

Under the current rules, as explained by the AEMC and as set out in the AER's draft decision, the AER must apply a reference tariff to a reference service. A reference service is a pipeline service that is likely to be sought by a significant part of the market.

2.4.2 Pipeline Service

APA GasNet reiterated its revised proposal arguments made in its earlier submission that AMDQ CC is not a pipeline service as it is not a service provided by "means of a pipeline" and is not an ancillary service to any such service.[47] In its revised proposal, it submitted that this was because the circumstances of the network means that it cannot provide any pipeline services other than the Tariffed Transmission Service. APA GasNet further submitted that AMDQ CC is more akin to a financial product.[48]

AGL is supportive of APA GasNet's position that AMDQ CC is not a pipeline service and should not be regulated. Similar to the submission made by APA GasNet, AGL considered that an AMDQ CC is not a haulage right but an additional product or attribute that confers certain market benefits to holders and is better characterised as an insurance product.[49]

The AER does not accept APA GasNet's, or AGL's, characterisation of AMDQ CC. The AER considers that AMDQ CC is a service provided by APA GasNet to users that encompasses a bundle of rights or benefits that are "provided by means of a pipeline" since AMDQ CC holders can exercise those rights with respect to gas flows on the VTS. Further to this, or in the alternative, it is a service ancillary to the provision of such services as such rights or benefits, namely preferential access and risk mitigation, are supportive of the Tariffed Transmission reference service. This reflects the AER's position in its draft decision.[50] APG in its submission noted its support for the AER's draft decision that the AMDQ CC is a pipeline service.[51]

APA GasNet submitted that for AMDQ CC to be an ancillary service it must be "necessary" to hold AMDQ CC to access the Tariffed Transmission Service.[52] AGL similarly suggested that purchase of AMDQ CC is not a prerequisite to participate in the Victorian gas market and therefore it is not an

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43 AEMC, *Rule change determination, reference and rebateable service definitions*, 1 November 2012, p. 24.
44 ACCC, *Final decision, Revised access arrangement by GasNet Australia Ltd for the Principal Transmission System*, *April 2008,* p. xx.
45 AEMC, *Rule change determination, reference and rebateable service definitions*, 1 November 2012, p. 58.
46 NGR, rule version 14, Commencement date 29 November 2011.
47 APA GasNet, *Access arrangement submission, March 2012,* pp. 14-20.
48 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 13-14.
49 AGL, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013, p. 2.
50 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, pp. 8-10.
51 Australian Power and Gas, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 18 December 2012.
52 APA GasNet, *Revised access arrangement submission*, November 2012, p. 13.

ancillary service.[53] The AER does not agree "ancillary" means that the service must be necessary to the Tariffed Transmission Service. Rather, as APA GasNet refers to in its revised proposal, it means "(1) accessory; auxiliary, (2) an accessory, subsidiary or helping thing or person." As such, AMDQ CC can properly be characterised as an ancillary service as they encompass rights relating to the gas transmission and the cost of gas transmission.

The AER's assessment is consistent with the ACCC's conclusion in its 2008 Final Decision.[54]

2.4.3 Rebateable Service

The AER accepts APA GasNet's submission in its revised proposal that AMDQ CC is not a rebateable service, consistent with the AER's draft decision.[55]

EnergyAustralia noted that the AEMC's final rule change determination did not amend the definition of a rebateable service. It submitted that, as a result, the AER will have no power to claw back any surplus revenue that APA GasNet over-recovers in excess of its regulated revenue from issuing AMDQ CC in the next regulatory period. EnergyAustralia submitted that regulated monopolies should not be able to earn revenue which is surplus to its building block revenue and it is concerned that APA GasNet will have incentives to recover more of its revenue from issuing AMDQ CC in the future. EnergyAustralia stated that it intends to submit a rule change to the AEMC to resolve this issue.[56]

The AER accepts that the AMDQ CC cannot be a rebateable service, albeit for a different reason than that submitted by AGL. The AER's reason is based on the NGR requirement that the market for the rebateable service must be substantially different from the market for any reference service and AMDQ CC would not meet this definition.[57]

2.4.4 Reference Service and Reference Tariff

The AER considers that AMDQ CC is a reference service. As set out in its draft decision, APA GasNet has re-tendered the majority of its AMDQ CC in 2011 for a period of five years, commencing on 1 January 2013.[58] On this basis, the AER considers that the AMDQ CC service is likely to be sought by a significant part of the market, at least for the 2013–17 access arrangement period and as such, AMDQ CC is a reference service under r. 101.

APG submitted that '[t]he degree of contracting of AMDQ CC by participants is strong evidence that it is a widely used pipeline service."[59]

The AER also considered the AEMC's conclusion in its final rule determination that:

> Until 2007 there was no significant demand for AMDQ cc, but since that time demand for AMDQ cc has increased significantly as parts of the pipeline system have been expanded. For the 2013-2017 access

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53 AGL, Submission to the AER: Draft decision APA GasNet revised access arrangement proposal, 3 January 2013, p. 2.

54 ACCC, *Final decision, Revised access arrangement by GasNet Australia Ltd for the Principal Transmission System*, *April 2008,* p. 109.

55 APA GasNet, *Revised access arrangement submission*, 9 November 2012, p. 14.
AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, p. 9.

56 EnergyAustralia, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 18 December 2012.

57 NGR, rr. 93(4)(a) and 93(4)(c).
AER, *Draft* decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, attachment, pp. 6-10.

58 AER, AER submission in response to the AEMC Draft Reference service and rebateable service definitions Rule change Determination, April 2012.

59 Australian Power and Gas, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 18 December 2012, p. 2.

arrangement period, there is currently 353 TJ/day contracted under AMDQ cc on the South West Pipeline (SWP) and 50 TJ/day contracted for at Culcairn.[60]

AGL submitted that the AER's assessment that AMDQ CC is a service likely to be sought by a significant part of the market needs to be heavily qualified because "it will only be sought by that part of the market that has injection rights to the South West Pipeline."[61] The AER does not accept AGL's submission because firstly, it considers that the South West Pipeline constitutes a significant part of the market, and secondly, the AMDQ CC is sought by users in other parts of the market (for example currently at Culcairn).

The AER notes that APA GasNet submitted that AMDQ CC is not a pipeline service and it is not a reference service,[62] but otherwise the revised proposal did not address the calculation methodology and the level of the reference tariff determined by the AER in the draft decision.[63]

As a reference service the AER must therefore apply a reference tariff, as noted by the AEMC in its final rule determination.[64] The AER in this final decision adopts the same approach used in the draft decision to calculate the level of AMDQ CC reference tariff.[65] The AER recognises that the reference tariff reflects only the issuance costs and, as Origin and AGL submitted, not the value that market participants may place upon AMDQ CC.[66]

The AER does not have the discretion to not set the reference tariff. The level of reference tariff determined by the AER based on the administrative cost is more appropriate than other tariff options such as on tariffs derived based on avoidable cost.[67]

As noted in submissions from EnergyAustralia and AGL, the AER acknowledges that there are AMDQ CC contracts in place for existing pipeline capacity. As a result, the reference tariff associated with these certificates will have no effect in the 2013–17 access arrangement period. This includes 353 TJ/day contracted AMDQ CC on the South West Pipeline (SWP) and 50 TJ/day contracted AMDQ CC at Culcairn.

Both AGL and Origin made submissions in relation to the tender process for AMDQ CCs.[68] The tender process allocates AMDQ CC in bundles to users bidding for these certificates. APA GasNet sets the price and users bid for quantities of daily capacity made available. Where bids total more than the total of new capacity available, APA GasNet allocates the available capacity on a pro-rata basis based on the capacity tendered for by bidders. The operation of the tender process for AMDQ CC is not specified in the NGR, the current APA GasNet access arrangement, or by AEMO. AGL submitted that a requirement should be imposed on APA GasNet to provide for greater transparency

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60 AEMC, *Rule change determination, reference and rebateable service definitions*, 1 November 2012, p. 63.

61 AGL, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013, p. 1.

62 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 13-14.

63 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, part 2, pp. 9-10.

64 AEMC, *Consultation paper*, *reference and rebateable service definitions,* 13 September 2012, pp. 21-22.
AEMC, *Rule change determination, reference and rebateable service definitions,* 1 November 2012, p. 63.

65 Upon further review, this final decision corrected a calculation error for the AMDQ reference tariff set out in the draft decision. The revised tariff is set out in revision 12.8.

66 AGL, *Submission to the AER:* Draft decision and APA GasNet access arrangement revised proposal, 3 January 2013, pp. 1-2
Origin Energy, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013, pp. 2-3

67 See further discussion in AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, pp. 9-10.

68 AGL, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013, pp. 1-2
Origin Energy, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013, pp. 2-3

and visibility of the tender process[69] Origin similarly submitted that there should be greater transparency in the AMDQ CC tender process. Origin also submitted that the AER should clarify how a tender process would work alongside a reference tariff.[70]

The AER has reviewed the submissions made by AGL and Origin and the information set out by the AEMC as part of its recent rule determination, both with respect to the current tender arrangements and the past auction process and first come first served approach.[71]

The tender process is generally accepted by most market participants as being an effective means of allocation and preferable to a 'first come, first served' approach or an auction process. As the AEMC explains, initially AMDQ CCs were allocated on a 'first come first served' basis at the reference tariff on a 'take or pay' basis. However, as demand increased dramatically, APA GasNet after consultation with the ACCC in 2008, moved to an auction process. Subsequently, the tender process was introduced by APA GasNet to address problems with the auction process.[72] As explained by the AEMC: "APA GasNet decided not to continue with the open auction process, as it considered that the high prices were not desirable in the longer term and it was cognisant of the requirement that all shippers should have access to scare resources."[73] Under the current tender process, "[w]here bids total more than the total of new capacity tendered for by bidders, APA GasNet allocates the available capacity on a pro-rata basis based on the capacity tendered for by bidders."[74]

The AER considers that the current tender process is efficient in the allocation of AMDQ CC. This position is consistent with the ACCC's conclusion on the AMDQ CC in the last access arrangement review[75], the AER's position for the reference and rebateable service definitions rule change proposal[76] and the AER's draft decision.[77] The tender process offers equal opportunity for prospective users to bid for the certificates, and users should not be precluded from engaging in the tender process for any additional capacity during the access arrangement period. The AER notes AGL and Origin have concerns in relation to the transparency and the timing of the tender process. However, the AER considers these issues should be best addressed through engagement with APA GasNet, including other avenues such as the gas wholesale consultative forum (GWCF) rather than the access arrangement.

The AER further notes that should any issues in relation to the setting of a reference tariff for AMDQ CC, and the tender process arise in the context of the next access arrangement review, the recent rule change will apply. At that time, the AER may be required to reconsider the operation of the tender process and the application of a reference tariff.

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69 AGL, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013.
70 Origin Energy, Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal, 3 January 2013, p. 3.
71 AEMC, *Draft rule change determination, reference and rebateable service definitions, appendix A,* 15 March 2012, pp. 34-35.
72 AEMC, *Draft rule change determination, reference and rebateable service definitions, appendix A,* 15 March 2012, pp. 34-35.
73 AEMC, *Consultation paper*, *reference and rebateable service definitions,* 13 September 2012, p. 8.
74 AEMC, *Consultation paper*, *reference and rebateable service definitions,* 13 September 2012, p. 8.
75 ACCC, *Draft decision, Revised access arrangement by GasNet Australia Ltd for the Principal Transmission System*, November 2007, p. xxi.
76 AER, AER rule change request to the AEMC, National Gas Rule change proposal in relation to reference service and rebateable service definitions and criteria, August 2011.
77 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, pp. 6–10.

2.5 Revisions

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

Revision 2.1

Remove section 2.2 from the access arrangement and replace with the following:

The Service Provider will provide two pipeline services under this Access Arrangement:

(1) the Reference Service comprising the Tariffed Transmission Service; and

(2) the AMDQ CC Reference Service.

Revision 2.2

Insert the following definition to Schedule B of the proposed access arrangement:

Authorised maximum daily quantity credit certificate (AMDQ CC) has the meaning given to it in the NGR.

3 Capital base

The capital base roll forward accounts for the value of APA GasNet's regulated assets over the access arrangement period. The opening capital base value for a regulatory year is rolled forward by indexing it for inflation, adding any conforming capex, and subtracting depreciation and other possible factors (for example, disposals or customer contributions). Following this process, the AER arrives at a closing value of the capital base at the end of the relevant year. The opening value of the capital base is used to determine the return of capital (regulatory depreciation) and return on capital building block allowances.

The AER is required to make a decision on APA GasNet's opening capital base as at 1 January 2013 for the 2013–17 access arrangement period. The AER is also required to make a decision on APA GasNet's projected capital base for the 2013–17 access arrangement period. This attachment presents the AER's final decision on these matters.

3.1 Final decision

The AER does not approve APA GasNet's proposed opening capital base of $630.8 million as at 1 January 2013. The AER accepts APA GasNet's proposed opening capital base as at 1 January 2008. However, the AER does not accept APA GasNet's proposed opening capital base as at 1 January 2013. This is because APA GasNet's proposed opening capital base as at 1 January 2013 did not adjust for the return on capital arising from the difference between actual and estimated capex in 2007.

After making this adjustment, the AER has determined an opening capital base of $617.6 million ($nominal) as at 1 January 2013, which is approximately $13.2 million less than that proposed by APA GasNet. Table 3.1 summarises the AER's final decision on the roll forward of APA GasNet's capital base during the 2008–12 access arrangement period.

Table 3.1 AER's final decision on capital base roll forward for the 2008–12 access arrangement period ($million, nominal)

	2008	2009	2010	2011	2012
Opening capital base	559.6	591.1	583.2	575.9	613.0
Net capex	37.8	10.2	10.6	53.6	58.0
Less: straight-line depreciation	27.0	30.7	33.4	34.3	35.5
Indexation	20.6	12.5	15.5	17.9	15.3
Closing capital base	591.1	583.2	575.9	613.0	650.8
Less: difference between 2007 forecast and actual capex	–	–	–	–	20.0
Less: return on difference for 2007 capex	–	–	–	–	13.2
Opening capital base at 1 January 2013	–	–	–	–	617.6

Source: AER analysis.
Note: Totals may not add due to rounding.

Based on the approved opening capital base and the AER's final decisions on forecast capex, forecast depreciation and the inflation forecast, the AER has determined a projected closing capital base of $746.7 million ($nominal) as at 31 December 2017. Table 3.2 sets out the projected roll forward of the capital base during the 2013–17 access arrangement period.

Table 3.2 AER's final decision on projected capital base roll forward for the 2013–17 access arrangement period ($million, nominal)

	2013	2014	2015	2016	2017
Opening capital base	617.6	640.3	733.1	747.2	748.7
Net capex	32.0	102.9	26.0	14.7	9.8
Less: straight-line depreciation[a]	24.7	26.2	30.2	31.9	30.5
Indexation	15.4	16.0	18.3	18.7	18.7
Closing capital base	640.3	733.1	747.2	748.7	746.7

Source: AER analysis.
Note: Totals may not add due to rounding.

3.2 Revised proposal

In its revised proposal, APA GasNet did not adopt the AER's draft decision on the opening capital base as at 1 January 2013. In particular, APA GasNet did not adopt the AER's adjustment to remove

the return on capital arising from the difference between forecast and actual capex in 2007. APA GasNet's revised proposal on the roll forward of the capital base is set out in table 3.3.

Table 3.3 APA GasNet's proposed capital base roll forward for the 2008–12 access arrangement period ($million, nominal)

	2008	2009	2010	2011	2012
Opening capital base	559.6	591.1	583.2	575.9	613.0
Net capex	37.8	10.2	10.6	53.6	58.0
Less: straight-line depreciation	27.0	30.7	33.4	34.3	35.5
Indexation	20.6	12.5	15.5	17.9	15.3
Closing capital base	591.1	583.2	575.9	613.0	650.8
Less: difference between 2007 forecast and actual capex	–	–	–	–	20.0
Opening capital base at 1 January 2013	–	–	–	–	630.8

Source: APA GasNet, *Revised proposal roll forward model*, November 2012.

APA GasNet also did not adopt the AER's projected capital base at 31 December 2017 in the revised proposal. This was because APA GasNet did not adopt the AER's draft decisions on:

- Forecast capex—this is discussed in attachment 4.
- The rate of return (return on capital)—this is discussed in attachment 5.
- Depreciation (return of capital) and indexation of the capital base—this is discussed in attachment 6.

APA GasNet's proposed roll forward of the capital base is set out in table 3.4.

Table 3.4 APA GasNet's proposed capital base roll forward for the 2013–17 access arrangement period ($million, nominal)

	2013	2014	2015	2016	2017
Opening capital base	630.8	639.4	719.8	717.3	702.5
Net capex	33.3	105.9	26.3	14.9	10.0
Less: straight-line depreciation	24.7	25.5	28.8	29.6	27.6
Closing capital base	639.4	719.8	717.3	702.5	684.9

Source: APA GasNet, *Revised proposal post tax revenue model*, November 2012.
Note: Totals may not add due to rounding.
(a) APA GasNet proposed to calculate depreciation for the 2013–17 access arrangement period using an un-indexed capital base. This is discussed in attachment 6. As a result, its proposed roll forward of the capital base does not include an inflation component.

3.3 Assessment approach

The AER's assessment approach for the regulatory depreciation allowance is set out in its draft decision. See section 2.3, attachment 2 of the draft decision for a detailed explanation of the assessment approach.

The AER also took into account submissions received on its draft decision in forming its final decision on APA GasNet's capital base. However, these submissions related mainly to capex and depreciation, which are inputs to the projected capital base as at 31 December 2017. Accordingly, these submissions are addressed in the capex attachment 3 and the depreciation attachment 6.

3.4 Reasons for decision

The AER is required to make a decision on APA GasNet's proposed capital base roll forward. As part this, the AER must make decisions on specific inputs to the roll forward process. Specifically, the AER must determine:

- the opening capital base at 1 January 2008—this is the base from which the AER rolls forward the capital base to reflect actual capex and forecast depreciation for the 2008–12 access arrangement period. The AER accepts APA GasNet's proposed opening capital base at 1 January 2008.
- the opening capital base at 1 January 2013—this is the capital base at the end of the 2008–12 access arrangement period. This in turn will be used as a base for the return on capital and depreciation building blocks over the 2013–17 access arrangement period. The AER has reduced APA GasNet's proposed capital base by $13.2 million or 2.1 per cent due to the return on difference between actual and forecast 2007 capex.
- the projected capital base at 31 December 2017—this is the forecast of the closing capital base for the 2008–12 access arrangement period. It includes forecast capex and depreciation. The AER has increased APA GasNet's proposed projected capital base at 31 December 2017 by $61.8 million or 9.0 per cent. This increase is due to the AER rejecting APA GasNet's proposed change to depreciation, which involved not indexing the capital base (see attachment 6).
- the depreciation approach used to roll forward the capital base from 2013–17 at the next access arrangement review.

3.4.1 Opening capital base at 1 January 2008

The AER approves APA GasNet's revised proposal on the opening capital base at 1 January 2008. In its revised proposal, APA GasNet adopted the AER's draft decision on this opening capital base.

3.4.2 Opening capital base at 1 January 2013

The AER approves APA GasNet's revised proposal on capex and depreciation for the 2008–12 access arrangement period. In particular, the AER approves APA GasNet's updated estimate of 2012 capex. APA GasNet largely adopted the AER's draft decision, but provided a revised estimate of 2012 capex. Actual 2012 capex is not yet available, but APA GasNet has updated its estimate to reflect its most recent projections. The AER considers the updated estimate of capex for 2012 to be reasonable. The estimate is similar to that approved in the AER's draft decision and represents the best forecast possible in the circumstances. The financial impact of any difference between actual and estimated capex for 2012 will be accounted for at the next access arrangement review.

The AER does not approve APA GasNet's revised proposal on its opening capital base as at 1 January 2013. This is because it does not adjust for the return on capital arising from the difference between actual and estimated capex in 2007. After making this adjustment, the AER has determined an opening capital base as at 1 January 2013 of $617.6 million. This is a reduction of $13.2 million or 2.1 per cent from APA GasNet's revised proposal.

Adjustment for the return on capital associated with difference between 2007 estimated and actual capex

The AER does not accept APA GasNet's proposal not to make the return on capital adjustment associated with difference between 2007 estimated and actual capex.

The AER proposes to remove from the capital base the return on capital associated with the difference between estimated and actual capex for 2007. The adjustment arises because actual capex for 2007 was not available at the last access arrangement review. At that time, the ACCC included in the capital base an estimate of capex for 2007. This capital base was then used to set APA GasNet's rate of return allowance. Because actual capex was lower than the estimate of capex, APA GasNet's rate of return allowance was higher than it would have been if APA GasNet's estimate had been accurate. The AER adjusts the capital base to remove this capex difference and the associated return on capital. APA GasNet adjusted the capital base for the capex difference, but not the associated return on capital in its revised proposal.

To clarify the terminology included in this attachment and appendix C:

- Forecast 2007 capex—is the capex amount for 2007 approved at the 2002 access arrangement review
- Estimated 2007 capex—is the updated estimate of 2007 capex approved at the 2007 access arrangement review
- Actual 2007 capex—is the actual recorded value of 2007 capex.

In the draft decision, the AER determined that the return on capital due to the difference between 2007 actual and estimated capex was approximately $13.2 million ($nominal). It arose because actual capex for 2007 is approximately $20.0 million less than the estimated capex for 2007 of $93.8 million ($nominal). The estimated capex for 2007 was included in the capital base at the time of the last access arrangement review. Under APA GasNet's proposed approach, it would keep the $13 million in incremental revenue associated with this accumulated return on capital.

The AER considers the adjustment is necessary to properly adjust the capital base for the difference between estimated and actual 2007 capex.[78] The AER's detailed analysis on this issue is set out in appendix C. In summary, the AER has reached this decision because:

- The adjustment prevents APA GasNet from gaining/losing from any difference between estimated and actual capex for the final year of an access arrangement period. This means APA GasNet has no incentive to overestimate capex for that final year, or to defer efficient expenditure. Conversely, the adjustment does not impose additional penalties on APA GasNet if its actual final year expenditure exceeds its estimate.

[78] NGR, r. 77(2)(a).

- In its decision on Jemena Gas Networks' appeal, the Australian Competition Tribunal affirmed that the NGR allows such an adjustment.[79]

The AER considers its proposed revision will result in an appropriate balance to encourage efficient investment in APA GasNet's network. It will do so by removing the incentive to overestimate or defer efficient expenditure during the final year when an access arrangement review is occurring. As a result, the AER considers that this will promote the long term interests of consumers of natural gas with particular respect to price.

3.4.3 Projected capital base at 31 December 2017

The AER does not approve APA GasNet's projected capital base as at 31 December 2017. The AER's forecast of APA GasNet's projected capital base as at 31 December 2017 is $746.7 million ($nominal), an increase of $61.8 million or 9.0 per cent from APA GasNet's revised proposal. This is because of the AER's final decision on the inputs to the determination of the projected capital base. The AER has amended the following inputs:

- Reduced APA GasNet's revised proposal on its opening capital base as at 1 January 2013 by $13.2 million or 2.0 per cent to reflect the changes required in this attachment.
- Applied an updated forecast inflation of 2.5 per cent per annum for the 2013–17 access arrangement period. As discussed in attachment 6, APA GasNet's proposed change in depreciation approach means no inflation indexation was applied to the capital base in its revised proposal. The AER has not accepted the proposed change in depreciation approach. Consequently, this final decision indexes the capital base for inflation.
- In rejecting APA GasNet's revised proposal on the depreciation approach (see attachment 6), the AER has projected the capital base as follows:
  - Applied forecast inflation indexation to the opening capital base
  - Determined the return on capital allowance using a nominal (vanilla) WACC and the indexed opening capital base
  - Determined the forecast depreciation (straight-line method) using the indexed capital base. The regulatory depreciation allowance in the building block is based on the forecast straight-line depreciation net of the forecast inflation indexation applied to the opening capital base.
- Reduced APA GasNet's revised proposal on the forecast capex allowance by $4.9 million ($nominal) or 2.6 per cent. The AER's detailed assessment of the forecast capex allowance is set out in attachment 4.
- Reduced APA GasNet's revised proposal on the forecast depreciation allowance by $80.0 million ($nominal) or 58.7 per cent. The AER's assessment of the forecast depreciation allowance is set out in attachment 6.

The capital base at the commencement of the 2018–22 access arrangement period will be subject to adjustments under the NGR.[80] These adjustments are not limited to, but include:

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[79] Australian Competition Tribunal, *Application by Jemena Gas Networks (NSW) Ltd (No 3) [2011] ACompT 6*, 25 February 2011, paragraph 55.

[80] NGR, r. 77(2).

- the difference between actual and estimated capex for 2012 (the final year of the 2008–12 access arrangement period)
- actual inflation and approved forecast depreciation over the 2013–17 access arrangement period. The AER accepts APA GasNet's proposal to use forecast depreciation to roll forward the capital base at the next access arrangement review.

3.5 Revisions

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

Revision 3.1: Make all necessary amendments to reflect the AER's final decision on the roll forward of the opening capital base for the 2008–12 access arrangement period, as set out in table 3.1.

Revision 3.2: Make all necessary amendments to reflect the AER's final decision on the projected opening capital base for the 2013–17 access arrangement period, as set out in table 3.2.

4 Capital expenditure

This attachment sets out the AER's assessment of APA GasNet's proposed capital expenditure (capex) for the 2008–12 access arrangement period and forecast capex for the 2013–17 access arrangement period.

4.1 Final decision

4.1.1 Capital expenditure in the 2008–12 access arrangement period

The AER approves APA GasNet's proposed total capex of $165.7 million ($2012) for the 2008–12 access arrangement period. Table 4.1 summarises the AER's approved capex in the 2008–12 access arrangement period.

Table 4.1 AER approved capital expenditure over the 2008–12 access arrangement period ($million, 2012)

Category	2008	2009	2010	2011	2012	Total
Augmentation	18.6	2.4	4.3	43.5	25.7	94.4
Refurbishment and upgrade	19.2	7.1	1.3	4.8	25.6	58.0
Non-system	0.6	0.8	5.5	1.7	4.7	13.3
Total capex	38.5	10.3	11.1	49.9	56.0	165.7

Source: APA GasNet, *Response to AER Information Request FD5a*, 11 December 2012, p. 1.

4.1.2 Capital expenditure in the 2013–17 access arrangement period

The AER does not approve APA GasNet's revised capex forecast of $174.2 million ($2012). The AER considers that a capex allowance of $171.5 million is conforming capex.

Table 4.2 summarises the AER's approved capex over the 2013–17 access arrangement period.

Table 4.2 AER approved capital expenditure over the 2013–17 access arrangement period ($million, 2012)

Category	2013	2014	2015	2016	2017	Total
Augmentation	12.0	75.1	11.6	-	-	98.7
Refurbishment and upgrade	13.4	14.9	11.1	11.4	5.9	56.6
Non-system	5.1	5.8	1.0	1.7	2.6	16.2
Total capex	30.5	95.8	23.6	13.1	8.5	171.5

Source: AER analysis.

The AER considers the proposed capex for the Rockbank pressure reduction station ($2.1 million) is not required in the 2013–17 access arrangement period and is therefore not conforming capex for the purposes of r. 79 of the NGR. The AER has also revised APA GasNet's proposed labour cost escalators, as discussed in appendix A of this decision.

4.2 Revised proposal

4.2.1 Capital expenditure in the 2008–12 access arrangement period

APA GasNet proposed revised total conforming capex of $165.7 million ($2012) for the 2008–12 access arrangement period. This is an increase of $5.3 million ($2012) or 3 per cent from the AER's draft decision. The increase relates only to the 2012 year, for which APA GasNet revised its forecast capex based on actual outturn costs and updated forecasts since the initial proposal was submitted to the AER in March 2012.[81] APA GasNet's revised capex proposal for the 2008–12 access arrangement period is set out in Table 4.3.

Table 4.3 APA GasNet's revised proposal of conforming capital expenditure over the 2008–12 access arrangement period ($million, 2012)

Category	2008	2009	2010	2011	2012	Total
Augmentation	18.6	2.4	4.3	43.5	25.7	94.4
Refurbishment and upgrade	19.2	7.1	1.3	4.8	25.6	58.0
Non-system	0.6	0.8	5.5	1.7	4.7	13.3
Total capex	38.5	10.3	11.1	49.9	56.0	165.7

Source: APA GasNet, *Response to AER Information Request FD5a*, 11 December 2012, p. 1.

4.2.2 Capital expenditure in the 2013–17 access arrangement period

APA GasNet proposed a revised conforming capex forecast of $174.2 million ($2012) for the 2013–17 access arrangement period, an increase of $20.4 million or 13 per cent from the AER's draft decision.[82] APA GasNet adopted most elements of the AER's draft decision on forecast capex, but proposed increased expenditure on the Gas to Culcairn project and the Brooklyn compressor station as follows:

- an additional 8.2 km of pipeline looping between Wollert and Clonbinane, and re-rating of the maximum allowable operating pressure of the pipeline between Euroa and Springhurst, to meet forecast Culcairn export capacity requirements at a cost of $14.6 million ($2012)[83]
- additional refurbishment and upgrade expenditure at the Brooklyn compressor station, in lieu of the previously proposed Western Outer Ring Main (WORM) project, to extend the asset life and maintain station safety and operational reliability at a cost of $2.7 million ($2012).[84]

The revised capex forecast reflects a reduction of $166.6 million or 49 per cent from APA GasNet's initial proposal. APA GasNet's revised capex proposal for the 2013–17 access arrangement period is set out in Table 4.4.

81 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 19-20.
82 APA GasNet, *VTSAACapexForecast - AER modelling - FINAL.xlsx*, 9 November 2012.
83 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 24-27.
84 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 27-28.

Table 4.4 APA GasNet's revised proposal of conforming capital expenditure over the 2013–17 access arrangement period ($million, 2012)

Category	2013	2014	2015	2016	2017	Total
Augmentation	12.0	75.3	11.7	-	-	99.0
Refurbishment and upgrade	13.4	17.1	11.1	11.5	5.9	59.0
Non-system	5.1	5.8	1.0	1.7	2.6	16.2
Total capex	30.5	98.2	23.8	13.2	8.6	174.2

Source: APA GasNet, *VTSAACapexForecast - AER modelling - FINAL.xlsx*, 9 November 2012.

4.3 Assessment approach

The AER's approach to assessing conforming capex is set out in section 3.3 of attachment 3 of the AER's draft decision.[85]

The AER took into consideration submissions received in relation to its draft decision and APA GasNet's revised proposal in making its final decision on APA GasNet's conforming capex. The AER received submissions from the following parties:[86]

- AGL Energy Limited
- Australian Power and Gas Company Limited
- EnergyAustralia Pty Ltd
- EnergyAustralia Gas Storage Pty Ltd
- Energy Users Coalition of Victoria (EUCV)
- Origin Energy Limited.

4.4 Reasons for decision

4.4.1 Capital expenditure in the 2008–12 access arrangement period

The AER approves APA GasNet's revised proposed capex of $165.7 million ($2012) for the 2008–12 access arrangement period. The AER considers the proposed capex for the 2008–12 access arrangement period is conforming capex in accordance with r. 79 of the NGR.

In the draft decision, the AER approved APA GasNet's proposed conforming capex in the 2008–12 access arrangement period of $160.4 million ($2012). However, APA GasNet's proposed capex was

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85 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, pp. 35-37.

86 AGL, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013; Australian Power and Gas, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 18 December 2012; EnergyAustralia, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 19 November 2012; EnergyAustralia Gas Storage, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013; Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013; Origin Energy, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013.

based on estimated expenditure for 2011 and 2012. The AER required APA GasNet to include actual expenditure for 2011 and an updated estimate of 2012 expenditure in its revised proposal.[87]

APA GasNet revised its proposed capex for 2012 to reflect actual incurred expenditure and updated forecasts since the initial proposal was submitted to the AER in March 2012.[88] APA GasNet's reported 2011 capex remained unchanged from its initial proposal. Table 4.5 sets out APA GasNet's proposed revisions to its 2012 capex forecast.

Table 4.5 Summary of revisions to APA GasNet's proposed 2012 capital expenditure

Project	Forecast cost increase ($million, 2012)	Reason for cost increase
Brooklyn Lara pipeline	0.7	Final land owner easement issues and expected settlement claim from the construction contractor.
Northern augmentation	1.6	Final negotiated costs with the construction contractor.
Sunbury loop	0.8	Increased construction costs and delays in commissioning the new regulator site.
Other (minor projects)	2.1	Unforeseen minor projects ($0.3 million) and cost increases on the Wandong heater, Brooklyn CS coolers, Gooding CS controls and other stay in business capex projects.
Total capex	5.4	Of the total increase in proposed 2012 capex, $2.8 million relates to actual outturn expenditure and $2.6 million relates to updated forecast expenditure.

Source: APA GasNet, *Revised access arrangement submission*, November 2012, pp. 19-20; APA GasNet, *Response to AER Information Request FD5a*, 11 December 2012, p. 2.

As flagged in the draft decision, the AER considers it appropriate to revise cost estimates when actual outturn costs or updated forecasts become available. This approach is consistent with r. 74(2) of the NGR, which requires that any forecast or estimate submitted must represent the best forecast or estimate possible in the circumstances.

The AER considered the revised capex estimates submitted by APA GasNet to assess whether the proposed capex is conforming for the purposes of r. 79 of the NGR. With the exception of a small amount of unforeseen refurbishment and upgrade expenditure, the costs relate to projects previously approved by the ACCC in 2008 (Brooklyn Lara pipeline and Northern augmentation) or by the AER in the draft decision (Sunbury loop and other minor projects). The need for the projects is therefore clearly established. The revised capex estimates for the Brooklyn Lara pipeline and Northern augmentation projects remain at or below the allowance for these projects approved by the ACCC in the 2008–12 access arrangement period. The AER considers APA GasNet's revised estimates continue to reflect a prudent and efficient level of expenditure, consistent with achieving the lowest sustainable cost of providing services.

On the basis of the information provided by APA GasNet in its revised proposal and in response to subsequent information requests,[89] the AER is satisfied that APA GasNet's revised proposed capex of $165.7 million ($2012) for the 2008–12 access arrangement period is conforming capex for the purposes of r. 79 of the NGR.

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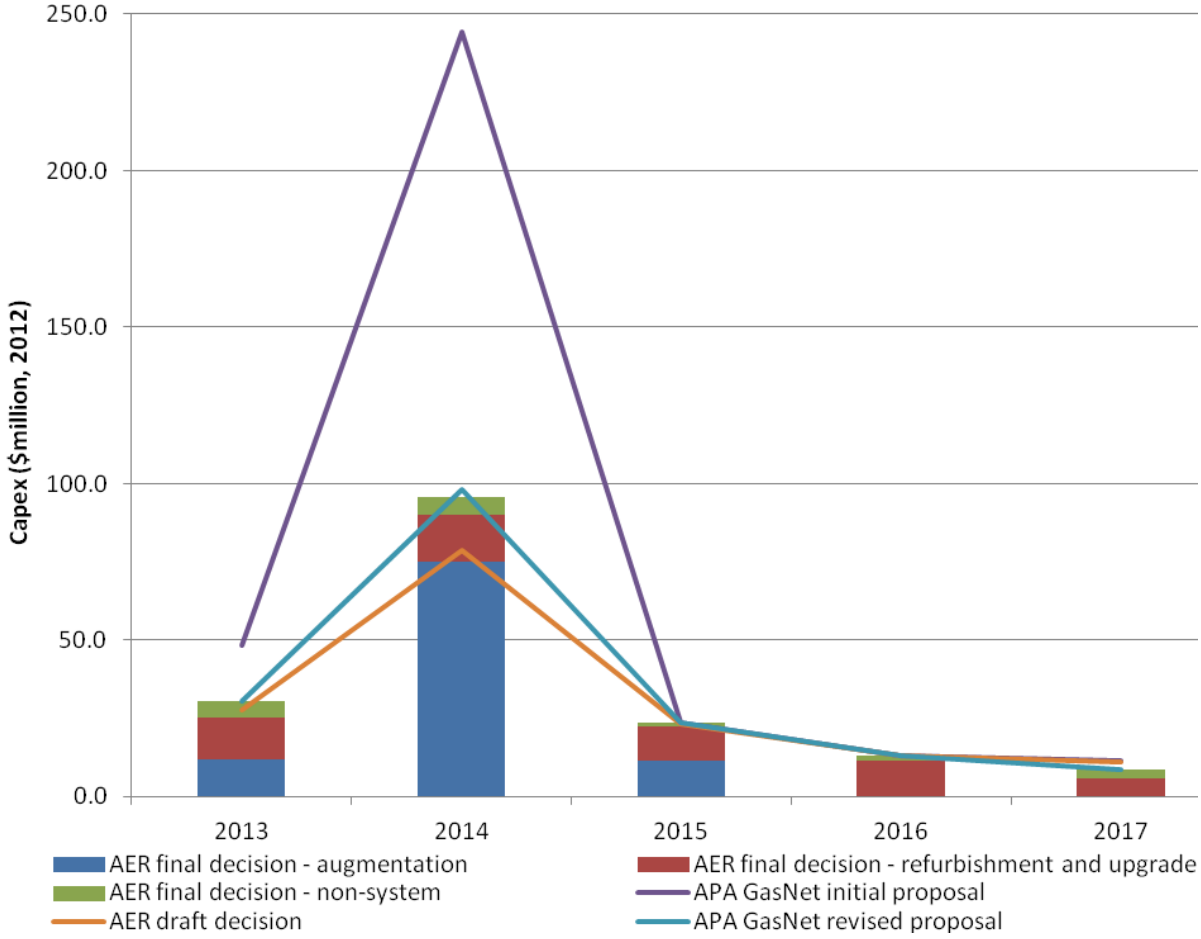
87 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, p. 20.
88 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 19-20.
89 APA GasNet, *Response to AER Information Request FD5a*, 11 December 2012, p. 2.

4.4.2 Capital expenditure in the 2013–17 access arrangement period

The AER approves $171.5 million ($2012) of APA GasNet's revised conforming capex proposal of $174.2 million ($2012) for the 2013–17 access arrangement period. Figure 4.1 shows the AER's final approved capex forecast by expenditure category, compared with APA GasNet's initial and revised capex proposals and the AER's draft decision.

Figure 4.1 AER approved capex over the 2013–17 access arrangement period by expenditure driver ($million, 2012)



Source: APA GasNet, *VTSAACapexForecastFINAL.xlsx*, 6 July 2012; AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, p. 24; APA GasNet, *VTSAACapexForecast - AER modelling - FINAL.xlsx*, 9 November 2012; and AER analysis.

As discussed below, the AER considers the proposed capex for the Rockbank pressure reduction station ($2.1 million) is not required in the 2013–17 access arrangement period and is therefore not conforming capex for the purposes of r. 79 of the NGR. The AER has also not approved APA GasNet's proposed labour cost escalators, as discussed in appendix A of this decision. The AER proposes to revise APA GasNet's access arrangement proposal as set out in revision 4.1.

Augmentation capital expenditure

Gas to Culcairn

The AER considers the proposed augmentation capex for the Gas to Culcairn project is conforming capex in accordance with r. 79 of the NGR.[90] The revised forecast incremental gas volumes associated with the project have been arrived at on a reasonable basis and represent the best forecast possible in the circumstances.[91] The scope of the project proposed by APA GasNet aligns with the revised incremental volume forecasts. The AER considers the proposed capex would be incurred by a prudent service provider acting efficiently to achieve the lowest sustainable cost of providing services. Further, the AER is satisfied the overall economic value of the expenditure is positive, and that the project is therefore justifiable under r. 79(2)(a) of the NGR.

Draft decision

In the draft decision, the AER concluded that the Gas to Culcairn project as proposed by APA GasNet was not conforming capex in accordance with r. 79 of the NGR. The AER considered that:[92]

- the forecast incremental gas volumes had not been arrived at on a reasonable basis and did not represent the best forecast possible in the circumstances
- the proposed capex would not be incurred by a prudent service provider acting efficiently
- the proposed expenditure was unlikely to result in a positive overall economic value
- the scope of the project should be reduced to allow for:
    - augmentation of the South West Pipeline through construction of a bi-directional Centaur 50 (C50) compressor station at Winchelsea
    - construction of approximately 27.2 km of 450 mm pipeline looping between Wollert and Wandong.

Revised proposal

APA GasNet adopted the AER's reduced forecast of incremental Culcairn export volumes, and the location of the proposed South West Pipeline compressor station at Winchelsea rather than Stonehaven.[93] However, APA GasNet submitted that the existing Culcairn export capacity available to meet the forecast incremental volumes had reduced by 8 TJ/day since its initial proposal as a result of:[94]

- a reduction in the modelled capacity for exports from the VTS at Culcairn of 6 TJ/day, as advised by AEMO following its October 2012 capacity assessment
- an additional 2 TJ/day in currently contracted export volumes.

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90 With the exception of labour cost escalation as discussed in section 4.4.3 of this attachment.
91 NGR, r. 74(2).
92 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, pp. 42-44.
93 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 24-25.
94 APA GasNet, *Revised access arrangement submission*, November 2012, p. 25.

APA GasNet submitted that the decline in the current available export capacity required an increase in the scope of the augmentation works needed to meet the forecast incremental gas volumes. The project scope proposed by APA GasNet included 35.4 km of 450 mm pipeline looping from Wollert to Clonbinane, and various works to facilitate an upgrade of the maximum allowable operating pressure of the Euroa to Springhurst pipeline from 7400 kPa to 8800 kPa. The total project capex of $83.2 million ($2012) proposed by APA GasNet is $14.6 million or 21 per cent more than the $68.6 million allowed in the AER's draft decision.[95]

Submissions

The AER received several submissions relating to the draft decision and APA GasNet's revised proposal for the Gas to Culcairn project. The submissions reflected a range of perspectives, from users, end users and other parties.

Submissions from Australian Power and Gas, Origin Energy, and the EUCV supported the AER's draft decision on the Gas to Culcairn project. [96] Origin Energy submitted that the level of augmentation proposed by APA GasNet in its revised proposal is excessive, and that the AER's draft decision provides adequate capacity to satisfy forecast export volumes while maintaining sufficient capacity for Victorian customers.[97] The EUCV similarly raised concerns regarding the prudency of APA GasNet's revised proposal for the Gas to Culcairn project. The EUCV also sought that the AER ensure that the risk of lower than expected gas exports through Culcairn is not transferred to Victorian customers.[98]

AGL did not support the capex allowed in the AER's draft decision for the Gas to Culcairn project. AGL queried APA GasNet's justification of the project on the basis of incremental revenues under r. 79(2)(b) of the NGR, and whether the costs of the project should be recoverable from Victorian consumers. AGL also questioned the need for the augmentation given that the remaining economic life of the existing Otway Basin gas fields is relatively short, and that the system has displayed sufficient adequacy from both an energy and capacity perspective. [99]

EnergyAustralia and EnergyAustralia Gas Storage supported the AER's draft decision to provide for augmentation of the South West Pipeline. However, both favoured APA GasNet's initial proposal for construction of a compressor at Stonehaven rather than the AER's draft decision to allow for construction of a C50 compressor station at Winchelsea. EnergyAustralia Gas Storage also queried whether the proposed option of compression augmentation had a lower overall cost than pipeline looping.[100]

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95 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 25-26.

96 Australian Power and Gas, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 18 December 2012; Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013; and Origin Energy, *Submission to the AER*, 3 January 2013.

97 Origin Energy, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013, p. 2.

98 Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, p. 15.

99 AGL, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013, pp. 2-4.

100 EnergyAustralia, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 19 November 2012, p. 3; EnergyAustralia Gas Storage, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, pp. 3-6.

Consultant review

The AER sought advice from Sleeman Consulting on the prudency and efficiency of APA GasNet's revised proposal for the Gas to Culcairn project. Sleeman Consulting concluded that:[101]

- the downward revision to the existing Culcairn export capacity modelled by AEMO aligns with the pipeline performance as modelled by Sleeman Consulting
- a total of at least 35.4 km of 450 mm diameter pipeline looping to the north of Wollert, together with re-rating of the maximum allowable operating pressure between Euroa and Springhurst, is required to provide the necessary increase in gas export capacity
- the works proposed by APA GasNet to achieve the maximum allowable operating pressure upgrade of the pipeline between Euroa and Springhurst are prudent in that they achieve the required technical outcomes safely and at least cost
- the proposed installation of a C50 compressor at Winchelsea is consistent with recommendations previously made by Sleeman Consulting in its report to the AER of 25 July 2012
- the revised programme of works for the Gas to Culcairn project is prudent and consistent with achieving the lowest sustainable cost of providing services.

AER assessment

In making this decision, the AER has assessed the arguments presented in the various submissions on this issue, as well as the advice from Sleeman Consulting and APA GasNet's revised proposal.

The proposed Gas to Culcairn project can be broken down into two constituent elements, namely the augmentation of the South West Pipeline, and the augmentation of the Wollert to Barnawartha pipeline. These two elements are discussed in turn below.

APA GasNet adopted the AER's draft decision that the most efficient means of augmenting the South West Pipeline is the construction of a bi-directional C50 compressor station at Winchelsea at a cost of $37.0 million ($2012).[102] Submissions from Australian Power and Gas, Origin Energy and the EUCV also supported this aspect of the AER's draft decision on forecast capex.[103] EnergyAustralia and EnergyAustralia Gas Storage, while supporting the augmentation of the South West Pipeline, queried the location of the compressor station at Winchelsea on the basis that this option:[104]

- would delay the augmentation of the South West Pipeline by at least one year
- would be a false economy as the additional costs of securing a new compressor site will be higher than the cost savings from the smaller compressor unit
- overlooks the significant benefits of greater west bound flows.

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101 Sleeman Consulting, *Addendum to Review of Gas to Culcairn Project and Western Outer Ring Main Project*, December 2012, pp. 3-4 and 7-9.

102 APA GasNet, *Revised access arrangement submission*, November 2012, p. 25.

103 Australian Power and Gas, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 18 December 2012; Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013; and Origin Energy, *Submission to the AER*, 3 January 2013.

104 EnergyAustralia, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 19 November 2012, p. 3; EnergyAustralia Gas Storage, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, pp. 3-6.

AGL Energy did not support the augmentation of the South West Pipeline.[105]

The AER maintains its decision that the augmentation of the South West Pipeline as proposed by APA GasNet in the context of the Gas to Culcairn project is prudent and efficient. The AER does not consider the arguments raised by EnergyAustralia and EnergyAustralia Gas Storage in favour of the Stonehaven site are persuasive. While the Winchelsea compressor may take longer to construct, the total cost of the project as forecast by APA GasNet remains lower than the alternative site at Stonehaven. APA GasNet has acknowledged that there is no longer a constraint on timing to augment the South West Pipeline that would justify the higher cost option.[106]

Further, the AER does not accept the argument that the preferred compressor location overlooks the benefits of west bound flows to Iona. As noted in the draft decision, while the location of Stonehaven is more optimal for west bound flows, Winchelsea provides significantly greater capacity for flows to Melbourne for the same compressor size.[107] The AER considers this is a key consideration, as the proposed augmentation is driven by shipper requests for additional capacity for Melbourne flows. However, the Winchelsea option is itself a compromise between augmenting flows to both Melbourne and Iona. As noted by Sleeman Consulting, the optimal compressor location for augmenting flows to Melbourne would be approximately 42-48 km from Iona.[108] The Winchelsea location is approximately 82 km from Iona, and therefore provides greater capacity for west bound flows than the optimal location for augmenting gas flows to Melbourne. This recognises the importance to the operation of the VTS of flows to Iona for a range of purposes, including refilling underground gas storages.

In relation to the concerns raised by EnergyAustralia Gas Storage on the choice of compression rather than looping to augment the South West Pipeline, the AER is satisfied that the Winchelsea compressor station is the most efficient augmentation option available. As advised by Sleeman Consulting, compression is typically the most efficient means for achieving initial expansions of pipeline capacity. This is confirmed for the South West Pipeline by Sleeman Consulting's analysis of the present value costs of the various augmentation options. This analysis, which accounts for both capital costs and operating, maintenance and fuel costs, indicates a substantially lower cost per unit of additional capacity provided by compression than by pipeline looping.[109]

The AER acknowledges the concerns raised by AGL regarding the need for augmentation of the network, and the South West Pipeline in particular, in circumstances where the system has displayed sufficient adequacy from both an energy and capacity perspective, and the Otway gas fields are in long term decline.[110] However, as APA GasNet and EnergyAustralia Gas Storage have submitted, the South West Pipeline operates at or near capacity on peak winter days.[111] The proposed augmentation is driven by specific requests from multiple gas shippers for additional peak capacity on the South West Pipeline and for export at Culcairn. On this basis, the AER is satisfied that there is a need for the proposed augmentation and that the proposed capex would be incurred by a prudent service provider.

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105 AGL, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013, p. 1.

106 APA GasNet, *Revised access arrangement submission*, November 2012, p. 25.

107 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, p. 44.

108 Sleeman Consulting, *Review of Gas to Culcairn Project and Western Outer Ring Main Project*, July 2012, p. 10.

109 Sleeman Consulting, *Review of Gas to Culcairn Project and Western Outer Ring Main Project*, July 2012, p. 15.

110 AGL, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013, pp. 1-4.

111 EnergyAustralia Gas Storage, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, pp. 3-5; and APA GasNet, *BC175-Rev1 - Gas to Culcairn Project Redacted*, 7 November 2012, p. 3.

In relation to the augmentation of the Wollert to Barnawartha pipeline proposed as part of the Gas to Culcairn project, APA GasNet has adopted the incremental gas volume forecasts for Culcairn exports set out in the AER's draft decision. The AER therefore considers the gas volume forecasts driving the Gas to Culcairn project have been arrived at on a reasonable basis and represent the best forecast possible in the circumstances.[112] The scope of the project proposed by APA GasNet now aligns with the incremental gas volume forecasts. The AER considers the proposed capex would be incurred by a prudent service provider acting efficiently to achieve the lowest sustainable cost of providing services. The AER accepts APA GasNet's revised capex proposal for augmentation of the Wollert to Barnawartha pipeline is conforming capex in accordance with r. 79 of the NGR.

APA GasNet proposed an additional $14.6 million ($2012) for augmentation of the Wollert to Barnawartha pipeline over and above the capex allowance set out in the AER's draft decision. The additional capex relates to a further 8.2 km of 450 mm pipeline looping, and various works to facilitate an upgrade of the maximum allowable operating pressure of the section from Euroa to Springhurst.[113]

Origin Energy and the EUCV raised concerns that APA GasNet's revised proposal for the Gas to Culcairn project was not prudent, in so far as the additional $14.6 million in augmentation expenditure proposed was excessive, and not required to satisfy forecast export volumes.[114] However, in view of APA GasNet's revised proposal and advice from Sleeman Consulting, the AER considers the augmentation capex allowed in the draft decision is insufficient to provide for the forecast incremental gas volumes. In the draft decision, the AER took account of existing spare capacity for exports from Culcairn in determining the necessary scope of augmentation required to meet the incremental gas volumes sought by gas shippers. Any reduction in the level of existing spare capacity would therefore necessitate an increase in the scope of augmentation required to provide for the forecast incremental gas volumes. APA GasNet advised that AEMO's remodelling of pipeline capacity in October 2012 reduced the current capacity for winter exports from Culcairn by 6 TJ/day, with a further 2 TJ/day reduction caused by the contracting of existing spare capacity.[115] The AER therefore recognises that the scope of augmentation allowed in the draft decision is insufficient to provide the increase in pipeline capacity now required.

The AER sought advice from Sleeman Consulting to test whether the increase in the scope of the Gas to Culcairn project proposed by APA GasNet was necessary and whether the proposed works represented prudent and efficient expenditure. Sleeman Consulting concluded that the proposed 35.4 km of 450 mm diameter pipeline looping to the north of Wollert, together with re-rating of the maximum allowable operating pressure between Euroa and Springhurst, is required to provide the necessary increase in gas export capacity.[116] The AER is therefore satisfied that the revised scope of the project proposed by APA GasNet aligns with the incremental gas volume forecasts. APA GasNet adopted the recommendation made by Sleeman Consulting that it consider upgrading the maximum allowable operating pressure of the pipeline north of Euroa as a low cost means of expanding capacity and improving pipeline operating efficiency.[117] This has minimised the length of additional pipeline looping required to provide the necessary capacity augmentation. The AER therefore

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112 NGR, r. 74(2).

113 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 25-26.

114 Origin Energy, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013, p. 2; and Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, pp. 13-15.

115 APA GasNet, *Revised access arrangement submission*, November 2012, p. 25.

116 Sleeman Consulting, *Addendum to Review of Gas to Culcairn Project and Western Outer Ring Main Project*, December 2012, p. 7.

117 APA GasNet, *Revised access arrangement submission*, November 2012, p. 25; and Sleeman Consulting, *Review of Gas to Culcairn Project and Western Outer Ring Main Project*, July 2012, p. 26.

considers the proposed capex would be incurred by a prudent service provider acting efficiently to achieve the lowest sustainable cost of providing services.

In its submission, AGL queried whether the incremental revenues generated by the Gas to Culcairn project would justify the project under r. 79(2)(b) of the NGR. The AER sought further information from APA GasNet in support of its claim that the proposed Gas to Culcairn project was justified under r. 79(2)(b) of the NGR, noting that the AER's draft decision to approve conforming capex of $68.6 million was made on the basis of the positive overall economic value of the project rather than net present value of forecast incremental revenues. APA GasNet advised that the reference to r. 79(2)(b) of the NGR in the revised business case for the Gas to Culcairn project was an error. APA GasNet considered the project to be justifiable on the basis of r. 79(2)(a) of the NGR as it has a positive overall economic value. [118] As stated in the draft decision, the AER considers that the overall economic value of the project is positive, considering the economic value that will accrue to APA GasNet, pipeline users, end users and gas producers as a result of the project.

AGL and the EUCV submitted that the cost of the Gas to Culcairn project should not be recoverable from Victorian customers, as the main benefit of the project is to expand the winter export capacity at Culcairn.[119] The AER addressed the question of cost allocation for the Gas to Culcairn project in attachment 10 of the draft decision. The AER agrees with AGL and the EUCV that the direct costs of the network augmentation should where possible be borne by those who benefit or who cause the costs to be incurred. The AER therefore required APA GasNet to ensure that the costs allocated to the Culcairn export tariff exceed the incremental cost of augmenting the Wollert to Barnawartha pipeline. In relation to the cost of augmenting the South West Pipeline, the AER considered that since this augmentation provides both specific benefits to certain users and more wide-spread benefits to all users from enhanced system security, it is appropriate that the direct costs of the asset be rolled into the South West pipeline asset base and recovered on that basis.[120] APA GasNet adopted the AER's draft decision on tariff allocation for the Gas to Culcairn project costs.[121]

Western Outer Ring Main

APA GasNet adopted the AER's draft decision on the WORM project.[122] However, APA GasNet proposed additional refurbishment and upgrade capital expenditure to maintain the safe and reliable operation of the Brooklyn compressor station in the access arrangement period, in lieu of the WORM project.[123] The AER's assessment of this additional refurbishment and upgrade capital expenditure is set out in the refurbishment and upgrade capex section of this attachment.

The AER received a number of submissions supportive of the forecast capex allowance set out in the AER's draft decision, which excluded the expenditure related to the WORM project proposed by APA GasNet.[124] However, the AER also received two submissions in support of the WORM project. EnergyAustralia and EnergyAustralia Gas Storage submitted that the WORM project is required as it

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118 APA GasNet, *Response to AER Information Request*, 22 November 2012.

119 Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, p. 15; and AGL, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013, p. 3.

120 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, pp. 190-191 and 197.

121 APA GasNet, *Revised access arrangement submission*, November 2012, p. 129.

122 APA GasNet, *Revised access arrangement submission*, November 2012, p. 27.

123 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 27-28.

124 Australian Power and Gas, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 18 December 2012; Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013; Origin Energy, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 3 January 2013.

provides operational and security of supply benefits, avoids sub-optimal capex, and supports increased cross-system flows between Iona, Melbourne and Dandenong.[125]

As noted above, APA GasNet accepted that the WORM project is not justified as conforming capex in the access arrangement period. The submissions presented by EnergyAustralia and EnergyAustralia Gas Storage are essentially the same as those already put forward by APA GasNet and considered by the AER in making its draft decision. The AER maintains its draft decision that expenditure relating to the WORM project is not required in the access arrangement period. The expenditure would not be incurred by a prudent service provider, and is not consistent with acting efficiently to achieve the lowest sustainable cost of providing services.

EnergyAustralia Gas Storage further submitted that the AER should support early planning and easement reservation for major system augmentations such as the WORM.[126] As noted in the draft decision, the AER accepts that the completion of the outer ring main around Melbourne appears to have merit from a technical perspective and might, in the future, prove to be a prudent response to the augmentation needs of the VTS in the longer term.[127] However, the AER does not consider capex is required in the access arrangement period for planning work or easement reservation for the WORM. The preferred route for the WORM identified by APA GasNet follows an existing public acquisition overlay in place for the outer metropolitan ring transport corridor. APA GasNet considers this route provides the greatest certainty for both future planning approvals and for easement acquisition as it follows an existing infrastructure corridor.[128] APA GasNet has not proposed any capex for easement acquisition in relation to the WORM project.

Other augmentation capital expenditure

APA GasNet adopted the AER's draft decision on the proposed Anglesea pipeline extension, Warragul loop and Kalkallo lateral augmentation capex projects.[129] See attachment 3 of the draft decision for further detail on the AER's decision regarding these projects.[130]

Refurbishment and upgrade capital expenditure

Brooklyn compressor station upgrade

The AER considers the proposed refurbishment and upgrade capex for the Brooklyn compressor station is conforming capex in accordance with r. 79 of the NGR.[131] The project is required to maintain the integrity and safety of services, and is consistent with achieving the lowest sustainable cost of providing services.

The Brooklyn compressor station upgrade aims to maintain station safety and operational reliability in the access arrangement period. APA GasNet proposed refurbishment and upgrade capex of $5.5 million ($2012) to replace the coolers on the BCS10 and BCS11 compressor packages, install

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125 EnergyAustralia, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 19 November 2012, p. 3; EnergyAustralia Gas Storage, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, pp. 6-7.

126 EnergyAustralia Gas Storage, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, 7 January 2013, p. 6.

127 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, p. 47.

128 APA GasNet, *BC083 - Western Outer Ring Main Redacted*, 14 May 2012, pp. 10-11.

129 APA GasNet, *Revised access arrangement submission*, November 2012, p. 23.

130 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, pp. 48-51.

131 With the exception of labour cost escalation as discussed in section 4.4.3 of this attachment.

new station isolation and loading valves, and replace the existing gas engine alternator (GEA) with a diesel engine alternator (DEA).[132]

APA GasNet did not include the WORM project in its revised capex proposal for the access arrangement period. However, in the absence of the WORM project, APA GasNet submitted that there is a requirement to upgrade the Brooklyn compressor station to maintain the safe and reliable operation of the station in the access arrangement period.[133] The AER reviewed the business case submitted by APA GasNet in support of the project, and sought advice from Sleeman Consulting regarding the prudence and efficiency of the proposed expenditure.[134]

The AER agrees with APA GasNet that the available compression capacity at Brooklyn continues to be required in the access arrangement period in the absence of the WORM project. The compressor station must be capable of reliable operations as and when required to maintain the integrity of services on the VTS.

In its draft decision, the AER allowed expenditure for a number of minor projects required in the absence of the WORM project.[135] The incremental cost of the proposed Brooklyn compressor station upgrade project over the works already allowed by the AER in the draft decision is $2.6 million. This additional cost is driven by APA GasNet's proposal to replace the coolers on the BCS10 and BCS11 compressors. Sleeman Consulting reviewed the proposed cooling system upgrade, and advised that:[136]

- the existing water-cooled heat exchange system is no longer best practice
- APA GasNet has already upgraded the cooling systems on other compressors to be retained in service
- removal of the cooling water tower will reduce risk, and free up space at the congested Brooklyn site
- the forecast project cost is based on APA GasNet's specific experience with previous work of this nature, and is considered reasonable.

Based on the information provided by APA GasNet and Sleeman Consulting, the AER is satisfied the proposed Brooklyn compressor station upgrade works are necessary to ensure the ongoing safe and reliable operation of the station in the access arrangement period. The capex 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.

In considering whether the proposed capex is justifiable, the AER agrees the capex is required to maintain the integrity of services on the VTS. Removal of the cooling water tower and installation of fail-safe station isolation and loading valves will improve site safety and meet the latest requirements

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132 APA GasNet, *BC180 - Brooklyn Compressor Station - BC10&11 Coolers, Station Isolation Valves Replacement and DEA*, 26 October 2012, p. 10.

133 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 23 and 27.

134 Sleeman Consulting, *Addendum to Review of Gas to Culcairn Project and Western Outer Ring Main Project*, December 2012.

135 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, p. 48.

136 Sleeman Consulting, *Addendum to Review of Gas to Culcairn Project and Western Outer Ring Main Project*, December 2012, p. 11.

of the relevant Australian Standards.[137] The AER is therefore satisfied the proposed capex is justifiable in accordance with r. 79(2) of the NGR.

Rockbank pressure reduction station

The AER considers the proposed refurbishment and upgrade capex for the Rockbank pressure reduction station is not conforming capex in accordance with r. 79 of the NGR. The project is not required to maintain the safety or integrity of services in the access arrangement period.

APA GasNet's revised proposal included capex of $2.1 million ($2012) for a new pressure reduction station at Rockbank.[138] This project was included in APA GasNet's initial proposal as a related project to the WORM. The AER approved capex for this project in its draft decision, although Sleeman Consulting advised there was doubt as to whether the Rockbank pressure reduction station would provide benefits in the absence of the WORM project.[139] The AER anticipated that APA GasNet would clarify the need for the Rockbank pressure reduction station in its revised proposal.

APA GasNet included the Rockbank pressure reduction station in its revised capex proposal, but did not provide further explanation of the benefits of this project in the absence of the WORM. In response to a query from the AER, APA GasNet advised that the Rockbank pressure reduction station is not required if adequate compression is available from Brooklyn. APA GasNet advised that capex for the Rockbank pressure reduction station had been included in its revised proposal in error.[140]

Given the advice from APA GasNet that capex proposed for the Rockbank pressure reduction station is not required in the access arrangement period and had been included in the revised proposal in error, the AER considers this project should be removed from the capex forecast for the 2013–17 access arrangement period.

Non-system capital expenditure

APA GasNet adopted the AER's draft decision on non-system capex. As discussed in the draft decision,[141] the AER is satisfied that APA GasNet's proposed non-system capex is conforming capex for the purposes of r. 79 of the NGR.[142]

4.4.3 Adjustments to labour cost escalation

As shown in Table 4.6, the AER has revised down the labour cost escalation proposed by APA GasNet.

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137 APA GasNet, *BC180 - Brooklyn compressor station - BC10&11 Coolers, Station Isolation Valves Replacement and DEA*, 26 October 2012, pp. 8 and 12.

138 APA GasNet, *VTSAACapexForecast - AER modelling - FINAL.xlsx*, 9 November 2012.

139 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, p. 51; and Sleeman Consulting, *Review of Gas to Culcairn Project and Western Outer Ring Main Project*, July 2012, pp. 34-35.

140 APA GasNet, *Response to AER information request*, 28 November 2012.

141 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, pp. 52-54

142 With the exception of labour cost escalation as discussed in section 3.4.3 of this attachment.

Table 4.6 APA GasNet proposed and AER approved labour cost escalation rates (%)

	2013	2014	2015	2016	2017
APA GasNet proposed internal labour	1.3	1.5	1.7	1.4	1.5
AER approved internal labour	1.5	1.5	1.0	1.0	0.9
APA GasNet proposed external contracted labour	0.8	1.4	1.6	1.2	1.3
AER approved external contracted labour	-0.1	0.2	0.5	0.3	0.7

Source: APA GasNet, *VTSAACapexForecast - AER modelling - FINAL.xlsx*, 9 November 2012; and Deloitte Access Economics, *Forecast growth in labour costs in Victoria –report prepared for the AER*, 4 February 2013.

The AER's assessment of APA GasNet's revised proposed labour cost escalators is set out in appendix A of this decision. The impact of the AER's amended labour cost escalators on proposed capex is shown in Table 4.7 below.

Table 4.7 Comparison of APA GasNet proposed and AER approved capex in the 2013–17 access arrangement period including revised labour cost escalation ($m, 2012)

	APA GasNet revised proposal	AER approved capex excluding AER labour cost escalation adjustments	AER approved capex including AER labour cost escalation adjustments	Variance between APA GasNet proposed and AER approved capex including labour cost escalation adjustment (%)
Augmentation	99.0	98.9	98.7	0.3%
Refurbishment and upgrade	59.0	56.9	56.6	4.1%
Non-system	16.2	16.2	16.2	0.4%
Total capital expenditure	174.2	172.1	171.5	1.6%

Source: APA GasNet, *VTSAACapexForecast - AER modelling - FINAL.xlsx*, 9 November 2012; and AER analysis.

4.4.4 Equity raising costs

Service providers incur equity raising costs when they need to raise new equity from outside the business. The AER's equity raising cost benchmark allows for costs in the form of dividend reinvestment plan costs and seasoned equity offerings. A prudent service provider acting efficiently would incur equity raising costs. Accordingly, the AER provides an allowance to recover an efficient amount of equity raising costs where a service provider's capex forecast is large enough to require an external equity injection (to maintain the benchmark 60:40 debt to equity ratio).

As demonstrated below in section *'APA GasNet's modified equity raising cost approach'*, APA GasNet's proposed equity raising cost approach is not internally consistent with the efficient practices of a benchmark firm. Further, it does not result in an equity raising cost allowance that 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.[143] The AER has therefore adopted its standard equity raising cost method.

Broadly, the AER's method applies the cash flow analysis in the post–tax revenue model (PTRM) to determine the required benchmark equity raising cost associated with forecast capex. This approach adopts the "pecking order" theory of capital structure. This theory predicts that an efficient service provider will seek to raise capital starting from the lowest cost forms and moving to higher cost forms as the lower cost forms are exhausted.[144]

Based on the need for any dividend reinvestment plans and seasoned equity offerings, the AER assigns transaction unit costs for each form of equity funding. They are based on the AER's empirical review in assessing the benchmark costs for raising equity finance:[145]

- Retained earnings—0 per cent
- Dividend reinvestment plans—1 per cent of total dividends reinvested
- Seasoned equity offerings—3 per cent of total external equity required.

The AER considers that these unit costs represent the efficient costs required to raise equity in current market conditions because they have been suitably estimated by the AER[146] and ACG,[147] and subsequently reviewed.[148]

The AER considers that this method represents the approach that a prudent service provider acting efficiently would apply in raising equity, given its particular capital raising requirements. This is because the method:

- assumes that service providers first use the cheapest sources of equity
- takes account of all the likely sources of equity
- takes account of the requirements of a prudent service provider acting efficiently, by using the inputs and outputs of the PTRM as found by the AER to be efficient.

The AER's draft decision for APA GasNet outlines the AER's equity raising cost method more fully.[149]

The AER has used the updated PTRM inputs and outputs to estimate the costs and total allowance for APA GasNet. Table 4.8 and Table 4.9 show the cash flow analysis calculated in the PTRM for APA GasNet's benchmark equity raising cost. Table 4.8 sets out (in nominal terms) the derivation of the required new equity for the network service provider. The second part of the cashflow analysis (in real terms) derives the benchmark allowance for raising this equity and is set out in Table 4.9. These tables demonstrate that APA GasNet does not require an equity raising cost allowance based on the amount of forecast capex.

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143 NGR, clause 79(1)(a)

144 ACG, Estimation of Powerlink's SEO transaction cost allowance–Memorandum, 5 February 2007

145 Final decision, TransGrid transmission determination 2009–10 to 2013–14, April 2009, pp. 233–244. ACG, Debt and Equity Raising Transaction Costs, Final Report to the Australian Competition and Consumer Commission, December 2004, p xiii, 65. Handley, A note on the cost of raising debt and equity capital, April 2009.

146 Final decision, TransGrid transmission determination 2009–10 to 2013–14, April 2009, pp. 233–244.

147 ACG, Debt and Equity Raising Transaction Costs, Final Report to the Australian Competition and Consumer Commission, December 2004, p xiii, 65.

148 Handley, *A note on the cost of raising debt and equity capital,* April 2009.

149 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017 Part 2 attachments, September 2012, Part 2, p. 55-7.

Benchmark equity raising costs

The AER has applied its equity raising costs method along with the updated PTRM inputs and outputs to determine that APA GasNet requires no benchmark equity raising costs.

Table 4.8 AER's final decision cash flow analysis for APA GasNet benchmark equity raising cost ($million, nominal)

Cash flow analysis	Total ($million, nominal)	Notes
Dividends	35.52	Set to distribute imputation credits assumed in the PTRM (70 per cent).
Dividends reinvested	10.66	Availability of reinvested dividends, capped at 30% dividends paid.
Capex funding requirement	179.13	Forecast capex funding requirement (including half year WACC adjustment).
Debt component	77.49	Set to equal 60% of annual change in RAB.
Equity component	101.64	Residual of capex funding requirement and debt component.
Retained cash flow available for reinvestment	125.65	Exclude dividends reinvested.
Equity required	-24.01	Equals equity component less retained cash flows.

Source: AER analysis.

Table 4.9 AER's final decision cash flow analysis for APA GasNet benchmark equity raising cost ($million, 2012–13)

Cash flow analysis	Total ($million, 2012–13)	Notes
Equity component	95.43	Residual of capex funding requirement and debt component.
Retained cash flow available for reinvestment	116.73	Exclude dividends reinvested.
Equity required	-21.30	Equals equity component less retained cash flows.
Dividends reinvested	9.92	Availability of reinvested dividends, capped at 30% dividends paid.
Dividend reinvestment plan required	0.00	Required reinvested dividends.
Seasoned equity offerings required	0.00	Required seasoned equity offerings (SEOs).
Cost of dividend reinvestment plan	0.00	Required reinvested dividends

		multiplied by benchmark cost.
Cost of seasoned equity offerings	0.00	Required SEOs multiplied by the benchmark cost.
Total equity raising costs	0.00	Sum of costs of dividend reinvestment plan and SEOs. To be added to the RAB at the start of the access arrangement period.

Source: AER analysis

APA GasNet's modified equity raising cost approach

APA GasNet proposed an alternative approach to calculating equity raising costs to the AER's standard approach.[150] These approaches differ in the calculation of forecast dividends, which are required to derive the benchmark equity raising costs allowance. Internal equity cannot be used to fund projects once it is distributed to shareholders via dividends. Therefore, if more dividends are distributed, more external equity needs to be raised, which results in a higher equity raising allowance. APA GasNet submitted that the dividends should be calculated from after tax cash flows, whereas the AER's method uses after tax income.[151] The main difference between these approaches is that APA GasNet assumes that share capital is, or can be distributed, but the AER does not. unlike APA GasNet, the AER subtracts depreciation from revenue before calculating dividends.[152]

In the AER's Powerlink decision, the AER discussed how the benchmark firm has a company structure. A company, unlike a trust structure, cannot distribute dividends from its return of capital. However, since the Powerlink decision, the relevant section of the Corporations Act 2001 was amended. Prior to the 12 July 2010 amendment, section 254T of the Corporations Act stated:[153]

> **254T Dividends to be paid out of profits**
>
> A dividend may only be paid out of profits of the company.

However, the Corporations Act now states:[154]

> **254T Circumstances in which a dividend may be paid**
>
> (1) A company must not pay a dividend unless:
>
> (a) the company's assets exceed its liabilities immediately before the dividend is declared and the excess is sufficient for the payment of the dividend; and
>
> (b) the payment of the dividend is fair and reasonable to the company's shareholders as a whole; and
>
> (c) the payment of the dividend does not materially prejudice the company's ability to pay its creditors.

150 APA GasNet Australia (Operations) Pty Limited Access Arrangement Revised Proposal Submission 1 January 2013 – 31 December 2017, September 2012, p. 30-33.

151 APA GasNet Australia (Operations) Pty Limited Access Arrangement Revised Proposal Submission 1 January 2013 – 31 December 2017, September 2012, p. 30-31. Additionally, APA GasNet's revised proposal outlined that the AER's equity raising cost modelling based the dividend calculation on after tax "income" but described this in the AER's draft decision after tax "cashflows". The AER accepts that this mislabelling occurred and notified APA GasNet of this mislabelling in an email on 25 January 2013. However, as discussed below, the AER does not consider this suggests a change in the modelling is required.

152 The AER's dividend calculation is equivalent to Div = (Revenue – Opex –Depreciation – Interest expense) * (1 – Tax rate) * Dividend payout ratio. APA's calculation is Div = (Revenue – Opex – Interest expense – Tax payable) * Dividend payout ratio.

153 Corporations Act 2001, Registered 6 May 2010. See http://www.comlaw.gov.au/Details/C2010C00337

154 Corporations Act 2001, Registered 3 January 2013. See http://www.comlaw.gov.au/Details/C2013C00003

> Note 1: As an example, the payment of a dividend would materially prejudice the company's ability to pay its creditors if the company would become insolvent as a result of the payment.
>
> Note 2: For a director's duty to prevent insolvent trading on payment of dividends, see section 588G.
>
> (2) Assets and liabilities are to be calculated for the purposes of this section in accordance with accounting standards in force at the relevant time (even if the standard does not otherwise apply to the financial year of some or all of the companies concerned).

In response to an AER request, APA GasNet outlined its consideration that under section 254T, it could pay dividends in excess of its accounting profit. APA GasNet submitted that: [155]

> In the case of paying a dividend in excess of the company's profits, the company still has assets in excess of its liabilities immediately before the dividend is declared as seen by the debt to RAB ratio.

The AER accepts that under the Corporations Act, a company could now pay dividends from capital and in excess of its profit. However, as discussed below, although the AER requested APA GasNet to demonstrate how its approach is consistent with the benchmark firm assumptions, it did not do so.[156] Additionally, the AER considers that APA GasNet's approach to calculating dividends does not result in an equity raising cost allowance that 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.[157]

APA GasNet's proposed equity raising cost approach is not internally consistent with the efficient practices of a benchmark firm. In the calculation of gamma, the AER uses an imputation credit payout ratio of 70 per cent. This payout ratio was applied by the Australian Competition Tribunal in its finding for Energex.[158] An imputation credit can only be distributed with a dividend and therefore, the AER's approach aligns the dividend payout ratio with the imputation credit payout ratio of 70 per cent. On the other hand, APA GasNet's approach implies a much higher dividend payout ratio, of 222 per cent. If the benchmark firm paid dividends in excess of 70 per cent, then it would be able to increase its imputation credit payout ratio accordingly, which would imply a higher value for gamma. If the benchmark firm did not increase its imputation credit payout ratio accordingly, then the firm would be reducing value to investors by the amount of unused imputation credits. APA GasNet has proposed a value for gamma consistent with a 70 per cent dividend payment ratio. The AER accepted this aspect of APA GasNet's proposal. Therefore, for consistency, APA GasNet should use a dividend payout ratio of 70 per cent.

The AER's analysis for determining that APA GasNet's implied dividend payout ratio is 222 per cent is as follows. A payout ratio is commonly defined as either 'dividends divided by earnings', or 'dividends divided by net income'.[159] APA GasNet, however, multiplied 70 per cent by its cashflows. In so doing, APA GasNet's approach derives a total dividend payment $112.82 (m, nominal) over the 2013-17 period. To determine the corresponding payout ratio, the AER divided APA GasNet's calculated dividends by APA GasNet's approved income over the 2013-17 period, providing an implied dividend payout ratio of 222 per cent.[160] This process is illustrated in Table 4.10.

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155 APA GasNet, email to the AER 'Equity raising costs', 31 January 2013.

156 AER, email to APA GasNet, Equity raising costs, 25 January 2013.

157 NGL, clause 79(1)(a)

158 Application by Energex Limited (Distribution Ratio (Gamma)) (No 3) [2010] ACompT 9 (24 December 2010).

159 Aswath Damodaran, Investment Valuations; tools and techniques for determining the value of any asset, 3rd end, p. 354. Koller, Goedhart, Wessels, Valuation; measuring and managing the value of companies, 5th edn, p. 182.

160 The AER also calculated APA GasNet's implied average dividend payout ratio over the access arrangement period. That is, the AER calculated the dividend payout ratio in the manner described in text albeit for each year of the access arrangement period rather than using the totals over the period, summed these payout ratios and then divided this by 5 (being the number of years in the access arrangement period). This calculation found that the average dividend payout

Table 4.10 AER dividend payout ratio analysis

Payout ratio analysis	Total ($, nominal)
Cashflow	161.17
Cashflow * 70 per cent = APA's calculation of total dividends	112.82
APA's calculation of dividends / AER approved income = APA GasNet's implied dividend payout ratio	222.32 per cent

Source: AER analysis

As noted, the AER consistently applies the same payout ratio for both the imputation credit payout ratio and the dividend payout ratio. APA GasNet, however, considered that the AER's dividend payout ratio is inconsistent with that used in gamma.[161] This issue is discussed under the section '*APA GasNet considerations on internal consistency*' below.

A change to the equity raising cost methodology must result in an equity raising cost allowance that 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.[162] The AER expects that to meet this criterion, the proposed change would need to have a net benefit when compared to the current approach. Otherwise, the proposed approach would not be efficient or incurred by a prudent service provider, unlike the current approach. APA GasNet's proposed approach, however, has a net cost in so far as APA GasNet has not demonstrated any benefits from the proposed approach. The proposed approach increases the amount of dividends paid, meaning that the benchmark firm would then need to raise more (or would be more likely to need to raise) external equity. As the AER has demonstrated, external equity such as dividend reinvestment plans and seasoned equity offers, have a cost greater than retaining internal equity. The cost of APA GasNet's proposed equity raising cost method can also be seen by examining APA GasNet's proposal. Under its proposal, APA GasNet has an equity raising requirement of $1.1m, compared to zero under the AER's approach.[163] The benchmark firm, acting prudently and efficiently, would not increase its net costs by adopting a more costly equity raising approach, even if the Corporations Act allowed a change.

Despite APA GasNet not demonstrating a net benefit, it is still possible that APA GasNet's proposed approach has a net benefit. For example, distributing more dividends may have tax advantages. If this is the case, however, APA GasNet has not provided a complete assessment of the impact of its proposed approach. If there was a net advantage, APA GasNet should have demonstrated this by, for example, making a subsequent reduction to the tax building block.[164] However, APA GasNet did not propose any other adjustment. Therefore, the AER is not in a position to make an adjustment. Further, the AER considers that APA GasNet must demonstrate that its proposed approach is prudent and efficient and consistent with the NGR. Given that APA GasNet provided an incomplete

over the access arrangement period is 224 per cent. The difference between this average payout ratio and five year dividend payout ratio described in text is immaterial and does not affect the AER's reasoning or analysis.

161 APA GasNet, email to the AER 'Equity raising costs', 31 January 2013.

162 NGR, clause 79(1)(a)

163 The figure $1.1m was that submitted by APA GasNet in its revised proposal. The AER's calculated equity raising cost of zero was calculated with reference to the AER's final decision. The equity raising cost, if calculated using APA GasNet's proposed approach but applied to the AER's final decision PTRM, would still be higher relative to the AER's equity raising cost approach.

164 Or whatever other adjustment is necessary.

assessment, APA GasNet's proposal has only a cost—in the form of higher equity raising costs—and is therefore not consistent with the NGR.[165]

APA GasNet provided information to show that other network service providers, including itself, pay dividends out of after tax cashflows rather than out of after tax income.[166] APA GasNet stated:[167]

> Based on reviewing the dividend policy of the listed gas infrastructure companies in their latest annual reports in Table 4.2, it is readily observed that the listed entities pay in excess of their earnings which is an accounting based metric. Hence, the dividend policy cannot be derived from earnings as listed entities typically pay more dividends than its accounting profit.

The AER's above reasoning does not preclude APA GasNet from actually adopting its proposed approach. The AER sets cost benchmarks based on a notional prudent benchmark firm. The benchmarks the AER adopts do not bind service providers' actions. APA GasNet may distribute more dividends to its shareholders than assumed in the benchmark (and to keep any associated actual benefit). However, what APA GasNet does in practice is not automatically assumed to be an appropriate basis to set the benchmark. For the benchmark firm assumptions to change, APA GasNet must demonstrate that its actual practices better reflect the actions of a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.[168] APA GasNet has not done so. Its proposed approach only has a cost with no associated benefit in the modelling.

In summary:

- APA GasNet's implied dividend payout ratio is 222 per cent, is not internally consistent with the efficient practices of a benchmark firm.
- A firm acting prudently and efficiently would not seek to distribute more dividends and then raise the more expensive external equity (that is, it would not adopt the higher cost approach proposed by APA GasNet).

For the reasons discussed above, the AER considers that APA GasNet's proposed approach is not prudent or efficient.

Separate from these, the AER has further concerns with the proposed approach. APA GasNet has not demonstrated, and it is far from certain, that the benchmark firm would increase its dividends, resulting from the amendment to the Corporations Act even if there was a financial benefit from doing so. Finance theory suggests that dividend policy may be used to signal information to investors.[169] A company's management may choose not to increase dividends unless it expects to be in a position to maintain the payout in the future.[170] A change to dividend policy that increases dividends paid may signal positive news—that a company expects higher future profits, or negative news—that a company has no projects of sufficient expected yield in which to invest. Therefore, companies may resist changing their dividend policies.

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165 NGR, clause 79(1)(a).
166 APA GasNet Australia (Operations) Pty Limited Access Arrangement Revised Proposal Submission 1 January 2013 – 31 December 2017, September 2012, p. 31.
167 APA GasNet Australia (Operations) Pty Limited Access Arrangement Revised Proposal Submission 1 January 2013 – 31 December 2017, September 2012, p. 31.
168 NGL, clause 79(1)(a).
169 Peirson, G. Brown, R. et al, Business Finance, 8th edn, 2002, p. 357.
170 Peirson, G. Brown, R. et al, Business Finance, 8th edn, 2002, p. 358.

APA GasNet considerations on internal consistency

For the reasons set out above, the AER considers its approach to equity raising costs and gamma are internally consistent, whereas APA GasNet's approach is not. In contrast, APA GasNet considered the AER's approach across equity raising costs and gamma was not internally consistent.

APA GasNet submitted that:[171]

> the 70% dividend payout (for the purposes of calculating equity raising costs, at least) ratio is too low, but more importantly is internally inconsistent...
>
> ...SFG's March 2011 report proposes an estimate of 0.35 for theta. This estimate is paired with an estimate, produced in the same statistical procedure, of the value of cash dividends in the range of 0.85 to 0.90...
>
> ...If the AER is going to use gamma of 0.25 based on the Tribunal's decision, then it needs to use the 85-90% cash dividend payout ratio as outlined in the same Tribunal decision.

APA GasNet seems to have misinterpreted the SFG report regarding this issue.[172] The 0.85-0.9 that is quoted in the SFG report is the *market value of each dollar of cash dividends* and not a *cash dividend payout ratio* as APA GasNet submits. These two concepts are different and are not interchangeable.

The current estimate of imputation credits distributed by the benchmark company is 70 per cent.[173] The AER adopts a payout ratio of 70 per cent because this is internally consistent with the estimate for the imputation credit payout ratio. The AER's approach is analogous to saying that because firms distribute 70 per cent of their imputation credits, the firm distributes 70 per cent of its after tax income as dividends. The AER considers that the market value of cash dividends—the value investors place on each dollar of dividends distributed—as determined in the SFG report, is not relevant to the discussion on the payout ratio. If it is relevant, APA GasNet has not demonstrated it.

APA GasNet also submitted that the payout ratio is too low for equity raising costs. APA GasNet did not provide evidence or reasoning to support this. For the consistency reason discussed above, the AER does not agree with APA GasNet's contention that a payout ratio of 70 per cent is too low. The AER therefore considers that a payout ratio of 70 per cent should be adopted.

4.4.5 Speculative capital expenditure account

The AER considers that the provision for a speculative capital expenditure account, as set out in APA GasNet's access arrangement, conforms to the requirements of the NGR. The AER, however, does not accept some aspects proposed by APA GasNet as to how the account would operate. In particular, the AER considers that:

- only capex which becomes conforming due to a change in the type or volume of services may be rolled into the capital base[174]
- an appropriate rate of return on speculative capex can only be set when the nature of the investment is known.

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171 APA GasNet, email to the AER 'Equity raising costs', 31 January 2013.
172 Strategic Finance Group, *Dividend drop-off estimate of theta final report*, 21 March 2011.
173 Australian Competition Tribunal, Ap*plication by Energex Limited (Distribution Ratio (Gamma)) (No 3) [2010] ACompT 9*, 24 December 2010. This was also the value implicitly proposed by APA GasNet in its draft and revised proposal by proposing a gamma of 0.25. APA GasNet Australia (Operations) Pty Limited, A*ccess Arrangement Revised Proposal Submission* 1 January 2013 – 31 December 2017, September 2012, p. 39.
174 NGR, r. 84(3).

In its revised proposal, APA GasNet has not adopted revision 3.2 of the AER's draft decision.[175] This revision required APA GasNet to notify the AER when speculative capex enters the account. APA GasNet submitted that there is no such requirement in r. 84 of the NGR, and that such a revision is neither reasonable nor practicable.[176] In relation to the applicable rate of return, APA GasNet did not comment on the AER's draft decision to not determine a rate of return. Further discussion on the rate of return applicable to speculative capex can be found in the rate of return attachment of this decision (attachment 5).

APA GasNet further submitted that there is "what appears to be a flaw in the Rules which arguably needs correction."[177] That is, that any non-conforming capex can potentially be added to a speculative capex account (that is not recovered by a surcharge or capital contribution). It may not, however, be possible for all non-conforming capex that becomes conforming under r. 79 to be rolled into the capital base.[178] Rule 84(3) of the NGR only allows speculative capex to be rolled into the capital base where 'the type or volume of services changes'.[179] APA GasNet submitted that this would preclude expenditure that would otherwise become conforming under, for example, r. 79(2)(c)(i) - to maintain and improve safety of services.

APA GasNet amended its access arrangement to include the following clause:[180]

> The amount [of new capex] that does not satisfy the requirements of Rule 79, to the extent that it is not to be recovered through a Surcharge on Users or a Capital Contribution, may form part of the Speculative Capital Expenditure Account (as contemplated by Rule 84). Service provider may increase the Capital Base in accordance with Rule 84(3) if a part of the Speculative Capital Expenditure Account subsequently satisfies the requirements of Rule 79.

APA GasNet submitted that this clause would allow for other kinds of speculative capex to enter the speculative capex account beyond those where 'the type or volume of services changes' so that it becomes conforming capex. APA GasNet concludes that its approach is preferable from a policy perspective, as it does not preclude safety or security expenditure which may become conforming for reasons other than a change in the type or volume of services.[181]

The AER agrees with APA GasNet's understanding that only certain kinds of non-conforming capex, upon becoming conforming, may enter the capital base. The AER notes APA GasNet's view on what may be preferable. However, the AER's final decision is made under the current rule. It is open to APA GasNet to propose a rule change to the AEMC to address what it considers are flaws in the current rule.

In relation to APA GasNet's understanding that all non-conforming capex can enter the speculative capex account, the AER considers that this is not correct. Rule 84 must be read as a whole and as a result only non-conforming capex that becomes conforming due to a change in the type or volume of services may be rolled into the capital base.

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175 AER, *Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017*, September 2012, Part 2, pp. 60–62.
176 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 28–30.
177 APA GasNet, *Revised access arrangement submission*, November 2012, p. 28.
178 APA GasNet, *Revised access arrangement submission*, November 2012, p. 30.
179 NGR, r. 84(3).
180 APA GasNet, *Revised access arrangement*, November 2012, pp. 6-7.
181 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 28–30.

4.5 Revisions

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

Revision 4.1 Make all necessary amendments to reflect the AER's final decision on conforming capex for the 2013–17 access arrangement period, as set out in Table 4.2.

5 Rate of return

The return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.[182]

The AER calculates APA GasNet's return on capital building block by multiplying the rate of return with the value of APA GasNet's capital base. Consistent with APA GasNet's revised proposal and previous AER decisions, the rate of return adopted by the AER is the nominal 'vanilla' weighted average cost of capital (WACC) specification.[183]

5.1 Final decision

The AER does not approve APA GasNet's proposed rate of return of 8.09 per cent (nominal vanilla).[184] The AER considers 7.22 per cent is a preferable alternative that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. The AER's rate of return for APA GasNet combines a cost of equity of 8.02 per cent and a cost of debt of 6.68 per cent.

Consistent with the draft decision, the AER agrees with a number of aspects of APA GasNet's proposed rate of return in its revised access arrangement proposal. Specifically, the AER agrees with:

- adopting a weighted average of the cost of equity and the cost of debt (known as the weighted average cost of capital (WACC)) to determine the rate of return
- adopting a 60 per cent gearing ratio
- 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 0.8 equity beta
- specifying the cost of debt as the debt risk premium (DRP) over the risk free rate
- determining the DRP by defining the benchmark bond as a 10 year corporate bond with a BBB+ credit rating and measuring the benchmark bond rate using the extrapolated Bloomberg BBB rated 7 year fair value curve (FVC)
- the method of extrapolating the Bloomberg BBB 7 rated FVC to a 10 year maturity (consistent with the definition of the benchmark bond) using 'paired bond' analysis
- adopting a recent and short term averaging period for determining the risk free rate (and DRP) components for the cost of equity and the cost of debt (specifically, the 10 business day period from 13 September 2012 to 26 September 2012).
- determining forecast inflation based on the Reserve Bank of Australia's (RBA's) short term forecasts and the mid-point of the RBA's inflation targeting band.

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182 NGR, r.87(1).

183 A nominal vanilla WACC is the combination of a nominal post-tax cost of equity and a nominal pre-tax cost of debt.

184 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 35. In contrast to the Gas Distribution businesses, APA GasNet's averaging period concluded before its revised proposal was submitted so it was not necessary for the AER to update the WACC estimate.

The AER does not agree with APA GasNet's proposal to adopt a 8.72 per cent MRP.[185] Rather, the AER adopts a 6 per cent MRP.

The individual WACC parameters and consequent overall rate of return are set out in Table 5.1.

Table 5.1 AER's final decision on APA GasNet's rate of return (nominal)

Parameter	AER draft decision[(a)]	APA GasNet revised proposal[(a)]	AER final decision
Nominal risk free rate (cost of equity)	3.22%	3.22%	3.22%
Nominal risk free rate (cost of debt)	3.22%	3.22%	3.22%
Equity beta	0.80	0.80	0.80
Market risk premium	6.00%	8.72%	6.00%
Debt risk premium	3.46%	3.46%	3.46%
Gearing ratio	60.00%	60.00%	60.00%
Inflation forecast	2.50%	2.50%	2.50%
Nominal post-tax cost of equity	8.02%	10.20%	8.02%
Nominal pre-tax cost of debt	6.68%	6.68%	6.68%
Nominal vanilla WACC	7.22%	8.09%	7.22%

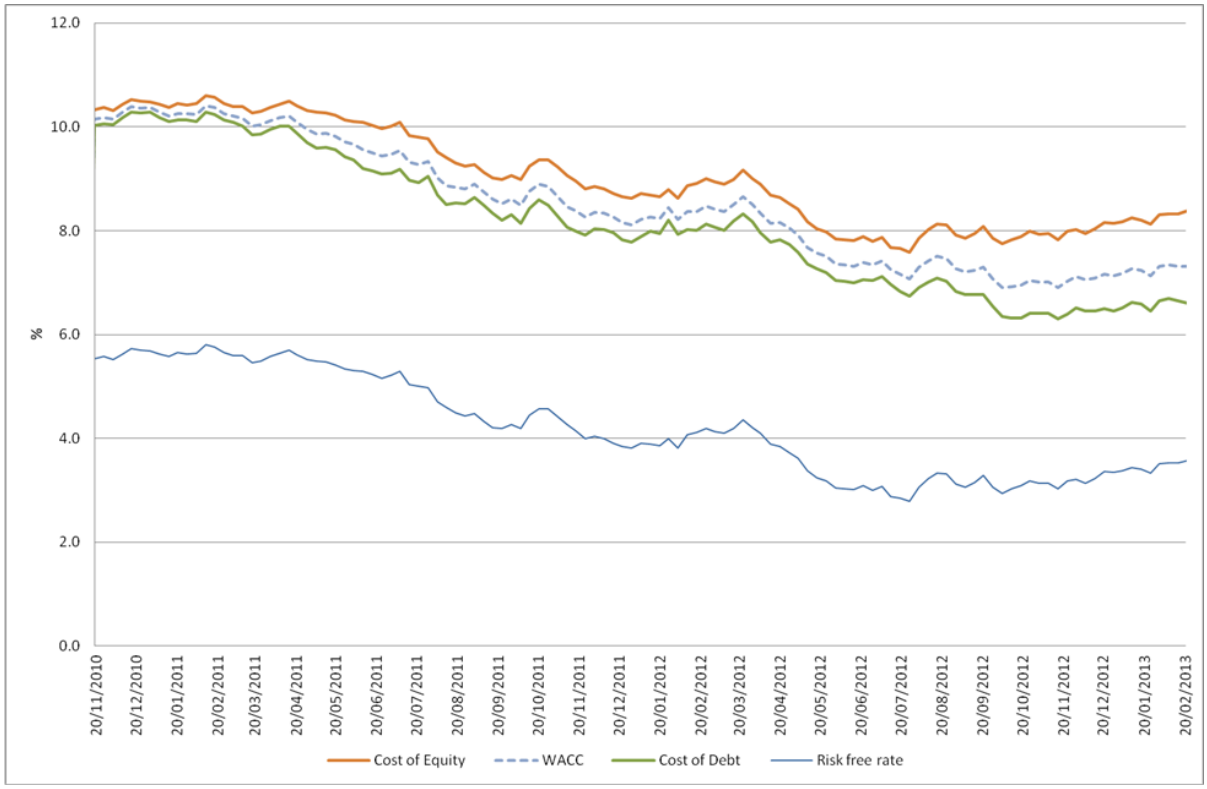
Source: APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, and AER analysis.
(a) The AER draft decision and APA GasNet revised access arrangement proposal parameters have been updated to reflect the final averaging period, based on the respective methodologies. The parameters published in the draft decision and revised access arrangement proposal were calculated based on indicative averaging periods, and hence differ from those in the above table for some parameters.

APA GasNet's rate of return in this decision is similar to the rates the AER determined in decisions over the past year.[186] It is lower than rates the AER determined in decisions before then. Nonetheless, the AER considers its decision on the rate of return is commensurate with prevailing conditions in the market for funds and the risk involved with providing reference services.

The cost of debt has fallen by approximately 1.5 per cent from its level in late 2011 and early 2012. As a result, the AER and APA GasNet agree that the lower cost of debt that currently prevails has reduced the overall rate of return from the levels that prevailed around a year ago (all things equal). The cost of debt in this decision accounts for 60 per cent of the overall rate of return. The AER and APA GasNet agree on the approach to determining the cost of debt. Figure 5.1 illustrates the results from applying the AER's rate of return approach in this decision over time.

185 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 35.
186 AER, *Final decision: APT Petroleum Pipeline Pty Ltd, Access arrangement final decision, Roma to Brisbane Pipeline 2012–13 to 2016–17*, August 2012; AER, *Final distribution determination, Aurora Energy Pty Ltd 2012–13 to 2016–17*, April 2012.

Figure 5.1 AER's rate of return approach over time (nominal, per cent)[187]



In this access arrangement review, the cost of equity is the key area of disagreement. APA GasNet's revised access arrangement proposal maintains its initial proposal position. APA GasNet's main submission was that the AER mixes a "spot" risk free rate with a "long term" average MRP and this currently produces a cost of equity that is too low.[188] As part of this submission, APA GasNet suggested the cost of equity is relatively stable over time, and related to this point, that the risk free rate and MRP are strongly negatively correlated.[189]

The AER acknowledges that APA GasNet was concerned with the impact of the lower risk free rate on its cost of equity and this was a driving factor in its proposing a higher MRP.[190]

As illustrated in Figure 5.1, the risk free rate has been continuously less than 4 per cent since early 2012.[191] Combined with a 0.8 equity beta and 6 per cent MRP, this has resulted in a cost of equity in AER decisions since this time that is lower than earlier decisions. The AER has made determinations for Aurora, the Roma-to-Brisbane (RBP) pipeline, and now the Victorian gas businesses, over this time period[192]. In each decision, the cost of equity arising from the low risk free rate has been a contentious issue, and the AER has considered the matter carefully.

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187 This chart illustrates the AER's current approach extrapolated backwards (assuming a 6 per cent MRP over that period). The starting date is chosen as this is when paired bond data was first available (the paired bond approach is applied in this decision when determining the debt risk premium - see attachment 5.3.5 below for further discussion).

188 This is an incorrect characterisation of the AER's approach. The AER estimates a 10 year forward looking risk free rate and a 10 year forward looking MRP. See below and appendix B for more detail.

189 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, pp. 63-64.

190 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 36.

191 The 10 year CGS yield fell below 3 per cent for a brief period in June and July 2012.

192 Note over this period, the AER also made determinations for Powerlink and is in the process of making determinations for Murraylink and ElectraNet. However these transmission determinations are not comparable to other AER decisions over this time as the WACC approach and parameters were largely prescribed by the NER and the 2009 WACC review.

The material in the next few pages provides a high level overview of the process the AER has employed to assess the proposals and subsequent material submitted by the Victorian gas businesses on the cost of equity. A brief summary of the AER's key reasons for its decision then follows. A more detailed explanation of the AER's reasons is then set out later in this attachment. Further detailed consideration of some specific issues is then set out in a separate appendix.

5.1.1 AER process

In view of the substantial material APA GasNet submitted, the AER has carefully reconsidered the issues raised and has also reassessed its analysis and reasons for the draft and this decision. It has also obtained additional expert advice on the material submitted APA GasNet. The AER has also extended and expanded its analysis in areas questioned by APA GasNet. In particular, in the areas of:

- the relationship between the risk free rate and the MRP, and the related issue of the extent of stability in the cost of equity over time
- the relationship between the cost of debt and the cost of equity, and the extent to which changes in the cost of debt over time can be used to inform the estimation of the cost of equity.

The AER has sought a substantial amount of expert advice on the cost of equity over the past 12 months. The advice has come from:

- the Reserve Bank of Australia (RBA)
- the Commonwealth Treasury and Australian Office of Financial Management (AOFM)
- finance academics (Professor McKenzie and Associate Professor Partington from the University of Sydney; Associate Professor Lally from the Victoria University of Wellington), and
- an economic consultancy firm (Cambridge Economic Policy Associates (CEPA))

The AER has sought advice on a wide range of issues associated with the cost of equity. This has included seeking follow up advice from certain experts to consider comments raised by APA GasNet and its consultants. This process has included:

- In a submission as part of the Aurora determination process, CEG suggested CGS yields might not be an appropriate proxy for the risk free rate in current market circumstances.[193] The AER sought advice from the RBA, Commonwealth Treasury and AOFM. They each advised that the CGS market remains liquid and well functioning. The RBA also advised that CGS bonds remained the best proxy for the risk free rate in Australia.[194]
- In 2011, the AER commissioned a report on the MRP from Professor McKenzie and Associate Professor Partington that comprehensively reviewed each major class of evidence on the MRP. McKenzie and Partington recommended the AER adopt 6 per cent. A regulated business questioned the relevance of the report because it did not directly consider the MRP in the context of a historically low risk free rate.[195] The AER sought further advice from McKenzie and Partington. The experts concluded there are good reasons for the AER to adopt a 6 per cent MRP

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193 CEG, *A report on the cost of equity in Aurora's revised proposal: Prepared for Citipower, Jemena, Powercor, SP AusNet, and United Energy*, February 2012, p. 12.

194 See section 5.3.2 below for further discussion.

195 Aurora, *AER's draft distribution determination—Return on capital*, Submission, 20 February 2012, p.2.

and they saw no reason to switch from using the current 10 year CGS yield as the proxy for the risk free rate.[196]

- In the draft decision, the AER set out its reasons for adopting a prevailing risk free rate and 6 per cent MRP and published consultants' reports it had commissioned and accepted in forming this position. This provided an opportunity for the Victorian gas businesses, including APA GasNet, to respond to this position. The businesses did respond to this position and provided substantial additional material. The AER subsequently sought further advice from experts to critically review their original advice in light of the new material submitted by the businesses.

- For this final decision, the AER sought advice from three separate experts on the reasonableness of adopting prevailing risk free rate and 6 per cent MRP.

    - In a third report, McKenzie and Partington concluded the AER's approach was reasonable. This report contains an extensive review of the theoretical and empirical evidence on the relationship between the risk free rate and MRP. McKenzie and Partington's conclusion is based on a more comprehensive analysis of the academic literature on this issue than that contained in the consultant reports submitted by the Victorian gas businesses.

    - Associate Professor Lally also concluded it is reasonable for the AER to adopt a prevailing risk free rate and 6 per cent MRP.

    - CEPA indentified some concerns with the AER's approach. However, current market evidence suggests the AER's current estimate is in line with market expectations. It concluded that, based on various criteria it identified, the AER should not change its estimation approach.

5.1.2 Overview of reasons

Compared with the cost of debt, the cost of equity is more challenging to estimate. This is because the cost of debt is observable while the cost of equity is not.[197] Accordingly, a model must be used to estimate the cost of equity. The NGR require that the AER use a well accepted financial model to estimate the cost of equity. The AER and APA GasNet agree that it is appropriate to use the Sharpe-Lintner capital asset pricing model (Sharpe CAPM) for this purpose.

This model requires the estimation of three parameters:

- The risk free rate—this compensates investors for the time value of money. This is compensation for an investor having committed funds to an investment for a period of time and therefore forgoing the opportunity to spend that money and consume goods now.

- The market risk premium (MRP)—this compensates an investor for the systematic risk of investing in the market portfolio or the "average firm" in the market. Systematic risk is risk that effects all firms in the market (such as macroeconomic conditions and interest rate risk) and cannot be eliminated or diversified away through investing in a wide pool of firms.

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196 M. McKenzie, and G. Partington, *Report to Corrs Chambers Westgarth: Equity market risk premium*, December 2011, p. 37. (McKenzie and Partington, *Equity market risk premium*, December 2011)

197 See, for example, RBA, *Latter to the AER*, July 2012, p. 1. The cost of debt can be observed by looking at yields on market traded bonds that match the benchmark characteristics, or fair value curves published by financial data service providers that match the benchmark characteristics.

- The equity beta—this reflects the systematic risk exposure of a particular firm, relative to the average firm in the market.

While the equity beta is difficult to estimate with precision, the AER and APA GasNet agree that 0.8 is a reasonable estimate for this parameter in this determination.

In determining the two remaining parameters within the Sharpe-Linter CAPM, the AER estimates:

- a 10 year forward looking risk free rate based on prevailing conditions in the market for funds, and
- a 10 year forward looking MRP based on prevailing conditions in the market for funds.

Conceptually, the adoption of a 10 year forward looking risk free rate and a 10 year forward looking MRP, based on prevailing conditions in the market for funds at the commencement of the access arrangement period:

- is consistent with the present value principle—this principle states that the present value of a regulated business's revenue stream should match the present value of its expenditure stream (plus or minus any efficiency rewards or penalties). As Lally explains, this is a fundamental principle of economic regulation. Satisfying this principle both promotes efficient investment and avoids the excess profits that regulation seeks to prevent.[198]
- is consistent with the building block model
- is consistent with the Sharpe-Lintner CAPM
- is internally consistent, and
- promotes regulatory certainty and consistency.

Practically, in estimating a 10 year forward looking risk free rate, the AER adopts the prevailing yield on 10 year CGS averaged over a period which is short and as close as practicably possible to the commencement of the access arrangement period.[199] The AER adopts this method because:

- An observable market proxy for the risk free rate is available.
- The yield on CGS is the best proxy for the risk free rate in Australia, as supported by RBA advice.
- The RBA, Commonwealth Treasury and AOFM advised that the CGS market is liquid and functioning well.[200]
- CGS yields are an observable market determined parameter.
- The prevailing rate at any point in time is the benchmark that returns on risky investments must better

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198 M. Lally, *The risk free rate and the present value principle*, 22 August 2012, p. 8, (Lally, *Risk free rate and present value*, August 2012)

199 The exact dates of the averaging period are proposed by the regulated business and are accepted by this AER so long as the proposed period: (1) is short (10-40 business days); (2) is as close as practicably possible to the commencement of the access arrangement period; (3) is nominated in advance.

200 Reserve Bank of Australia, *Letter to the ACCC: The Commonwealth Government Securities Market*, 16 July 2012, (RBA, *Letter regarding the CGS market*, July 2012); Australian Treasury and Australian Office of Financial Management, *Letter to the ACCC: The Commonwealth Government Securities Market*, 18 July 2012, p. 2 (Treasury and AOFM, *Letter regarding the CGS Market*, July 2012).

- Prevailing 10 year CGS yields reflect expectations of the risk free rate over the appropriate forward looking investment horizon (which is 10 years).
- Selecting an averaging period in advance ensures the method is unbiased.
- There is no clear evidence that CGS yields are abnormally low. McKenzie and Partington suggest that the current rates may be consistent with a longer term trend.

In estimating a 10 year forward looking MRP, the AER adopts 6 per cent. After carefully assessing the information submitted by the Victorian gas businesses, the AER remains of the view that the available evidence supports a MRP of 6.0 per cent as commensurate with prevailing conditions in the market for funds. This is because:

- historical excess returns—these estimates provide a range of 4.9–6.1 per cent if calculated using an arithmetic mean and a range of 3.0–4.7 per cent if calculated using a geometric mean.
- academic research on excess return predictability—over the past decade, there is an increased scepticism about the ability for particular variables to predict returns. New empirical evidence has cast doubt on previous empirical evidence that suggested particular variables were good predictors of returns. Some studies indicate there is no better forecast of excess returns than the historical average.
- survey evidence—surveys of market practitioners consistently support 6 per cent as the most commonly adopted value for the MRP. These surveys also indicate that the average MRP adopted by market practitioners was approximately 6 per cent.
- forward looking MRP measures—these give mixed results, and are each subject to various limitations. On the one hand, dividend growth model (DGM) estimates suggest the MRP is in the range of 5.9–8.4 per cent. These estimates were provided by Associate Professor Lally who used CEG's DGM method, after adjusting for certain deficiencies in CEG's method. On the other hand, implied volatility based MRP estimates suggest the MRP is currently below its historical average level.
- recent Tribunal decisions—the Tribunal held the view that it was open for regulators to adopt a 6 per cent MRP in all of the recent decisions where regulated businesses sought Tribunal review.
- consultant advice—Associate Professor Lally, Professor McKenzie and Associate Professor Partington all advised the AER that a 6 per cent MRP is reasonable in the prevailing market conditions in their most recent reports and CEPA found the valuation reports do support an MRP that is equal to 6 per cent.
- recent decisions among Australian regulators—the AER notes both the ERA and the QCA consistently adopted an MRP estimate of 6 per cent under the same CAPM framework. The AER also notes while the IPART consistently adopted an MRP range of 5.5–6.5 per cent, it has made an upward adjustment to the overall WACC in its recent decisions due to the current low risk free rate.

The AER is aware that there are some academic papers that present a plausible argument for an inverse relationship between the risk free rate and MRP. Accordingly, the AER has given careful consideration to this issue in estimating the MRP. The advice from McKenzie and Partington provides a comprehensive review of the academic literature on the theoretical and empirical evidence on the relationship between these two parameters. Among other findings, McKenzie and Partington note:

> Ang and Bekaert (2007) find a negative relationship between short term risk free rates and the equity risk premium. The general message of Ang and Bekaert's work, however, is that "… predictability is mainly a short-horizon, not a long-horizon phenomenon" (p.696). Their implication is that predictive regressions might help forecast market returns at say a one year horizon, but are little use at say a ten year horizon.[201]

This is relevant to the present matter as the AER is estimating a 10 year forward looking MRP, not a short term MRP.

Overall, McKenzie and Partington find that there is evidence to support both a positive and negative relationship between the risk free rate and MRP. They conclude:

> An examination of the relevant evidence leads us to conclude that the relation between the MRP and the level of interest rates is an open question and that the relation, if any, is not sufficiently well established to form the basis for a regulatory adjustment to the MRP.[202]

The AER also considers reasonableness checks on the overall rate of return. These reasonableness checks suggest that the overall rate of return broadly accords with market expectations. For example, recent regulated assets have generally been sold at a premium to the RAB. In addition, recent RAB trading multiplies are consistently greater than one (averaging around 1.2). This evidence provides the AER with a degree of confidence that its approach to determining the rate of return is reasonable

5.2 Assessment approach

The AER's assessment approach for this final decision is consistent with that adopted in the draft decision. This material is not reprinted here; see section 4.2 of attachment 4 – Rate of Return of the draft decision for this detail.[203] The section below sets out the AER's further observations on its assessment approach, including discussion of material arising subsequent to the draft decision.

5.2.1 Requirements of the national gas law and rules on the rate of return

In this section the AER considers the requirements of the NGR and NEL on the rate of return, including in the interpretation of relevant provisions of the NGR in recent Tribunal decisions.

Rule 87 of the NGR states:

> 1) 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.
>
> 2) In determining a rate of return on capital:
>
> a) it will be assumed that the service provider:
>
> i) meets benchmark levels of efficiency; and
>
> ii) uses a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern and reflects in other respects best practice; and
>
> b) a well accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital, is to be used; and a well accepted financial model, such as the Capital Asset Pricing Model, is to be used.

The AER understands rule 87 operates as follows:

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201 M. McKenzie, and G. Partington, *Review of the AER's overall approach to the risk free rate and market risk premium,* February 2013,, p.26 (McKenzie and Partington, *Review of the AER's overall approach*, February 2013).

202 McKenzie and Partington, *Review of the AER's overall approach*, February 2013, p. 6.

203 AER, *Draft decision: Access arrangement draft decision: APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, pp. 65-74 (AER, *Drat decision: APA GasNet*, September 2012).

- Rule 87(1) describes the objective in determining the WACC but not how to achieve the objective.
- Rule 87(2) describes how to achieve the objective, including through a well accepted approach (such as the WACC) and through a well accepted financial model (such as the CAPM).
- Rule 87(1) informs the selection of input parameters for the well accepted approach and well accepted financial model. Through the determination of appropriate parameters, it is expected that the overall rate of return will reflect prevailing conditions in the market for funds and the risk involved in providing reference services.[204]

This is consistent with the Tribunal's construction of rule 87 in the ATCO and WAGN matters.

Rule 87 is a full discretion provision. This means the AER may, but is not bound to, approve APA GasNet's proposed rate of return if that rate complies with, and is consistent with, the NGL's and NGR's requirements and criteria. The AER has the discretion to withhold its approval it considers a preferable alternative exists that complies with, and is consistent with, those requirements and criteria. 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.[205]

If the AER does not approve APA GasNet's access arrangement, then the AER must formulate an access arrangement that accounts for:

- 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.[206]

This list is not exhaustive, and the service provider's proposal is not the only source of information that the AER considers when assessing the proposed rate of return. Other regulatory processes provide relevant information sources, because issues with the cost of capital are generally not specific to a service provider. Further, many issues have evolved across a long history of consideration by the AER and other regulators.

The AER considers information that includes:

- previous AER decisions, including the AER's 2009 review of WACC parameters for electricity service providers (the WACC review) and resulting Statement of Regulatory Intent (SRI)
- the service provider's proposal
- expert reports commissioned by the AER, the service provider and other stakeholders

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[204] In its revised proposal, APA GasNet submitted that it is the result of applying a well accepted financial model (in this case, the Sharpe-Linter CAPM) that is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. The AER agrees with this interpretation. Conceptually, the AER's approach to implementing this is to estimate a risk free rate that is commensurate with prevailing conditions in the market for funds (i.e. a forward looking risk free rate) and a MRP that is commensurate with prevailing conditions in the market for funds (i.e. a forward looking MRP). It follows logically that if each parameter within the Sharpe-Lintner CAPM is commensurate with prevailing conditions, then so too will the total cost of equity be. In contrast, the Victorian gas distribution businesses proposed a historical average risk free rate and a historical average MRP. That is, conceptually, they proposed input parameters that are not commensurate with prevailing conditions, yet considered the combination of these input parameters would result in a cost of equity that is commensurate with prevailing conditions. This approach relies on the assumption that the cost of equity is stable over time.

[205] NGR r. 99 (3).

[206] NGR r. 64(2).

- the decisions of the Tribunal
- the decisions of other economic regulators, particularly in Australia
- submissions

In 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 national gas objective.[207] Either the AER's approval or withholding of its approval of APA GasNet's proposed rate of return—and in the case of the latter the AER's determination of a preferable rate of return—is an AER economic regulatory function or power. The national gas objective is:

> … to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

In addition, the AER must account for the revenue and pricing principles when approving or making the parts of an access arrangement that relate to a reference tariff.[208] The rate of return is such a part, so the AER must account for the following[209]:

- A service provider should have a reasonable opportunity to recover at least the efficient costs that it incurs in providing reference services[210]
- A service provider should have effective incentives to promote economic efficiency in the reference services that it provides. That economic efficiency should include efficient investment in, or connection with, a pipeline that the service provider uses to provide reference services.
- A reference tariff should allow for a return that matches the regulatory and commercial risks from providing the reference services to which that tariff relates.
- A reference tariff should account for the economic costs and risks of potential under or over investment by a service provider in a pipeline that the service provider uses to provide pipeline services.

In the sections that follow, the AER determines APA GasNet's rate of return in a manner consistent with the NGO, revenue and pricing principles and rule 87 of the NGR.

5.2.2 Submissions from stakeholders

On the rate of return, the AER received submissions on its draft decision and the Victorian gas businesses' revised proposals from:

- the Energy Users Coalition of Victoria (EUCV)[211], and
- the Victorian Minister for Energy and Resources[212]

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207 NGL s. 28(1).
208 NGL s. 28(2)(a)(i)
209 NGL, s. 24.
210 APA GasNet submitted a report by PriceWaterhouseCoopers. Among other matters, the report discussed the asymmetric consequences of setting the rate of return too high and too low. The AER considers this matter is embodied in the revenue and pricing principle that service providers should have a reasonable opportunity to recover at least efficient costs. Therefore, by applying the revenue and pricing principles, the AER considers it takes into account the matters raised by PWC. Further, Lally noted the equivalence of the principle of providing a reasonable opportunity to recover at least efficient costs and the present value principle. Lally, *The risk free rate and the present value principle*, 2012. The present value principle is considered extensively in relation to the rate of return in this decision.
211 EUCV, *Victorian gas distribution revenue reset AER draft decision and revised applications*, January 2013

On the relationship between the risk free rate and MRP, the EUCV considers the adoption of a higher MRP when the risk free rate is low is not supported by the facts. It further states:

> The EUCV makes the rhetorical observation whether the massive debate as to the setting of the risk free rate would have been raised if the bond rates were at the levels seen in the 1980s, with an average value of some 13%, rather than the current value of about 3? Would there be a debate that the return on equity has a constant value of about 12% when the AER approach would deliver a value of 19%?

The EUCV also state that, in the interests of regulatory certainty, the AER has advised it will review the cost of debt approach through industry-wide consultation as part of the next rate of return guideline process, rather than as part of the Victorian gas review. This is despite, in the EUCV's opinion, the current approach to the cost of debt imposing costs on consumers that are higher than warranted. The EUCV consider this context should be taken into account when considering changes to the cost of equity approach in this decision.

The Victorian Minister for Energy and Resources supported the AER's draft decision on the rate of return. The Minister also commented on the construction of rule 87 of the NGR.

5.2.3 Selection of well accepted approach and model

The AER accepts APA GasNet's proposal to determine the rate of return as the weighted average of the cost of equity and the cost of debt (the WACC approach), weighted 40 per cent to equity and 60 per cent to debt. The AER also accepts APA GasNet's proposal to determine:

- the cost of equity using the Sharpe Lintner CAPM, and
- the cost of debt as the summation of the risk free rate and DRP.

In the draft decision, the AER agreed with APA GasNet's approach to determining the rate of return and models to determine the cost of equity and cost of debt. The AER agreed with this approach because the weighted average cost of capital is a well accepted approach to determining the rate of return. The AER agreed with the financial models proposed by APA GasNet to determine the cost of equity and debt because these are also well accepted.[213]

APA GasNet also adopted the same WACC approach, use of Sharpe CAPM, and specification of the cost of debt in its revised access arrangement proposal. The AER is not aware of any new information that causes it to depart from its draft decision position. Accordingly, the AER accepts these aspects of APA GasNet's revised proposal

5.2.4 Approach to the determination of specific parameters

The AER's assessment approach for each parameter is set out in its draft decision. See section 4.2.4 of the draft decision for a detailed explanation of the assessment approach.

For clarity, and consistent with the draft decision, in this final decision the AER:

- estimates a 10 year forward looking risk free rate
- estimates a 10 year forward looking MRP

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212 Hon. Michael O'Brien MP, Minister for Energy and Resources, *Victorian gas access arrangement review - Victorian government Submission*, 14 January 2013.

213 Australian Competition Tribunal, *Application by WA Gas Network Pty Ltd (No 3) [2012] ACompT*, 8 June 2012, paragraph 64.

- taking into account the economic interdependencies between these two parameters, and
- based on prevailing expectations at the commencement of the access arrangement period.

In doing so, the AER maintains the integrity in estimation of each individual parameter when determining an estimate. The AER does not attempt to address a perceived problem in the estimation of one parameter through the estimation of another parameter. Maintaining the integrity of each parameter promotes rigour and robustness in the estimation of those parameters. Besides, the AER is unaware of any well accepted approach for making adjustments between these parameters without introducing subjectivity and regulatory risk.

The risk free rate and MRP are estimated using differing information. This reflects the differing nature of these two parameters. A proxy for the risk free rate is readily observable.[214] On the other hand, no such proxy is available for the MRP.[215]

Maintaining integrity between these two parameters is important. This including having regard to any economic interdependencies between these parameters.

Further, the AER's approach is internally consistent. This is because for both the risk free rate and MRP the AER is estimating a 10 year forwarding looking rate.

5.2.5 Reasonableness check on overall rate of return

The AER's assessment approach for each parameter is set out in its draft decision. See section 4.2.4 of the draft decision for a detailed explanation of the assessment approach.

For clarity, and consistent with the draft decision, in this final decision the AER:

- estimates a 10 year forward looking risk free rate
- estimates a 10 year forward looking MRP
- taking into account the economic interdependencies between these two parameters, and
- based on prevailing expectations at the commencement of the access arrangement period.

In doing so, the AER maintains the integrity in estimation of each individual parameter when determining an estimate. The AER does not attempt to address a perceived problem in the estimation of one parameter through the estimation of another parameter. Maintaining the integrity of each parameter promotes rigour and robustness in the estimation of those parameters. Besides, the AER is unaware of any well accepted approach for making adjustments between these parameters without introducing subjectivity and regulatory risk.

The risk free rate and MRP are estimated using differing information. This reflects the differing nature of these two parameters. A proxy for the risk free rate is readily observable.[216] On the other hand, no such proxy is available for the MRP.[217]

Maintaining integrity between these two parameters is important. This including having regard to any economic interdependencies between these parameters.

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214 See section 5.3.2 below for further discussion.
215 See section 5.3.3 below for further discussion.
216 See section 4.3.2 below for further discussion.
217 See section 4.3.3 below for further discussion.

Further, the AER's approach is internally consistent. This is because for both the risk free rate and MRP the AER is estimating a 10 year forwarding looking rate.

5.2.6 Reasonableness checks on the overall rate of return

In section 4.2.4 of the draft decision, the AER sets out its approach to the determination of each parameter within the overall rate of return. In addition, the AER has given appropriate consideration to reasonableness checks on the overall rate of return. This approach is consistent with the draft decision. See section 4.2.5 of the draft decision for further discussion of the assessment approach.

Overall, the AER:

- determines reasonable estimates for the input parameters into the CAPM (a well accepted financial model), which in turn feeds into the WACC (a well accepted approach)[218]
- gives limited consideration to the overall WACC estimates, in accordance previous Tribunal decisions[219] and the strengths and weaknesses of this approach.

The AER discusses the use of reasonableness checks further in section 5.3.9 and appendix B.

5.2.7 Promotion of regulatory certainty and consistency

As outlined above, the AER has carefully considered the material presented by the Victorian gas businesses on the cost of equity. The end result of this consideration is that the AER has decided to maintain its approach from the draft decision.

The AER has maintained its approach from the draft decision because it considers this approach is reasonable. And applying that approach to the Victorian gas businesses in this final decision, the AER considers this provides a cost of equity commensurate with prevailing conditions in the market for funds and the risks involved with providing reference services.

- Further, the cost of equity approach in this final decision is consistent with the AER's approach in previous decisions. This consistency:
- promotes certainty of process and predictability in regulatory decision making
- promotes symmetry in regulatory outcomes over time. It avoids a bias or arbitrariness in regulatory outcomes that may result from changing to a method that favours a particular outcome or stakeholder at a particular point in time (and then potentially reverting back to the previous method at a later point in time).[220]

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218 NGR, r. 87.

219 Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraphs 166-167. See section 4.3.8 below for further discussion.

220 A source of potential bias in regulatory outcomes over time is when only the economic interdependencies between some but not all relevant parameters are considered. For example, in this review the Victorian gas businesses have argued in favour of a strongly negative relationship between the risk free rate and MRP. They have highlighted that this relationship is particularly important to take into account in this review because of the low risk free rate. However, the Victorian gas businesses have not considered whether there is a relationship between the risk free rate, MRP and equity beta. For example, it might be that the factors driving the low risk free rate also decrease (or increase) the equity beta of regulated utilities. The AER does not express a view on this relationship. It raises it instead to highlight the importance of considering the independencies between all relevant parameters. For the reasons expressed elsewhere in this decision, the AER does not consider the evidence on the risk free rate and MRP relationship is conclusive enough—in terms of the direction, strength or stability in this relationship—to warrant a higher MRP because of the low risk free rate. However, even if the AER had considered this evidence warranted a higher MRP, it would be necessary to consequentially consider whether any adjustment to the equity beta was warranted.

The AER further notes that is has not changed the cost of debt approach in this final decision from that adopted in the draft decision or other recent AER decisions. While the AER has previously raised concerns that the Bloomberg BBB fair value curve may have overcompensated regulated businesses for the true benchmark cost of debt. This reflects the Tribunal's statement that if the AER were to decide that the extrapolated Bloomberg fair value curve 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 businesses and other interested parties.[221]

5.3 Reasons for final decision

In the previous section, the AER set out its approach to determining the rate of return. This included the AER's interpretation of the relevant criteria from the NGL and NGR.

In this section the AER applies its approach, and explains why the rate it determines for APA GasNet's access arrangement period is consistent with the NGL and NGR criteria. In this section, the AER:

- firstly, explains why it adopts the CAPM as the well accepted financial model to determine the cost of equity
- secondly, explains how it determines each of the parameters within the CAPM, with a particular focus on the determination of the risk free rate and MRP.
- then explains how it estimates the DRP and gearing ratio for APA GasNet
- also outlines its reasons for its position on forecast inflation
- finally, considers the outcome from the above approach against reasonableness checks on the overall rate of return.

5.3.1 The Capital Asset Pricing Model (CAPM)

The cost of equity is not directly observable and therefore a model is required in order to estimate it. This position is supported by Wright[222] and Ernst and Young. Ernst and Young noted:[223]

> The cost of equity is not directly observable, so it must be estimated or inferred from market data. Finance theory usually guides the process of estimation and the CAPM is often applied in this process.

A financial model must be a well accepted model to be used for determining a return on capital. The Sharpe Lintner CAPM is a well accepted financial model. As noted by the AER during the WACC review, the Sharpe Lintner CAPM has been consistently adopted by regulators and market practitioners. The AER is not aware of any instances where an Australian regulator has adopted an alternative model. Truong, Partington and Peat found that 72 per cent of Australian businesses who

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221 Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 95. In relation to change of the cost of debt approach, the Tribunal noted: "In the longer term, as the Tribunal has said, it is open to the AER to adopt a different methodology. Consideration of the proper composition of the comparison sample of bonds, the methodology for deciding on the appropriate sample of bonds and the relevance of these bonds to its task should be undertaken by the AER in consultation with interested parties across the spectrum of entities in the industries it regulates, consumers of their services and other interested parties." See: Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 118

222 S. Wright, *Review of risk free rate and cost of equity estimates: A comparison of UK approaches with the AER*, 25 October 2012, p.2.

223 Ernst & Young, *Market evidence on the cost of equity: Victorian gas access arrangement review 2013-2017*, 8 November 2012, p. 7

responded to their survey adopt the (Sharpe) CAPM in formulating their capital budgeting decisions.[224]

The AER and the Tribunal agree that the Sharpe Lintner CAPM is a well accepted financial model and is appropriate to use in order to estimate the cost of equity. Implicitly, APA GasNet must also consider that the Sharpe Lintner CAPM is a well accepted financial model because it proposed the model, and a requirement of the NGR is that a well accepted financial model must be used.[225] The AER therefore estimates the cost of equity by combining the best estimate of each parameter that is required within the CAPM. The AER determines the cost of equity (r_e) using the CAPM formula:

$$r_e = r_f + \beta_e \times MRP$$

where:

the AER and APA GasNet agree the equity beta estimate (β_e) is 0.8.[226]

5.3.2 Risk free rate

The AER agrees with APA GasNet's proposed method for estimating the risk free rate component of both the cost of debt and the cost of equity.[227] On both matters, the AER's position is consistent with its position in the draft decision.

Conceptually, this method adopts a 10 year forward looking risk free rate, commensurate with prevailing conditions in the market for funds at the commencement of the access arrangement period. Practically, this method adopts the 10 year CGS yield averaged over a short and recent period (chosen by APA GasNet), as close as practicably possible to the date of the final decision.

The AER considers this method reflects prevailing conditions in the market for funds and the risks involved in providing reference services.

The AER's reasons for adopting this method are summarised in section 5.1.2. In this section, the AER explains those reasons. Further considerations on the risk free rate are discussed in appendix B.

CGS are the best proxy for the risk free rate in Australia

The risk free rate measures the return an investor would expect from an asset with no default risk. CGS are low default risk securities issued by the Australian Government, and are therefore an appropriate proxy for the risk free rate.[228] Each of the three major credit rating agencies issued its highest possible rating to the Australian Government.[229]

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224 AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, p. 335.

225 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 42.

226 APA GasNet, Revised Access Arrangement Proposal, 9 November 2012, p. 71.

227 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 35-36 & 39-40.

228 Gregory also identifies the absence of re-investment risk and inflation risk and characteristics of a risk free rate. Gregory, *The risk free rate and the present value principle*, November 2012, p.5. Lally discusses these risks in his report. Lally, *The present value principle*, March 2013, p. 10-12.

229 Standard and Poor's, viewed 5 March 2013, http://www.standardandpoors.com/prot/ratings/entity-ratings/en/us/?entityID=268976&sectorCode=SOV ; Moody's, viewed 5 March 2013, http://www.moodys.com/credit-ratings/Australia-Government-of-credit-rating-75300; Fitch Ratings, viewed 5 March 2013 http://www.fitchratings.com/gws/en/esp/issr/80442187

Experts generally acknowledge that an observable proxy for the risk free rate is available in Australia.[230] The AER received advice from the RBA, Australian Treasury and AOFM in July 2012 that supported the use of CGS yields as a proxy for the risk free rate in Australia.[231] In the RBA letter, Guy Debelle stated:

> I therefore remain of the view that CGS yields are the most appropriate measure of a risk free rate in Australia.[232]

Similarly, the Treasury and AOFM stated:

> The nominal CGS market is liquid and continues to display the attributes of a well-functioning market.[233]

While there is no explicit statement to this effect, APA GasNet appears to agree with this conclusion because it proposed prevailing CGS yields for the risk free.[234] Furthermore, in advice to APA GasNet, CEG makes the following statement:

> The AER goes on to address the issues that I raised and, in each case, the AER concludes that CGS is nonetheless the best proxy for the risk free rate. However, I did not argue otherwise...The argument that I did put related to the need for internal consistency between the risk free rate and MRP in the CAPM.[235]

This statement indicates that CEG agrees CGS yields are an appropriate proxy for the risk free in Australia. The AER addresses CEG's argument on internal consistency in appendix B.2.1.

Appropriate averaging period

The AER considers the best method for determining an appropriate risk free rate is to use a short and recent averaging period as close as practicably possible to the commencement of the access arrangement period. The AER explains its reasons for this position in the following sections.

Prevailing CGS yields are consistent with the CAPM

For the following reasons, using a CGS yield estimated as close as practical to the commencement of the access arrangement period is consistent with the CAPM. Inputs to a model must be appropriate for use in that model, so individual equity parameters in this decision must be consistent with the CAPM framework.

The CAPM uses the most current information to derive the rate of return. In theory, it would use the risk free rate on the day (in this case, the commencement of the access arrangement period), as recognised by the Federal Court in *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639 (the ActewAGL matter).[236]

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230 See, for example, Lally, *The present value principle*, March 2013, p. 13, and Wright, *Review of risk free rate and Cost of equity estimates: A comparison of UK approaches with the AER*, October 2012, p. 3.
231 RBA, *Letter regarding the CGS market*, July 2012; Treasury and AOFM, *Letter regarding the CGS Market*, July 2012.
232 RBA, *Letter regarding the CGS market*, July 2012, p. 1.
233 Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.
234 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 35-36.
235 CEG, *Response to the AER Vic gas draft decisions: Internal consistency of MRP and risk free rate*, November 2012, p. 14. (CEG, *Response to the AER Vic gas draft decisions*, November 2012).
236 Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator [2011] FCA 639*, 8 June, 2011, paragraph 119.

During the ActewAGL matter, Associate Professor Lally for the AER and Greg Houston for ActewAGL agreed theory requires the risk free rate be an "on the day" rate.[237] The Federal Court acknowledged this agreement:

> There was no dispute between the experts that the CAPM theory suggests that, ideally, the nominal risk-free rate input will be calculated on the day of the final determination.[238]

Associate Professor Lally advised:

> In relation to the Sharpe-Lintner model, this model always requires a risk free rate prevailing at a point in time for some subsequent period rather than a historical average and application of the model to a regulatory situation would require the risk free rate prevailing at the beginning of a regulatory period.[239]

A prevailing risk free rate is consistent with the building block model and present value principle

For the risk free rate, an averaging period that is as close as practical to the commencement of the access arrangement period promotes consistency with the building block model and the present value principle.

Lally defines the present value principle in this manner:

> The Present Value principle states that the present value of a regulated firm's revenue stream should match the present value of its expenditure stream plus or minus any efficiency incentive rewards or penalties.[240]

The NGR prescribe the use of the building block model when the AER is calculating the total revenue allowance.[241] An important principle of the building block model is the present value principle.[242] Indeed, Lally states:

> In relation to the Building Block model, this is a consequence of the Present Value principle and therefore the same conclusion applies.[243]

Further, as Lally explains:

> The Present Value principle is fundamental to regulation; lower revenues then those that satisfy this principle will fail to entice producers to invest and higher revenues constitute the very excess profit that regulation seeks to prevent (Marshal et al, 1981).[244]

As Lally explains, this principle requires the risk free rate (and MRP) to be estimated at the commencement of the access arrangement period.[245]

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237 In advice provided to APA GasNet by NERA, Greg Houston raised concerns with the AER's presentation of his advice to the Federal Court. NERA, *Estimating the cost of equity under the CAPM: Expert report of Gregory Houston*, November 2012, pp. 36-37. In response, the AER has amended its discussion of Mr Houston's advice to the Federal Court.

238 Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator [2011] FCA 639*, 8 June 2011, paragraph 119.

239 Lally, *Risk free rate and present value*, August 2012, p. 3.

240 M. Lally, *The present value principle: risk, inflation and interpretation*, March 2013, p. 5 (Lally, *The present value principle*, March 2013)

241 NGR r. 76

242 Biggar, D., *Public utility regulation in Australia: Where have we got to? Where should we be going, Working paper no. 4, ACCC/AER working paper series*, July 2011, p. 58. A similar description of the building block model supported by more detailed analysis can be found in Biggar, D., *Incentive regulation and the building block model*, 28 May 2004, pp. 2-21, accessed on 27 August 2012, <http://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=ACE2004&paper_id=133>

243 Lally, *Risk free rate and present value*, August 2012, p. 3.

244 Lally, *Risk free rate and present value*, August 2012, p. 6.

245 Lally, *The present value principle*, March 2013, p. 6.

The averaging period should be short

A short averaging period provides a reasonable estimate of the prevailing rate while not exposing service providers to unnecessary volatility. It is a pragmatic alternative to using a risk free rate that precisely satisfies the present value principle.

The rate of return must be estimated in a manner consistent with not only that principle, but also the building block model and the CAPM. In advice received prior to the draft decision, Lally stated that all three require a risk free rate estimated at the commencement of the access arrangement period[246]—literally, the first market price on the first day of the access arrangement period.[247] However, Lally explained:

> ... the use of this transaction would expose the regulatory process to reporting errors, an aberration arising from an unusually large or small transaction, and a rate arising from a transaction undertaken by a regulated firm for the purpose of influencing the regulatory decision.[248]

A short averaging period (between 10 and 40 business days) as close as practically possible to the commencement of the access arrangement period provides a pragmatic alternative—violating the present value principle only to the minimum extent necessary. Lally states:

> The use of the CAPM in a regulatory situation requires that the risk free rate and the MRP must be the rates prevailing at the beginning of the regulatory period. However pragmatic considerations suggest that the risk free rate be averaged over a short period close to the beginning of the regulatory period.[249]

On the other hand, Lally noted a long term average would more significantly violate the present value principle without providing any pragmatic gain:

> Rates averaged over a much longer historical period would be inconsistent with the present value principle, i.e., they would violate it without offering any incremental pragmatic justification.[250]

Subsequent advice provided by Lally did not change this conclusion. The presence of risky assets does not justify the use of a long-term averaging period.[251]

APA GasNet's nominated averaging period for the cost of debt was 13 September 2012 to 26 September 2012. This AER agrees with this averaging period because it is consistent with the AER's considerations in this section. The AER has applied this averaging period for both the cost of equity and the cost of debt. The averaging period is discussed in more detail in appendix B.4.2.

CGS are an observable market determined parameter

CGS yields are observable in a market. As that market is liquid and functioning well,[252] the AER has confidence the market rate reflects the prevailing risk free rate.

Changes in yields for securities traded in a liquid market are likely to reflect the actions of many market participants at each point in time. So, market determined CGS yields are likely to reflect prevailing conditions in the market for funds. On its own, a yield that is low relative to historical averages is not a sign that the yield prevailing at any point in time is no longer a good proxy for the risk free rate. The current CGS yields are likely to reflect strong demand from foreign investors and a

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246 Lally, *Risk free rate and present value*, August 2012, p. 3
247 Lally, *Risk free rate and present value*, August 2012, p. 7
248 Lally, *Risk free rate and present value*, August 2012, p. 7
249 Lally, *The present value principle*, March 2013, p. 5.
250 Lally, *Risk free rate and present value*, August 2012, p. 7.
251 Lally, *The present value principle*, March 2013, p. 6
252 Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

general re-assessment of the value of a risk free asset. Lower yields (higher prices) are an expected outcome from increased demand for those assets.

The Treasury and the AOFM noted this point:

> The weak and fragile global economy has put downward pressure on benchmark global long-term bond yields, and is driving investors into high quality government debt.[253]

The prevailing yield is the benchmark that risky investments must better

In previous advice, Professor McKenzie and Associate Professor Partington explained the relationship between the prevailing risk free rate and investment decisions:

> There seems to be an implication in some of the submissions that there is something wrong with using the government bond rate as the risk free rate when government bond rates are low. The fundamental point to be made is that the government bond rate sets the current benchmark that a risky project has to beat. Clearly there is little point in taking on a risky project if you can get the same or higher return by investing in a government bond. The government bond thus sets a benchmark; the time value of money.[254][255]

They also advised:

> 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 fact that government 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.[256]

Since the AER received this advice in February 2012, the 10 year CGS yield has further decreased. The risk free rate from APA GasNet's nominated averaging period is 3.22 per cent. The logic in Professor McKenzie and Associate Professor Partington's advice continues to apply. In prevailing market conditions during APA GasNet's averaging period, 3.22 per cent is the benchmark that a risky project must exceed. The AER estimates an appropriate risk premium above this rate reflecting prevailing conditions in the market for funds and the risks involved in providing reference services. The risk premium is the product of the equity beta and the MRP. The AER considers the appropriate equity beta and MRP in sections 4.3.4 and 4.3.3.

Prevailing 10 year CGS yield is a forward looking 10 year rate

The prevailing 10 year CGS yield is a forward looking rate. The prevailing 10 year CGS yield varies over time, but this variation does not mean the yield is a 'short term' rate. Rather, according to the expectations theory on the term structure of interest rates, at any point in time the yield on long dated bonds (such as 10 year CGS) incorporates the market's expectation of the yield on shorter dated bonds over the next 10 years. The expectations theory is generally regarded as a partial but not complete explanation of the term structure of interest rates. Other factors are also likely to be relevant.[257]

The method is unbiased

Determining the averaging period in advance helps achieve an unbiased risk free rate.

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253 Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 1.
254 McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 11–12..
255 The advice was provided for the AER's final determination on Aurora. Many of the contentions made in that process are also being made in this process.
256 McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 12.
257 The 'liquidity premium' theory and the 'preferred habitat' theory identify other important determinants of the term structure of debt. Elton et. al., *Modern Portfolio Theory and Investment Analysis 8th ed.* (2010), pp. 516–-521. These concepts are discussed further in appendix B of the draft decision.

Regulated businesses have an incentive to seek a WACC that is as high as possible, because it will increase their revenue allowance. If a regulated business can select an averaging period by looking at historical yields, they may introduce an upward bias.[258] They can select a period with the highest yield available. But, when an averaging period is agreed or specified in advance regulatory "gaming" is less likely because the risk free rate is unknown for that future period.

The possibility of upward bias also applies to a long term average. No particular long term averaging period is clearly superior. The Victorian gas distribution businesses responded to these concerns by proposing the use of a 10 year averaging period.[259] They suggested that there is regulatory precedent from IPART that supports the use of a 10 year averaging period.[260] IPART has indeed taken long term historical averages into account.[261] However, as SFG acknowledges, it has not formally adopted a long term historical estimate in the manner that the Victorian gas distribution businesses proposed.[262] The precedent value of IPART's approach is not as strong as those businesses suggest. IPART's approach to setting the WACC is discussed in more detail in appendix B.8.2.

The AER thus maintains its position that a short averaging period, determined in advance, minimises the likelihood of bias.

There is no clear evidence that CGS yields are abnormally low

While APA GasNet did not specifically suggest CGS yields are normally low, the Victorian gas distribution businesses did so. The following statement in SP AusNet's proposal is an example:

> Under conditions of normally functioning capital markets, the AER's standard approach would generally result in reasonable estimates of the cost of equity. However, we cannot rely on normal conditions persisting and, therefore, the AER's standard regulatory approach will only by chance produce an estimate of the cost of equity that is consistent with clause 87(1) of the NGR. Furthermore, the current market conditions are far from normal.[263]

This position also finds support in advice from CEG (which was submitted by APA GasNet), who state:

> The effect of this is that the prevailing cost of equity is at least as high as under normal market conditions - notwithstanding that the CGS yields are at historic lows.[264]

These statements raise the question of what "normal" conditions are and whether CGS yields are "abnormally" low.

The analysis above demonstrates that the CGS market is liquid and functioning well. There is no evidence before the AER to suggest that conditions in the CGS market are abnormal. Conversely,

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258 Lally, M., *Expert Report of Martin Thomas Lally*, 13 February 2011, pp. 9-10. Lally's comments in this report were made about a specific approach proposed in the relevant determination but are consistent with the approach taken by the AER in this decision.

259 SP AusNet, *Revised Access Arrangement Proposal: Chapter 5 - Rate of return and corporate tax allowance*, 9 November 2012, p. 43; Multinet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 172; Envestra, *Revised Access Arrangement Information, Attachment 9.11 Response to Draft Decision – Rate of return, 9 November 2012, section 6*.

260 SP AusNet, *Revised Access Arrangement Proposal: Chapter 5 - Rate of return and corporate tax allowance*, 9 November 2012, p. 43; Multinet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 172; Envestra, *Revised Access Arrangement Information, Attachment 9.11 Response to Draft Decision – Rate of return, 9 November 2012, section 6*.

261 IPART, *Review of water prices for Sydney Desalination Plant Pty Limited from 1 July 2012 - Final Report*, December 2011, p. 93.

262 SFG, *The required return on equity: Response to AER Victorian gas draft decisions*, 7 November 2012, p. 60. (SFG, *The required return on equity*, November 2012)

263 SP AusNet, *Revised Access Arrangement Proposal: Chapter 5 - Rate of return and corporate tax allowance*, 9 November 2012, p. 20.

264 CEG, *Update to March 2012 Report: on consistency of the risk free rate and MRP in the CAPM*, November 2012, p. 32. (CEG, *Update to March 2012 Report*, November 2012)

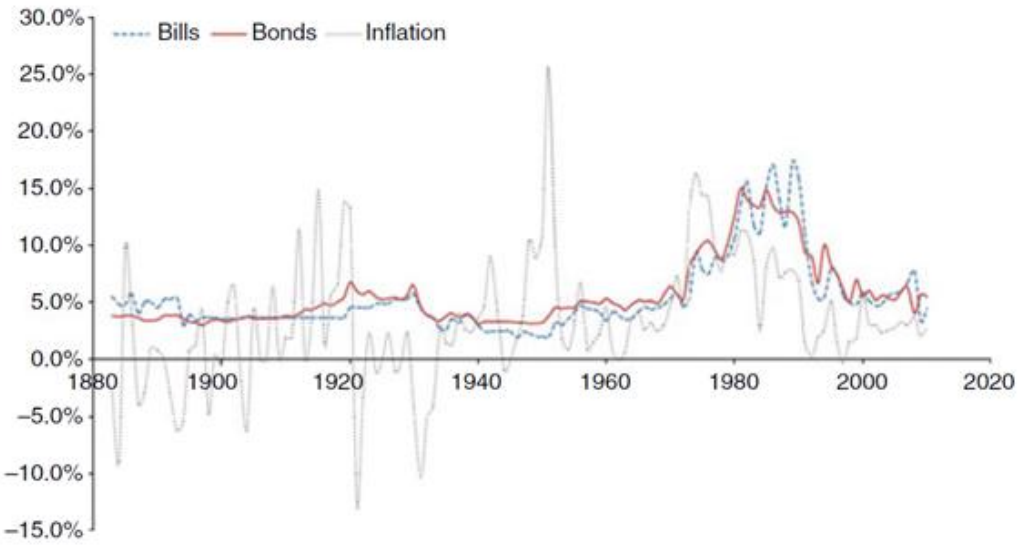
there is no clear understanding of "normal" market conditions. Prices (and yields) in markets move up and down all the time depending on the circumstances, demand and supply conditions, and investor expectations. There is no evidence before the AER to suggest that there is mispricing in the CGS market.

McKenzie and Partington also considered the question of whether CGS yields are abnormally low. They did not find that there was reason to describe current CGS yields as abnormally low. They state:

> The evidence provided by the data suggests that the history of interest rates over the last few decades is not truly representative of the long run in this market. For both the U.S., UK and Australian markets, evidence exists which suggests that bond yields were stable (and possibly even falling) in the long run. The history of data over the last few decades is anomalous and the high interest rates observed during this period are clearly not representative of the longer time series. As such, one conclusion may be that the current environment is nothing more than a return to the 'normal' long run interest rate regime. On the other hand, it could be argued that there is a new normal and the GFC represents a true regime shirt for global financial markets. It is difficult to determine whether this is the case or not - only in the fullness of time will we be able to comment on this with any certainty.[265]

Their report also presents the following figure from Brailsford et al (2012).[266]

Figure 5.2 Bond yields, bill yields and inflation rates over time



The figure shows:

- Yields in the 1970s and 1980 were high by comparison with historical rates.
- Yields have remained elevated (depressed) for long periods before falling (increasing).

As part of its considerations on the cost of equity, the AER has considered evidence on the stability of the cost of equity and the relationship between the risk free rate and MRP. These issues are further considered in appendix sections B.3.1, B.3.2 and B.3.3.

5.3.3 Market risk premium

The AER does not agree with APA GasNet's proposed MRP of 8.72 per cent.

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265 McKenzie and Partington, *Review of the AER's overall approach*, February 2013, p. 5.
266 McKenzie and Partington, *Review of the AER's overall approach*, February 2013, p. 13.

In the draft decision, the AER did not agree with APA GasNet's proposal for an 8.5 per cent MRP. In the revised proposal, APA GasNet increased its MRP estimate to 8.72 per cent based on CEG's updated DGM estimate and APA GasNet's actual risk free rate.[267] It submitted its proposed approach, which adopts current observations for both the risk free rate and MRP, is one of the two internally consistent options to estimate the cost of equity by applying the CAPM. While proposing a 'current' MRP of 8.72 per cent and a prevailing risk free rate, APA GasNet also suggested it would accept a higher long term average risk free rate if there are concerns with using a forward estimate of the MRP.[268]

It is well recognised that the MRP cannot be directly observed. Unlike the risk free rate, the evidence available for estimating the MRP is imprecise and subject to varied interpretation. There is no consensus among experts on which method produces the best MRP estimate. In addition, different methods can produce widely different results at the same point in time.[269] For these reasons, the AER considers that it is reasonable to assess a range of evidence to inform the best estimate of the MRP. In this assessment the AER must apply its judgment to interpret the information before it.

The AER considers a 6 per cent MRP reflects prevailing conditions in the market for funds and the risks involved in providing reference services. The AER's reasons for adopting this value are summarised in section 5.1.2. In this section, the AER explains those reasons. Further considerations on the MRP are discussed in appendix B.

Historical excess returns

Long run historical average excess returns support a 10 year forward looking MRP of 6 per cent as reasonable.

Historical excess returns estimate the realised return that stocks have earned in excess of the 10 year government bond rate. They can be directly measured. Although not strictly forward looking, historical excess returns have been used to estimate a forward looking MRP on the view that investors base their forward looking expectations on past experience. The Tribunal recognised this view in the DBNGP matter.[270] In a regulatory context, the use of historical excess returns has advantages, as supported by McKenzie and Partington:

- The estimation methods and the results are transparent.
- The estimation methods have been extensively studied and the results are well understood.
- Historical estimates are widely used and have support as the benchmark method for estimating the MRP in Australia.[271]

Dimson, Marsh and Staunton (2012) indicate there is no better forecast of expected excess returns than the historical average:[272]

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267 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 69.
268 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, pp. 69-70.
269 See: Damodaran, *Equity risk premiums: determinants, estimation and implications - the 2012 edition*, March 2012, p. 93. He also noted: "No matter what the premium used by an analyst, whether it be 3% or 12%, there is back-up evidence offered that the premium is appropriate."
270 Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14,* 26 July 2012, paragraph 153.
271 M. McKenzie, and G. Partington, *Report to Corrs Chambers Westgarth: Equity market risk premium*, 21 December 2011, pp. 5–6, (McKenzie and Partington, *Equity market risk premium*, December 2011)
272 Dimson, Marsh and Staunton, *Credit Suisse Global Investment Returns Sourcebook 2012*, February 2012, p.37.

> In summary, there are good reasons to expect the equity premium to vary over time. Market volatility clearly fluctuates, and investors' risk aversion also varies over time. However, these effects are likely to be brief. Sharply lower (or higher) stock prices may have an impact on immediate returns, but the effect on long-term performance will be diluted. Moreover volatility does not usually stay at abnormally high levels for long, and investor sentiment is also mean reverting. For practical purposes, we conclude that for forecasting the long run equity premium, it is hard to improve on extrapolation from the longest history that is available at the time the forecast is being made.

This conclusion is informed by their assessment of the current state of research on the MRP, which they summarize as follows:[273]

> Mean reversion would imply that the equity premium is to some extent predictable…Yet despite extensive research, this debate is far from settled. In a special issue of the Review of Financial Studies, leading scholars expressed opposing views, with Cochrane (2008) and Campbell and Thompson (2008) arguing for predictability, whereas Goyal and Welch (2008) find that 'these models would not have helped an investor with access only to available information to profitably time the market'.

The long term averages of historical excess returns, adjusted to incorporate an imputation credit utilisation rate (theta) of 0.35[274], produce a range of 4.9–6.1 per cent (based on arithmetic averages) and 3.0–4.7 per cent (based on geometric averages) over the periods 1883–2011, 1937–2011, 1958–2011, 1980–2011 and 1988–2011 (Table 5.2). The starting point for each of the five estimation periods was chosen because the quality of the underlying data sources changed (in 1883, 1937, 1958 and 1980) and the imputation tax system was introduced (in 1988).[275]

Table 5.2 Historical excess return estimates—assuming a use rate of distributed imputation credits of 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

[a] Indicates estimates are statistically significant at the 5 per cent level using a two tailed test.
Source: Handley.[276]

The AER considers the strengths and weaknesses of each sampling period, which are:

- Longer time series contain a greater number of observations, so produce a more statistically precise estimate.
- Significant increases in the quality of the data becoming available in 1937, 1958 and 1980.
- More recent sampling periods more closely accord with the current financial environment, particularly since financial deregulation (1980) and the introduction of the imputation credit taxation system (1988).[277]

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273 Dimson, Marsh and Staunton, *Credit Suisse Global Investment Returns Sourcebook 2012*, February 2012, p.36.
274 The 0.35 value for theta is consistent with the Australian Competition Tribunal's position in *Application by Energex Limited (Gamma) (No 5) [2011] ACompT9*, November 2009.
275 Brailsford, Handley and Maheswaran, *Re-examination of the historical equity risk premium in Australia,* Accounting and Finance, vol. 48, 2008, pp. 85-86.
276 Handley, *An estimate of the historical equity risk premium for the period 1883 to 2011*, April 2012, p. 6.

- Shorter time series are more vulnerable to influence by the current stage of the business cycle or other (one-off) events. [278]

The AER considers that there is no one sampling period that is to be preferred, since each period has a number of strengths but at least one weakness. For this reason, the AER considers that all five sampling periods are relevant.

Arithmetic and geometric means

The AER considers the arithmetic average of 10 year historical excess returns would likely be an unbiased estimator of a forward looking 10 year return. However, historical excess returns are estimated as the arithmetic or geometric average of one year returns. If the one year historical excess returns are variable, which they are, then their arithmetic average will overstate the arithmetic average of 10 year historical excess returns. Similarly, the geometric average of one year historical excess returns will understate the arithmetic average of 10 year historical excess returns.[279]

The AER considers both the arithmetic and geometric averages are relevant to consider when estimating a 10 year forward looking MRP using historical annual excess returns.[280] In the Envestra matter, the Tribunal found no error with this approach.[281] 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. Also APA GasNet's consultant, Wright, considers both arithmetic averages and geometric averages of historical data when estimating the MRP.[282]

Bias in historical excess returns

In using historical excess returns as a source of evidence on the forward looking MRP, it is important to consider whether historical estimates are likely to under or overstate a forward looking MRP. As various experts have noted, historical excess returns may be subject to certain biases, including:

- survivorship bias (McKenzie and Partington; Damodoran)[283]
- unanticipated inflation, historically high transaction costs and a historical lack of low cost opportunities for diversification (Siegel)
- bias due to the inclusion of historical data which contains periods of major recessions (Lally)[284]

McKenzie and Partington suggested MRP estimates based on historical data may be overstated relative to true expectations, as a result of survivorship bias.[285] According to Damodoran (2011),

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277 In a report submitted on Aurora's revised proposal, NERA raised the issue that the market excess returns were less volatile before the 1950s. See: NERA, *Market risk premium*, 20 February 2012, pp. 13–20. The lack of a well developed theory behind what drives the MRP makes the AER cautious of excluding large periods of data because it does not represent a forward looking MRP. Also, other evidence suggests the historical excess returns were too high before the 1950s. See: AER, *APTPPL access arrangement draft decision*, April 2012, pp. 296297–7.
Further, the arithmetic averages of historical excess returns over 1883–2011 and 1958–2011 both produce a historical MRP of 6.1 per cent. The geometric averages are 4.7 and 3.0 respectively. Accordingly, even if the AER were to rely on only the post 1958 data, it would not change its position on the appropriate value of the MRP.

278 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*, 2008, vol. 48, pp. 78–82. (AER, *WACC review final decision*, May 2009)

279 This matter is explained in detail in appendix section B.2.1 of the draft decision.

280 The AER also discusses the comments on the use of geometric averages by SFG, NERA and Lally in appendix section B.5.1.

281 Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT4*, 11 January 2012, paragraph 157.

282 Wright, *Review of risk free rate and cost of equity estimates*, October 2012, p.20

283 Damodoran, A. *Equity risk premiums: determinants, estimation and implications—the 2012 edition*, Mach 2012, p. 24.

284 M. Lally, *The cost of equity and the market risk premium*, 25 July 2012, p. 24 (Lally, *Cost of equity and the MRP*, July 2012).

survivorship bias is created by estimating historical returns on only stocks that have survived.[286] Historical data excludes negative return stocks that no longer exist, which naturally results in higher return estimates. McKenzie and Partington[287] and Joye[288] supported this view. This upward bias is a relevant consideration because the various Australian stock indexes exclude the failed stocks.[289]

Other arguments also suggest the historical excess returns are upwardly biased. Siegel (1999) considered unanticipated inflation means historical returns underestimate real returns on risk free assets.[290] He also submitted historical returns on equity overstate returns actually realised, given historically high transaction costs and the historical lack of low cost opportunities for diversification.[291]

To address the overestimating problem noted by Siegel, Lally suggested one could estimate the MRP by adding back the historical average real risk free rate to the conventional MRP estimate and then deducting an improved estimate of the long-term expected real risk free rate. The modified MRP estimate is 4.9 per cent. Lally noted results from this methodology have been used by both the QCA and the New Zealand Commerce Commission in reaching their conclusions on the MRP.[292]

McKenzie and Partington noted APA GasNet's consultant Gregory makes a similar argument to Siegel in support of his view that the regulatory rate of return in the UK has been too high. He submits that a comparison of realised bond returns unprotected from inflation with realised equity returns that have some protection from inflation is likely to overstate the MRP.[293]

Lally also suggested historical excess returns may underestimate the forward looking 10 year MRP when an economy has entered a major recession. But he noted Australia has not recently entered a major recession and, even if it had, the downward bias is unlikely to be very large.[294] He also noted:

> ... the fact that the AER bases its estimate of the MRP at least partly upon historical averaging of excess returns does not invalidate its claim that it is estimating the MRP for the next ten years; this estimation methodology is suitable (in conjunction with other methodologies) for estimating the MRP for the next ten years as well as for estimating the long-term average MRP. The use of historical averaging results may introduce a downward bias at the present time, but the effect is likely to be small relative to the standard deviation in the estimate and to possible upward bias in the methodology arising from significant unanticipated inflation in the 20th century.[295]

The AER considers the bias is a relevant consideration when estimating the MRP using historical excess returns. Since it is not clear what the precise magnitude of the bias is, McKenzie and Partington do not recommend adjusting the historical estimate of the MRP. Given that 6 per cent is towards the top of the range of average historical excess returns, the AER considers 6 per cent is a reasonable estimate, and unlikely to underestimate a forward looking MRP.

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285 McKenzie, M. and G. Partington, *Equity market risk premium*, 21 December 2011, pp. 6–7.
286 Damodoran, A. *Equity risk premiums: determinants, estimation and implications—the 2012 edition,* Mach 2012, p. 24.
287 M. McKenzie, and G. Partington, *Report to the AER: Review of regime switching framework and critique of survey evidence,* 27 August 2012, p. 19, (McKenzie and Partington, *MRP: regime switching framework and survey evidence*, August 2012)
288 Joye, C., *Super funds miss mark in bias to equities,* Australian Financial Review, 14 August 2012.
289 For example, the ASX All Ordinaries Index represents the 500 largest companies listed on the ASX. Market capitalisation is the only eligibility requirement. An underperforming stock that is losing its market share would be eventually be removed from the index. See: http://www.asx.com.au/products/capitalisation-indices.htm#all_ordinaries_index.
290 Lally, *Cost of equity and the MRP*, July 2012, p. 8, (Lally, *Cost of equity and the MRP*, July 2012).
291 McKenzie and Partington, *Equity market risk premium*, December 2011, p. 7
292 Lally, *Review of the AER's methodology*, March 2013, p.29.
293 McKenzie and Partington, *Review of the AER's overall approach*, February 2013, pp. 18.
294 Lally, *Cost of equity and the MRP*, July 2012, p. 24.
295 Lally, *Cost of equity and the MRP*, July 2012, p. 27.

Forward looking predictors of excess returns

APA GasNet has submitted consultant reports in support of using dividend yields, dividend yield based DGM estimates and credit spreads to forecast the MRP. In past regulatory decisions, service providers have also proposed other methods to estimate MRP, such as implied volatility. Over the past decade, there is considerable scepticism about evidence for a relationship between observable variables and the MRP. A few studies indicated there is no better forecast of excess returns than the historical average.[296]

For example, Goyal and Welch examine the performance of variables that academic literature suggested as good predictors of the equity premium. These variables include dividend yield, earnings price ratio, corporate bond returns and volatility. Goyal and Welch find that, of the variables that have been proposed to predict excess returns, many produced poor in-sample forecasts. Moreover, they find most variables that performed well in-sample performed poorly out-of-sample.

Goyal and Welch distinguish between in-sample and out-of-sample performance of forecasting models. To understand this distinction, it may be helpful to consider the following passage in Brooks (2008), which insists on the importance of out-of-sample forecast performance:[297]

> In-sample forecasts are those generated for the same set of data that was used to estimate the model's parameters. One would expect the 'forecasts' of a model to be relatively good in-sample, for this reason. Therefore a sensible approach to model evaluation through an examination of forecast accuracy is not to use all of the observations in estimating the model parameters, but rather to hold some of the observations back. The latter sample, sometimes known as the holdout sample, would be used to construct out-of-sample forecasts.

The conclusion of Goyal and Welch is stated below: [298]

> Most models are no longer significant even in sample (IS), and the few models that still are usually fail simple regression diagnostics…Most models have poor out-of-sample (OOS) performance, but not in a way that merely suggests lower power than IS tests. They predict poorly late in the sample, not early in the sample…Therefore, although it is possible to search for, to occasionally stumble upon, and then to defend some seemingly statistically significant models, we interpret our results to suggest that a healthy scepticism is appropriate when it comes to predicting the equity premium, at least as of early 2006. The models do not seem robust.
>
> ...
>
> OOS, most models not only fail to beat the unconditional benchmark[299] (the prevailing mean) in a statistically or economically significant manner, but underperform it outright.

Forward looking measures

There is growing scepticism in the academic literature of forward looking measures of the MRP. However, in this section the AER considers two forward looking MRP measures that are frequently suggested by service providers. Those are:

- DGM estimates—these estimates are advocated by APA GasNet and its consultant in the initial proposal and the revised proposal. CEG, Capital Research, NERA and Lally all recommended

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296 Boudoukh, Richardson and Whitelaw, *Myth of long-horizon predictability,* Review of financial studies, July 2008, vol. 21, no. 4, pp. 1577–605; Timmermann, *Elusive return predictability,* International journal of forecasting, January – March 2008, vol. 24, no. 1, pp. 1–18; Goyal and Welch, *A comprehensive look at the empirical performance of equity premium,* Review of financial studies v, 2008, vol. 21 n, no. 4, pp. 1455–508.

297 Brooks, C, *Introductory Econometrics for Finance*, 2nd ed. Cambridge, Cambridge University Press, 2008, p.245

298 Goyal and Welch, *A comprehensive look at the empirical performance of equity premium,* Review of financial studies v, 2008, vol. 21 n, no. 4, p. 1456 & p. 1504.

299 Unconditional benchmark refers to average historical excess returns in Goyal and Welch.

placing at least some weight on DGM estimates for estimating a forwarding looking MRP. The AER considers that DGM based analysis can provide information on the expected MRP, however, this approach is also subject to a number of limitations.

- Implied volatility glide path—the AER notes this technique was not proposed by APA GasNet in this review. However, this approach, as suggested by Value Adviser Associates (VAA) in its 2010 report, is the only other forward looking approach that produces an MRP estimate. Therefore the AER gives consideration to this method in both the draft decision and this final decision.

These two forward looking MRP measures give mixed results. DGM estimates can give some insight into the prevailing MRP estimate, although it is subject to a number of limitations. Associate Professor Lally found the current DGM MRP estimates are in the range of 5.9–8.4 per cent after correcting for deficiencies in CEG's method. The other forward looking MRP measure—implied volatility glide path indicates the MRP estimate is currently below its historical average level (and therefore below 6 per cent).

DGM estimates

DGM analysis can provide some information on the expected MRP. The DGM method examines the forecast future dividends of businesses and derives the cost of equity that makes these dividends consistent with the market valuation of the equity of those businesses.

However, DGM based estimates of the return on equity and implied MRP estimates are highly sensitive to the assumptions made. It is necessary that all assumptions made have a sound basis, otherwise estimated results from DGM analysis may be inaccurate and lead analysts into error.[300] This view is also supported by McKenzie and Partington:

> 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.[301]

Consistent with its position in the WACC review and previous decisions, the AER considers:

- The implied MRP produced by DGM estimates is sensitive to both the model specification and the choice of inputs
- No input assumptions are reliable. 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). Associate Professor Lally advised such proxies are likely to produce an upward bias in the MRP estimates.[302]

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300 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, Myers and Allen, *Principles of Corporate Finance: International Edition,* 9th Edition, Boston: McGraw-Hill, 2008, p. 95.

301 McKenzie and Partington, *Equity market risk premium*, December 2011, p. 25.

302 Lally, *Cost of equity and the MRP*, July 2012, pp. 11–18.

- Regulators had previously been wary to lower the MRP when DGM estimates were below 6 per cent.[303] The AER is similarly wary to increase the MRP (based on DGM estimates) even though the DGM estimates can produce estimates above 6 per cent.
- At the WACC review, academics (Officer and Bishop, and CEG) and industry representatives (including the ENA who represents the Victorian gas businesses) considered DGM estimates should be used only as a 'cross check' on the reasonableness of other methods to estimate the MRP, rather than as the primary method.[304] In contrast, in this review the regulated businesses and CEG consider substantial weight should be placed on DGM estimates. The reasons for this change in position have not been explained.
- Although DGM is extensively used by US economic regulators in estimating the return on equity[305], it is not well accepted for use in the Australian context.[306]

The AER notes different consultants produce widely different DGM based MRP estimates over a short period. Table 5.3 below illustrates the consultants' DGM estimates from the last year, which range from 5.90–9.56 per cent. DGM estimates from the most recent reports (CEG and Lally) produce a lower range of 5.90–8.89 per cent. For the reasons explained in appendix B, the AER gives greater consideration to Lally's estimates than CEG's estimates. This is because Lally's DGM method is based on CEG's method, however adjusts for certain deficiencies in CEG's method identified by Lally. Lally's method produces a range of 5.90–8.39 per cent.

Table 5.3 Recent DGM based MRP estimates produced by consultants

		Dividend yield	Dividend per share growth	RFR	MRP estimate
CEG (March 2012)		5.68%	6.60%	3.77%	8.52%
Capital Research (Feb 2012)		4.70%	7.00%	5.08%	6.62%
Capital Research (Feb 2012)		5.23%	7.00%	5.08%	7.15%
Capital Research (Feb 2012)		5.71%	7.00%	5.08%	7.63%
Capital Research (Mar 2012)		6.29%	7.00%	3.73%	9.56%
NERA (Feb 2012)	Bloomberg and IBES forecasts		5.65%	3.96%	7.72–7.75%
NERA (Feb 2012)	Bloomberg and IBES forecasts		5.65%	5.50%	6.18–6.21%
NERA (March 2012)	Bloomberg and IBES forecasts		5.65%	3.99%	7.69–7.72%
CEG (November 2012)		5.34%	6.60%	3.05%	8.89%
Lally (March 2013)		5.34%	a mix of long term and short term dividend growth	3.26%	5.90-8.39%

Sources: CEG, Capital Research, Capital Research, NERA, Lally

303 AER, *WACC review final decision*, May 2009, p. 220.
304 AER, *WACC review final decision*, May 2009, pp. 218–219.
305 CEG, Risk free rate and MRP in the CAPM, March 2012, p.38.
306 In most capital markets there are relatively few independent forecasts of future earnings and, consequently, there is a high level of statistical uncertainty surrounding DCF projections of the cost of equity for a particular company. However, in the US there is a very deep market for analysts' projections of company's future earnings. See: NERA, *Review of ESCOSA's decision on ETSA utilities equity beta*, April 2005, p. 23.

DGM analysis is producing relatively high MRP estimates at the moment. However, DGM analysis produced MRP estimates just above 2 per cent in 1994 (CEG's modified approach using indexed CGS rates). It is unlikely this would have been seen then or now as a credible estimate of the MRP in 1994. The AER considers the results from the DGM analysis, while also aware of the limitations to this analysis discussed above. The AER discusses its further considerations on DGM estimates in appendix B.

Implied volatility

VAA estimated the MRP based on an 'implied volatility glide path' approach, the MRP estimate generated from implied volatility will have the same horizon as the underlying options. The implied volatility approach to estimate the MRP is based on an assumption that the MRP is the price of risk times the volume of risk (volatility), which is based on Merton (1980).

The AER has already set out its concerns with using VAA's implied volatility approach and the implied volatility as an indicator for the MRP in the draft decision and its previous decisions[307]. Specifically, the AER considers that the VAA implied volatility approach:

- inappropriately determines the baseline long run average implied volatility by using a different data series—the realised volatility of a 90 day data window for the S&P/ASX 30 from 1980 onwards.[308] Using this (historical) realised volatility series results in a long run average volatility of 14 per cent. The actual long run average of one of the (forward looking) implied volatility series used by VAA (3 month VIX) is 18.6 per cent. Adopting the higher baseline would reduce the MRP estimated using the VAA approach in all scenarios.
- incorrectly calculates the price per unit of implied volatility using a 'long run historical average MRP' of 7 per cent, when the evidence indicates that this value is approximately 6 per cent.[309] Adopting the lower historical average MRP would reduce price per unit of volatility, which in turn reduces the MRP estimated using the VAA approach in all scenarios.

Although implied volatility was high during the height of the GFC, the current level is significantly below the long run average. Using data updated to 7 February 2013[310], the VIX implied volatility measures at 11.4 per cent, significantly below the long run average of 18.6 per cent (measured from the start of the data series in 1997). Figure 5.3 shows the value of this measure of implied volatility relative to its long run average level across the period since the global financial crisis.

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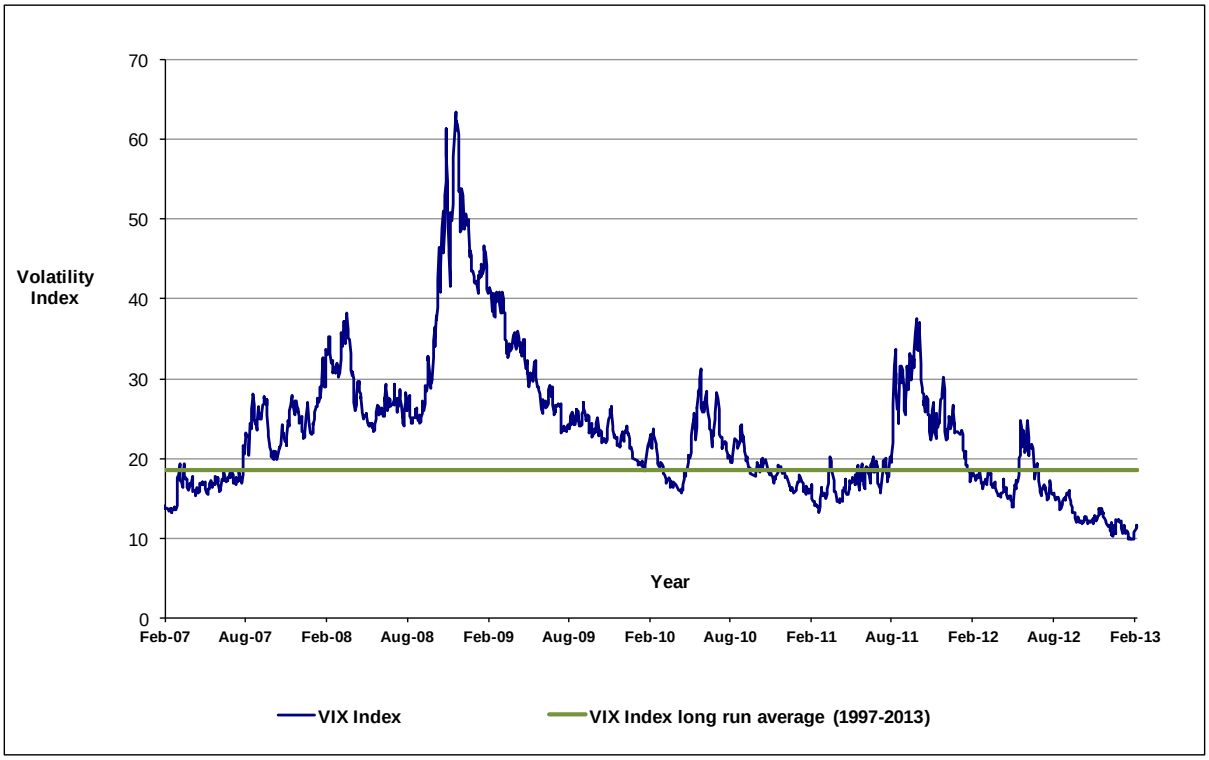
307 AER, *Final decision Envestra Ltd access arrangement proposal for the SA gas network*, June 2011, pp. 195-197.

308 VAA, MRP for *Envestra*, March 2011, p. 4 (footnote 7). Further, VAA appears to end its baseline period in 2009 even when using implied volatility data up to the end of 2010. See Bishop, Fitzsimmons, and Officer (2011), pp. 9, 14 (endnote 5).

309 The AER sets out earlier in this decision its analysis of the historical excess return series.

310 The AER attempts to update rate of return related data in this final decision to 20 February 2013. This is because 20 February 2013 is the end date of the averaging period of the Victorian gas business (Envestra) whose averaging period ended the latest. However, at the time of finalising this decision VIX data from Bloomberg was only available until 7 February 2013. Therefore the data was updated to 7 February 2013 for this implied volatility analysis.

Figure 5.3 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.

By directly applying VAA's approach, the current one year MRP is 5.7 per cent—this is derived by applying a constant premium per unit risk to implied volatility of 11.4 per cent for 3 month options on th ASX 200 index.[311] Transitioning to a long term average of 6 per cent, this implied volatility approach produces an MRP below 6 per cent.

Further, if the VAA approach is corrected for the AER's concerns above, it produces a current one year MRP of 3.7 per cent (based on a revised constant premium per unit risk to implied volatility of 11.4 per cent for 3 month options on ASX 200 index). The revised constant premium per unit risk is 0.32, which is derived by dividing a more realistic long term MRP of 6 per cent by the long run average volatility of 18.6 per cent, measured from the start of the data series in 1997. This converts to a 10 year MRP of 5.54 per cent.[312]

The AER does not consider that VAA's implied volatility glide path approach produces a robust basis on which to place substantive weight in estimating a 10 year forward looking MRP. However, even if weight were to be given to this approach, it would currently support an MRP estimate below 6 per cent. The AER notes that this is a forward looking measure that until recently was strongly advocated

311 Note the constant premium per unit risk is 0.5, which is consistently used by VAA. Also, VAA uses implied volatility for 1 year options on ASX 200 index, while the AER applied implied volatility for 3 month options on ASX 200 index. However, the AER notes VAA found the 3 month and 12 month option volatilities are highly correlated, the correlation coefficient is 0.92. See: VAA, *Market risk premium estimate for January 2010-June 2014 prepared for WestNet Energy*, December 2009, p.13.

312 Converting the one-year implied MRP to a 10 year forward looking MRP requires further assumptions, VAA assumed this one-year implied MRP will fade to a long term historical average MRP over three years. It also noted JCP assumed step reversion after two years. The AER is not entirely clear how VAA faded a one-year implied MRP into a long term average MRP, since VAA report provided no further explanation. The AER estimated a 10- year volatility implied MRP of 5.54% based on JCP assumption—that is assuming the MRP will be 3.7% for the first two years and reverts to a long term average MRP for the next eight years. See: Bishop, Fitzsmmons, Officer, 'Adjusting the market risk premium to reflect the global financial crisis', *The Finsia Journal of Applied Finance*, Issue 1, 2011, p.9 and p. 14. For the long term average MRP the AER has adopted 6 per cent, which reflects long term average historical excess returns.

by regulated businesses. It is appropriate to consider this measure, among other measures of the MRP, having regard to the strengths and weaknesses of this approach.

As noted above, and further in appendix B, both DGM based and implied volatility based estimates of a forward looking MRP are subject to certain limitations. A further limitation is, in prevailing market conditions, these two approaches produce vastly different results. Implied volatility estimates suggest the 10 year forward looking MRP is around 5.54 per cent. This is somewhat below 6 per cent. DGM estimates suggest the MRP is around 5.90–8.39 per cent (based on Lally's estimates). This ranges from slightly below 6 per cent to materially above 6 per cent. However, taking both measures together, and having regard to the strengths and weaknesses of these methods, the AER considers 6 per cent is a reasonable estimate of the 10 year forward looking MRP.

Survey evidence

The AER attempts to estimate investors' expectations of what the MRP will be in the future and not simply rely on the excess stock market returns that have been achieved in the past. The AER considers surveys of market practitioners and academics are relevant as they reflect the forward looking MRP applied in practice. The AER is aware of the Tribunal comments made in relation to the survey evidence. The AER applies the criteria noted by the Tribunal to the survey evidence it considers in this decision and concludes the survey results are still relevant to inform the forward looking 10-year MRP.[313]

In the draft decision, the AER noted that survey based evidence needed to be treated with caution as the results may be subject to limitations. The relevance of some survey results depend 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 be subjective, because market practitioners may look at a range of different time horizons and they are likely to have differing views on the market risk. This concern may be mitigated as the sample size increases.[314]

The AER considered survey evidence on the MRP before and after the WACC review. It includes:

- KPMG (2005) surveyed 33 independent expert reports on takeover valuations from January 2000 to June 2005. It found the MRP adopted in valuation reports was in a 6–8 per cent range. KPMG reported 76 per cent of survey respondents adopted an MRP of 6 per cent.[315]
- Capital Research (2006) found the average MRP adopted across a number of brokers was 5.09 per cent.[316]
- Truong, Partington and Peat (2008) surveyed chief financial officers, directors of finance, corporate finance managers or similar finance positions of 365 companies included in the All Ordinaries Index at August 2004. From the 87 responses received, 38 were relevant to the MRP. They found the MRP adopted by Australian firms in capital budgeting was in a 3–8 per cent range, with an average of 5.94 per cent. The most commonly adopted MRP was 6 per cent.[317]

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313 Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraphs 159–163.

314 Australian Competition Tribunal, Application by Envestra Limited (No 2) [2012] ACompT 3, 11 January 2012, paragraphs 159–63.

315 KPMG, *Cost of capital—market practice in relation to imputation credits*, August 2005, p. 15.

316 Capital Research, *Telstra's WACC for network ULLS and the ULLS and SSS businesses—review of reports by Prof. Bowman*, March 2006, p. 17.

317 Truong, G. Partington, G. and Peat, M., *Cost of capital estimation and capital budgeting practices in Australia,* Australian Journal of Management, June 2008, vol. 33, no. 1, p. 155.

- Bishop (2009) reviewed valuation reports prepared by 24 professional valuers from January 2003 to June 2008. It found the average MRP adopted was 6.3 per cent, and 75 per cent of these experts adopted an MRP of 6 per cent.[318]

- Fernandez (2009) surveyed university finance and economics professors around the world in the first quarter of 2009. The survey received 23 responses from Australia and found the required MRP used by Australian academics in 2008 was in a 2.0–7.5 per cent range, with an average of 5.9 per cent.[319]

- Fernandez and Del Campo (2010) surveyed analysts around the world in April 2010. The survey received seven responses from Australian analysts and found the MRP that they used in 2010 was in a 4.1–6.0 per cent range, with an average of 5.4 per cent.[320]

- A further survey by Fernandez et al. (2011) in April 2011 reported the MRP used by 40 Australian respondents was in a 5–14 per cent range, with an average of 5.8 per cent.[321]

- Asher (2011) surveyed 2000 members of the Institute of Actuaries of Australia. Asher reported 33 of a total of 58 Australian analysts who responded to the survey expected the 10 year MRP to be 3–6 per cent. The most commonly adopted MRP value was 5 per cent. The report also illustrated that expectations of an MRP much in excess of 5 per cent were extreme.[322]

- A further survey by Asher (2012) in March 2012 reported 49 useful responses, with an average 10 year MRP of 4.6 per and two thirds of the responses falling in the range 4-6%.[323]

- Like KPMG (2005), Ernst Young (2012) surveyed 17 independent expert reports on takeover valuations from January 2012 to October 2012. It found the mid-point MRP adopted in valuation reports was in a 6–7 per cent range and 71 per cent of them adopted a mid-point MRP of 6 per cent.[324]

- The most recent survey by Fernandez et al. (2013) in June 2012 reported the MRP used by 73 Australian respondents. Respondents include both academics and a wide range of practitioners. It found the MRP the respondent used in 2012 was in a 3.0-10.0 per cent range, with an average of 5.9 per cent.[325] The number of Australian respondents to this survey was reasonably large, greater than previous surveys, and resulted in similar MRP responses. This provides the AER with a degree of further confidence in the results of MRP surveys.

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318 Bishop, S., *A conservative and consistent approach to WACC estimation by valuers*, Value Advisor Associates, 2009.

319 Fernandez and Del Campo, *Market Risk Premium used by Professors in 2008: A Survey with 1400 Answers, IESE Business School Working Paper*, WP-796, May 2009, p. 7.

320 Fernandez and Del Campo, *Market Risk Premium Used in 2010 by Analysts and Companies: A Survey with 2400 Answers, IESE Business School*, May 2010, p. 4.

321 Fernandez, Arguirreamalloa and 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.

322 Asher, *Equity Risk Premium Survey—results and comments*, Actuary Australia, July 2011, no. 161, pp. 13–14.

323 Asher, *Equity Risk Premium Survey 2012: results and comments*, Actuary Australia, July 2012, pp. 28-29.

324 Ernst & Young, *Market evidence on the cost of equity: Victorian gas access arrangement review 2013-2017*, 8 November 2012, p.23. The AER further considers the Ernst and Young report in appendix B.

325 Fernandez, Arguirreamalloa and Corres, *Market Risk Premium used in 82 Countries in 2012: A Survey with 7,192 Answers*, IESE Business School Working Paper, CH-14, January 2013, p.3.

Table 5.4 summarises the key findings of the surveys.

Table 5.4 Key findings of 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%	na
Fernandez and Del Campo (2010)	7	5.4%	5.5%	na
Fernandez et al (2011)	40	5.8%	5.2%	na
Asher (2011)	45	4.7%	5.0%	5.0%
Asher (2012)	49	4.6%	5.0%	4.0-6.0%
Ernst & Young (2012)	17	6.26%[326]	6.0%	6.0%
Fernandez et al (2013)	73	5.9%	6.0%	na

Sources: KPMG (2005), Capital Research (2006), Truong, Partington and Peat (2008), Bishop (2009), Fernandez (2009), Fernandez and Del Campo (2010), Fernandez et al. (2011), Asher (2011), Asher (2012), Fernandez et al. (2013).

Survey measures of the MRP across different years, different survey respondents or sources, and different authors support an MRP of 6.0 per cent. For the surveys under consideration, the most commonly used MRP was 6 per cent.

McKenzie and Partington place significant weight on survey evidence due to the triangulation of that evidence.[327] The idea behind the triangulation is that a specific survey might be subject to a particular type of bias (although there is no compelling demonstration of it). However, that the type of bias would likely be much less consistent across surveys using different methods and different target populations.

Lally also supported the use of survey evidence and suggested the recent Fernandez survey is the most relevant survey evidence. However, its average of 5.9 per cent should be considered as an upper bound as some respondents to this survey will have provided responses for an MRP defined against bank bills.[328]

Appendix B details the AER's further analysis and responds to SFG's view on survey evidence.

Recent Australian Competition Tribunal decisions

In 2011, Envestra challenged the AER's decisions to adopt an MRP of 6 per cent for Envestra's South Australia and Queensland gas distribution businesses. Envestra submitted the AER should have accepted Envestra's proposed 6.5 per cent MRP. The Tribunal concluded the AER's adoption of a 6 per cent MRP was reasonably open to it on the evidence:

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326 Ernst & Young only presented mid-point MRP in its report. Therefore the actual mean from those 17 valuation reports might be different to what is presented here.

327 McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 19; McKenzie and Partington, *MRP: regime switching framework and survey evidence*, August 2012, p. 28.

328 Lally, *Review of the AER's methodology*, March 2013, p.32

> The critical issue in this section of the review is whether the AER's determination of the MRP at 6% was reasonably open to it on the evidence. As has already been mentioned, there was substantial evidence before the AER, both that submitted to it by service providers and that sourced by the AER itself. This evidence was not conclusive. It was incumbent upon the AER to exercise its judgment in deciding on an appropriate MRP. ...
>
> It is not sufficient for Envestra to persuade the Tribunal that 6.5% should be preferred. It must demonstrate the unreasonableness of the decision made by the AER. Unless this can be done, the Tribunal would be merely reaching a different conclusion as to the preferable result. The mere fact that the Tribunal may prefer a different rate does not entitle it to substitute its preferred MRP for that of the AER unless a ground of review has been made out. In all the circumstances of this matter, it was reasonably open to the AER to choose a MRP of 6%.[329]

The Tribunal handed down a similar decision in its review of ATCO's (formerly WA Gas Network's) and DBNGP's access arrangements.[330] In both decisions, the ERA considered the available information and exercised its judgement to determine the appropriate MRP. The Tribunal subsequently found no error in the ERA's determination of a 6.0 per cent MRP.

Expert advice commissioned by the AER

CEPA noted when the UK regulators directly estimating the MRP, the starting point is often historical data produced by Dimson, Marsh and Staunton (DMS). Forward looking estimates are often used as cross-checks for the DMS estimates, but are sometimes used more to check the reasonableness of the figure than set such a figure.[331] The premium of Australian equities over bonds for 1900-2011 from DMS is 5.6 per cent based on a geometric mean and 7.5 per cent based on an arithmetic mean. DMS noted this might be an overestimation as Brailsford, Handley and Maheswerán (2008) identified dividend prior to 1958 were overstated. Further, CEPA found the valuation reports presented by Ernst and Young do support an MRP that is equal to about 6 per cent.[332]

McKenzie and Partington agreed with the AER that the 6 per cent MRP as used by the AER is not just a choice based on the historic average of the MRP. Rather, it is based upon a broader set of evidence, which includes historical, utility-based[333], survey based, and implied estimates of the equity market risk premium. Each evidence presents its own unique set of challenges and possesses its own limitations. McKenzie and Partington have comprehensively reviewed the above evidence in their December 2011 paper. In their most recent February 2013 report, they reviewed the AER's method in estimating the cost of equity and concluded again that 6 per cent is a reasonable estimate of the market risk premium.[334]

Lally holds a similar view. He notes the AER did not estimate the long run average value for the MRP. The AER uses results from both forward looking methods and historical averaging of excess returns

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329 Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 4*, 11 January 2012, paragraphs 145 and 148.

330 Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3) ACompT 12,* 8 June 2012, paragraphs 105–8.
Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14,* 26 July 2012, paragraphs 161–3.

331 CEPA, *Advice on estimation of the risk free rate and market risk premium, report prepared for the Australian Energy Regulator*, 12 March 2013, p.23.

332 CEPA, *Advice on estimation of the risk free rate and market risk premium, report prepared for the Australian Energy Regulator*, 12 March 2013, p.60.

333 The AER does not use utility based methods of the MRP as a distinct method on its own. Rather, the AER's application of utility theory has been in relation to assessing the reasonableness of historical excess returns as a forward looking estimate of the MRP. McKenzie and Partington found this utility theory suggests that historical risk premia are too high and therefore historical excess returns may overstate a forward looking MRP. See: M. McKenzie, and G. Partington, *Report to Corrs Chambers Westgarth: Equity market risk premium*, 21 December 2011, pp.4-8 and p.36.

334 McKenzie and Partington, *Review of the AER's overall approach*, February 2013, pp. 30-31.

for estimating the MRP and the results from forward looking methods unambiguously constitute estimates of the prevailing rather than the long-term average value for the MRP.[335]

In estimating the MRP, Lally favours an approach that minimises the mean squared error[336] and this leads to a consideration of the results from a wide range of methods. These methods include the historical averaging of excess returns (6 per cent), the historical average of excess returns modified for the "great inflation shock" in the 20th century (4.9 per cent), the result from the DGM approach (5.9-8.4 per cent), and the result from surveys (up to 5.9 per cent).

The median[337] of these approaches is 6.0 per cent. Lally notes a wide range of other methods are available and the cut-off point is a matter of judgement. If the historical average real market return[338] (favoured by Gregory and Wright) is considered, the estimated nominal MRP is about 8%. Adding this to the other methods, the median of these five approaches is still 6%.

Lally also considers that evidence from foreign markets may also be considered. For the first, second and fourth of the five methods described above, the cross-country averages are 6.0%, 4.0%–5.0%, and up to 5.8%. These additional results are consistent with those for Australia and therefore Lally considers these reinforce the conclusion that the appropriate MRP estimate for Australia at the present time is 6.0 per cent.[339]

Relationship between the risk free rate and market risk premium

CEPA noted the relationship between the risk free rate and the MRP is difficult to test empirically as the MRP is unobservable and any regressions would rely on developing a robust/consistent time series of investors' expectations. As such, the arguments presented by academics, regulators and companies have tended to be more indirect, and conclusions have therefore been presented in more uncertain terms. As a result, CEPA considered there is not enough evidence to justify making a firm conclusion about the relationship between the risk free rate and the MRP.[340]

McKenzie and Partington performed a comprehensive literature review on the relationship between the risk free rate and the MRP. Despite the strong support of a negative relationship by APA GasNet's consultants, they found both a positive and a negative relationship is possible. Therefore they concluded the relationship between the MRP and the level of interest rates is an open question. They considered submissions received from APA GasNet in support of such a relationship are not sufficiently well established to form the basis for a regulatory adjustment to the MRP.[341] AER outlines and considers further McKenzie and Partington's report in appendix B.3.3. McKenzie and Partington's review of the academic literature on the theoretical and empirical evidence on the stability of the cost of equity, and on the relationship between the risk free rate and MRP, was more comprehensive than the review of the academic literature in any of the consultant reports submitted by APA GasNet. For this reason, among others discussed in appendix B, the AER has relied on the conclusion of McKenzie and Partingon's report over the conclusion from the reports submitted by APA GasNet.

Lally reviewed evidence presented by CEG, Wright, Gregory, SFG and NERA in support of a stable cost of equity or a negative relationship between the risk free rate and MRP. He identified numerous

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335 Lally, *Review of the AER's methodology*, March 2013, pp.5-6.
336 The MSE is the average over the squared differences between estimated value and the true value.
337 Lally explained, as some methods provide estimated ranges rather than point estimates, the mean cannot be determined and therefore the median is considered. Lally, *Review of the AER's methodology*, March 2013, p. 32.
338 This approach is discussed in appendix B.
339 Lally, *Review of the AER's methodology*, March 2013, pp.38.
340 CEPA, *Advice on estimation of the risk free rate and market risk premium,* March 2013, p.25.
341 McKenzie and Partington, *Review of the AER's overall approach*, February 2013, pp. 21-28

problems in the evidence presented by APA GasNet's consultants.[342] In addition, Lally applied Australian data using Wright's approach and found the time-series of MRP estimates is much more stable than that for the average real market return, and therefore supports estimating the MRP rather than the real market cost of equity from historical data.[343] While Lally noted there may be a negative relationship between the real risk free rate and the MRP, it isn't sufficiently strong to suggest the real market cost of equity is more stable than the MRP.[344] The AER further considers Lally's report in appendix section B.3.3.

The concerns raised by Lally and McKenzie and Partington on the consultant reports submitted by APA GasNet are relevant. Based on their advice, the AER concludes the theoretical and empirical evidence is not sufficiently strong in support of a relatively stable cost of equity or a strong negative correlation between the risk free rate and the MRP. Accordingly, the AER concludes its approach in estimating the cost of equity produces a reasonable cost of equity estimate that is commensurate with the prevailing conditions in the market for funds.

Recent practice among Australian regulators

Australian regulators consistently applied an MRP of 6 per cent in recent regulatory decisions. 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 a long term forward looking MRP (for example, 10 years) rather than a short term forward looking MRP (for example, one year). As a result, short term MRP estimates have little relevance.
- The MRP is for a domestic CAPM, which means the relevance of overseas evidence depends on the similarities between overseas and domestic market conditions, and consequently may have limited relevance.[345]

342 Lally, *Review of the AER's methodology*, March 2013, pp.8-18.
343 Lally, *Review of the AER's methodology*, March 2013, p.13. .
344 Lally, *Review of the AER's methodology*, March 2013, pp.16..
345 For example, Lally considers and compares evidence on the MRP based on domestic and overseas data.

Table 5.5 sets out the MRP adopted recently by Australian state and territory regulators responsible for economic regulation across the electricity, water and rail industries.

Table 5.5 Recent regulatory decisions

Regulator	Decision date	Sector	MRP (%)
ESCOSA	February 2012	Water	6.0
QCA	May 2012	Water	6.0
ESCV	June 2012	Rail	6.0
IPART	June 2012	Water	5.5–6.5
IPART	June 2012	Water	5.5–6.5
ERA	September 2012	Electricity	6.0
QCA	December 2012 (draft decision)	Water	6.0

Source: ERA, ESCV, QCA, IPART, ESCOSA.[346]

In the DBNGP matter, the Tribunal commented on the desirability of regulatory consistency:[347]

> The Tribunal regards regulatory consistency as a laudable objective, provided the particular regulator (in this case the ERA) independently fulfils its decision-making functions and responsibilities. Each regulator must do so in the context of the particular applicable legislation, and in the context of the particular issue and relevant material on that issue. The NGL under the NGA WA Act, the National Gas Law and the NGR are in most respects the same. It is not therefore surprising that the ERA should be aware of decisions of the AER, and vice versa, on particular provisions which have to be addressed. It is to be expected, in such circumstances, that experienced and well qualified regulators would also reach similar conclusions on such matters. It is to the benefit of providers of regulated services, the users of those services, and the community that—where appropriate—regulatory consistency should exist.

The AER has independently reached its conclusion by exercising its judgment on the evidence presented above. The AER has reached a similar conclusion on the MRP as that reached by state regulators. Like the AER, the ERA and QCA have consistently applied an MRP of 6.0 per cent over the recent years. While IPART has consistently set the boundaries of its WACC range by applying an MRP in the range of 5.5-6.5 per cent and a prevailing (low) risk free rate, it has chosen an overall WACC point estimate towards the top of its WACC range due to the current low risk free rate. The AER discusses the approaches of ERA, QCA and IPART in detail in appendix B. In appendix B, the AER also considers the approaches of UK and US regulators.

5.3.4 Equity beta

The AER accepts APA GasNet's proposed equity beta of 0.8 in its revised access arrangement proposal.

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

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346 Essential Service Commission of South Australia (ESCOSA), *Final Advice:* Advice on a Regulatory Rate of Return for SA Water, February 2012, p. 50; Queensland Competition Authority, *Final Report:* SunWater Irrigation Price Review: 2012–17, Volume 1, May 2011, p. 503; Essential Service Commission of Victoria (ESCV)), *V/line access arrangement final decision*, June 2012, p. 208. Independent Pricing and Regulatory Tribunal (IPART), *Water – Final report:* Review of prices for Sydney Water Corporation's water, sewerage, drainage and other services: From 1 July 2012 to 30 June 2016, June 2012, pp. 198, 204; IPART, *Water – Final report: Review of prices for Sydney Catchment Authority: From 1 July 2012 to 30 June 2016,* June 2012, pp. 90, 118, 123; ERA, *Final decision on proposed revisions to the access arrangement for the* Western Power network submitted by Western Power, 5 September 2012, p. 241. QCA, *Draft Report:* Seqwater Irrigation Price Review: 2013–17, Volume 1, December 2011, p. 259.

347 Australian Competition Tribunal, Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14, 26 July 2012, paragraph 333.

In the draft decision, the AER agreed with APA GasNet's proposed equity beta of 0.8. The AER agreed with this value because the empirical evidence indicated a point estimate of between 0.4 and 0.7 for the equity beta of electricity and gas service providers.[348] Adopting 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.[349] The AER's full reasons are set out in its draft decision.[350]

APA GasNet also adopted an equity beta of 0.8 in its revised access arrangement proposal.[351] The AER is not aware of any new information that causes it to depart from its draft decision position. Accordingly, the AER accepts APA GasNet's 0.8 equity beta in its revised proposal.

5.3.5 Debt risk premium

The AER accepts APA GasNet's proposed DRP method in its revised access arrangement proposal.

The DRP is the margin above the nominal risk free rate that a debt holder would require to invest in the debt issued by a benchmark efficient service provider. Combined with the nominal risk free rate, the DRP represents the return on debt and is an input into the rate of return.

In the draft decision, the AER agreed with APA GasNet's proposed benchmark and method for estimating the DRP.[352] APA GasNet also adopted the same benchmark and method in its revised access arrangement proposal.[353] For this final decision, the AER has updated APA GasNet's proposed DRP to reflect the agreed averaging period.[354] This results in a DRP of 3.46 per cent.[355]

In assessing APA GasNet's proposal, the AER also took into account recent market evidence. This includes two debt issuances by the APA Group.[356] The AER, however, considers that the available market evidence is of limited use. The reasons for this are discussed in greater detail in section B.7.2 of the appendix, and include:

- the financing costs of a single entity should not be considered to be reflective of either the market as a whole, or the benchmark regulatory firm
- the available market evidence does not match the characteristics of the benchmark firm (or debt issuance).

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348 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

349 Most Australian regulators had previously provided electricity and gas service providers with an equity beta of either 0.9 or 1.0.

350 AER, *Drat decision: APA GasNet*, September 2012, pp. 100-102.

351 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 35.

352 The AER made minor amendments to the bond sample selected by APA GasNet for the extrapolation of the Bloomberg fair value curve. However, these amendments were to achieve consistency with the bond selection criteria proposed by APA GasNet. See section 4.3.6 of the draft decision for a detailed explanation. AER, *Drat decision: APA GasNet, Part 2 attachments*, September 2012.

353 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, pp. 39-40.

354 The agreed averaging period was from 13 September 2012 to 26 September 2012.

355 For clarity, the paired bonds used to extrapolate the Bloomberg fair value curve in this final decision are the pair of Stockland bonds (maturing in 2016 and 2020), and the pair of Sydney Airport Finance bonds (maturing in 2015 and 2021). Estimated yields from both UBS and Bloomberg are available for the Stockland issuances, while only UBS data is available for the Sydney Airport Finance bonds. Each bond pair has been given equal weight in determining the extrapolation adjustment. That is, the Stockland spreads have been averaged to determine a single estimate, with this estimate subsequently averaged with the single Sydney Airport estimate.

356 In September 2012, the APA Group completed the issuance of $515 million of subordinated notes in Australia. This hybrid capital was issued at 450 basis points above the BBSW. Shortly thereafter, in November 2012, the APA Group raised £350 million of debt financing in the UK. The APA Group swapped this debt into AUD at an average fixed rate of 7.36 per cent.

The AER also considered the submission by the Energy Users Coalition of Victoria—that the Bloomberg BBB fair value curve overcompensated service providers for their actual cost of debt.[357] The AER stated in its draft decision that it intends to undertake a review into alternatives to the Bloomberg fair value curve. The AER considers that the current development of the rate of return guidelines represents the most appropriate forum to consider these alternatives.

5.3.6 Rate of return for speculative capex account

Rule 84 provides for the inclusion of a speculative capex account in a full access arrangement. Under rule 84, an access arrangement may provide that the amount of non-conforming capex, to the extent not recovered through a surcharge or capital contribution, may enter into the speculative capital expenditure account. While in the account, the capex increases at a rate determined by the AER. If at any time the type or volume of services changes so that capex becomes conforming, then the value of the conforming capex plus the accrued return is rolled into the RAB at the commencement of the next access arrangement period.[358] Rule 84 is a full discretion provision.

APA GasNet did not comment on the AER's draft decision for the rate of return on speculative capex. In the draft decision, the AER considered that different speculative capex projects may have different risks, and hence it may be appropriate to set different returns. Aligning the rate of return with the risk profile of the particular speculative capex would promote efficient investment in services. As APA GasNet had not proposed or identified any speculative capex, the AER did set a rate of return on the speculative capex account.[359]

The AER still considers that its draft decision position is appropriate. The AER would need to know the nature of the capex to determine how risky such capex would be, before it could set a return that would compensate for the risk. APA GasNet has still not proposed any speculative capex in its revised proposal, and as noted, it did not comment on the AER's draft decision. Therefore, the AER will not set a rate of return until it is aware of speculative capex.

The AER outlined, in its draft decision, that although it need not set a rate of return on the speculative capex account, it would not have accepted APA GasNet's proposed return on the basis of the information provided in APA GasNet's initial proposal.[360] This was because:[361]

- APA GasNet did not provide a strong rationale for why 1.2, specifically, is an appropriate equity beta for its speculative capex account. The justification presented by APA GasNet for this quantification was based on a misrepresentation of its own proposal.
- APA GasNet did not propose or identify any speculative capex that would be added to the account and therefore it was not clear to the AER that investment in the speculative capex account faces greater risk such as to warrant a different equity beta than provided for reference services.

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357 Energy Users Coalition of Victoria, *Submission to the AER: APA GasNet access arrangement proposals*, June 2012.

358 NGR, r. 84

359 AER, Draft decision, *APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017 Part 2 attachments,* September 2012, p. 107.

360 AER, Draft decision, *APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017 Part 2 attachments*, September 2012, p. 107. APA GasNet proposed to set the return on the speculative capex account based on the WACC for regulated services but to use an equity beta of 1.2 rather than 0.8.

361 AER, Draft decision, *APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017 Part 2 attachments*, September 2012, p. 107.

- If investment in the speculative capex account does face greater risk, it is not clear to the AER that the risk is driven by systematic risk factors. Under the Sharpe Lintner CAPM, only systematic risk is compensated for.

For this final decision, determining a specific rate of return is still not required. However, the AER maintains its view from the draft decision that when the time comes to set a rate of return on speculative capex, APA GasNet would need to provide more analysis and explanation than it provided in its initial proposal, to justify a return higher than that for reference services.[362]

5.3.7 Forecast inflation

The AER accepts APA GasNet's proposed inflation forecasting method in its revised access arrangement proposal.

This methodology is based on the geometric average of:

- the RBA's most recent inflation forecasts for the longest period available (two years), and
- the mid point of the RBA's inflation targeting band for a further eight years.

Following this method, in this final decision, the AER adopts a 10 year forward looking inflation forecast of 2.50 per cent. This result is shown in Table 5.6.

In the draft decision, the AER agreed with APA GasNet's proposed inflation forecasting method. APA GasNet's proposed method was consistent with that adopted by the AER in previous decisions. APA GasNet also adopted the same method in its revised access arrangement proposal.

Since the draft decision, the RBA released its February 2013 *Statement on Monetary Policy* which includes updated inflation forecasts for 2013 and 2014. As indicated in the draft decision, the AER has updated the RBA's short term inflation forecasts based on the most recent RBA statement available at the time of the final decision.

Table 5.6 AER inflation forecast (per cent)

	2013	2014	2015 to 2022	10 year forecast (Geometric average)
Forecast inflation	2.50 [a]	2.50[a]	2.50	2.50

Source: RBA, Statement on Monetary Policy, February 2013, p. 65.
Notes: (a) The RBA published a range of 2-3 per cent for its 2013 and 2014 forecast inflations. The AER has selected the mid-point of 2.5 for the purposes of this final decision.

5.3.8 Gearing ratio

The AER accepts APA GasNet's proposed gearing ratio of 60 per cent in its revised access arrangement proposal.

The gearing ratio is the ratio of the value of debt to total capital (that is, both debt and equity) and is used to weight the cost of equity and cost of debt when determining the rate of return. Under NGR, in

[362] AER, Draft decision, *APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017 Part 2 attachments*, September 2012, p. 107-8..

determining the rate of return, it is assumed the service provider meets benchmark levels of efficiency and uses a financing structure that meets benchmark standards as to gearing for a going concern.[363]

In the draft decision, the AER agreed with APA GasNet's proposed gearing ratio of 60 per cent. The AER agreed with a 60 per cent gearing ratio because this level is supported by relevant available empirical evidence.[364]

APA GasNet also adopted a gearing ratio of 60 per cent in its revised access arrangement proposal.[365] The AER is not aware of any new information that causes it to depart from its draft decision position. Accordingly, the AER accepts APA GasNet's 60 per cent gearing ratio in its revised proposal.

5.3.9 Reasonableness checks on overall rate of return

The AER considers the approach in this decision provides a reasonable estimate of the benchmark rate of return. At the same time, the AER recognises that while the overall rate of return in this decision is similar to that in recent decisions, it is lower than that in previous decisions. There is no single robust method for estimating the overall rate of return. However, the AER's reasonableness checks suggest that the overall rate of return broadly accords with market expectations.

Techniques available to assess the overall rate of return can produce a range of plausible results. Each of these techniques has weaknesses that prevent them from being given significant weight. Nevertheless, they do provide a useful reasonableness check for the AER's primary approach. The AER examined:

- assets sales
- trading multiples
- broker WACC estimates
- recent decisions by other regulators
- the relationship between the cost of equity and the cost of debt.

For this final decision, the AER determines an overall rate of return using a nominal vanilla WACC of 7.22 per cent. This is based on a cost of equity of 8.02 per cent, a cost of debt of 6.68 per cent and a gearing level of 60 per cent. The cross checks listed above suggested the regulated rate of return is not unreasonable:

- Recent regulated assets have generally been sold at a premium to the RAB. In addition, recent RAB trading multiplies are consistently greater than one (averaging around 1.2). This evidence provides the AER with a degree of confidence that its current approach in calculating the rate of return is reasonable.
- The overall rate of return does fall below the range of estimates found in broker reports (7.38-10.02 per cent). The lower bound of this range has decreased from the draft decision due to lower WACCs in more recent broker reports. The upper bound was calculated from a less recent report

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363 NGR, r.87(2)(a).

364 AER, Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters, 1 May 2009, p. 126.

365 APA GasNet, *Revised Access Arrangement Proposal*, 9 November 2012, p. 35

dated October 2012[366], and if this one report was excluded the upper bound would reduce to 9.52%. However, the AER notes the broker WACC technique is subject to known limitations and inherent imprecision. Further, broker WACC estimates of themselves do not demonstrate the overall rate of return is unreasonable, given this is the only aspect of the reasonableness check that has indicated a potential concern.

- While the overall rate of return is lower than AER decisions from more than a year ago, it is in line with recent regulatory decisions made by other Australian regulators (5.78–8.65 per cent). It is also in line with other recent AER decisions.
- The cost of equity determined by the AER is greater than the cost of debt. This accords with what is expected according to finance theory, given investment in equity is more risky than investment in debt.

Appendix B.7.2 explores each overall rate of return reasonableness check technique in detail.

5.4 Revisions

The AER proposes the following revisions to make the access arrangement acceptable.

Revision 5.1

Make all necessary amendments to reflect the AER's final decision on the rate of return on capital for the access arrangement period, as set out in Table 5.1 of this attachment.

366 AER analysis based on Goldman Sachs, *APA Group: Non cash significant item leads to FY13 EBITDA guidance upgrade*, 24 October 2012, p. 2.

6 Regulatory depreciation

The AER must approve a service provider's depreciation schedule.[367] The depreciation schedule reflects the expected economic lives of the assets in the capital base and the depreciation approach adopted. Asset values change due to depreciation over the access arrangement period. This affects the return on capital a service provider receives. Depreciation (or return of capital) is also a building block in the total revenue requirement.

Regulatory depreciation typically has two components; a straight-line depreciation allowance (calculated by dividing the asset value by its economic life) and an offsetting inflation adjustment for indexation of the asset's values.[368] This is the standard approach that the AER has approved for all gas transmission and distribution access arrangement decisions to date.[369] In this attachment, the AER sets out its concerns with APA GasNet's proposal that assets values be unindexed. The proposal means there would be no indexation adjustment in the regulatory depreciation calculation. It would result in a significantly different cash flow profile than APA GasNet's current approach. The AER also sets out its consideration of specific matters that affect the estimate of regulatory depreciation over the 2013–17 access arrangement period. These include:

- the standard economic lives for depreciating new assets associated with forecast net capex
- the remaining economic lives for depreciating existing assets in the opening capital base.

6.1 Final decision

The AER does not approve APA GasNet's revised proposed regulatory depreciation allowance of $136.3 million ($nominal) for the 2013–17 access arrangement period. The AER's final decision on APA GasNet's total regulatory depreciation allowance over the 2013–17 access arrangement period is $56.3 million ($nominal) as shown in Table 6.1. This represents a reduction of $80 million ($nominal) or 59 per cent of the total regulatory depreciation allowance proposed by APA GasNet in its revised proposal.

The AER accepts APA GasNet's revised proposal on the standard economic lives with one exception. As discussed in attachment 4, the AER does not approve APA GasNet's revised proposal for an equity raising cost allowance. Therefore, the AER considers a standard economic life for amortising the equity raising cost is not necessary. Further, the AER accepts APA GasNet's revised proposed method for calculating the remaining economic lives as at 1 January 2013. This method in the revised proposal reflects the revisions proposed by the AER in its draft decision. Based on the roll forward of the capital base (discussed in attachment 3) and the method in the revised proposal, the AER has updated the remaining economic lives as at 1 January 2013 for this final decision.

The AER does not approve APA GasNet's proposed change of depreciation approach over the 2013–17 access arrangement period. The AER considers that APA GasNet's proposal to not index the asset values does not meet the requirements of the NGR which require tariffs to vary, over time, in a way that the promotes efficient growth in the market for reference services.[370] The AER considers

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367 NGR, r. 76(b).

368 This adjustment is necessary where a nominal rate of return, rather than real rate of return, is used and the asset values are indexed.

369 For example, APT Allgas and the Roma to Brisbane Pipeline (RBP) access arrangements used the standard approach. See the final decision Post-tax revenue model for RBP at http://www.aer.gov.au/node/5197.

370 NGR, r. 89(1)(a).

that the proposed approach leads to tariffs varying, over time, in a way that promotes inefficient growth in the market for reference services.

Considering the modelling scenarios presented in APA GasNet's proposal, the AER's analyses show that APA GasNet's proposed approach would lead to substantially higher tariffs for customers over the next three access arrangement periods. This is despite the expectation of falling demand in the short run and relatively subdued demand over the medium term. The standard approach, which is consistent with APA GasNet's current approach, leads to tariffs tracking forecast cost changes over time. However, APA GasNet's proposed approach results in higher starting tariffs that decrease regardless of the direction of costs in the scenarios modelled. This does not send an appropriate signal for asset utilisation. These scenarios are discussed further below.

Further, the AER considers that the change of approach is not an efficient response to emerging capacity constraints. The AER engaged Frontier Economics (Frontier) to review APA GasNet's analysis. Frontier found the claim of constraints to be overstated and that demand over the medium term is likely to be subdued. Where constraints are emerging, they are localised. A change of depreciation approach is not an efficient or effective response to such issues.

APA GasNet should not be using the depreciation approach to increase its cash flows to offset falls in other building block costs (such as the return on capital). Its reasonable cash flow needs do not require the change of depreciation approach. Such short term objectives can also lead to cash flow problems in the future.

The AER has made adjustments to other building blocks that have had a consequential effect on the forecast regulatory depreciation allowance. These are discussed in other attachments and include:

- roll forward of the opening capital base (attachment 3)
- forecast capex (attachment 4).

Table 6.1 AER's final decision on APA GasNet's depreciation allowance ($million, nominal)

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	24.7	26.2	30.2	31.9	30.5	143.5
Less: indexation on opening capital base	15.4	16.0	18.3	18.7	18.7	87.2
Regulatory depreciation	9.3	10.2	11.9	13.2	11.8	56.3

Source: AER analysis.

6.2 Revised proposal

APA GasNet's revised proposal on the forecast regulatory depreciation allowance over the 2013–17 access arrangement period is $136.3 million ($nominal).[371] To calculate the revised proposed depreciation allowance, APA GasNet proposed:

- to adopt the standard economic lives as set out in the AER's draft decision. APA GasNet's revised proposal also adopted the AER's required input changes to its roll forward model (RFM) used to calculate the remaining economic lives as at 1 January 2013.

[371] APA GasNet, *Revised PTRM*, November 2012.

- to depreciate a historical cost capital base using straight-line depreciation. But, APA GasNet's proposed approach does not involve indexation of the capital base for inflation. Therefore, the estimate of straight-line depreciation would equal the regulatory depreciation allowance because there is no offsetting indexation adjustment.[372]

Table 6.2 APA GasNet's revised proposed depreciation allowance ($million, nominal)

	2013	2014	2015	2016	2017	Total
Depreciation allowance	24.7	25.5	28.8	29.6	27.6	136.3

Source: APA GasNet, *Revised proposal PTRM*, November 2012.

6.3 Assessment approach

The AER's assessment approach for the regulatory depreciation allowance is set out in its draft decision. See section 5.3, attachment 5 of the draft decision for a detailed explanation of the assessment approach. The AER has limited discretion under the NGR[373] and has assessed APA GasNet's proposal against the criteria in r. 89. Criteria of relevance in the present circumstances are r. 89(1)(b) (relevant to assessing the assets economic lives), and r. 89(1)(a) and r. 89(1)(e) (relevant to the proposed depreciation approach).

The AER engaged Frontier to review APA GasNet's and PricewaterhouseCooper's (PwC) analysis on APA GasNet's proposed change of depreciation approach. The AER gave APA GasNet the opportunity to comment on the Frontier report. Frontier then also submitted a second (rejoinder) report to provide further clarification on its position in response to APA GasNet's comments.

The AER received submissions from the Energy Users Coalition of Victoria (EUCV) and ATCO Gas Australia (who commissioned a report from NERA) on this matter.

6.4 Reasons for decision

The AER has calculated a total regulatory depreciation allowance over the 2013–17 access arrangement period of $56.3million ($nominal) for APA GasNet, as shown in Table 6.1. This represents a reduction of $80 million ($nominal) or 59 per cent of the total regulatory depreciation allowance proposed by APA GasNet in its revised proposal. The AER accepts APA GasNet's revised proposal on the standard economic lives except for the 'Equity raising cost' asset class. For this final decision, the AER has updated the remaining economic lives due to its final decision on the roll forward of the capital base (discussed in attachment 3).

The AER does not approve APA GasNet's proposed depreciation approach. The AER considers that APA GasNet's proposed approach does not meet the requirements of the NGR which require tariffs to vary over time, in a way that promotes efficient growth in the market for reference services.[374] Nor does the AER consider the change of approach is necessary to support APA GasNet's reasonable cash flow needs.

Each of these issues is discussed in turn below. In addition, the AER has made changes to other components of APA GasNet's revised proposal that impact on the regulatory depreciation allowance,

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372 This approach is consistent with APA GasNet's original proposal.
373 NGR, rr. 40 and 89(3).
374 NGR, r. 89(1)(a).

such as the capital base and forecast capex allowance. These matters are discussed in other attachments.

6.4.1 Economic lives of assets

The straight-line depreciation component of regulatory depreciation is calculated by dividing the asset value for each asset class by its standard economic life (for new assets) or remaining economic life (for existing assets). The AER's final decision on APA GasNet's standard, and remaining, economic lives follows.

Standard economic life

The AER accepts APA GasNet's revised proposal on the standard economic lives except for the 'Equity raising cost' asset class. In the draft decision,[375] the AER considered that APA GasNet's proposed standard economic lives are consistent with the ACCC's approved standard economic lives for the 2008–12 access arrangement period.[376]

In its revised proposal, APA GasNet proposed a new asset class for amortising benchmark equity raising cost for the 2013–17 access arrangement period.[377] The AER does not accept the revised proposed 'Equity raising cost' asset class. This is because the AER does not consider that APA GasNet requires a benchmark equity raising cost allowance associated with its forecast capex for the 2013–17 access arrangement period (discussed in attachment 4). Therefore, there is no expenditure amount to be amortised for this asset class and a standard economic life is not necessary.

Remaining economic life

The AER accepts APA GasNet's revised proposal on the weighted average method to calculate the remaining economic lives as at 1 January 2013. Based on the AER's final decision on the roll forward of the opening capital base (discussed in attachment 3), the AER has updated the remaining economic lives for this final decision.

In the draft decision, the AER corrected a number of input errors in the APA GasNet's proposed RFM and accordingly updated the remaining economic lives as at 1 January 2013.[378] APA GasNet's revised proposal adopted all of these input changes, and continued to apply the weighted average method to calculate the remaining economic lives as at 1 January 2013.[379]

The AER's final decision on APA GasNet's remaining economic lives for the 2013–17 access arrangement period is set out in table 6.3.

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375 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 118-119.
376 ACCC, *Final decision: GasNet Australia—revised access arrangement 2008–12*, 30 April 2008, pp. 56-60.
377 APA GasNet, *Access arrangement revised proposal submission*, November 2012, pp. 30-33.
378 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 118-119.
379 APA GasNet, *Access arrangement revised proposal submission*, November 2012, p. 72.

Table 6.3 AER's final decision on APA GasNet's standard economic lives and remaining economic lives as at 1 January 2013 (years)

Asset class	AER final decision – standard economic life	AER final decision – remaining economic life
Pipelines	55	29.4
Compressors	30	23.7
City gates and Field regulators	30	24.1
Odourant plants	30	23.0
Gas quality	10	0.9
Other	5	4.1
General buildings	60	34.4
General land	n/a	n/a

Source: AER analysis.
n/a Not applicable.

6.4.2 Change of depreciation approach

Regulatory depreciation typically has two components:

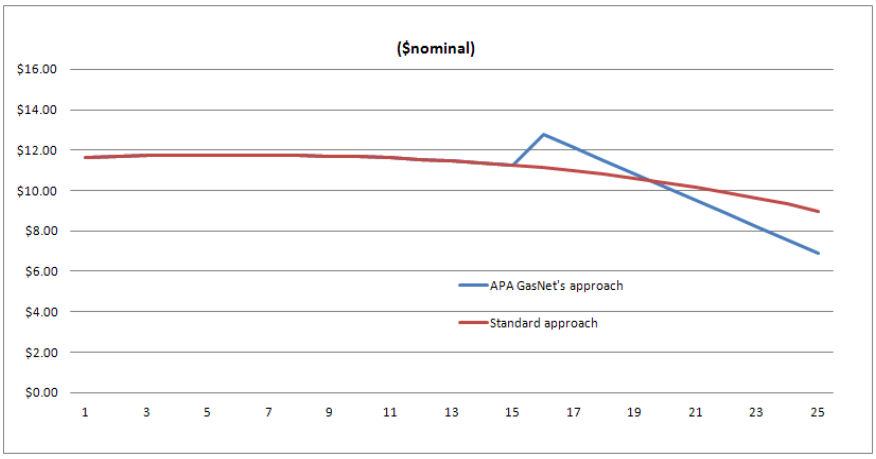
1. a straight-line depreciation allowance (calculated by dividing the asset value by its standard economic life (for new assets) or remaining economic life (for existing assets)); and
2. an offsetting inflation adjustment for indexation of the assets values. This adjustment is necessary where a nominal rate of return, rather than real rate of return, is used and the asset values are indexed.[380]

This is the standard approach that the AER has applied for all other gas transmission and distribution access arrangement decisions to date.[381]

However, APA GasNet proposed not to employ the second component. It proposes not to index its asset values for inflation. This is a change from APA GasNet's current depreciation approach for the 2008–12 access arrangement period. APA GasNet's current depreciation approach achieves the same cash flow profile as the standard approach.[382] During the 2008–12 access arrangement period APA GasNet's capital base was indexed for inflation and a real rate of return was applied to it to determine the return on capital. However, the proposed change of approach brings forward cash flows relative to the standard approach.[383] The impact of the change of approach can be illustrated for a single asset in figure 6.1. It is based on the example APA GasNet provided in its original proposal.[384]

380 This approach was illustrated in the AER's draft decision, section 5.4.1.
381 It is also the approach required for electricity transmission under the National Electricity Rules.
382 The consistency of the approaches was illustrated in the AER's draft decision, section 5.4.1.
383 This was illustrated in figure 5.1 for a single asset in the draft decision. AER, *Draft decision, Part 2 –Attachments*, p. 116.
384 APA GasNet, *Access arrangement submission*, March 2012, pp. 127-129.

Figure 6.1 Impact of change of approach to profile of revenue for a single asset



Source: AER analysis.

In the draft decision, the AER rejected APA GasNet's proposed change of approach.[385] The AER considered that tariffs would not vary, over time, in a way that promotes efficient growth in the market for reference services. This was based on consideration of a number of factors including:

- Inefficient asset utilisation–APA GasNet's proposed approach encourages under utilisation early in an asset's life (because tariffs are relatively high) and over utilisation near the end of its life (because tariffs are relatively lower), other things being equal.
- Unnecessary high prices in the short to medium term–These could discourage gas usage and downstream investment. The scenarios presented by APA GasNet below show it takes over thirteen years (fifteen years based on the final decision numbers) before tariffs under its proposed approach become lower than under the standard approach.
- Inefficient management of assets–Incentives to manage assets based on reasons other than the efficient provision of reference services. For example, given the historical cost value is not indexed for inflation over time, this could provide APA GasNet an incentive to realise any revaluation gain on the historical cost value by selling the assets or replacing them before the end of their useful life.

In its revised proposal APA GasNet disagreed with the AER's position in the draft decision to reject the proposed change of approach. APA GasNet stated that:[386]

- its network capacity is constrained at peak times and that price increases (or at least smaller falls) are an efficient response to this situation. The change of depreciation approach achieves this outcome
- there are future costs that should be reflected in tariffs today, so lower growth in tariffs will result in the future when costs rise. This is consistent with efficient growth in the market for reference services
- reductions in other building block costs (such as the return on capital) means APA GasNet will not recover reasonable cash flows without the change in depreciation approach.

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385 AER, *Draft decision, Part 2 – Attachments*, pp. 113-118.
386 APA GasNet, *Access arrangement revised proposal submission*, November 2012, pp. 74-81, 83-84.

The AER received limited reasoning in APA GasNet's original proposal for its proposed change of approach. APA GasNet presented a single asset example to show how switching between both approaches were net present value (NPV) neutral over the life of the asset. It also informed the AER it was seeking additional cash flow.[387] The AER considers that NPV neutrality is not equivalent to efficiency. Rule 89(1)(a) requires that a depreciation schedule should be designed so that tariffs vary, over time, in a way that promotes efficient growth in the market for reference services.

For this final decision, the AER has considered a variety of information and scenarios. APA GasNet presented various scenarios that extrapolated the tariff paths out over several access arrangement periods (based on allowances in the draft decision). It commissioned reports by PwC and Australia Ratings. APA GasNet also provided statutory declarations from two of its staff. Submissions were received from users (the EUCV) and a gas distributor (ATCO Gas Australia who commissioned a report from NERA) on this matter.

The AER engaged Frontier to consider the information put forward by APA GasNet, PwC and the statutory declarations. Frontier prepared a report on the points raised. APA GasNet was given the opportunity to comment on this report and it provided additional information including a new statutory declaration from one of its staff members,[388] and a response from PwC. Frontier was then also given an opportunity to respond to the additional information. All this information has been considered by the AER in forming its position.

The AER disagrees with the analysis presented by APA GasNet and the conclusions reached by PwC and Australia Ratings in their analyses. The AER considers that the proposed change in depreciation approach will not lead to reference tariffs varying, over time, in a way that promotes efficient growth in the market for reference services. Nor does it consider the change of approach needed to support APA GasNet's reasonable cash flow needs. A summary of each of these matters is discussed in turn below. Appendix D discusses these matters in greater detail.

Efficient growth in the market for reference services

The AER assessed whether the proposed change of approach would lead to tariffs varying, over time, in a way that promotes efficient growth in the market for reference services. It did so by:

- assessing the scope and size of any capacity constraints including consideration of the statutory declarations of APA GasNet's staff and Frontier's analysis
- calculating the impact of the change of depreciation approach. The size of this impact can be considered against the size and scope of the capacity constraints
- reviewing the scenarios presented by APA GasNet based on the numbers in the draft decision and PwC's submissions on the tariff profiles emerging from these scenarios
- rerunning the modelled scenarios using numbers from the revised proposal and this final decision
- considering other matters (for example, inflation protection under the two approaches, incentives to manage assets under the two approaches, and NERA's views on financing costs).

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387 AER, *Draft decision, Part 2– Attachments*, p. 114.
388 A correction to this statutory declaration was also subsequently provided.

General position

The AER considers that the standard depreciation approach will generally lead to tariffs varying, over time, in a way that promotes efficient growth in the market for reference services. In most circumstances this would imply that sunk costs are recovered as evenly as possible over an asset's life and that revenues (and tariffs) are relatively flat.[389] As the scale of operations change, the revenue (and tariff) path should shift up/down to reflect the new scale of operations. The standard depreciation approach achieves such outcomes.[390]

Importantly, the standard approach achieves this outcome regardless of the mix of asset ages, because the profile of recovery of costs for each asset is relatively flat. In contrast, the revenue (and tariff) path under APA GasNet's approach depends on the mix of assets and their remaining economic lives. APA GasNet's approach may achieve a relatively flat revenue (and tariff) path reflecting the scale of its operations. However, the mix of assets needs to be right to achieve this outcome. Therefore, the circumstances in which APA's approach will have this outcome are likely to be more limited and transient in nature than under the standard approach. Appendix D sets out the examples and results of the scenario modelling to substantiate these findings.

There are two situations where a flat tariff profile is unlikely to lead to efficient growth in the market. The first is the case of a new asset with little demand. This is not relevant in the present circumstances as APA GasNet's network is not new.[391]. The second case is where capacity is reached and no augmentation occurs. However, there a various responses to such capacity constraints. The response should reflect both the size of the problem and the cause of the constraint. The constraints vary by location and the standard used for assessing peak demand.[392] A change of depreciation approach would impact tariffs at all locations and all times of the day in the same way.[393] The AER considers APA GasNet's proposed approach would have an impact that far exceeds the potential cost increases resulting from capacity constraints. A change of depreciation approach would be an inefficient and potentially ineffective response to peak demand. APA GasNet could have proposed different tariff structures to deal with emerging localised constraints.[394] The AER would expect APA GasNet to target augmentation in localities where constraints emerge in the future.

More generally, the AER considers that efficient growth in the market for reference services requires variations in tariffs to reflect variations in costs in the short to medium term.[395] It does not preclude tariffs being reduced through a significant adjustment in tariffs from one access arrangement period to the next if an assessment of the efficient cost base has occurred.[396] The revenue reductions in the

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389 This is consistent with PwC's generalisation of the Ramsey pricing approach.

390 Tariffs need not step up the same amount, if the increased scale of operation is also reflected in increased demand. The impact of converting revenues to tariffs is the same under both approaches. Under both approaches, tariffs would decrease as economies of scale are realised and costs fall on a per unit basis.

391 This was acknowledged in the AER's draft decision. However, appendix D includes some further discussion on this matter, given that it was raised in a submission.

392 The statutory declarations and Frontier's analysis discusses the current and future scope for constraints across the South west Pipeline, Northern zone and Longford-Melbourne.

393 This is because the change of approach would increase the depreciation on all assets and therefore increase overall revenues and all tariffs.

394 Refer to appendix D for further discussion on this matter.

395 On occasion economists will make a distinction between the short run and long run. The distinction rests on what is considered in the assessments undertaken rather than the actual time period per se. For example, in the short run capacity may be fixed, but in the long run it would be variable. The AER has used here the additional concept of medium term to reflect that data limitations would hamper any assessment that attempts to forecast too far into the future. Costs become too speculative and lack regulatory scrutiny if a very long term view is taken on possible cost variations.

396 There is likely to be an asymmetry in customers' reactions to tariff reductions and tariff increases. A tariff reduction does not represent a shock to customers because budget constraints are not an issue. They can consider their response to the lower tariff and whether they wish to expand consumption. However, customers can be shocked by tariff increases due to their budget constraint. They may find it difficult to modify their behaviour by reducing consumption in the short run. With a given budget, other services or goods would have to be foregone for them to remain with their budget constraints.

draft decision (and this final decision) flow from the assessment of the efficient level of costs for each of the building block components. The straight-line depreciation allowance in the draft decision was comparable with that allowed for the 2008–12 access arrangement period.[397] There were reductions in certain building blocks—for example, a lower rate of return, actual capex less than forecast for the 2008–12 access arrangement period resulting in a lower opening capital base as at 1 January 2013. Some of these reductions reflect changes in market conditions. It is not efficient to use the depreciation approach to 'fill in' revenues due to changes in these efficient costs so as to maintain existing tariffs in the short to medium term.[398] At a high level, it is also not unexpected that tariffs in 2012, based largely on forecasts made five years ago, should require an adjustment.[399]

Assessing the impact of constraints over time

In assessing whether tariffs should rise to reflect emerging capacity constraints, it is important to have an idea of the likely impact those constraints would have on costs. Long run marginal costs (LRMC) can provide an analytical framework for assessing the likely cost impact of emerging constraints. Frontier, PwC and NERA all assessed the prospect for increasing tariffs by considering the expected changes in marginal costs or LRMC. LRMC will be relatively high if augmentation is currently high relative to historical levels. It will increase when augmentation exceeds current levels in response to emerging constraints. However, no consultant (or APA GasNet) provided any estimate of marginal costs or LRMC and the degree to which they are changing. Instead, they had differing qualitative views on how much marginal costs may be rising due to their perceptions of the constraints on APA GasNet's network.

The AER approves prices based on average costs and the scenarios presented by APA GasNet are all in terms of average costs. Average costs are typically well in excess of marginal costs, because average costs include not just variable costs but sunk costs.[400] The AER considers that LRMC would have to rise substantially relative to average costs before higher tariffs would be efficient, particularly if the adjustment is to occur across all tariffs. Based on the evidence submitted by both APA GasNet and Frontier, the AER is not satisfied that marginal costs will rise substantially over the short to medium term. It appears that any significant increase in LRMC is likely to occur well into the future.[401]

Impact of the proposed change

The impact of the proposed change of depreciation approach in terms of additional revenues based on numbers in the original proposal, draft decision, revised proposal and this final decision are presented in table 6.4. It shows the impact of the change of depreciation approach is significant. The quantum is also sensitive to changes in the underlying assumptions employed at each stage of the assessment process and the positions taken on other building block costs.

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397 There were relatively small differences due to APA GasNet underspending its capex allowance (and its capital base therefore being relatively lower than forecast) and some rebalancing of capex to assets with different economic asset lives. These economic lives were assessed above.

398 PwC characterised the change of depreciation approach as 'digging a hole' in the capital base to absorb future costs. PwC, *Depreciation of assets under the National Gas Rules*, November 2012, pp.13, 16.

399 In other regulatory decisions, revenues/prices have often increased significantly from the final year of one regulatory period to the first year of the next.

400 For networks, sunk assets typically represent the most significant proportion of total costs.

401 Frontier stated that LRMC will stay relatively low until the end of this decade and then begin to gradually rise from 2020s. Frontier, *APA GasNet proposed depreciation approach*, January 2013, p. 29. This position was further discussed in its rejoinder report. Frontier, *Rejoinder to APA GasNet response*, February 2013, pp. 13-15.

Table 6.4 Impact on revenues due to change in depreciation approach ($million, nominal)

	2013-17	2018-22	2023-27	2028-32
Original proposal				
Standard approach	665	781	1,027	1,321
APA GasNet approach	766	863	1,073	1,315
Difference ($m)	100	82	46	–6
Percentage (%)	15.1%	10.5%	4.5%	–0.5%
AER's draft decision				
Standard approach	467	562	681	818
APA GasNet approach	552	612	690	783
Difference	85	50	9	–36
Percentage (%)	18.1%	8.8%	1.4%	–4.3%
Revised proposal				
Standard approach	537	652	793	956
APA GasNet approach	625	701	797	910
Difference	88	49	4	–46
Percentage (%)	16.3%	7.5%	0.5%	–4.8%
AER's final decision				
Standard approach	487	584	713	865
APA GasNet approach	574	638	727	833
Difference	87	54	14	-32
Percentage (%)	17.9%	9.2%	2.0%	-3.7%

Source: AER analysis.

Under APA GasNet's approach it would receive additional cash flows in nominal dollar terms of about $87 million (or 18 per cent higher revenues), $54 million and $14 million over the next three access arrangement periods (2013–17, 2018–22 and 2019-27) respectively.

Capacity constraints

The AER considers that capacity concerns are insufficient to justify the proposed change of depreciation approach. APA GasNet may have some emerging capacity constraints. However, these constraints are localised and could be managed in various ways, including through tariff structures.[402] A change of depreciation approach is an inefficient response to the emerging areas of constraint. It would impact all tariffs and all customers regardless of where the constraints are emerging.

The impact of the change of approach is substantial when compared to the potential impact of the capacity constraints. For example, the change of depreciation approach would generate additional revenues over the next five years that are roughly as large as the entire cost of the Western Outer Ring Main (WORM) project, which is a major potential new project modelled in one of APA GasNet's scenarios.[403] Frontier's analysis suggests the extent of expected capacity constraint is not sufficient to increase LRMC significantly in the short to medium term.[404] PwC's submission that marginal costs are rising is not supported by data showing the financial impact of the emerging capacity constraints beyond the scenarios submitted by APA GasNet.

The high levels of utilisation shown in the statutory declarations of APA GasNet's staff depend on two important factors. They reflect: 1) the focus on peak demand, and 2) the standard used to determine whether full utilisation has been reached. On the first matter, utilisation rates will naturally look high if the only focus is on when demand is at its greatest during a day. Increased demand at off peak times can be accommodated on APA GasNet's network as utilisation rates overall are very low.[405] While peak demand is important, the AER considers it should not be the sole focus in determining the efficient operation of a network. It understates the scope for APA GasNet to manage constraints over the short to medium term, including through tariff restructuring.[406]

On the second matter, a relatively high planning standard (1-in-20 year peak demand) was used by APA GasNet for determining whether constraints exist or are likely to emerge.[407] This standard implies that the network has to have sufficient capacity to meet a 1-in-20 year peak demand. This would be a higher peak demand than a standard that assessed peak demand over a shorter period of time. The AER considers the planning standard APA GasNet used to determine capacity constraints is important for considering probable augmentation needs in the long run and therefore relevant to the determination of LRMC. However, it is a relatively high standard and again understates the scope for APA GasNet to manage constraints over the short to medium term.

Augmentation alleviates capacity constraints. APA GasNet underspent its capex allowance for the 2008–12 access arrangement period by about $45 million or 22 per cent. This suggests it could still defer investment over this period, despite any emerging constraints. For the 2013–17 access arrangement period, the AER has approved augmentation capex that it considers sufficient to prevent any inefficient constraints developing on the network out to 2017. Accordingly, there should be no immediate need for additional revenues (beyond the capex allowances in this final decision) to alleviate constraints.

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402 The tariff structures are discussed further in appendix D.

403 The costs of such large projects are usually recovered over the economic life of the asset which can be as much as 55 years for gas mains.

404 Frontier, *APA GasNet proposed depreciation approach*, January 2013, pp. 29, 33

405 APA GasNet, *Access arrangement information*, 31 March 2012, p. 15.

406 Shippers can also manage constraints by a number of means including injecting LNG or injecting gas from underground storage or curtailing their loads voluntarily at certain time.

407 The standard used for tariff setting is a 1-in-2 year peak demand.

Any future constraints cannot be managed effectively by raising cash flow today, as APA GasNet has little incentive to exceed its capex allowance.[408] However, APA GasNet has the ability to prioritise work within the capex allowance approved by the AER. In the scenarios modelled, the capex allowances for future access arrangement periods are assumed to be equivalent or greater than those in the draft decision. In these periods, these allowances should be sufficient to alleviate constraints. APA GasNet would also have flexibility to prioritise how these allowances are spent.

Over the medium term there is little prospect for a substantial increase in demand. The Frontier report (based on an interpretation of the AEMO data) supports this view.[409] The AER agrees with the EUCV's view that lower prices today would help maintain demand, that is, prevent demand falling further.[410] In other words, it would create allocative inefficiency to maintain tariffs at the previous higher levels.

Scenario modelling

APA GasNet modelled the expected tariff paths under both depreciation approaches over the next 20 years using different scenarios about the scope for future cost increases. APA GasNet presented four cost scenarios that included both smoothed and unsmoothed versions for each scenario. The AER considers the smoothed versions do not reflect how the AER conducts smoothing and are therefore confusing and potentially misleading.[411] They were not analysed in the PwC report or the Frontier reports. Accordingly, the AER has focused on the unsmoothed versions of the scenarios.

The scenarios modelled by APA GasNet were in nominal dollar terms. Analysis conducted in nominal or real terms can give very different pictures of future outcomes, particularly when a trend is being considered over several years. A dollar today is not worth the same as a dollar tomorrow. APA GasNet's conclusions in its revised proposal were based on the tariffs paths in nominal terms, submitting that its proposed approach will lead to relatively flat tariffs compared to the AER's approach.[412] The AER disagrees with the use of a nominal tariff path to assess the efficient tariff path. The AER agrees with PwC and Frontier that the analysis of the tariff path should be in real dollar terms.[413] The tariff profiles change significantly when the analysis is presented in real terms. Figure 6.2 shows the results for scenario 1 presented in both nominal and real terms.[414]

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408 Any spending above the capex allowance will only receive a return if and when it is included in the capital base. The earliest this would be is at the start of the 2018-22 access arrangement period.

409 Frontier, *APA GasNet proposed depreciation approach*, January 2013, p. 25.

410 EUCV, *Victorian gas transmission revenue reset draft decision by AER: a response*, January 2013, pp. 33-35.

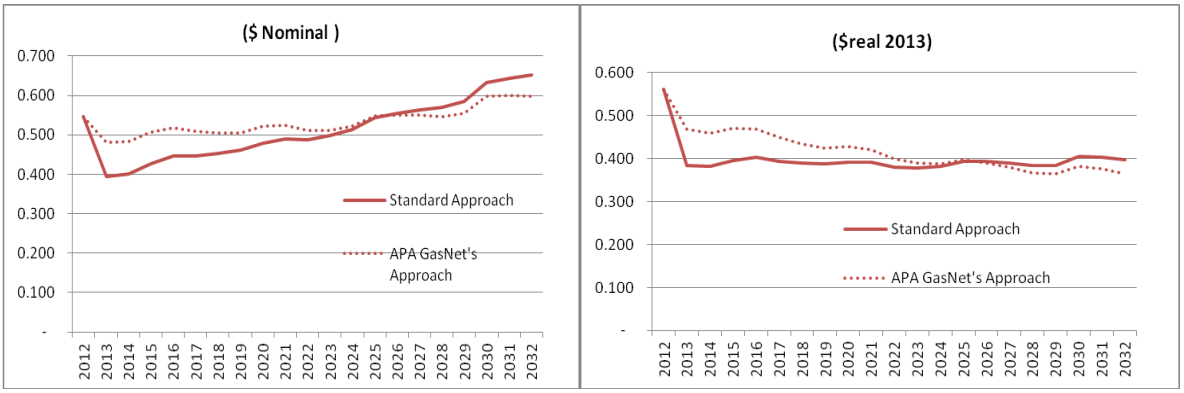
411 They are misleading in the sense that both depreciation approaches look equally bad in terms of smoothing prices and one may be lead to believe the choice of depreciation approach does not matter.

412 APA GasNet, *Revised proposal submission*, pp. 75-76.

413 PwC only presented the scenarios in real terms. See PwC, *Depreciation of assets under the National Gas Rules*, November 2012, p. 18. Frontier's report is consistent with PwC's approach in only discussing this matter in terms of real tariff changes.

414 Scenario 1 assumes the same real capex costs in draft decision for 2013–17 will occur in each subsequent period out to 2032, that real opex costs from 2017 are constant, and that the WACC is the same as in the draft decision.

Figure 6.2 Tariff paths under scenario 1 presented in nominal and real terms



The AER Fconsiders that the scenarios presented by APA GasNet show its proposed depreciation approach will not lead to reference tariffs varying, over time, in a way that promotes efficient growth in the market for reference services. Regardless of the scenario chosen as the best representation of the future costs, real tariffs decrease under APA GasNet's approach over the entire 20 years modelled, whereas real costs are either flat or increasing in those scenarios. In contrast, the standard approach (after an initial reduction in 2013 due to other cost reductions) leads to flat or increasing real tariffs consistent with all the scenarios presented and the cost trends assumed for each of those scenarios.[415] Frontier's report supports this assessment.[416] PwC's support for the declining tariff path under APA GasNet's proposed approach is inconsistent with the modelled cost trends. Contrary to PwC's suggestion it is neither flat in times of no constraint nor rising at times when constraints are expected to emerge (and therefore LRMC rise) in the future. Tariffs that track costs over the short to medium term encourage efficient utilisation of assets and provide an efficient signal as to the cost of service. The proposed approach does not do this.

APA GasNet and PwC submitted that scenario 4,[417] which has the highest future cost assumptions, is the appropriate scenario to use to assess the tariff path profile under the two depreciation approaches. The AER questions the level of costs assumed for scenario 4 and agrees with Frontier that they are likely to be overstated. Notwithstanding this, Frontier submitted that the tariff path under the standard approach in scenario 4 begins to rise at the time when LRMC is likely to begin to rise in the future.[418] In contrast, under the proposed approach the tariff path would still be downward sloping.[419] These results and detailed discussions are set out appendix D to this attachment.

The declining tariff path under APA GasNet's proposed approach becomes steeper if the scenarios are remodelled based on APA GasNet's revised proposal allowances, rather than the draft decision allowances. This shows the sensitivity of the APA GasNet approach to the assumptions on the size and timing of future costs. In contrast, the tariff path under the standard approach shifts up parallel and remains relatively flat if the revised proposal costs were accepted in full by the AER. This is shown in figure 6.3. It employs the same assumptions as in scenario 1.

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415 APA GasNet made a couple of errors in its modelling of the unsmoothed scenarios in relation to nominal depreciation and tax depreciation. However, these errors do not noticeably affect the overall tariff pattern in the scenarios presented by APA GasNet.

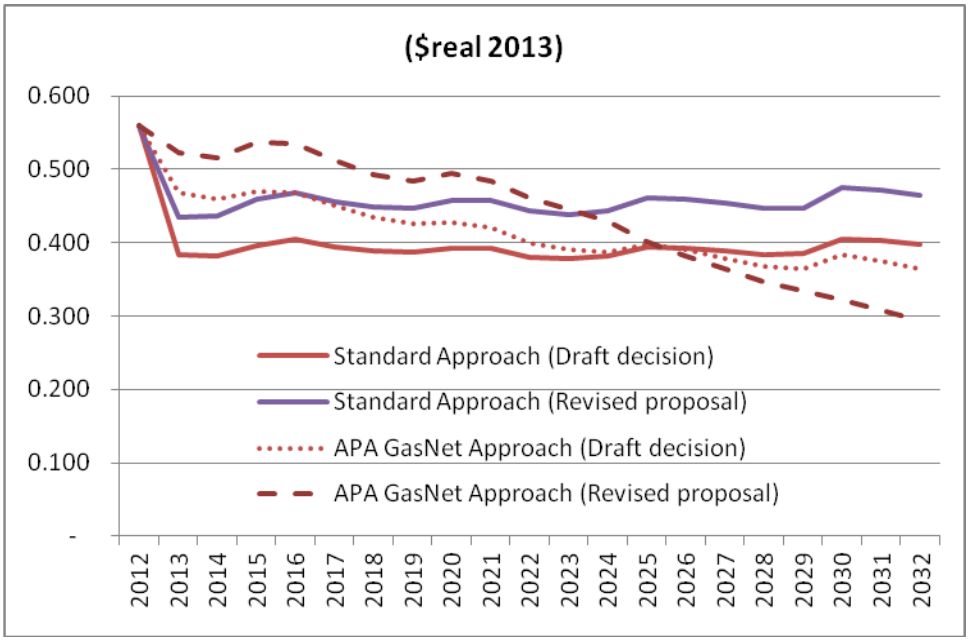
416 Frontier, *APA GasNet proposed depreciation approach*, January 2013, p. 33.

417 Scenario 4 assumes that real capex for each five year period from 2018–32 is the same as forecast for the 2013–17 plus additional capex for the WORM project in the 2018–22 access arrangement period, real opex is constant from 2018–32 based on the forecast allowance for 2017, and WACC rises from 7.22% to 7.93% from 2018–2032.

418 Frontier, *APA GasNet proposed depreciation approach*, January 2013, p. 33.

419 This tariff path was further discussed in Frontier's rejoinder report. Frontier, *Rejoinder to APA GasNet response*, February 2013, p.14.

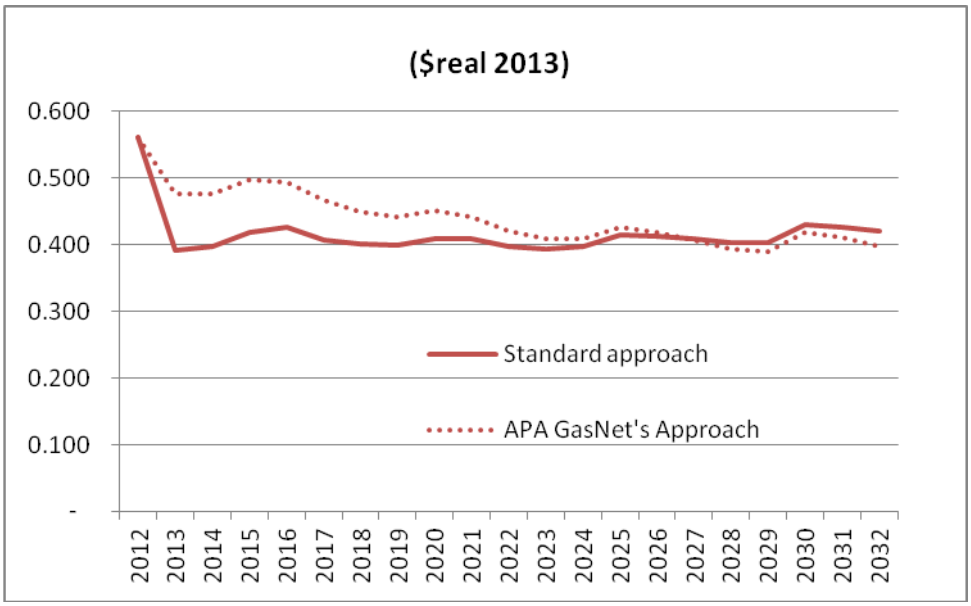
Figure 6.3 Tariff paths using draft decision and revised proposal data – scenario 1



Source: AER analysis.

For this final decision, the AER has again modelled the results that would emerge under scenario 1. The same pattern emerges as shown in figure 6.4. The cross over point in tariffs is later (in 2027), due to the AER accepting some additional costs between the draft and final decision.

Figure 6.4 Tariff paths using final decision data – scenario 1



Source: AER analysis.

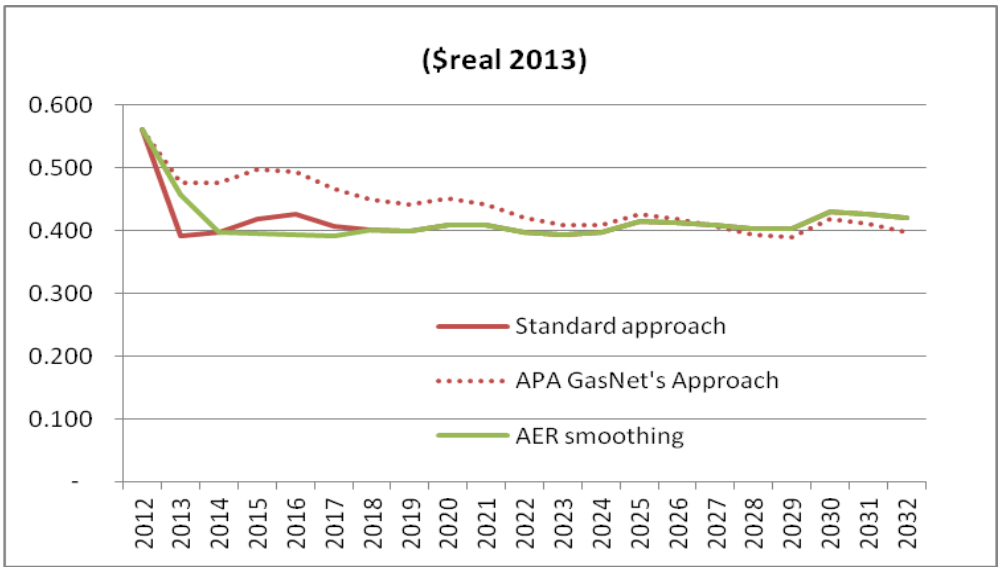
APA GasNet and PwC speculated on future costs beyond the scenarios they modelled. The AER considers these speculations are questionable. APA GasNet and PwC noted only potential sources for real cost increases in the future. But, they failed to mention any areas for potential real cost decreases or productivity improvement. The AER considers that regulatory scrutiny of future costs is important for efficient growth of the market for reference services. There will be a number of access

arrangement reviews conducted during the period of analysis used for the scenarios. Further assessment of future costs cannot be made with any degree of certainty at this time.

APA GasNet and PwC are critical of the significant tariff adjustment in 2013. However, the AER considers the adjustment to be an efficient response in the circumstances. It is not efficient to maintain high prices by increasing depreciation to offset decreases in other building block costs. The EUCV highlighted that under APA GasNet's original proposal, its change of depreciation approach would have lead to significant tariff increases in 2013, rather than the decreases that emerge after the AER adjusted other building block costs in the draft decision.[420] The increase in tariffs would have been 8.8 per cent from 2012 to 2013. The EUCV also highlighted the expected lower demand over the next few years.[421] The AER agrees that falling prices are an efficient response to falling demand.

When the AER smooths tariffs within the access arrangement period, it aims for as flat tariff profile as possible, subject to the smoothed and unsmoothed revenues being reasonably close in the final year of the period (2017 in this case).[422] This approach has been used in all electricity and gas network decisions to date.[423] As noted above, APA GasNet made an error in its smoothing scenarios. In the present circumstances, the smoothing approach requires a significant adjustment to 2013 tariffs. In the draft decision, the entire adjustment was made to 2013 tariffs. However, there is some scope for the final decision to further smooth 2013–17 tariffs for customers by shifting some of the real tariff reduction to 2014 (13 per cent real reduction) and 2015 (3 per cent real reduction). This then allows zero per cent real tariff changes for 2016 and 2017. This approach reduces the immediate cash flow impact to APA GasNet such that the fall in smoothed revenues for 2013 is not as great as required under the unsmoothed building block revenue requirement. The smoothed tariff path is shown in the figure 6.5. It overlays the unsmoothed results shown above in figure 6.4.[424]

Figure 6.5 Tariff paths using smoothed revenue from final decision – scenario 1



Source: AER analysis.

420 EUCV, *Victorian gas transmission revenue reset draft decision by AER: a response*, January 2013, p. 35.
421 EUCV, *Victorian gas transmission revenue reset draft decision by AER: a response*, January 2013, p. 35.
422 This is done to minimise future P_0 adjustments, in 2018 in this case.
423 See for example the final decision Post-tax revenue model for RBP at http://www.aer.gov.au/node/5197. In that case, prices increased significantly from the final year of the previous access arrangement period to the first year of the next, rather than the decreases that have occurred in the present case.
424 No further smoothing is conducted after 2017. In practice, the small tariff fluctuations after 2017 would also be smoothed. But for simplicity of presentation, the smoothed tariff path tracks the unsmoothed tariff path after 2017 in figure 6.5.

Other matters

The AER agrees with PwC that the standard approach is better in dealing with inflation protection than APA GasNet's proposed approach. Indexing the capital base for actual inflation insulates the business (and customers) from any difference between actual inflation and the forecast inflation used in calculating the X factors, which update tariffs annually.[425] The AER considers this an important matter, although the impact is likely to be significantly less than the cash flow impact of the proposed change of approach.

On other potentially substantive matters raised, the AER concludes that:

- the concerns the AER noted in its draft decision regarding inefficient management of assets cannot be completely discounted as APA GasNet suggested. They could become more significant over time as the replacement cost and historical cost of the assets diverge under APA GasNet's proposed approach.[426]
- it is unlikely that there would be any inherent difference in financing costs between the two depreciation approaches as suggested by NERA. Even if this were true an adjustment to the rate of return would be necessary for customers to share in any benefit. This has not been proposed by APA GasNet.
- NERA's submission that the proposed approach would be better in terms of certainty for investors is incorrect. As PwC noted, the standard approach is common in Australia, United Kingdom and New Zealand.[427] To the extent that investor certainty is encouraged by consistency, the change of approach cannot be supported.

These matters are discussed in further detail in appendix D to this attachment.

Reasonable cash flow needs

The AER considers that the standard depreciation approach does not inhibit APA GasNet reasonable cash flow needs and that a proposed change of approach is likely to result in APA GasNet's 'reasonable cash flow' needs being exceeded.[428] This conclusion is based on the AER's interpretation of reasonable cash flow needs. The AER considers that reasonable cash flow needs do not equate to a particular credit rating. Even if it did, the AER disagrees with the analysis presented by Australia Ratings for determining what credit rating would result from the AER's draft decision. Each of these issues is discussed in turn below.

Interpretation of 'reasonable cash flow needs'

From a regulatory perspective, APA GasNet's reasonable cash flow needs under the NGR should be assessed in the context of the NGL's revenue and pricing principles.[429] When assessed against these principles, the AER considers that the change of depreciation approach would result in additional revenues (cash flows) that exceed APA GasNet's reasonable cash flow needs. These principles, for example, require that the business be given an effective incentive to promote economic efficiency,

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425 For example, if inflation is greater than forecast at the time of the access arrangement review, the X factors set at that time would be greater than they should have been (that is tariff would be reduced further than they should have been). Indexing the capital base by actual inflation provides a way to get back this difference in the future.

426 The indexed historical cost of assets may also diverge from replacement costs. However, it should do so to a lesser degree than the proposed approach because the assets are indexed each year for inflation under the standard approach.

427 PwC, *Depreciation of assets under the National Gas Rules*, November 2012, p. 6.

428 NGR, r. 89(1)(e).

429 NGL, clause 24.

including the efficient use of the pipeline. The AER has concerns with the efficient use of the pipeline under APA GasNet's proposed depreciation approach, as discussed above. Therefore the additional revenues APA GasNet is seeking would not represent reasonable cash flows when judged against this standard.

The AER does not consider the standard approach to depreciation leads inherently to any cash flow concerns. It applies to all the gas and electricity service providers that the AER regulates. The debt and equity capital that the service providers must raise are directly proportional to the approved opex and capex allowances. It therefore does not follow that the approach to depreciation does not allow service providers to meet their reasonable cash flow needs.

Nor does the AER consider that reasonable cash flow needs implies a particular credit rating must be achieved, such as BBB+ as APA GasNet submitted. Although the AER allows a return on capital commensurate with a 'benchmark efficient business', it is not for the AER to guarantee that a service provider will achieve a particular credit rating once the total efficient costs of service provision are recognised. The depreciation criteria in the NGR also envisage the potential for a significant deferral of depreciation.[430] Such deferrals are unlikely to be possible if reasonable cash flow needs requires a specific credit rating to be achieved in all circumstances. In the present circumstances, the building block components have each been set at an efficient level. The depreciation allowed is comparable with the 2008–12 access arrangement period. Therefore, the AER considers that no further cash flow is reasonably required by APA GasNet that would warrant a change of depreciation approach.

The EUCV also observed that the cost of debt in recent APA Group capital raisings is below the amount that has been allowed by the AER. Accordingly, it considered APA GasNet's reasonable cash flow needs have been more than met.[431]

Australia Ratings' report

As identified previously, the AER considers that reasonable cash flow needs do not imply a specific credit rating. That is, the AER considers that the Australia Ratings report does not directly address the question of whether the depreciation schedule will allow APA GasNet to recover its reasonable cash flow needs.[432] In contrast, the AER considers both the standard depreciation approach and APA GasNet's proposed change of approach will allow APA GasNet to recover at least its reasonable cash flow needs. For these reasons, the AER has placed no weight on the Australia Ratings report in reaching its final decision on APA GasNet's proposed depreciation allowance. Nonetheless, the AER does not agree with Australia Ratings' analysis or conclusion.

The AER has reviewed Australia Ratings' report in detail. In its report, Australia Ratings set out a 'shadow credit rating' analysis of APA GasNet as a stand-alone service provider. In simple terms, this analysis replicates the process that Standard and Poor's (S&P) follows in assigning credit ratings.[433] Australia Ratings included quantitative and qualitative analysis of the AER's draft decision, including the revenue implications for APA GasNet. Australia Ratings stated that the AER's draft decision would

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430 NGR, r. 89(2).
431 EUCV, *Victorian gas transmission revenue reset draft decision by AER: a response*, January 2013, p. 36.
432 NGR, r. 89(1)(e).
433 Australia Ratings, *Assessment of implied credit ratings arising from the Australian Energy Regulator's draft decision on access arrangements for APA GasNet Australia (Operations) Pty Ltd for 2013–17*, November 2012, p. 11.

not allow APA GasNet to achieve a BBB+ credit rating.[434] Australia Ratings concluded that APA GasNet's proposed change of depreciation approach would allow it to achieve this credit rating.

The AER considers that Australia Ratings:

- has relied on analysis that is in some cases the AER does not agree with. In particular, the AER does not agree with Australia Ratings' analysis of APA GasNet's financial risk factors. These include liquidity, cashflow adequacy, and financial flexibility.
- reached an overall conclusion that is sensitive to this analysis. Using the S&P business and financial risk matrix, it appears that a minor change in the analysis of financial risk could result in APA GasNet achieving an A– rating under the AER's draft decision revenue allowance.
- suggested that the credit rating metrics are only a minor component of its analysis when it appears they are the primary factor influencing its conclusions. The change of depreciation approach appears only to affect the credit rating metrics. However, Australia Ratings concluded the change of depreciation approach was sufficient to move APA GasNet from a likely BBB rating to a likely BBB+ rating. This suggests that credit rating metrics are primary factors in Australia Ratings' conclusions.
- did not clearly test or explain how its overall shadow credit rating would change if aspects of its analysis employed different assumptions.

Overall, the AER has reached the view that changes to a number of these findings and assumptions could reverse Australia Ratings' overall conclusion. Specifically, using the draft decision revenue allowance, it appears that APA GasNet could receive an A– credit rating, which is above the proposed BBB+ target. The AER's detailed analysis of the Australia Ratings report is set out in appendix D.

Long term consequences of APA GasNet's proposal

The national gas objective (NGO) refers to the promotion of the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.[435] The AER considers that APA GasNet's proposal will not promote these long term interests, as it will promote an inefficient tariff path.

The scenario analysis demonstrates APA GasNet's proposed approach would allow it to achieve greater revenues over the next three access arrangement periods (2013–17, 2018–22 and 2023-27). After this time the proposed approach would counter the need for further expansion of the network. At a time that Frontier expected capex may be expected to rise, APA GasNet's revenues could be falling in real terms. APA GasNet could then potentially be in a far worse cash flow position than afforded under the standard approach if the change of approach was allowed.

In the UK, Ofgem has previously allowed additional cash flows (through accelerated depreciation, rather than a change of depreciation approach) to meet a target credit rating (the financeability test). There is evidence that this has created a revenue profile which is not supportive of the long term interests of consumers. In this regard, Cambridge Economic Policy Associates (CEPA) noted that:[436]

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434 Australia Ratings, *Assessment of implied credit ratings arising from the Australian Energy Regulator's draft decision on access arrangements for APA GasNet Australia (Operations) Pty Ltd for 2013–17*, November 2012, p. 9.

435 Rule 100(a) of the NGR requires the access arrangement to be consistent with the national gas objective.

436 CEPA, *RPI-X@20: Providing financeability in a future regulatory framework*, May 2010, p.i.

> Even when NPV neutral approaches are adopted there may be unintended consequences – for example, the most recent electricity distribution determination saw an increase in the proportion of assets that are subject to accelerated depreciation in part because the previous acceleration exacerbated the perceived cash-flow constraints as the capex programme grows.

In the same report, CEPA concluded that:

> Regulation which is expected to mimic the operation of competitive markets has adopted an approach to financeability which places a major cost on today's consumers. In the energy sectors this has led to inter-generational equity concerns since the solution to financeability has been to halve the economic life of assets for depreciation in electricity distribution and transmission and to expense 50 percent of a significant capex programme in gas distribution. In a competitive market when funding is required for projects with strong business cases but additional debt would breach financial ratios there would be a call on equity investors. There is no reason why this approach cannot happen in the regulated sectors and has been used recently by Ofwat (and to an extent Ofgem at TCPR4). [437]

While financeability has a specific meaning in the UK context, the AER agrees with CEPA's concerns about the long term effects of major adjustments to the time profile of cash flows in response to concerns about short term cash flows.

6.5 Revisions

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

Revision 6.1: Make all necessary amendments to reflect the AER's final decision on the regulatory depreciation allowance for the 2013–17 access arrangement period, as set out in Table 6.1.

Revision 6.2: Make all necessary amendments to reflect the AER's final decision on the standard economic lives and remaining economic lives as at 1 January 2013, as set out in table 6.3.

Revision 6.3: Make all necessary amendments to reflect the AER's final decision on the proposed depreciation approach for modelling the return of capital (and return on capital) for the 2013–17 access arrangement period, as set out in section 6.4.2.

[437] CEPA, *RPI-X@20: Providing financeability in a future regulatory framework*, May 2010, p.viii.

7 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other non-capital costs incurred in providing pipeline services.[438] It incorporates labour costs associated with operating the gas distribution network.

The AER is required to assess APA GasNet's forecast opex to decide whether it is satisfied the forecast opex complies with applicable criteria prescribed by the NGL and NGR.[439] This includes that any forecast or estimate must be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.[440]

7.1 Final Decision

The AER's final decision is not to approve a forecast opex of $154.3 million ($2012) for the 2013–17 access arrangement period for APA GasNet. The AER is not satisfied that APA GasNet's forecast of opex for the 2013–17 access arrangement period complies with the opex NGL and NGR criteria.[441] The AER proposes forecast opex of $147.4 ($2012) for the 2013–17 access arrangement period.[442]

The difference between the AER's final decision and APA GasNet's revised proposal primarily reflects different views about the allowances for forecast labour cost escalation and forecast step changes above base year opex.

Table 7.1 compares the AER's final decision to APA GasNet's initial and revised proposal and the AER's draft decision for each year of the 2013–17 access arrangement period.

Table 7.1 Comparison of APA GasNet's initial and revised proposals, and AER draft and final decisions ($2012, million)

	2013	2014	2015	2016	2017	Total
APA GasNet initial proposal	32.6	35.2	37.4	38.6	38.6	182.2
AER draft decision	27.0	27.3	28.1	29.1	29.1	140.6
APA GasNet revised proposal	29.3	29.9	30.9	32.0	32.1	154.3
AER final decision	28.2	28.7	29.5	30.5	30.5	147.4

Source: AER analysis.

7.2 Revised proposal

APA GasNet forecasts total operating expenditure of $154.3 million ($2012) for the 2013–17 access arrangement period in its revised proposal.[443] This is a reduction of $27.9 million ($2012) from APA GasNet's initial proposal of $182.3 million ($2012).

APA GasNet's revised proposal:

438 NGR, r. 69.
439 NGR, rr. 91, 74(2).
440 NGR, r. 74.
441 NGR, rr. 91, 74(2), 100.
442 NGR, rr. 91 and 74(2).
443 APA GasNet, *VIC GAAR 2013-17 - GasNet - Opex model - FINAL.xlsm* (confidential).

- adopted the AER's draft decision approach to determining base year opex with the exception of the removal of movement in provisions from base year costs. APA GasNet noted that the AER took a different approach to adjustments to base year costs, treating them as step changes rather than adjusting the base year. APA GasNet adopted the AER's proposal where it considered the outcome was the same.[444]
- adopted the AER's draft decision on nine step changes APA GasNet proposed in its initial proposal.
- adopted the AER's draft decision approach on one further step change (allocation between regulated and non-regulated functions) but updated the amount based on its revised proposal for capex.
- did not adopt the AER's draft decision on the following six step changes:
  - environmental net gain obligations
  - safety management studies
  - maintenance of hazardous area dossiers
  - expanded apprenticeship program
  - Western district depot
  - insurance costs.[445]
- did not adopt the AER's draft decision on real cost escalation.[446]
- included a revised forecast for network growth to reflect APA GasNet's revised proposal for capex.[447]
- adopted the AER's draft decision approach on two of its allowances (debt raising costs and other allowances), but updated the amount based on its revised proposal for WACC and capex.
- did not adopt the AER's draft decision on reset costs from 2008–12 access arrangement period.[448]

7.3 Assessment approach

The AER's assessment approach for opex is set out in attachment 6 of the AER's draft decision.[449]

Where the AER considered additional material to inform this final decision, this is noted in its reasons for decision.

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444 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 95.
445 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 104–114. This includes APA GasNet's proposed adjustments to the base year opex the AER considered were inconsistent with fixed principle clause 7.2(h)(ii) and assessed as step changes.
446 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 115–119.
447 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 114–115.
448 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 119–122.
449 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017: Part 2*, September 2012, pp. 127–128.

The AER received a submission on APA GasNet's revised opex forecast from the Energy Users Coalition of Victoria (EUCV).[450] Comments made in the EUCV submission are addressed in this attachment.

In forming its views the AER has also considered advice from Deloitte Access Economics[451] (DAE) on labour cost escalators.

7.4 Reasons for decision

The AER's final decision is not to approve APA GasNet's forecast opex.

The AER accepts APA GasNet's proposal that its opex forecast be based on a base year roll forward method, using 2011 as the base year, consistent with its initial proposal and the AER's draft decision. This is consistent with the fixed principle at clause 7.2(h) in its access arrangement which requires:

> In calculating the allowable revenues for operations and maintenance expenditure for the Fourth Access Arrangement Period, the Regulator must:
>
> (i) comply with the requirements of the Code;
>
> (ii) take into account the actual operating costs in 2011, adjusted for the change in forecast operating costs between 2011 and 2012 and, to avoid doubt, not taking into account the efficiency gain (loss) made in 2012;
>
> (iii) take into account forecast changes in workload, taxes, Regulatory Events, insurance premiums and other relevant costs between 2011 and each year of the Fourth Access Arrangement Period; and
>
> (iv) take into account a percentage trend factor.

Using this method, historical expenditure, and particularly 2011 expenditure, plays a key role in forecasting and assessing efficient opex.

The importance of 2011 expenditure is partly due to the efficiency sharing mechanism in APA GasNet's existing access arrangement. The efficiency sharing mechanism recognises the incentive to reduce opex is driven by both the ex ante opex allowance and carryover amounts.[452] The use of actual opex in determining the opex allowance for the following access arrangement period is a key factor in whether the mechanism will achieve its stated objective. The objective is to allow APA GasNet to retain the reward associated with efficiency improving initiatives for five years.

For the mechanism to achieve this objective, opex must be forecast based on actual expenditure in the penultimate year of the preceding access arrangement period, in this instance 2011. If external benchmarks, or a bottom up forecast, were used to set opex allowances APA GasNet's opex allowance would not reflect revealed costs, and revealed efficiencies would not be clawed back.[453] Consequently, APA GasNet would be rewarded twice, once in the ex ante opex allowance, and a

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450 Energy Users Coalition of Victoria, *Submission to the AER: AER draft decision and revised applications from APA GasNet*, January 2013.

451 Deloitte Access Economics, *Forecast growth in labour costs in Victoria –report prepared for the AER*, 4 February 2013.

452 An ex ante opex allowance provides an incentive to reduce opex since it allows a network service provider to retain all opex underspends during the access arrangement period. However, since opex is mostly recurrent, the incentive to reduce expenditure declines as the period progresses since the network service provider would not be able to retain the savings for as long. Carryover amounts allow the network service provider to retain opex savings for five years regardless of the year in which the savings are made.

453 Under a revealed cost opex forecasting approach actual opex is used as the basis for determining opex forecasts. Consequently revealed efficiency savings are 'clawed back' when actual opex, including the revealed efficiency savings, is used to forecast opex for the following access arrangement period. This shares the efficiency gains between the network service provider and its customers. However, if something other than actual costs is used to forecast opex revealed efficiencies have no impact on opex forecasts and the efficiencies are retained by the network service provider.

second time in the carryover amounts under the mechanism. Therefore, it is important actual expenditure in 2011 be used as the basis for setting opex forecasts for the 2013–17 access arrangement period, where an efficiency sharing mechanism exists.

However, there are several reasons why efficient opex in the 2013–17 access arrangement period will be different from actual expenditure in 2011. It is necessary to take these into account to ensure APA GasNet retains the reward associated with efficiency improving initiatives for five years.

1. First increased demands for APA GasNet's outputs may require it to expand its network. It is reasonable that an efficient service provider will require more inputs, and thus greater opex, to deliver more output. It therefore is reasonable to assume it needs an allowance for network growth.

2. Second, it is reasonable to assume that the cost of inputs for an efficient firm to produce the same level of output may not change at the same rate as CPI. Consequently it is reasonable to account for real cost changes in APA GasNet's inputs. However, to the extent the cost of inputs change, the input mix which minimises costs will also likely change. Thus, to apply input cost escalation while assuming a constant input mix will provide at least the efficient costs of a prudent service provider.

3. Third, there may be other reasons beyond APA GasNet's control that will increase or decrease its costs. For example, regulatory obligations may change requiring APA GasNet's to increase expenditure to meet those new obligations. For this reason the AER allows for other incremental increases above base year opex (often referred to as step changes). Generally step changes should only be provided for cost increases beyond the service provider's control. Otherwise the step change would represent an increase in costs to produce the same level of output and thus a loss in efficiency.

While the AER agrees that APA GasNet's opex in the 2013–17 access arrangement period will need to differ from the opex it incurred it 2011, the AER does not agree that APA GasNet's proposed adjustments to base year opex comply with applicable criteria prescribed by the NGL and NGR. [454]

The adjustments to base year opex for APA GasNet proposed by the AER include additional allowances above base year opex for:

- escalation in labour costs
- additional opex related to network expansion
- additional costs of managing native vegetation to meet regulatory requirements (environmental net gain obligations)
- new ongoing maintenance related to changes in hazardous area regulations (maintenance of hazardous area dossiers)
- a higher allocation of shared costs to regulated functions consistent with APA GasNet's existing methodology for allocating shared costs
- an additional allowance to recover regulatory costs for which APA GasNet was not previously funded for

[454] NGR, rr. 91, 74(2), 100.

- an increased Energy Safe Victoria levy.

In general, the AER has not approved adjustments to APA GasNet's base year opex where it considers there is no need for an incremental increase above the opex APA GasNet incurred in 2011, or where APA GasNet's proposed increase in expenditure relates to circumstances within its control. For some of APA GasNet's proposed adjustments the AER accepts that an increase above the opex APA GasNet incurred in 2011 is required but does not accept that APA GasNet's forecast was arrived at on a reasonable basis or is the best in the circumstance. Each of the adjustments the AER has not accepted is discussed in detail in this chapter.

The AER's final decision is discussed in further detail in this section under the following headings:

- response to APA GasNet's comments about the AER's forecasting approach
- forecasting base year opex
- escalation of base year opex
- step changes
- other allowances.

Further reasoning about the AER's final decision on real cost escalation is provided in appendix A.

Where APA GasNet's position in its revised proposal is the same as the position as the AER adopted in the draft decision, this is noted in the relevant section. Refer to attachment 6 of the Draft Decision for these reasons.[455]

7.4.1 Response to comments about the AER's forecasting approach

In its revised proposal APA GasNet raised some concerns with the AER's framework for forecasting opex. It considers a benefit sharing allowance introduces a 'double disincentive' to bring forward opex. It submitted:[456]

> The inherent assumption under the revealed cost methodology is that the opex forecast represents the lowest sustainable cost of operating the system based on the operating conditions the system faced in the base year. The corollary of this is that the business is not funded for additional costs that may arise due to changes in that operating environment during the regulatory period that are not also pass through events.
>
> Any unforecast opex costs incurred then must be sourced from the business' return on equity. This creates a disincentive for the business to undertake that expenditure, or if the necessary expenditure is undertaken as prudent operator would, a penalty is incurred by the operation of the EBSS...
>
> So while the business has no incentive to defer opex, it has a double disincentive to bring forward opex from the forecast to current regulatory period: first, to fund the opex out of its own returns with no scope to recover the costs through tariffs, and second to suffer the five year EBSS penalty for doing so.

The benefit sharing allowance recognises the incentive to reduce opex is driven by both the ex ante opex allowance and by carryover amounts. In this sense the incentive mechanism does introduce a 'double disincentive '.

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455 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017: Part 2*, September 2012, pp. 121–147.

456 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 88–89.

The first incentive, which requires APA GasNet fund over-expenditure during the access arrangement period, is the foundation of an ex ante expenditure forecast incentive regime. By allowing service providers to retain cost savings within the access arrangement period, or requiring them to fund over-expenditure, they are incentivised to reduce cost where it is efficient to do so. However, this incentive declines as the access arrangement period progresses.

Thus, the benefit sharing allowance introduces a second incentive to allow the service provider to retain efficiency gains (loss) for five years regardless of the year in which the efficiency gain (loss) is realised. These two incentives, when combined, provide a constant incentive to reduce expenditure.

Further, the incentive is symmetric. The service provider has an incentive to reduce costs as much as it has a disincentive to increase costs. The service provider does have an incentive to defer costs where it is efficient to do so since it will retain those efficiency savings for five years before they are reflected in its opex forecasts (net of the benefit sharing allowance).

The AER considers the forecast opex it has determined represents the costs of a prudent service provider, acting efficiently. That is, the AER considers the opex forecast determined is an unbiased forecast of efficient costs consistent with the NGR opex criteria. In these circumstances the ex ante opex forecast and benefit sharing allowance work to share those uncontrollable cost changes between APA GasNet and its customers.

7.4.2 Forecasting base year opex

The fixed principle at clause 7.2(h)(ii) of APA GasNet's access arrangement for 2008–12 provides that in forecasting opex for the 2013–17 access arrangement period it is necessary to:

> ... take into account the actual operating costs in 2011, adjusted for the change in forecast operating costs between 2011 and 2012 and, to avoid doubt, not taking into account the efficiency gain (loss) made in 2012;

Consistent with this fixed principle APA GasNet proposed 2011 be used as the base year to forecast opex. The AER accepted this in its draft decision.[457]

APA GasNet made the following adjustments to the opex it incurred in 2011:

1. allocation between regulated and non-regulated functions
2. Energy Save Victoria (ESV) levy increase
3. added insurance costs
4. removed movement in provisions
5. added expected escalation of base year costs in 2012.[458]

The AER has considered the proposed adjustment for insurance costs, recalculation of cost allocations between regulated and non-regulated functions under fixed principle 7.2(h)(iii). This is discussed in section 7.4.4.

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[457] AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017: Part 2*, September 2012, p. 129.

[458] APA GasNet, *Revised access arrangement submission*, November 2012, pp. 95–104.

The AER's final decision on the other proposed adjustments to APA GasNet's base year opex is set out in Table 7.2 and discussed below. The AER also responds below to comments raised by the EUCV in relation to overheads allocated to APA GasNet.

Table 7.2 Revised proposal and AER final decision on base year adjustments ($million, 2012)

Opex item	APA GasNet revised proposal	AER final decision	Difference
Unadjusted 2011 opex	27.5	27.5	–
Insurance costs	0.5	–	–0.5
Movements in provisions	–0.4	–0.0	0.4
Change in forecast opex between 2011 and 2012	0.4	0.4	–
Expected opex in 2012	28.1	27.9	–0.1

Source: AER analysis.
Note: Totals may not add due to rounding.

Movements in provisions

The AER has made an adjustment from APA GasNet's unadjusted 2011 opex to remove a small movement in provisions in the base year.

A provision is a liability of uncertain timing or amount.[459] Provision accounts are used to set aside amounts for the payments of these liabilities for when they arise for settlement. A movement in provisions occurs when the amount set aside differs to the amount paid out. Consistent with its draft decision, the AER considers the movement in these provisions does not represent actual costs incurred in a given year and should be removed from base year expenditure.[460] The AER considers this necessary in setting forecast opex for APA GasNet, on the basis that movements in provisions:

- may be used to represent the reported accounts for APA GasNet differently from its underlying economic circumstances
- may prevent and distort the comparison of APA GasNet's expenditure on a consistent basis from year to year
- can be affected by a change in accounting standards despite expenditure remaining unchanged.

APA GasNet submitted in its revised proposal that to correctly remove movements in provisions the accrued expense should be removed and the actual cash outlay added back.[461] The AER agrees. The AER requested this data from APA GasNet prior to the draft decision but APA GasNet advised there were no actual cash outlays.[462]

APA GasNet included this information in its revised proposal.[463] Taking this information into account, the AER has adjusted the movement in provisions for base opex accordingly.

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459 AASB, *137: Provisions, contingent liabilities and contingent assets*, section 10.
460 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017: Part 2*, September 2012, pp. 130–131.
461 APA GasNet, *Revised access arrangement submission*, November 2012, p. 103.
462 APA GasNet, Response to information request 13, 22 June 2012.
463 APA GasNet, *Revised access arrangement submission*, November 2012, p. 103.

In its revised proposal, APA GasNet raised a concern that removing movements in provisions from forecast opex would require it to maintain its accounts on a cash basis for regulatory purposes going forward. It considered this would add unnecessary complexity.[464] However, the AER considers it is not necessary to maintain regulatory accounts on a cash basis. It is sufficient to maintain accounts on an accrual basis as long as the movements in provisions are also reported.

Expected opex in 2012

Consistent with the AER's draft decision APA GasNet forecast the increase in opex between 2011 and 2012 as the difference between forecast opex between 2011 and 2012 in the 2008–12 access arrangement. This ensures any efficiency gain (loss) made in 2012 is not taken into account as required by the fixed principle. Consequently the AER is satisfied this base year adjustment is consistent with the fixed principle in clause 7.2(h) of APA GasNet access arrangement and the opex criteria.[465]

Overheads incurred by APA GasNet in base year

In response to the AER's draft decision, the Energy Users' Coalition of Victoria (EUCV) raised concerns about overhead costs allocated to APA GasNet during the 2008–12 access arrangement period. It considered that these overheads had risen by around 50 per cent compared to the overheads allocated to APA GasNet during the 2003–07 access arrangement period. As a result the EUCV urged the AER to investigate this issue further and make 'the necessary adjustments in the allowances determined'.[466]

The AER has considered the EUCV's suggestion but does not consider such an adjustment is required. APA GasNet reported the overheads it was allocated during the 2008–12 access arrangement period to the AER as part of the Regulatory Information Notice it submits as part of its access arrangement proposal. The overheads APA GasNet reported to the AER are significantly different than the overheads allocated to APA GasNet estimated by the EUCV. APA GasNet's estimates do not suggest the overheads allocated to APA GasNet in 2011 were unusually high. On this basis the AER considers that no adjustments to APA GasNet's base year opex are required.

7.4.3 Escalation of base year opex

APA GasNet proposed to escalate the base year opex allowance for both scale effects (network growth) and forecast real cost changes in labour and material inputs (real cost escalation).

Network growth (scale escalation)

The AER considers APA GasNet's forecast increase in opex of $4.1 million ($2012) for the 2013–17 access arrangement period is the best estimate possible in the circumstances.[467] This forecast reflects the AER's assessment of the additional opex required to give effect to the AER's final decision on APA GasNet's capex (discussed in attachment 4).

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[464] APA GasNet, *Revised access arrangement submission*, November 2012, p. 103.
[465] NGR, r. 91
[466] Energy Users Coalition of Victoria, *Submission to the AER: AER draft decision and revised applications from APA GasNet*, January 2013, p. 21.
[467] NGR, r. 74(2)

APA GasNet's initial proposal included an increase in opex related to the operation and maintenance of several new compressor stations and pipelines.[468] The AER in its draft decision did not accept all of APA GasNet's proposed increase in opex for network growth as it considered it was not consistent with the criteria forecasts and estimates.[469] The AER's draft decision recalculated the increase in opex for network growth based on its draft decision on APA GasNet's forecast capex and approved an increase in opex of $3.8 million ($2012) for the 2013–17 access arrangement period.[470]

In APA GasNet's revised proposal it adjusted the network growth component of forecast opex to reflect its revised capex forecast.[471]

As discussed in attachment 4, the AER accepts APA GasNet's proposed capex for the 2013–17 access arrangement period relating to the Springhurst pressure limiter, Northern Looping and Echuca offtake regulator. The AER considers APA GasNet's proposed opex for network growth relating to the capex for the above projects is arrived at on a reasonable basis and represents the best estimate possible in the circumstances.[472]

Real cost escalation

APA GasNet's proposed total opex included $8.3 million ($2012) for forecast real cost increases in labour. The AER's consideration of the real cost escalators proposed by APA GasNet is in appendix A. The AER did not accept the real cost escalators proposed by APA GasNet. The impact of the application of the AER's proposed real cost escalators on forecast opex is outlined in Table 7.3.

Table 7.3 Impact of real cost escalation ($million, 2012)

	2013	2014	2015	2016	2017	Total
APA GasNet revised proposal	0.95	1.28	1.66	2.01	2.35	8.25
AER final decision	0.31	0.63	0.85	1.10	1.30	4.19
Difference	–0.63	–0.65	–0.82	–0.91	–1.05	–4.06

Note: Totals may not add due to rounding.
Source: AER analysis.

7.4.4 Step Changes

In its initial proposal APA GasNet proposed the following 16 step changes:[473]

1. ESV levy rises
2. increases in electricity costs
3. carbon costs
4. heating facilities

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468 APA GasNet, *Access arrangement submission*, 31 March 2012, pp. 174–6.
469 NGR, r. 74(2)
470 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, p. 142.
471 APA GasNet, *Revised access arrangement submission*, November 2012, p. 115.
472 NGR, r. 74(2).
473 This includes APA GasNet's proposed adjustments to the base year opex the AER considered were inconsistent with fixed principle clause 7.2(h)(ii) and assessed as step changes.

5. line valve actuator overhauls
6. pressure vessel inspections
7. restore hard standing
8. reset costs for 2013–17 access arrangement period
9. change in capitalisation policy
10. insurance costs
11. environmental net gain obligations
12. safety management studies
13. hazardous area dossiers
14. expanded apprenticeship program
15. Western district depot
16. allocations between regulated and non-regulated functions.

APA GasNet's revised proposal adopted the AER's draft decision on nine of these step changes (1–9 above).[474] The AER's final decision is to accept APA GasNet's revised proposal on these opex items based on its reasoning in its draft decision.[475]

The AER's final decision on step changes for APA GasNet is set out in Table 7.4. In the following sections the AER sets out its reasons for its decision for each step change for which APA GasNet did not adopt the AER's draft decision.

Table 7.4 Impact of step changes ($million, 2012)

	2013	2014	2015	2016	2017	Total
APA GasNet revised proposal	–0.07	0.18	0.15	0.81	0.59	1.67
AER final decision	–0.44	–0.27	–0.30	0.36	0.14	–0.53
Difference	–0.38	–0.46	–0.46	–0.46	–0.46	–2.21

Note: APA GasNet's revised proposal does not include the base year adjustments the AER has treated as step changes. Totals may not add due to rounding.
Source: AER analysis.

AER approach to assessing step changes

Step changes generally fall into three categories:

1. regulatory change
2. non-recurrent expenditure

[474] APA GasNet, *Revised access arrangement submission*, November 2012, pp. 104–114.
[475] AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 132–14.1

3. discretionary expenditure

These categories are indicative of how the AER is able to assess whether expenditure meets the applicable criteria prescribed by the NGL and NGR.

Regulatory change

The AER generally considers an increase in opex to meet an existing regulatory requirement would be an efficiency loss as it would cost a business more to meet the same requirement. Consequently a step change would not be required.

However, the AER also recognises a gas service provider should be provided with a reasonable opportunity to recover at least the efficient costs incurred in complying with a regulatory obligation or requirement.[476] In some circumstances there may be external factors, beyond its control as to why a gas service provider might require an increase in expenditure to meet an existing regulatory requirement. In these circumstances, a step change may be required.

Non-recurrent expenditure

A gas service provider's opex program will not be exactly the same from year to year. Actual opex in the base year reflects both recurrent expenditure and non-recurrent expenditure. Consequently base year opex will include non-recurrent expenditure that will not be required in the next access arrangement period for the same activities. However, non-recurrent expenditure incurred in the base year is not typically removed from base year opex. Consequently, the fact a particular activity was not undertaken in the base year is not sufficient evidence to demonstrate a step change is required. Instead, whether base year opex will be sufficient to fund the proposed activity, or whether a step up in opex is required, needs to be considered on a case by case basis.

The Victorian Minister for Energy and Resources made the same point in his submission:[477]

> The assessment of step changes in operating expenditure tends to be focused on increases in expenditure and not on decreases in expenditure. There will be some variation in expenditure from year to year—the AER needs to consider the extent to which small forecast increases in expenditure will be offset by small decreases in expenditure that have not been forecast.

The AER considers there could be reasons where a significant increase in non-recurrent expenditure is required. In some cases a gas service provider may have relatively limited discretion in whether or not to undertake this expenditure. For example, some maintenance costs may be lumpy. As a result, base year opex may be insufficient to cover the costs of the new program of expenditure. In this case a step change in opex may be required.

Discretionary expenditure

The AER does not typically consider an incremental increase above base year opex is required for discretionary expenditure.

For instance, a gas service provider might propose step changes above base year opex for projects or programs it submits would increase productivity. However, if a new program of expenditure delivers productivity savings those cost savings should also be factored into the forecast of total opex. Adding

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476 NGL, s. 24(2)(b).

477 Minister for Energy and Resources, *Victorian Gas Access Arrangement Review – Victorian Government Submission*, 14 January 2012, pp. 3–4.

a step change above base year opex to total opex will not produce an efficient forecast if the cost savings resulting from the step change are not taken into account.

Similarly, if a project or program is being undertaken at a gas service provider's discretion on productivity grounds then it is only prudent if the cost savings outweigh the costs. Consequently, a step change is not required because, all else equal, total opex will be reduced by the project or program.

In some limited circumstances the benefits of a discretionary project may not be productivity gains, but the project is expected to lead to lower prices to customers. If there are few benefits to the gas service provider, the benefits of undertaking the project to the gas service provider may not outweigh the cost of the project. Therefore it may not undertake the project without an increase in opex. A step change in opex may be necessary so that customers benefit in the long term.

Assessment of proposed step changes

Insurance costs

The AER's final decision is to not approve the step change for insurance costs. This is because a step change in opex would double count increases in insurance costs that will be included in CPI adjustments to base year opex. Therefore the AER considers that an incremental increase in base year opex for insurance would not be a forecast of total opex arrived at on a reasonable basis or represent the best estimate possible in the circumstances.[478] Further, it would not result in opex incurred by a prudent service provider, acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.[479]

In its draft decision, the AER did not approve the step change for increased insurance costs. The AER considers APA GasNet will be compensated for any increase in insurance costs when its base year costs are escalated by the CPI.

In its revised proposal APA GasNet submitted that a step change would be required by a prudent service provider acting efficiently. This is because insurance costs are determined in an international market, in which APA GasNet is a price taker. As insurance costs are outside the control of APA GasNet a step change is required to compensate APA GasNet for the increase in insurance premiums.[480]

APA GasNet also submitted that CPI adjustments to tariffs would not adequately compensate it for increased insurance premiums. This is because insurance premiums have increased at a rate much higher than inflation. APA GasNet further noted that not providing adequate compensation for changes in insurance premiums would be a misapplication of fixed principle 7.2(h)(iii)—which explicitly states that forecast changes in insurance premiums must be taken into account.[481]

The AER accepts that it must take into account fixed principle 7.2(h)(iii). However, the AER considers that it has applied the fixed principle correctly in this instance because CPI adjustments to tariffs will adequately compensate APA GasNet for increased insurance premiums. This is because the CPI adjustment is made to all opex items, some of which will increase, some of which will decrease. Adjusting only for real cost increases, and not decreases, produces upwardly biased cost forecasts.

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478 NGR, r. 74(2).
479 NGR, r. 91.
480 APA GasNet, *Revised access arrangement submission*, November 2012, p. 96.
481 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 96–7.

Even if insurance costs increase by more than the CPI, the price of the basket of operating costs will not necessarily increase by more than the CPI.

Environmental net gain obligations

The AER's final decision is to approve APA GasNet's step change in opex for environmental net gain obligations. The AER is satisfied that APA GasNet's incremental increase above base year opex to implement its forecast environmental net gain obligations is required. This increase in opex is driven by native vegetation works triggered by capex projects.

APA GasNet's initial proposal included a step change of $980 000 ($2012) over the 2013–17 access arrangement period. It states that these funds will be used to offset any native vegetation affected by pipeline operations. APA GasNet is required to source and protect another piece of land which would deliver a 'net gain' to protected native vegetation. [482]

The AER's draft decision approved $812 000 ($2012). The AER was satisfied that the forecast increase in opex for the rectification works at Wollert and the new obligations likely to be triggered by the Anglesea pipeline extension have been arrived at on a reasonable basis and are the best estimates possible in the circumstances. [483]

The AER was also satisfied that there would be an increase in opex related to native vegetation works triggered by the Northern Expansion project. However, as the AER only approved part of the forecast capex for this project, the AER considers the likely impact on native vegetation would be correspondingly less and therefore the amount of opex required would be less than the amount originally forecast by APA GasNet. [484]

APA GasNet's revised proposal acknowledged the AER's revisions to the Northern Expansion project's scope. APA GasNet also included its consultant Monarc Environmental's revised estimates for net gain assessment for the Northern Expansion project.[485] As a result of these revisions APA GasNet proposed a revised step change of $1 190 000 ($2012) for environment net gain obligations. The AER is satisfied with Monarc Environmental's forecast. Therefore the AER considers APA GasNet's proposed step change for environmental net gain obligations results in a forecast of total opex that is consistent with the opex criteria and criteria for forecasts and estimates.[486]

Safety management studies—monitoring and rectification

The AER's final decision is to not approve a step change for safety management studies. As APA GasNet has not identified an increase in total activities required by the 2011 Safety Management Studies or a change in obligations on the pipeline operator from the 2008–12 access arrangement period, the AER is not satisfied that an incremental increase in APA's total opex is prudent or efficient.

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482 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 167.
483 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, part 2, September 2012, p. 134.
484 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, part 2, September 2012, p. 134.
485 APA GasNet, *Revised access arrangement submission*, November 2012, p. 104.
486 NGR, rr. 91(1), 74(2).

APA GasNet's initial proposal included a step change for increased activities it identified that must be carried out as a result of safety management studies completed in the 2008–12 access arrangement period.[487]

The AER in its draft decision did not accept this step change as it was not satisfied that the obligations on the pipeline operator had materially changed since the 2008–12 access arrangement period. Therefore the AER was not satisfied on the basis of the evidence provided by APA GasNet that an increase above APA GasNet's 2011 opex was required to address pipeline safety. The AER concluded that it was not satisfied that an additional opex allowance for these activities would be required.

APA GasNet's revised proposal acknowledged that there is no specific new obligation to conduct the work proposed in this step change. However, it noted that the work identified in the last Safety Management Study was driven by ongoing urban encroachment on the network and the findings of the recent Royal Commission covering the Black Saturday bushfires in Victoria.[488]

In particular, APA GasNet submitted that it is required to conduct a Safety Management Study for each of its pipelines and related assets at least every five years. As part of these studies, APA GasNet is required to assess the risks associated with a particular asset and identify works or procedures required to minimise the identified risks. APA GasNet's proposed step change relates to the costs associated with the implementation of activities identified by safety management studies.[489]

In response to an information request from the AER, APA GasNet provided the 2011 Safety Management Studies for underground assets and above ground facilities. The Safety Management Study for underground assets identified that the majority of activities required by the previous (2007) Safety Management Study had been completed and identified only five additional activities. The AER notes that the number of activities identified in the 2011 Safety Management Study are significantly less than the activities identified in the 2007 Safety Management Study. The Safety Management Study for above ground facilities did not identify additional actions to those previously identified in the previous (2008) Safety Management Study.[490]

APA GasNet has not identified a material increase in activities required by the 2011 Safety Management Studies for the 2013–17 access arrangement period. The majority of activities identified in the studies were first identified in the 2007 Safety Management Studies. The AER considers a prudent service provider would have taken actions to address these activities during the 2008–12 access arrangement period. [491]

The AER also notes that the 2011 Safety Management Study for underground assets identified that all previous actions identified in the 2007 Safety Management Study had been completed by 2011.[492] Therefore, actual opex was incurred in the 2008–12 access arrangement period to complete activities required by the Safety Management Studies. As these activities have already been completed, no increase in opex is required.

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487 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 168.
488 APA GasNet, *Revised access arrangement submission*, November 2012, p. 105.
489 APA GasNet, *Response to Information Request no. 1*, 18 May 2012, p. 5.
490 APA GasNet, *Response to AER information request no FD7a*, 20 December 2012, Attachment: Pipeline Safety Management Study Review – Victorian Pipeline Facilities, 20 October 2011 (confidential); APA GasNet, *Response to AER information request no FD7a*, 20 December 2012, Attachment: Pipeline Safety Management Study Review – Victorian Transmission Pipelines, 22 August 2011 (confidential).
491 NGR, rr. 91(1), 74(2).
492 APA GasNet, *Response to AER information request no FD7a*, 20 December 2012, Attachment: Pipeline Safety Management Study Review – Victorian Transmission Pipelines, 22 August 2011, p. 7 (confidential).

Maintenance of hazardous area dossiers

The AER's final decision is to approve APA GasNet's proposed step change in opex for maintenance of hazardous area dossiers. This increase in opex is driven by a change in the regulatory standard, which will mean APA GasNet will need to undertake additional activities to what was required in the 2008–12 access arrangement period.

APA GasNet's initial proposal included a step change in opex for two additional personnel to be employed to maintain its hazardous area dossiers to comply with Australian standards. To comply with the relevant Australian standards, APA GasNet submitted that it must have in place a Hazardous Area Verification Dossier which details the compliance and safety of the electrical equipment installed within the hazardous area.[493]

The AER in its draft decision did not approve this step change as it was not satisfied from the information provided by APA GasNet that opex incurred in 2011 was not sufficient to ensure APA GasNet met the relevant Australian standards. Therefore, the AER considered an increase in APA GasNet's opex to fund this program would be inconsistent with r. 91 of the NGR.[494]

APA GasNet's revised proposal did not adopt the AER's draft decision on this step change. It noted that no opex cost was included in the base year related to the establishment of the Hazardous Area Dossiers. However, once established, the dossiers must be subject to an ongoing maintenance program which will be required to commence during 2013.[495]

In its submission, the EUCV considered that APA GasNet has not justified its submission that the new standard imposes increased activity above that required previously, or the activities APA GasNet currently undertakes.[496]

The relevant Australian standard was introduced in 2009.[497] This standard required APA GasNet to establish Hazardous Area Dossiers for each hazardous area in its network. Once established, these dossiers are required to be updated every four years.[498] The standard did not require the dossiers to be updated and maintained prior to 2013. Therefore, the AER is now satisfied that the standard requires APA GasNet to undertake additional activities in the 2013–17 access arrangement period. As such, the AER is satisfied APA GasNet requires an incremental increase in total opex for these activities.

The AER considers APA GasNet's proposed increase is arrived at on a reasonable basis and represents the best forecast possible in the circumstances. APA GasNet submitted it had considered alternative ways to comply with its hazardous area obligations and concluded the most efficient solution was to employ two additional staff to carry out the ongoing maintenance functions.[499] APA GasNet also submitted a consultant report which concluded the step change of $250 000 per year was reasonable.[500] Therefore, the AER is satisfied that APA GasNet's proposed step change for

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493 APA GasNet, *Access arrangement submission*, 31 March 2012, pp. 168–69

494 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, p. 135.

495 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 106–107.

496 Energy Users Coalition of Victoria, *Submission to the AER: AER draft decision and revised applications from APA GasNet*, January 2013, pp. 18–19.

497 Australian Standard AS60079.14:2009

498 APA GasNet, Response to AER information request 15, 27 June 2012, p. 3.

499 JP Kenny, *APA GasNet (Operations) Pty Ltd: Access Arrangement 2013–17 Capex & Opex Review*, 31 March 2012, pp. 71–72.

500 JP Kenny, *APA GasNet (Operations) Pty Ltd: Access Arrangement 2013–17 Capex & Opex Review*, 31 March 2012, p. 72.

hazardous area dossiers results in total opex that is consistent with the opex criteria and criteria for forecasts and estimates.[501]

Expanded apprenticeship program

The AER's final decision is to not approve a step change for the expanded apprenticeship program. Apprenticeship program costs are already included in base year opex. If there are productivity gains from this program, APA GasNet would be incentivised to expand this program such that an increase in opex is not required.

APA GasNet's initial proposal included a step change for an expanded apprenticeship program. APA GasNet submitted that it was facing a skills shortage and it was necessary to hire apprentices to address the problem.[502]

In the draft decision, the AER did not accept this step change because providing a step change would double count APA GasNet's apprenticeship costs.[503] This is because base year opex already compensates APA GasNet for training costs.

APA GasNet submitted that a prudent service provider would require the step change because the apprenticeship program will not double count costs because it is expanding its apprenticeship program.[504]

APA GasNet further submitted that a step change, for the expanded apprenticeship program, is required to incentivise network service providers (NSPs) to undertake training programs that will address skills shortages. APA GasNet submitted that as new apprentices are hired and experienced employees leave, productivity levels in its workforce will decrease. As productivity levels will decrease there is no incentive to hire new apprentices without a step change. Therefore, APA GasNet considers taking the approach suggested by the AER in its draft decision would create incentives for service providers to cut costs in the short term to the long term detriment of society.[505]

In relation to APA GasNet's submission that opex is required for the expansion of the program, the AER considers that including a step change for an expanded apprenticeship program would double count costs involved in replacing staff that retire or resign. When a revealed cost opex forecasting approach is used, service providers are provided with an allowance for labour costs on the basis of base year expenditure. This allowance includes real cost escalation for forecast labour cost increases. To the extent a skilled labour shortage is expected, forecast labour cost escalation will reflect the effect of the shortage on labour costs. When staff leave, funds become available for APA GasNet to hire new staff. How APA GasNet decides to respond to its skills shortage with the allowance provided is a business decision for APA GasNet.

Furthermore, APA GasNet's apprenticeship program does not represent an expansion as APA GasNet proposes to hire fewer apprentices than it did in the current access arrangement period.[506] The new apprentices APA GasNet will employ in the 2013–17 access arrangement period will replace current apprentices who are nearing the completion of their apprenticeships.

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501 NGR, rr. 91(1), 74(2).
502 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 171.
503 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, p. 137.
504 APA GasNet, *Revised access arrangement submission*, November 2012, p. 111.
505 APA GasNet, *Revised access arrangement submission*, November 2012, p. 109.
506 APA GasNet, *Response to information request 15*, 27 June 2012, p. 7.

In relation to APA GasNet's submission that a step change is required to incentivise it to undertake training programs, the AER considers that a prudent service provider, acting efficiently, has an incentive to hire new apprentices without a step change. When experienced employees leave a firm, the firm has two options. It may either hire a skilled worker to replace the employee or, hire an unskilled worker—such as an apprentice—and train them. If it is cheaper to hire an apprentice, and train them, an efficient firm will have an incentive to do so. Given that the AER has escalated operating expenditure for expected labour cost increases, it considers a prudent service provider would not require an incremental increase in opex.[507]

As the AER considers a prudent service provider would not require a step change for the apprenticeship program, the AER is also not satisfied including a step change would lead to a forecast of total opex that has been arrived at on a reasonable basis, or is the best forecast possible in the circumstances.[508]

Western District depot

The AER's final decision is to not approve a step change in opex for the Western District depot. This is because there has not been a change in APA GasNet's operating environment that requires an incremental increase in opex above the base year level. [509] Furthermore, the forecast costs of the depot are allocated inappropriately and do not take into account related cost savings.

In its initial proposal, APA GasNet included a step change to establish a depot in Warrnambool to accommodate technicians currently working from home. APA GasNet submitted that it must conduct periodic audits of its employees' home workstations under occupational work and safety legislation. APA GasNet submitted this was not appropriate and proposed to provide work accommodation that it could readily monitor for safety.[510]

In the draft decision, the AER did not approve this step change.[511] APA GasNet did not identify any new regulatory requirements that would require a new depot. As there were no new regulatory requirements, a prudent service provider would only establish the proposed depot if the benefits of the depot outweigh the costs. If the benefits of the depot outweigh the costs, a step change is not required as the cost savings will already create adequate incentive to establish the depot.

In response to the AER's draft decision APA GasNet submitted, that although there had been no regulatory change, a new depot was required due to increased staff numbers in the Western District region for APA Group activities.[512] With the increase in staff numbers, APA GasNet considered that, the prudent way to deal with health and safety risks was to establish a depot in the Western District.[513]

The AER maintains that a prudent service provider would not require a step change for the Western District depot. This is because there are no new regulatory requirements, or network growth, that would require APA GasNet to establish a Western District depot.

The AER considered APA GasNet's submission in its revised access arrangement proposal that:

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507 NGR r. 91(1).
508 NGR, r. 74(2).
509 NGR, r. 91(1).
510 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 172.
511 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, p. 138.
512 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
513 APA GasNet, *Revised access arrangement submission*, November 2012, p. 113.

> With a single employee in the region, it was prudent and reasonable for APA GasNet to manage the HSE risks associated with an employee working from a home base.[514]

The AER asked APA GasNet what activities had led to an increase in APA GasNet staff. APA GasNet informed the AER that it 'still has a single dedicated employee in the Western Region'.[515]

APA GasNet informed the AER that the new employees were hired because:

> APA Group now has additional activities in the region beyond the APA GasNet business. As a result, the demands for on-call and after-hours technical support have increased.[516]

The AER accepts that a prudent service provider may require additional expenditure to establish a new depot if the key driver for the new depot is additional staff required by APA GasNet network growth itself. However, APA GasNet did not identify any network growth specific to the APA GasNet network in the region that would require additional staff.[517] Any growth in APA Group activities 'beyond the APA GasNet business' are not a basis for increased costs under this access arrangement review.

Additionally 50 per cent of the costs associated with the depot have been allocated to APA GasNet.[518] The AER considers this is high given only one third of the staff is dedicated to APA GasNet activities.[519]

A forecast of total opex that includes a step change for the Western District depot is neither reasonable nor the best possible in the circumstances. APA GasNet submitted that it bears some risk associated with the existing staff accommodation arrangements in the Western Region. Due to increased staff levels in the region, the cost of a depot is now lower than the risks APA GasNet currently bears.[520] If the cost of the depot is lower than the explicit and implicit costs of existing arrangements included in APA GasNet's base year, including a step change would overcompensate APA GasNet. For the above reasons, the AER considers such expenditure would not be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

Allocation between regulated and non-regulated functions

The AER proposes a step change in opex to reflect an increased allocation of shared costs to regulated functions. However, the AER considers APA GasNet's proposed allocation between regulated and non-regulated functions is not the best estimate possible in the circumstances and is not consistent with the opex criteria.[521] The AER considers an allocation of 93.3 per cent is the best estimate possible in the circumstances. This forecast reflects the AER's adjustments to APA GasNet's capex forecasts (discussed in attachment 4)

APA GasNet's initial proposal adjusted base opex to account for a change in allocation of shared costs to regulated assets. Shared costs were allocated to regulated assets based on the share of

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514 APA GasNet, *Revised access arrangement submission*, November 2012, p. 113.
515 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
516 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
517 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
518 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
519 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
520 APA GasNet, *Response to information request Fd7a*, 20 December 2012, p. 1.
521 NGR, rr. 91, 74.

overall asset value. APA GasNet considered it appropriate to apply an updated allocation percentage to forecast opex, reflecting forecast asset values for the 2013–17 access arrangement period.[522]

The AER in its draft decision considered an adjustment to base year opex to account for a change in allocation of shared costs was inconsistent with the fixed principle at clause 7.2(h)(ii). However, the fixed principle 7.2(h)(iii) does allow for step changes and the AER considered the proposed allocation of shared costs could be considered as a step change.[523]

The AER proposed a step change based on its draft decision asset values for the for the 2013–17 access arrangement period.[524] A change in capex forecast would change the total asset value of the regulated asset base. Consequently this would affect the proportion of shared costs between regulated assets and non-regulated assets.

APA GasNet's revised proposal recalculated the allocation between regulated and non-regulated functions based on its revised forecast asset values for the 2013–17 access arrangement period.[525]

As discussed in attachment 4 and attachment 6, the AER's final decision did not accept APA GasNet's proposed capex and depreciation for the 2013–17 access arrangement period. For the final decision on opex the AER recalculated the allocation percentage reflecting the final decision asset values for the 2013–17 access arrangement period.[526]

The AER notes that the EUCV raised concerns about the increased allocation of overheads to APA GasNet's regulated assets. It considered that APA GasNet's overheads increased by 25 per cent for the 2013–17 access arrangement period.[527]

APA GasNet's reallocation of overheads is as a result of APA GasNet's updated forecast asset values. The AER considers it reasonable for overheads to be reallocated across different business segments as the relative asset values that service the different business segments change.

7.4.5 Allowances

APA GasNet submitted that its forecast opex is supplemented by a number of other allowances to make up the total forecast opex allowance.[528] Table 7.5 provides a summary of the allowances proposed by APA GasNet and how the AER's final decision differs from APA GasNet's revised proposal. The AER's final decision on each allowance is discussed below.

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522 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 165

523 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, p. 131.

524 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, p. 141.

525 APA GasNet, *Revised access arrangement submission*, November 2012, p. 95

526 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, p. 141.

527 Energy Users Coalition of Victoria, *Submission to the AER: AER draft decision and revised applications from APA GasNet*, January 2013, p. 21.

528 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 119–122.

Table 7.5 Allowances ($million, 2012)

	2013	2014	2015	2016	2017	Total
APA GasNet revised proposal	3.76	1.01	–1.45	–2.54	0.74	1.52
AER final decision	1.63	0.54	0.58	0.58	0.57	3.89
Difference	–2.13	–0.47	2.03	3.12	–0.17	2.37

Note: Totals may not add due to rounding.
Source: AER analysis.

Efficiency carryover mechanism

The application of the efficiency benefit sharing scheme to APA GasNet is discussed in attachment 8.

Reset costs (incurred in the 2008–12 regulatory period)

The AER's final decision is to accept reset costs incurred by APA GasNet during the 2008–12 access arrangement period as part of the operating expenditure for the 2013–17 access arrangement period.

In its initial proposal APA GasNet proposed opex for the costs of preparing submissions for both the 2013–17 and 2018–22 access arrangement periods for recovery in the 2013–17 access arrangement period. In all of APA GasNet's previous access arrangements, reset costs were recouped in the access arrangement period following their accrual.[529]

In the draft decision, the AER approved APA GasNet's recovery of the 2018–22 access arrangement reset costs in the 2013–17 access arrangement period. The AER considered APA GasNet's historical level of expenditure on reset costs in doing this.[530] However the AER did not approve the recovery of the reset costs for the 2013–17 access arrangement period, as they were incurred in the previous access arrangement period.[531]

In its revised proposal APA GasNet referred to its 2003–07 and 2008–12 access arrangements in which the ACCC determined that reset costs could be recovered in the period following that in which they are incurred.[532] APA GasNet also noted that the AER approved capitalisation of reset costs as a one-off transitional measure in its access arrangement final decision for ActewAGL.[533]

The AER has reconsidered the approach proposed by APA GasNet in relation to the reset costs recoverable in the 2013–17 access arrangement period. As a transitional measure for this access arrangement decision only, the AER accepts the approach approved by the ACCC in previous APA GasNet access arrangements. Therefore, the AER accepts reset costs incurred during the 2008–12 access arrangement period.

529 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 165.
530 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, p. 140.
531 NGR, r. 76(e).
532 APA GasNet, *Revised access arrangement submission*, November 2012, p. 120.
533 APA GasNet, *Revised access arrangement submission*, November 2012, p. 121.

Debt raising costs

In its draft decision, the AER determined benchmark debt raising costs using its established approach. The AER outlined this approach in its draft decision.[534] APA GasNet's revised proposal incorporated the benchmark debt raising cost allowance (as expressed in basis points per annum) determined by the AER in its draft decision.[535] The AER agrees with APA GasNet's revised proposal regarding the approach to determine APA GasNet's debt raising cost allowance.

Benchmark debt raising costs

As flagged in the AER's draft decision, the AER has updated the benchmark allowance for APA GasNet's final RAB and WACC values.[536] The AER's benchmark allowance provides for two standard sized bond issues. The unit costs and the benchmark debt raising cost are shown in Table 7.6.

Table 7.6 AER's final decision on debt raising costs for APA GasNet based on a nominal WACC of 7.22 per cent

Value	Explanation	1 issue	2 issues	3 issues
Opening RAB	The AER accepted opening RAB ($m, 2012)		617.55	
Total amount raised	Multiples of median MTN ($250m)	$250m	$500m	$750m
Gross underwriting fee	Median gross underwriting spread, upfront per issue, amortised	6.47	6.47	6.47
Legal and roadshow	$195 000 upfront per issue, amortised	1.12	1.12	1.12
Company credit rating	$55 000 per annum	2.20	1.10	0.73
Issue credit rating	4.5 basis points upfront per issue, amortised	0.65	0.65	0.65
Registry Fees (Startup)	$4 000 upfront per issue, amortised	0.02	0.02	0.02
Registry Fees (Ongoing)	$9 000 per issue per annum	0.36	0.36	0.36
Total	**Basis points per annum**	**10.8**	**9.7**	**9.4**

Source: AER analysis

534 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p. 146.

535 APA GasNet, PTRM 'input' tab, cell G273. APA GasNet Australia (Operations) Pty Limited Access Arrangement Revised Proposal Submission 1 January 2013 – 31 December 2017, September 2012, p. 122.

536 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017 Part 2 attachments, September 2012, p. 146. The debt raising costs (as expressed in dollar amount) in this final decision differs from that in APA GasNet's revised proposal because of the updated RAB and WACC inputs.

The debt raising cost benchmark for APA GasNet is 9.7 bppa of total debt raised. This has resulted in the debt raising costs for APA GasNet outlined below in Table 7.7.

Table 7.7 Debt raising costs ($million, 2012)

	2013	2014	2015	2016	2017	Total
AER final decision	0.35	0.35	0.40	0.39	0.39	1.88

Source: AER analysis

Other allowances

The AER considers a forecast increase in opex of $0.91 million ($2012) for the 2013–17 access arrangement period is the best estimate possible in the circumstances. This forecast reflects the AER's approved WACC (discussed in appendix B) and has been arrived at on a reasonable basis.

In its initial proposal APA GasNet submitted that it maintains two types of inventories related to the VTS. These are passive linepack and spare pipes, valves and fittings required for maintenance and emergency use.[537] APA GasNet considers both of these inventories represent an investment in the pipeline system and so a return on these assets is included in the allowed revenue.

The AER's draft decision approved APA GasNet's approach to calculating a return on passive linepack and spare parts. However, the AER did not approve APA GasNet's proposed WACC. Therefore, the AER's draft decision adjusted APA GasNet's proposed allowances to account for the AER's draft decision WACC.[538]

APA GasNet's revised proposal recalculated the allowances for passive linepack and spare parts to account for its revised proposal WACC.[539]

As discussed in appendix B, the AER's final decision is not to approve APA GasNet's proposed WACC. The AER therefore considers APA GasNet's proposed opex for other allowances is not arrived at on a reasonable basis and does not represent the best estimate possible in the circumstances and is not consistent with other of the opex criteria. The AER's final decision on other allowances reflects its revised decision on WACC.

7.5 Revisions

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

Revision 7.1: Make all necessary amendments to reflect the AER's final decision on the proposed opex allowances for the 2013–17 access arrangement period, as set out in Table 7.1 and Table 7.5.

537 APA GasNet, *Access arrangement submission*, 31 March 2012, p. 182.
538 AER, *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013-17*, September 2012, Part 2, pp. 146–147.
539 APA GasNet, *Revised access arrangement submission*, November 2012, p. 122.

8 Incentive mechanisms

Incentive mechanisms are an important tool to provide service providers continuous incentives to reduce costs and increase efficiency in the provision of pipeline services. Incentive mechanisms provide a financial reward (or penalty) for efficiency gains (or losses) achieved compared to expenditure benchmarks for the access arrangement period. Any rewards (or penalties) for efficiency gains (or losses) are added to the service provider's total revenue and carried forward for five years after the year in which the efficiency gain (or loss) is made. Five years corresponds to the length of the access arrangement period.

This attachment presents the AER's assessment of APA GasNet's proposed:

- carryovers from the operation of the incentive mechanism in the 2008–12 access arrangement period, namely the benefit sharing allowance
- incentive mechanism for the 2013–17 access arrangement period.

8.1 Final Decision

8.1.1 Carryover from the 2008–12 access arrangement period

The AER does not approve APA GasNet's proposed carryover of –$4.4 million ($2012) from the 2008–12 access arrangement period. This is because there is no provision for negative carryovers under the National Third Party Access Code for Natural Gas Pipelines (the Gas Code) under which APA GasNet's access arrangement was approved. Consequently the AER considers a carryover of zero from the 2008–12 access arrangement period should apply.

8.1.2 Incentive mechanism for the 2013–17 access arrangement period

The AER does not approve the incentive mechanism proposed by APA GasNet for inclusion in the 2013–17 Access arrangement. The AER considers amendments are necessary to ensure the incentive mechanism will encourage efficiency in the provision of services by APA GasNet.[540] It considers amendments will provide more effective incentives in order to promote economic efficiency consistent with the revenue and pricing principles (RPP).[541]

8.2 Revised Proposal

8.2.1 Carryovers accrued in the 2008–12 access arrangement period

APA GasNet proposed a carryover of –$4.4 million ($2012) for the 2013–17 access arrangement period from applying the benefit sharing mechanism in the 2008–12 access arrangement (Table 8.1).

Table 8.1 Proposed carryover from the 2008–12 access arrangement period ($'000, 2012)

	2013	2014	2015	2016	2017	Total
APA GasNet revised proposal	1.0	–1.6	–2.0	–1.7	–	–4.4

Source: APA GasNet, Victorian Transmission Revenue Model

[540] NGR, r. 98(1).
[541] NGR, r. 98(3); NGL, s. 24(3).

8.2.2 Proposed incentive mechanism for the 2013–17 access arrangement period

APA GasNet did not adopt the majority of the revisions to its incentive mechanism required by the AER in its draft decision. It proposed to retain the benefit sharing allowance from the 2008–12 access arrangement period subject to minor amendment.

8.3 Assessment approach

The AER's assessment approach for incentive mechanisms is set out in its draft decision. See attachment 7 of the draft decision.[542]

8.4 Reasons for Decision

8.4.1 Carryover from the 2008–12 access arrangement period

The AER has not approved the carryover of –$4.4 million ($2012) from the 2008-12 regulatory period because there is no provision under the Gas Code that allows for the application of negative carryovers.

This differs to the AER's draft decision. The AER determined a negative carryover in its draft decision on the basis that the definition of 'efficiency gains' in APA GasNet's 2008–2012 access arrangement expressly allows for the benefit sharing allowance to be either positive or negative. Under clause 5(1)(a) of the NGR transitional provisions, the AER must take into account the operation of an incentive mechanism approved 'under section 8.44 of the Gas Code and ensure, in particular, that revenue calculations made for the next access arrangement period properly reflect increments or decrements resulting from the operation of the incentive mechanism'. APA GasNet's 2008–2012 access arrangement was approved by the ACCC under the Gas Code. On this basis, the AER determined a negative carryover in its draft decision.[543]

The AER applied the same approach in its draft decisions for Envestra and Multinet to the accrual of negative carryovers under their respective incentive mechanisms.[544] However, both Envestra and Multinet objected to this approach in their revised proposals on the basis that an ESCV appeal panel decision in 2008 had broader application than recognised by the AER in its draft decisions.[545] In that appeal Envestra Albury objected to the application of a negative carryover it accrued during its 2003–2008 access arrangement period.[546] Its access arrangement was approved by the ESCV under the Gas Code. (APA GasNet's access arrangement was approved by the ACCC under the Gas Code.) The Essential Services Commission Appeal Panel upheld the appeal and varied the carryover to zero on the basis that there is 'no power or discretion' provided by the Gas Code, under section 8.44 or other of the Gas Code provisions, which enabled the ESCV to make provision for negative carryovers in Envestra Albury's access arrangement.[547] Section 8.44 of the Gas Code provides:

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542 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, Part 2,* September 2012, p. 150.

543 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, Part 2,* September 2012,pp. 150–151.

544 AER, AER, *Draft decision, Envestra access arrangement proposal for 1 January 2013 – 31 December 2017, Part 2,* September 2012,, pp. 203–216; AER, *Draft decision, Multinet access arrangement proposal for 1 January 2013 – 31 December 2017, Part 2,* September 2012, pp. 170–184.

545 Envestra, *Revised access arrangement proposal, attachment 11-1: incentive mechanism*, November 2012; Multinet, *Revised access arrangement proposal*, November 2012, pp. 175–181.

546 Essential Services Commission Appeal Panel, *Application by the Albury Gas Company (Envestra Albury)*, E2/2008, 11 November 2008.

547 Essential Services Commission Appeal Panel, *Application by the Albury Gas Company (Envestra Albury)*, E2/2008, 11 November 2008, paragraph 177.

> The Reference Tariff Policy should, wherever the Relevant Regulator considers appropriate, contain a mechanism (an Incentive Mechanism) that permits the Service Provider to retain all, or any share of, any returns to the Service Provider from the sale of the Reference Service:
>
> (a) during an Access Arrangement Period, that exceed the level of returns expected for that Access Arrangement Period; or
>
> (b) during a period (commencing at the start of an Access Arrangement and including two or more Access Arrangement Periods) approved by the Relevant Regulator, that exceed the level of returns expected for that period, particularly where the Relevant Regulator is of the view that the additional returns are attributable (at least in part), to the efforts of the Service Provider. Such additional returns may result, amongst other things, from lower Non Capital Costs or greater sales of Services than forecast.

The ESC Appeal Panel held that section 8.44 was limited to sharing extra returns resulting from reduced costs but did not extend to imposing penalties for efficiency losses.[548]

On review, the AER accepts the position submitted by Envestra and Multinet as to the broader application of the ESC Appeal Panel Decision with regard to its findings that the language of the Gas Code only contemplated or intended for positive incentive mechanisms,[549] Therefore, while APA GasNet's specific access arrangement does provide for the imposition of a negative carryover, and clause 5(1)(a) of the NGR also countenances it, the Gas Code does not provide for it based on the ESC Appeal Panel's reasoning. As a result, the AER considers that a penalty cannot be applied to APA GasNet under its incentive mechanism. Accordingly, APA GasNet's carryover should be revised from –$4.4million ($2012) to zero.

8.4.2 Proposed incentive mechanism for the 2013–17 access arrangement period

Calculation of efficiency gains made in 2013

The AER does not approve APA GasNet's proposed approach to the carryover of efficiency gains made in 2013 because it also included efficiency gains made in 2012. Instead, the AER considers that it is necessary to apply the fixed principle which allows gains made in 2012 to be carried over for five years consistent with gains made in other years. By calculating the efficiency gain for 2013 in the way determined by the AER in its draft decision, efficiency gains made in 2012 are still carried over by the mechanism in clause 7.2(h)(ii) of APA GasNet's benefit sharing allowance and only by that mechanism. The AER's approach ensures efficiency gains/losses made in the 2008–2012 access arrangement period are only carried over by the mechanism in the 2008–2012 access arrangement and gains/losses made in the 2013–2017 period are only carried over by the mechanism in the 2013–2017 access arrangement period.

As discussed in the AER's draft decision, APA GasNet's proposed approach (which it maintained in its revised proposal) results in the efficiency gains made in 2012 being carried over for six years. This is because opex forecasts, which are set based on actual expenditure in 2011, implicitly carry over the benefits of any efficiencies made in 2012 for five years (that is, the 2013–17 access arrangement period). Calculating the efficiency gain for 2013 as proposed by APA GasNet would include efficiency gains made in both 2012 and 2013 being included. Thus, efficiency gains (losses) made in 2012 would be carried over for six years—five years implicitly through the opex forecasts and for a sixth year through the efficiency carryover payment in 2018. The revised approach in the AER's draft decision removed the incremental efficiency gain (loss) made in 2012 from the calculation of the

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548 Essential Services Commission Appeal Panel, *Application by the Albury Gas Company (Envestra Albury)*, E2/2008, 11 November 2008, paragraph 175.

549 Essential Services Commission Appeal Panel, *Application by the Albury Gas Company (Envestra Albury)*, E2/2008, 11 November 2008, paragraphs 173–175.

efficiency gain (loss) for 2013, thus ensuring any efficiency gain (loss) made in 2012 is carried over for only five years.[550]

APA GasNet submitted in its revised proposal that the benefit sharing allowance included in its 2008–12 access arrangement period was designed to operate over four years, with the final year of the period, 2012, omitted from the scheme. APA GasNet considered the AER's revisions would retrospectively apply the benefit sharing allowance to actual expenditure in 2012. It submitted that this was not appropriate and not within the AER's powers because the incentive mechanism for the current access arrangement period is a fixed principle..[551]

However, the AER has concluded that APA GasNet's current benefit sharing allowance does apply to efficiency gains made in 2012, although in a different manner to other years. This is required because 2012 expenditure occurs after base year expenditure (in 2011). To ensure APA GasNet retains efficiency gains made in 2012 for five years, clause 7.2(h)(ii) of its current benefit sharing allowance provides:[552]

> In calculating the allowable revenue for operations and maintenance expenditure for the Fourth Access Arrangement Period, the Regulator must take into account the actual operating costs in 2011, adjusted for the change in forecast operating costs between 2011 and 2012 and, to avoid doubt, not taking into account the efficiency gain (loss) made in 2012.

For these reasons, the revision proposed by the AER does not retrospectively change the way in which efficiency gains/losses made in 2012 are carried over.

The AER notes that similar clauses are included in other gas network businesses opex incentive mechanisms. For example, clause 6.4(b)(1) of part B of Multinet's access arrangement states:[553]

> For operating expenditure, it will be assumed that the Service Provider does not achieve more than the forecast productivity gain between the penultimate and last years of the Third Access Arrangement Period. As a result, if the Service Provider makes an efficiency gain in the last year of the Third Access Arrangement Period, there would be no carryover in respect of that year. However, the operating expenditure benchmark for the Fourth Access Arrangement Period will then be higher than otherwise for the Fourth Access Arrangement Period by the amount of the efficiency gain. **This would provide the Service Provider with precisely the same reward had the expenditure level in the last year been known** [emphasis added].

The clause in Multinet's access arrangement explains the reason for assuming no efficiency gain in the last year when forecasting opex in the following access arrangement period. Applying clause 7.2(h)(ii) of APA GasNet's 2008–12 access arrangement achieves the same outcome.

Deletion of the proposed fixed principle

The AER does not approve APA GasNet's proposed fixed principle clause 8.2(h). It considers the clause is not necessary to ensure the incentive mechanism will encourage efficiency in the provision of services by APA GasNet.[554]

The AER included a revision in its draft decision on the approach to forecasting opex for the 2018–22 access arrangement period. The purpose of this revision was to clarify the approach in APA GasNet's proposed access arrangement. APA GasNet did not adopt the AER's revisions to

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550 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, Part 2,* September 2012,p. 154.
551 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 92–93.
552 APA GasNet, Revised GasNet Australia Access Arrangement, 2008.
553 Multinet, *Access arrangement: Part B—Reference tariffs and reference tariff policy*, 2 June 2008, p. 15.
554 NGR, r. 98(1).

clause 8.2(h)(i) (apart from deleting the requirement for the AER to comply with the NGR). However, it stated it wished to further engage with the AER as to the appropriate formulation of clause 8.2(h).

After further engagement with the AER, APA GasNet stated:[555]

> APA has reviewed this fixed principle (as drafted by APA and as amended by the AER) and considers that it describes opex forecasting practices that do not reflect current established regulatory practice for other regulated businesses.
>
> At the time the fixed principle was drafted (it first appeared in GasNet's second access arrangement approved in 2003) there was limited gas sector experience or established regulatory practice associated with the operation of the Code. The fixed principle was seen as a way to reduce regulatory risk in the way that operating expenditure would be forecast in later AAs.
>
> APA considers, however, that regulatory risk in this area has declined significantly and there has emerged clear regulatory practice using the base year roll forward methodology, which differs from that described in the fixed principle. APA therefore proposes to remove fixed principle clause 8.2(h) from its access arrangement proposal.

Given APA GasNet considers there is now clear regulatory practice the AER is satisfied the fixed principle is no longer required to ensure the incentive mechanism will encourage efficiency in the provision of services by APA GasNet.[556]

8.5 Revisions

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

Revision 8.1: delete and replace clause 8.2(c) of the access arrangement proposal to state: The efficiency gain for 2013 is to be calculated in accordance with the following formula:

$$E_{2013} = (F_{2013} - A_{2013}) - (F_{2012} - A_{2012}) + (F_{2011} - A_{2011})$$

where:

E_{2013} is the efficiency gain in 2013

F_{2013} is the forecast operating costs for 2013 as specified in clause 8.2(f)

A_{2013} is the actual operating costs for 2013 as specified in clause 8.2(e)

F_{2012} is the forecast operating costs for 2012 as specified in clause 8.2(f)

A_{2012} is the actual operating costs for 2012 as specified in clause 8.2(e)

F_{2011} is the forecast operating costs for 2011 as specified in clause 8.2(f)

A_{2011} is the actual operating costs for 2011 as specified in clause 8.2(e).

Revision 8.2: amend clause 8.2(e) to state: in each case, A_t, A_{t-1}, A_{2011}, A_{2012} and A_{2013} must be determined:

Revision 8.3: delete clause 8.2(h) of the access arrangement proposal.

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555 APA GasNet, *Response to AER information request FD8a*, 30 January 2013, p. 3.
556 NGR, r. 98(1).

Revision 8.4: delete and replace table 11.1 in the proposed Access arrangement information with Table 8.2.

Table 8.2 Forecast operating expenditure for incentive mechanism purposes ($'million, 2012)

	2011	2012	2013	2014	2015	2016
Controllable opex	27.50	27.94	28.19	28.68	29.45	30.40

Source: AER analysis.

9 Corporate income tax

When determining the total revenue for APA GasNet, the AER must estimate APA GasNet's cost of corporate income tax.[557] APA GasNet has adopted the post-tax framework to derive its revenue requirement for the 2013–17 access arrangement period.[558] Under the post-tax framework, a separate corporate income tax allowance is calculated as part of the building blocks assessment.

9.1 Final decision

The AER does not approve APA GasNet's revised proposed forecast corporate income tax allowance of $47.6 million ($nominal)[559] for the 2013–17 access arrangement period. This is because the AER's adjustments to other building block components have had a consequential effect on the forecast corporate income tax allowance. These are discussed in other attachments and include:

- forecast capex (attachment 4)
- depreciation (attachment 6)
- forecast opex (attachment 7).

These adjustments result in an estimated cost of corporate income tax allowance of $16.3 million ($nominal) as shown in Table 6.1. This represents a reduction of $31.3 million ($nominal) or 65.7 per cent of APA GasNet's revised proposed corporate income tax allowance. Based on the approach to modelling the cash flows in the post-tax revenue model (PTRM), the AER has derived an effective tax rate of 28.2 per cent for this final decision.

The AER approves APA GasNet's revised proposed opening tax asset base of $237.0 million ($nominal) as at 1 January 2013.[560] APA GasNet's revised proposal adopted all of the AER's draft decision adjustments to its proposed roll forward model (RFM), and provided an updated estimate for the 2012 tax additions used to roll forward the tax asset base.[561] The AER has reviewed and accepts the updated estimate for the 2012 tax additions.

The AER accepts APA GasNet's revised proposed standard tax asset lives, which are the same as those proposed by APA GasNet in its original proposal.[562] As discussed in attachment 5, the AER's final decision does not accept APA GasNet's revised proposed equity raising cost allowance. Therefore, the AER considers a standard tax asset life for amortising equity raising cost is not necessary. Further, the AER accepts APA GasNet's revised proposed remaining tax asset lives as at 1 January 2013. These revised remaining tax asset lives are directly attributable to APA GasNet's updated estimate for the 2012 tax additions, which the AER accepts in this final decision.

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557 NGR, r. 76(c).
558 APA GasNet, *Revised Proposal – Post Tax Revenue Model (PTRM)*, November 2012.
559 All dollar amounts are in nominal dollar terms in this attachment because corporate income tax is an output of the post-tax revenue model (PTRM). The output of the PTRM such as the tax allowance and regulatory depreciation are expressed in nominal dollar terms, whereas the inputs of the PTRM such as forecast opex and capex are expressed in real dollar terms.
560 APA GasNet, *Revised proposal PTRM*, November 2012.
561 APA GasNet, *Revised proposal PTRM*, November 2012.
562 APA GasNet, *Proposal PTRM*, March 2012.

Table 9.1 AER's final decision on corporate income tax allowance for APA GasNet ($million, nominal)

	2013	2014	2015	2016	2017	Total
Tax payable	4.4	4.8	4.4	4.5	3.7	21.7
Less: value of imputation credits	1.1	1.2	1.1	1.1	0.9	5.4
Net corporate income tax allowance	3.3	3.6	3.3	3.4	2.8	16.3

Source: AER analysis.

9.2 Revised proposal

In its revised proposal, APA GasNet proposed a total corporate income tax allowance for the 2013–17 access arrangement period of $47.6 million ($nominal) as set out in Table 9.2.

APA GasNet used the AER's PTRM to calculate the corporate income tax allowance for the 2013–17 access arrangement period.[563] In estimating its revised proposed corporate income tax allowance, APA GasNet used:[564]

- an opening tax asset base of $237.0 million ($nominal) as at 1 January 2013
- 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 as set out in its revise proposal PTRM.

Table 9.2 APA GasNet's revised proposal on corporate income tax allowance ($million, nominal)

	2013	2014	2015	2016	2017	Total
Tax payable	12.7	12.9	13.2	13.0	11.7	63.4
Less: value of imputation credits	3.2	3.2	3.3	3.2	2.9	15.9
Net corporate income tax allowance	9.5	9.6	9.9	9.7	8.8	47.6

Source: APA GasNet, *Revised proposal PTRM*, November 2012.

9.3 Assessment approach

The AER's assessment approach for the corporate income tax allowance is set out in its draft decision. See section 8.3, attachment 8 of the draft decision for a detailed explanation of the assessment approach.

563 This means that APA GasNet adopted a straight line method to calculate tax depreciation. However, APA GasNet made some modelling errors in the revised proposal PTRM relating to tax depreciation calculation (discussed in section 9.4.4).

564 APA GasNet, *Revised proposal PTRM*, November 2012.

There were no submissions that commented on APA GasNet's corporate income tax allowance.

9.4 Reasons for decision

The AER's final decision on APA GasNet's forecast corporate income tax allowance is $16.3 million ($nominal). This represents a reduction of $31.3 million ($nominal) or 65.7 per cent of APA GasNet's revised proposed corporate income tax allowance.

The AER accepts APA GasNet's updated estimate for the 2012 tax additions (capex). Consequently, the AER approves APA GasNet's revised proposed opening tax asset base of $237.0 million ($nominal) as at 1 January 2013. Further, the AER accepts APA GasNet's revised proposed standard tax asset lives except for the 'Equity raising cost' asset class. In relation to the remaining tax asset lives as at 1 January 2013, the AER accepts APA GasNet's minor revisions which are a direct consequence of the updated estimate for the 2012 tax additions.

In this final decision, the AER has adjusted other building block components that impact on forecast revenues. These adjustments will consequently affect the forecast corporate income tax allowance.

9.4.1 Opening tax asset base as at 1 January 2013

The AER approves APA GasNet's revised proposed opening tax asset base of $237.0 million ($nominal) as at 1 January 2013.

In the draft decision, the AER accepted APA GasNet's proposed method to roll forward the tax asset base to 1 January 2013.[565] However, the AER made a number of input changes to the proposed roll forward model (RFM) which affected the opening tax asset base as at 1 January 2013. APA GasNet's revised proposal adopted all of these draft decision adjustments, and provided an updated estimate for the 2012 tax additions used to roll forward the tax asset base. For the reasons as outlined in attachment 3 regarding the opening capital base, the AER accepts APA GasNet's updated capex estimate for 2012. Accordingly, the AER also accepts APA GasNet's updated estimate of 2012 tax additions. The AER therefore approves the revised proposed opening tax asset base as at 1 January 2013.

The AER's final decision on APA GasNet's tax asset base roll forward for the 2008–12 access arrangement period is set out in Table 9.3.

Table 9.3 AER's final decision on APA GasNet's roll forward of the tax asset base for the 2008–12 access arrangement period ($million, nominal)

	2008	2009	2010	2011	2012
Opening tax asset base	165.7	186.1	177.0	167.7	201.4
Net capital expenditure	37.8	10.2	10.6	53.6	58.0
Less :tax depreciation	17.4	19.3	19.9	19.9	22.4
Closing tax asset base	186.1	177.0	167.7	201.4	237.0

Source: AER analysis.

[565] AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 160-161.

9.4.2 Standard tax asset life

The AER accepts APA GasNet's proposed standard tax asset lives except for the 'Equity raising cost' (ERC) asset class. The AER in its draft decision[566] considered that the proposed standard tax asset lives are consistent with Australian taxation law.[567] Also, the proposed standard tax asset lives are largely consistent with the ACCC's approved standard tax asset lives for the 2008–12 access arrangement period.[568]

In its revised proposal, APA GasNet proposed a new asset class for equity raising costs for the 2013–17 access arrangement period.[569] The AER does not accept the revised proposed 'Equity raising cost' asset class. This is because the AER considers that APA GasNet does not require a benchmark equity raising cost allowance associated with its forecast capex for the 2013–17 access arrangement period (discussed in attachment 4). Therefore, there is no expenditure amount to be amortised for this asset class and a standard tax asset life is not necessary.[570]

9.4.3 Remaining tax asset life

The AER accepts APA GasNet's revised proposed remaining tax asset lives as at 1 January 2013.

In the draft decision, the AER accepted APA's GasNet's approach to calculating the remaining tax asset lives as at 1 January 2013.[571] The AER's draft decision updated the remaining tax asset lives using the weighted average method as proposed by APA GasNet. APA GasNet's revised proposal adopted all the input changes to the RFM required by the draft decision, and continued to apply the weighted average method to calculate the remaining tax asset lives.[572] However, as a result of APA GasNet's updated estimate for the 2012 tax additions, the revised proposed remaining tax asset lives differ slightly to those determined in the draft decision. As discussed in section 9.4.1, the AER has reviewed and accepts the updated estimate for the 2012 tax additions. The AER therefore accepts the revised proposed remaining tax asset lives as at 1 January 2013. The AER's final decision on APA GasNet's standard tax asset lives and remaining tax asset lives as at 1 January 2013 is set out in table 9.4.

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566 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 161-162.

567 *Income Tax Assessement TAA 1997*, s. 40.102(5).

568 ACCC, *2006 Regulated asset base model v2*, 2006.

569 APA GasNet, *Access arrangement revised proposal submission*, November 2012, pp. 30-33.

570 If the AER was to allow equity raising costs, the AER would not accept APA GasNet's revised proposed approach for assigning the standard tax asset life for the 'ERC' asset class. Consistent with an ATO determination, the AER considers the standard tax asset life for equity raising costs purposes should be 5 years. See ATO, *Guide to depreciating assets 2001-02: Businesses-related costs – section 40–880 deductions, ATO reference; NO NAT7170*.

571 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 161-162.

572 APA GasNet, *Revised proposal PTRM*, November 2012.

Table 9.4 The AER's final decision on APA GasNet's standard tax asset lives and remaining tax asset lives

Tax asset class	AER final decision - standard tax asset life	AER final decision - remaining tax asset life
Pipelines	20	10.8
Compressors	20	16.5
City gates and field regulators	20	14.3
Odourant plants	20	18.5
Gas quality	20	4.2
Other	7.5	6.5
General buildings	60	49.5
General land	n/a	n/a

Source: AER analysis.
n/a Not applicable.

9.4.4 Modelling of tax depreciation calculation

The AER accepts most of APA GasNet's revised proposed methods for calculating the forecast corporate income tax allowance. However, the AER identified some minor modelling errors in the revised proposed PTRM relating to tax depreciation calculation and the roll forward of the tax asset base. APA GasNet did not convert forecast tax addition into nominal dollar terms before they were entered into the tax asset base for calculating tax depreciation. The AER considers that this was an error. Under the AER's standard approach to tax depreciation in the PTRM, nominal tax additions are added into the tax asset base and depreciated over time; and the tax asset base is rolled forward in nominal dollar terms. The AER has applied its standard approach to tax depreciation in the PTRM.[573]

9.4.5 Utilisation of imputation credits (gamma)

Consistent with its draft decision, the AER accepts APA GasNet's proposed value for the utilisation of imputation credits (gamma) for this final decision.

In the draft decision, the AER accepted APA GasNet's proposal to adopt the value of 0.25 for gamma.[574] As part of the post-tax nominal framework, the value of gamma must be applied to calculate the net corporate income tax allowance.

9.5 Revisions

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

Revision 9.1: Make all necessary amendments to reflect the AER's final decision on the corporate income tax allowance for the 2013–17 access arrangement period, as set out in table 9.1.

[573] This adjustment slightly lowers the revised proposed forecast corporate income tax allowance (by about 1 per cent).
[574] AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 162.

Revision 9.2: Make all necessary amendments to reflect the AER's final decision on the standard tax asset lives for the 2013–17 access arrangement period, as set out table 9.4

10 Capacity utilisation forecasts

This attachment sets out the AER's consideration of APA GasNet's capacity utilisation forecasts over the 2013-17 access arrangement period. The NGR requires, to the extent it is practicable, that an access arrangement include a forecast of pipeline capacity and utilisation of pipeline capacity over the access arrangement period. It must also include the basis on which such forecasts have been derived.[575] The assessment of a pipeline's capacity utilisation includes an assessment of the volumes of gas forecast to flow through the pipeline.

10.1 Final decision

The AER does not accept APA GasNet's revised capacity utilisation forecasts. The forecasts are arrived at on a reasonable basis, but do not represent the best possible forecasts in the circumstances.[576] While the AER accepts the forecasting methodology, it has adjusted the demand forecast to take into account the latest available information. This information includes an updated and adjusted forecast for one distribution network service, which is an input into APA GasNet's forecast for tariff V customers.

The reasoning for the AER's final decision is set out below.

10.2 Revised proposal

The primary differences between APA GasNet's revised proposal and its initial proposal are:

- A change in the methodology of forecasting tariff V gas demand
- Changes to the capacity of the network arising from the changes made to the capex program (Gas to Culcairn project and the WORM project).

Regarding the change in methodology, rather than utilising AEMO's top-down forecasts of tariff V demand to forecast VTS demand, APA GasNet has used the aggregated volumes of all the Victorian gas distribution networks, which were reviewed and approved by the AER in its draft decisions for those businesses. This has resulted in a reduction of the forecast volumes for tariff V demand on the VTS. APA GasNet proposes that this approach is preferable for the following reasons:[577]

- The forecasts reflect the individual circumstances of each distribution business
- The forecasts correlate well with the current experience of each distribution business
- The forecasts were developed by independent consultants for the distribution businesses, and reviewed by both the AER and its consultant ACIL Tasman.

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575 NGR, r. 72(1)(d).
576 NGR, r. 74(2).
577 APA GasNet, *Revised access arrangement submission*, November 2012, pp. 126–127.

Table 10.1 Forecast of VTS capacity

Forecast capacity (TJ/day)	2013	2014	2015	2016	2017
Longford to Melbourne	1030	1030	1030	1030	1030
South West Pipeline (from Iona)	353	353	414	414	414
South West Pipeline (to Iona)	129	129	190	190	190
Western Transmission System	28	28	28	28	28
New South Wales Interconnect (to Vic)	92	92	110	110	110
New South Wales Interconnect (from Vic (Summer))	83	83	90	90	90
New South Wales Interconnect (from Vic (Winter))	38	38	68	68	68

Source: APA GasNet, *Revised access arrangement*, November 2012, p. 13.

Table 10.2 Forecast of VTS utilisation

Forecast capacity utilisation	2013	2014	2015	2016	2017
Longford to Melbourne	43.3%	43.3%	43.2%	43.2%	43.4%
South West Pipeline (from Iona)	32.6%	31.1%	34.3%	33.8%	33.5%
South West Pipeline (to Iona)	11.6%	11.6%	7.9%	7.9%	7.9%
Western Transmission System	43.4%	42.8%	42.5%	42.2%	42.2%
New South Wales Interconnect (to Vic)	3.0%	3.0%	2.5%	2.5%	2.5%
New South Wales Interconnect (from Vic (Summer))	22.7%	22.7%	36.7%	36.7%	36.7%
New South Wales Interconnect (from Vic (Winter))	68.8%	68.8%	67.3%	67.3%	67.3%

Source: APA GasNet, *Access Arrangement Information Effective 01 January 2013 – 31 December 2017*, 9 November 2012, p. 14.

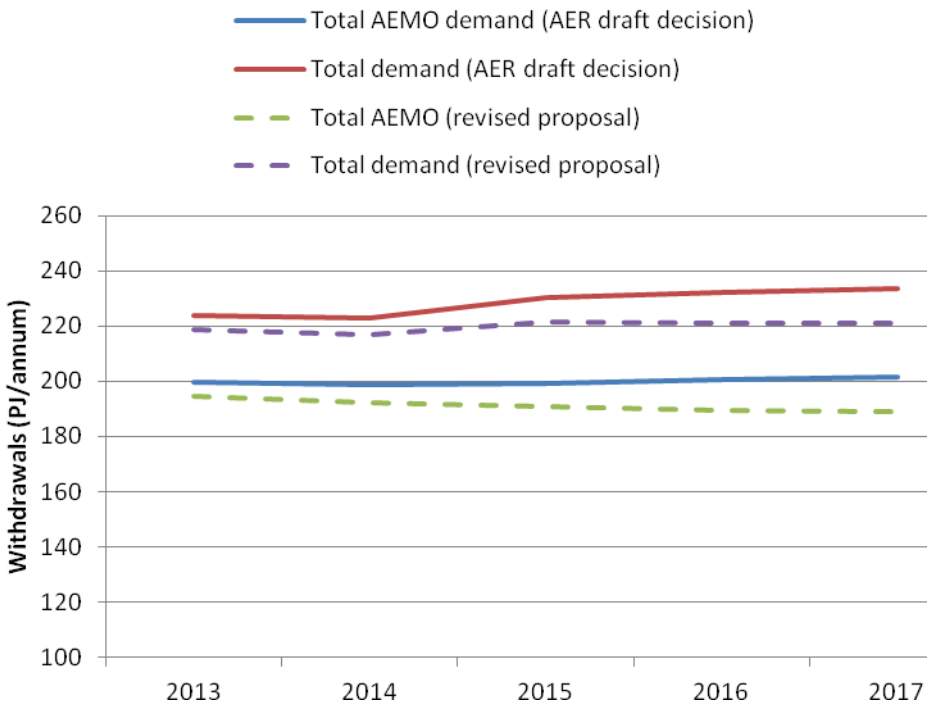
Table 10.3 Forecast of VTS maximum and average demand

Forecast demand (TJ/day)	2013	2014	2015	2016	2017
Maximum demand	1218.4	1213.2	1242.0	1245.6	1254.5
Average demand	571.0	566.0	580.0	577.0	579.0

Source: APA GasNet, *Revised access arrangement*, November 2012, p. 14.

The total volume of demand on the VTS is shown in Figure 10.4.

Figure 10.4 APA GasNet's forecast of total withdrawals on the VTS



Source: APA GasNet, *Revised access arrangement submission*, November 2012, AER analysis.
Note: Total demand includes exports and demand from GPG.

10.3 Assessment approach

The AER's assessment approach for the capacity utilisation forecasts is set out attachment 9 of the AER's draft decision.[578]

The AER received a submission from the Energy Users Coalition of Victoria (EUCV) on APA GasNet's revised methodology for forecasting tariff V demand.[579]

[578] AER, *Draft Decision: APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 169–170.

[579] Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, January 2013, p. 23.

10.4 Reasons for decision

The AER does not approve APA GasNet's capacity utilisation forecasts for the 2013–17 access arrangement period. The AER considers that the forecasts provided for tariff V demand on the VTS are arrived at on a reasonable basis, but do not represent the best possible forecasts in the circumstances. This is because the estimates of gas throughput do not incorporate the most recent information on tariff V demand on the VTS as set out in the AER's final decisions on the Victorian gas distribution businesses.[580] Using APA GasNet's proposed method for aggregating the forecasts of the distribution businesses, which the AER considers appropriate, the forecast utilisation of the pipeline differs from that set out by APA GasNet in its revised proposal for the reasons discussed below.

10.4.1 APA GasNet's capacity utilisation forecasts for the NSW Interconnect

APA GasNet has proposed a different capex program for the provision of extra capacity to move gas to Culcairn. As such, the capacity utilisation on this section of the network has changed. The estimated throughput of gas via the NSW Interconnect has not changed since the AER's draft decision. The AER considers that APA GasNet's own modelling of flows on the NSW Interconnect provides the best forecast in the circumstances of capacity utilisation on this section of the network. The AER accepts the updated capacity utilisation forecasts for this section of the pipeline.

10.4.2 APA GasNet's use of AEMO's forecasts

For its tariff V demand forecasts, APA GasNet in its revised proposal proposed to alter its approach to forecasting tariff V demand. Rather than using AEMO's aggregate-level forecasts as it did in its initial proposal, APA GasNet proposed to use the sum total of forecasts made by the distribution businesses, and approved by the AER in the relevant draft decisions.[581] For its tariff D demand forecasts, as in its initial proposal, APA GasNet in its revised proposal has used AEMO's forecasts of tariff D demand, and has updated these forecasts based on AEMO's 2012 Medium Term Outlook.

The AER considered EUCV's submission that the AER should apply the latest AEMO and ACIL Tasman forecasts of gas demand. EUCV states that it is "intriguing" that the APA GasNet revised forecasts of gas demand have reduced by 10% over a short timeframe, especially given an increase in demand at Culcairn.[582] The AER considers that forecast of throughput at Culcairn has not changed since the draft decision, but that given the changes to the capex program planned by APA GasNet, the utilisation rate has changed. Furthermore, the AER considers that the change in approach to forecasting for tariff V users on the VTS is the reason for the reduction in the forecast volume.

For tariff V demand forecasts, the AER considers that the approach taken by APA GasNet is consistent with the NGR.[583] The AER has reviewed the forecasts of the distribution businesses (SP AusNet, Multinet, and Envestra). Its conclusions on the best demand forecasts possible for those networks are set out in the AER's draft and final decisions for those networks. The load delivered by the VTS to tariff V customers, which receive gas via the distribution networks, should be equal to the sum of the distribution businesses forecasts, once adjustments for unaccounted for gas (UAFG) and gas sourced from other systems are made. The forecasts made by the distribution businesses incorporate detailed data gathered from each of the individual networks, and have been reviewed by the AER's consultant ACIL Tasman. The change in approach from APA GasNet's initial proposal is

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580 The AER has not approved SP AusNet's revised demand forecasts but has accepted those provided by MultiNet and Envestra.

581 APA GasNet, *Revised access arrangement submission*, November 2012, p. 126.

582 Energy Users Coalition of Victoria, *Submission to the AER: Draft decision and APA GasNet revised access arrangement proposal*, January 2013, p. 23.

583 NGR, r. 74(2)

understandable in light of the fact that APA GasNet did not have access to the individual forecasts of each of the Victorian gas distribution businesses prior to preparation of its initial proposal.

The forecasts provided to the AER by APA GasNet do not match exactly the forecasts in the AER's proposed amendments to the distribution businesses' forecasts as set out in the relevant AER draft decisions.[584] Also, the AER's approved forecasts for SP AusNet and Envestra have changed following the draft decision. Since the forecasts used as the bases for APA GasNet's tariff V demand forecasts have changed, the AER considers the forecasts in APA GasNet's revised proposal are not the best possible estimates in the circumstances. The AER has updated the forecasts of gas throughput on the VTS to align with its final decisions for the three Victorian gas distribution businesses.

The AER has further considered APA GasNet's adjustments made to the tariff V demand forecast to adjust for gas sourced from other networks and UAFG lost over the distribution networks. APA GasNet's adjustments for UAFG assume a larger amount of UAFG than that assumed in the benchmarks set by the Essential Services Commission of Victoria (ESCV) in its Gas Distribution System Code.[585]

APA GasNet's adjustments for UAFG are based on historical data from the current regulatory period and are similar to forecasts provided by the distribution businesses.[586] For the purpose of determining the tariff V demand forecast for the transmission network, the AER accepts that these forecasts are a reasonable basis for forecasting UAFG.[587] The AER considers that the UAFG forecasts need to be updated, however, due to APA GasNet providing incorrect figures, as well as updated figures being available in Envestra's revised proposal submission. The AER has used the same basis for the forecasts as APA GasNet, but made the required corrections and used the most up to date numbers. There is a small amount of gas served by the distribution networks that is not sourced from the VTS. APA GasNet has made an adjustment for this.[588] Information that would confirm the exact volume of gas served by other pipelines into the distribution systems is not publically available. APA GasNet has provided limited information to justify the size of the adjustment, but proposes that aggregate demand from these systems is small.[589] The AER has reviewed this adjustment and, based on the size of the townships served by pipelines other than the VTS (such as the South Gippsland and the Eastern Gas Pipeline), considers APA GasNet's adjustment to be the best possible forecast in the circumstances.

The AER considers that the use of AEMO's most up-to-date forecasts to forecast tariff D loads on the VTS is an appropriate approach, as discussed in the AER's draft decision.[590] The AER considers that the forecasts used by APA GasNet in its revised proposal, which are those used in AEMO's 2012 Victorian DTS Medium Term Outlook, are the best possible estimates in the circumstances for this component of demand.

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584 APA GasNet, *Response to AER information request FD2a (confidential)*, 10 December 2012.

585 APA GasNet, *Response to AER information request FD2a (confidential)*, 10 December 2012, and ESCV, Gas Distribution System Code, 12 December 2008, p. 39.

586 APA GasNet, *Response to AER information request FD12*, 31 January 2013, and ESCV, Gas Distribution System Code, 12 December 2008, p. 39.

587 The information on UAFG forecasts was submitted to the AER by the Victorian gas distributors in relation to the setting of UAFG benchmarks for the purposes of Part 19 of the NGR. However, this review is separate from the AER's assessment of the access arrangement proposals and is being undertaken by the ESCV.

588 APA GasNet, *Response to AER information request FD2a (confidential)*, 10 December 2012.

589 APA GasNet, *Revised access arrangement submission*, November 2012, p. 126.

590 AER, *Draft Decision: APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 171–173.

Peak demand

Although APA GasNet has changed its forecast of tariff V volumes to align with the sums of the forecasts of the Victorian gas distribution businesses, it has continued to use the 1-in-2 peak demand day volumes as forecast by AEMO. Although this is not relevant to the forecast of capacity utilisation dealt with in this attachment, it does affect the tariff outcomes for the VTS. The AER has adjusted the forecasts of 1-in-2 peak day demand for tariff V by utilising the same load factors as AEMO for the various VTS zones, but applying them to the reduced volumes consistent with the final approved and adjusted forecasts of the distribution businesses. This has resulted in a reduction in the 1-in-2 peak demand day withdrawal forecasts provided by APA GasNet.

10.4.3 APA GasNet's forecast of GPG-related demand

In its draft decision, the AER accepted APA GasNet's forecast for proposed demand relating to GPG.[591] APA GasNet's revised proposal has not altered the proposed forecasts of demand relating to GPG.

10.4.4 Other forecast components

Demand forecasts for the VTS also incorporate smaller components including throughput to the Western Underground Storage (WUGS), the SEAGas pipeline, VicHub, and the LNG facility at Dandenong. In its draft decision, the AER accepted APA GasNet's forecasts of these components of demand, and APA GasNet has not altered these forecasts in its revised proposal.[592] The AER accepts these forecasts in this final decision.

10.5 Revisions

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

Revision 10.1: All amendments proposed in this final decision on the capacity utilisation forecasts as set out in Tables 10.5, 10.6 and 10.7 below.

591 AER, *Draft Decision: APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, pp. 173–175.

592 AER, *Draft Decision: APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017*, September 2012, Part 2, p. 176, and APA GasNet, *Revised access arrangement submission*, November 2012, p. 126.

Table 10.5 AER's forecast of VTS capacity

Forecast capacity (TJ/day)	2013	2014	2015	2016	2017
Longford to Melbourne	1030	1030	1030	1030	1030
South West Pipeline (from Iona)	353	353	414	414	414
South West Pipeline (to Iona)	129	129	190	190	190
Western Transmission System	28	28	28	28	28
New South Wales Interconnect (to Vic)	92	92	110	110	110
New South Wales Interconnect (from Vic (Summer))	83	83	90	90	90
New South Wales Interconnect (from Vic (Winter))	38	38	68	68	68

Source: APA GasNet, *Revised access arrangement*, November 2012, 9 November 2012, p. 13.

Table 10.6 AER's forecast of VTS utilisation

Forecast capacity utilisation	2013	2014	2015	2016	2017
Longford to Melbourne	41.2%	40.9%	40.5%	40.3%	40.2%
South West Pipeline (from Iona)	33.5%	32.8%	32.5%	32.6%	33.0%
South West Pipeline (to Iona)	11.6%	11.6%	7.9%	7.9%	7.9%
Western Transmission System	43.7%	43.1%	42.7%	42.4%	42.5%
New South Wales Interconnect (to Vic)	3.0%	3.0%	2.5%	2.5%	2.5%
New South Wales Interconnect (from Vic (Summer))	22.7%	22.7%	36.7%	36.7%	36.7%
New South Wales Interconnect (from Vic (Winter))	68.8%	68.8%	67.3%	67.3%	67.3%

Source: AER analysis.

Table 10.7 AER's forecast of VTS maximum and average demand

Forecast demand (TJ/day)	2013	2014	2015	2016	2017
Maximum demand	1167.0	1158.1	1182.1	1177.4	1175.5
Average demand	574.8	574.6	588.6	586.8	587.2

Source: AER analysis.

11 Tariff setting

This attachment sets out the AER's assessment of APA GasNet's proposed reference tariff setting for the 2013–17 access arrangement period.

11.1 Final decision

The AER does not approve the revised reference tariffs or the revised reference tariff setting methodology submitted by APA GasNet. The AER proposes the following revisions to the revised reference tariff setting methodology to make the access arrangement proposal acceptable:

- indirect costs must be allocated to the Culcairn export point in the same way as they are allocated to the Northern tariff zones, as described in Revision 10.9 of the draft decision[593]
- the reference tariffs must be calculated using the appropriate forecast inputs, including pipeline flows, capex, opex, depreciation, tax and WACC, where the revised proposal submitted by APA GasNet did not adopt the proposals made by the AER for these factors
- the AMDQ CC tariff must be defined as described in attachment 2.

The reasons for the AER's decision are discussed in detail below.

11.2 Revised proposal

In its draft decision, the AER accepted many of the features of the APA GasNet tariff setting methodology, including:

- the tariff design
- the tariff classes and charging parameters
- the definition of the tariff zones
- the storage refill and cross-system tariff designs
- the specific prudent discounts
- the main principles behind the cost allocation procedures[594].

The main areas where the AER required revisions were in relation to the cost allocation principles and in the treatment of AMDQ CC.[595]

In its revised proposal, APA GasNet maintained all the features of its initial proposal and adopted the majority of the 13 revisions proposed by the AER in the draft decision.[596] APA GasNet also provided a revised tariff model where these revisions were implemented numerically.

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593 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, p. 196.

594 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, pp. 178-200.

595 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, pp. 178-200.

596 APA GasNet, *Revised proposal*, November 2012, pp.128-129.

The AER has reviewed APA GasNet's revised tariff model and is satisfied that the following revisions adopted by APA GasNet are correctly implemented in the tariff model:

- Revisions 10.1 to 10.3: the costs of the Warragul and Anglesea laterals are allocated to the appropriate asset groups and tariff zones so that the beneficiaries of these assets pay the costs. The allocation of the Kalkallo lateral costs is no longer relevant as this asset is not conforming capex
- Revisions 10.4 and 10.5: the costs of the asset groups comprising the South West pipeline, the Murray Valley pipeline, the Wollert to Wodonga expansion assets, and the Winchelsea compressor are each treated on a stand-alone basis
- Revision 10.6: the direct costs of the Wollert to Wodonga expansion are priced incrementally in the Culcairn export tariff
- Revision 10.7: tax liabilities are allocated to assets groups in the same way that the return to assets is allocated to asset groups
- Revision 10.8: the Western zone should not bear the "rolled-out" costs from assets which do not benefit this zone
- Revision 10.9 (adopted in part): Indirect and "rolled-out" costs are allocated to the Northern zones on a variable basis to make the real tariff deviations between the 2008–12 access arrangement period and the 2013–2017 access arrangement period commensurate with the forecast change in average revenue between these periods. APA GasNet notes that the resulting cost allocations are contingent on the specific revenue outcomes from the overall access arrangement
- Revisions 10.10 and 10.11: the Port Campbell and Culcairn injection tariffs are set in relation to the Longford injection tariff
- Revision 10.12 (adopted in part): a wide range of numerical, forecasting and coding errors have been corrected in the revised tariff model.

APA GasNet did not adopt all or part of the following revisions proposed in the draft decision:[597]

- Revision 10.9: APA GasNet does not accept that the Culcairn export tariff should pay a contribution to indirect and "rolled-out" costs. This means that the Culcairn export tariff will cover only the direct costs attributable to the carriage of gas to Culcairn
- Revision 10.12: APA GasNet does not accept the practical need to forecast tariff revenues attributable to exports through VicHub which are not sourced from Longford (including cross-system tariff revenues)
- Revision 10.13: APA GasNet does not accept the AER's decision to treat AMDQ CC as a pipeline service.

In addition to the methodological issues, the reference tariffs depend on the use of the appropriate forecast inputs, including pipeline flows, capex, opex, depreciation, tax and WACC. The revised proposal submitted by APA GasNet did not adopt the proposals made by the AER for these factors.

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[597] APA GasNet *Revised access arrangement submission*, November 2012, pp. 129-133.

11.3 Assessment approach

The AER's approach to assessing the proposed tariff setting methodology is set out in attachment 10 of the AER's draft decision.[598]

There were no submissions specifically in relation to the revised proposal on the tariff setting methodology.

11.4 Reasons for decision

VicHub exports

The AER has reviewed further information provided by APA GasNet and accepts APA GasNet's revised proposal for the forecast of tariff revenues from gas exports at the VicHub export point.

In the draft decision, the AER required that APA GasNet calculate the forecast revenues from exports through VicHub in light of the fact that historical evidence suggested that most VicHub exports were not sourced from the Longford injection point as was assumed by APA GasNet[599].

Based on APA GasNet's assumption, the forecast export revenues are zero (VicHub exports sourced at Longford generate zero matched injection and withdrawal tariff revenues). VicHub exports sourced elsewhere can generate injection, withdrawal and cross-system revenues, and if allowed for in the tariff model would lead to marginally lower initial tariffs.

APA GasNet in its revised proposal argued that the gas flows and the revenue effects are small and uncertain and difficult to forecast[600]. Furthermore, APA GasNet stated that it is preferable to ignore possible revenues at VicHub in generating initial tariffs and to account for any actual revenue generated in the annual tariff review process. In response to a query from the AER, APA GasNet provided 10 years of historical data of gas flows at VicHub and the source of these flows.[601]

The AER has examined the historical data, and considers that there is significant uncertainty in the level and sourcing of the exports at VicHub. The AER also accepts that any revenues generated from exports not sourced from Longford will be passed back to users through the operation of the annual tariff review process.

On this basis the AER accepts that APA GasNet's revised proposal for the forecast of tariff revenues from gas exports at VicHub is arrived at on a reasonable basis and is the best forecast possible in the circumstances[602].

NSW exports

The AER requires that indirect costs must be allocated to the Northern zones (including the Culcairn export point) to the extent required to make the real tariff deviations from the 2008–12 access arrangement period in each zone commensurate with the forecast change in average revenue per GJ across the whole system.

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598 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, pp. 182-184.

599 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, p. 192.

600 APA GasNet, *Revised access arrangement submission*, November 2012, p. 131.

601 AER, email to APA GasNet, *AER information request - FD6a*, 4 December 2012.
APA GasNet, *Response to AER information request - FD6a*, 14 December, 2012.

602 r. 74(2)(a) and (b).

This decision confirms the draft decision made by the AER.[603]

In the 2008–12 access arrangement none of these zones were allocated any indirect costs. The intent of the AER's draft decision was to allocate some indirect costs to these zones if possible whilst avoiding "tariff shock". In effect, if average tariffs across the system were to rise, then little or no indirect costs would be allocated to these zones, but if average tariffs were to fall, there would be scope to allocate some indirect costs to these zones.

APA GasNet in its revised proposal stated it had implemented the revision, subject to the final tariff outcomes[604]. However in its response to a query from the AER, APA GasNet proposed the removal of the indirect costs in respect of the Culcairn export point, in light of the highly competitive nature of the NSW market[605]. APA GasNet stated that no user of the VTS would be worse off in this situation. APA GasNet further stated that if indirect costs are allocated at Culcairn, there would be a risk that flows might not eventuate, which would provide no benefit to other VTS users.

The AER does not accept that the Culcairn export point should be treated differently from the adjacent Northern zones. The AER's draft decision takes into account the magnitude of the change in tariffs between the 2008–12 and 2013–17 access arrangement periods, and the fact that in the 2008–12 access arrangement period neither the Culcairn export point nor the Northern zones had any allocations of indirect costs. Therefore a "tariff shock" is not likely to eventuate at Culcairn.

AMDQ CC

The AER does not accept APA GasNet's revised proposal to classify AMDQ CC service as an unregulated service. The AER considers that the AMDQ CC service should be classified as a pipeline service under the NGL and further a reference service under the requirements of r. 101 of the NGR. For this reason, the AER propose to include the reference tariff for AMDQ CC in the tariff setting model.[606]

11.5 Revisions

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

Revision 11.1

Allocate indirect costs (including "rolled-out" costs) to the Culcairn export point on a variable basis between 0% and 100% to make the real (approved) tariff deviations from the 2008–12 access arrangement period, to the extent possible, commensurate with the forecast change in the average revenue per GJ across the system.

Revision 11.2

Calculate the reference tariffs using the approved forecast inputs, including pipeline flows, capex, opex, depreciation, tax and WACC

Revision 11.3

603 AER, Draft decision: APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, September 2012, Part 2, p. 199.
604 APA GasNet, *Revised access arrangement submission*, November 2012, p. 129.
605 APA GasNet, *Response to AER information request - FD6a*, 19 December 2012, p. 2.
606 See attachment 2 of this final decision for further information.

The AMDQ CC tariff must be defined as in attachment 2.

12 Tariff variation mechanism

This attachment sets out the AER's assessment of APA GasNet's proposed tariff variation mechanism for the 2013–17 access arrangement period.

12.1 Final decision

The AER does not approve the revised tariff variation mechanism proposal by APA GasNet. The AER considers the following revisions to the tariff variation mechanism section are required to make the access arrangement proposal acceptable:

- Separately report contracted AMDQ CC volume and actual injection volume under the price control model.
- Update the initial 2013 tariffs under Schedule A of the proposed access arrangement to reflect the approved revenue and demand forecast figures as set out in chapter 2 of this decision and to account for the interval of delay between the 2008–12 (the third) and the 2013–17 (the fourth) access arrangement period.
- Amend the definition of the revision commencement date to provide better clarity in relation to the nominated commencement date of the 2018–2023 (the fifth) access arrangement period.
- Amend the timeframe for the submission of an annual reference tariff adjustment notification from 30 to 50 business days consistent with other Victorian gas network businesses.
- Amend the process for approving cost pass through applications to provide that the review period will not include any time taken to obtain further information or expert advice.
- Amend the approval factors under the process for approving cost pass through applications to be consistent with other Victorian gas network businesses.

12.2 Assessment approach

The AER's approach to assessing APA GasNet's tariff variation mechanism is set out in part 2, attachment 11 of the draft decision.[607]

12.3 Revised proposal

In its draft decision, the AER required APA GasNet to amend some elements of its proposed tariff variation mechanism.[608] In the revised proposal APA GasNet has adopted and incorporated the following revisions required in the draft decision in its revised access arrangement proposal:

- revision to the definition for the EDD variable under the price control formula[609]
- revision to the approval process for annual tariff adjustments[610]
- revision to the starting date of the initial 2013 reference tariffs[611]

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607 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, part 2 attachment*, 11 September 2012, Part 2, p. 205.

608 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017, part 2 attachment* , 11 September 2012, Part 2, pp. 216-223.

609 APA GasNet *Revised proposal*, November 2012, p. 135.

610 APA GasNet *Revised proposal*, November 2012, p. 136.

APA GasNet did not adopt the draft decision to classify the AMDQ CC as a reference service.[612] APA GasNet proposed to classify AMDQ CC as an unregulated service and has removed the AMDQ CC reference tariff from the tariff schedule in the access arrangement. APA GasNet did not raise any comments on the method used by the AER to derive the AMDQ CC reference tariff. Further, APA GasNet updated the initial 2013 reference tariffs schedule in the access arrangement to reflect the revenue and demand forecasts contained in its revised proposal as opposed to those set out in the AER's draft decision.[613]

APA GasNet's 2008-2012 access arrangement provides no tariffs beyond 31 December 2012. However, the revisions to that access arrangement will not take effect until 1 July 2013. APA GasNet proposes that, in the interim, it will maintain its 2012 tariffs. The 2012 tariffs are higher than the 2013 tariffs. As a result, unless there is an adjustment to APA GasNet's 2013 tariffs, it will receive a revenue shortfall/windfall.[614]

APA GasNet submits there should be no adjustment. It submits that that the current scenario is irrelevant for setting tariff and revenue in the 2013–17 access arrangement period.[615] It also submits that r. 92(3) of the NGR does not apply.

APA GasNet further submits that the proposed carbon cost event delays recovery of carbon costs until two regulatory years after the cost was incurred.[616]

12.4 Reasons for decision

12.4.1 AMDQ CC tariff

The AER considers that the AMDQ CC service should be classified as a pipeline service under the NGL and further a reference service under the requirements of r. 101 of the NGR.[617] For this reason, the AER proposes to include a reference tariff for AMDQ CC in Schedule A of the access arrangement. The AER adopted the same approach set out in its draft decision to calculate the initial 2013 AMDQ CC reference tariff. The initial AMDQ CC reference tariff will be escalated on an annual basis over the 2013–17 access arrangement period by CPI consistent with the draft decision.[618]

Given the actual gas flows on the pipeline may be different from the contracted AMDQ CC volumes, the AER requires that the two volumes to be reported separately under the price control model. This amended definition is set out in revision 12.1.

12.4.2 Annual tariff variation process

The AER's draft decision proposed a 30 business day timeframe for the submission of an annual reference tariff adjustment notification. The AER considers it is appropriate to amend this timeframe from 30 to 50 business days, consistent with the other Victorian gas network businesses. This is also consistent with the approach for the Queensland and South Australia gas network businesses. The AER considers that the 50 business day requirement facilitates earlier market notification of approved tariffs, providing greater certainty to retailers and consumers, and is a material benefit to market

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611 APA GasNet *Revised proposal*, November 2012, p. 148.
612 APA GasNet, *Revised proposal*, November 2012, pp. 13-14.
613 APA GasNet, *Revised proposal*, November 2012, p. 134.
614 Compared to what would have occurred if there had been a seamless transition on 1 January 2013.
615 APA GasNet, *Revised proposal*, November 2012, p. 147.
616 APA GasNet, *Revised proposal*, November 2012, p. 137.
617 See AMDQ CC section of Attachment 2 of this final decision.
618 AER, *Draft decision, APA GasNet access arrangement proposal for 1 January 2013 - 31 December 2017,* 11 September 2012, Part 2, pp. 35-37.

participants. Origin Energy agrees. It submits that from a retailer's perspective, at least 20 business days should be allowed for retailers to prepare for implementation.[619] This submission is in line with the AER's requirement of at least 50 business day notice which allows 30 business days for the AER's approval and 20 business days for retailers to prepare for implementation. This is set out in revision 1.2.

12.4.3 Calculation and the implementation of the initial 2013 reference tariff

The AER has decided to make an adjustment to deal with the additional revenue that APA GasNet would receive as a result of APA GasNet's proposal to continue to apply the 2012 tariffs until the commencement of the 2013–17 access arrangement period. It considers that r 92(3) applies, enabling this adjustment. The AER has reached this view having carefully considered the definition of 'revision commencement date' in both the NGR and the National Third Party Access Code for National Gas Pipeline Systems (Code).i[620]

Interval of delay

The AER considers that an interval of delay has arisen and, therefore, r. 92(3) applies. This permits the AER, in fixing reference tariffs for the new access arrangement period, to make an adjustment to take into account the previous access arrangement's tariffs continuing over the period of delay.

Relevantly, an interval of delay arises where there is an interval between a revision commencement date stated in a full access arrangement and the date on which revisions to the access arrangement actually commence.

For the reasons set out below, the AER considers that the revision commencement date for the purpose of r. 92(3) is 1 January 2013. Accordingly, the AER has taken into account the operation of r. 92(3) in fixing reference tariffs for the 2013–17 access arrangement period.[621] That is, in fixing the reference tariff in the fourth access arrangement period, the AER has taken into account the revenue APA GasNet recovers over the interval of delay (from 1 January 2013 to 30 June 2013), as a consequence of the 2012 reference tariffs continuing to apply. The AER considers that the most appropriate approach to implementing this is through further amendments to the initial 2013 tariff and an adjustment to the tariff variation mechanism. Revision 12.4 below sets this out. The 2013 reference tariffs under the 2013–17 access arrangement should take effect from 1 July 2013 until 31 December 2013.

In addition to the adjustment to account for the interval of delay, the AER re-calculated the initial 2013 reference tariff submitted in the revised access arrangement proposal. It now reflects the AER's final decision on the revenue and demand forecast figures as set out in chapter 2 and attachment 10. Revision 12.8 below sets out the schedule of initial 2013 reference tariffs.

Definitions of revision commencement date

The 2008-2012 access arrangement fixed the date on which revisions from a review were intended to take effect. *Clause 3(9) of Schedule 1 of the NGR effectively deems a date designated as a revisions commencement date in a transitional access arrangement to be a revisions commencement date for*

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619 Origin Energy Victoria Pty Ltd, *Submission to the Victorian gas access arrangement review*, 7 January 2013, p.3.

620 The AER notes the definition of revision commencement date under the National Third Party Access Code for National Gas Pipeline Systems (Code) is substantially the same as the definition contained in the NGR.

621 AER, *Draft decision,* 11 September 2012, Part 2, pp. 206-207.

the purpose of the NGR. The 2008–2012 access arrangement is a transitional access arrangement. It stated that the revision commencement date is:

> *the later of 1 January 2013 and the date on which approval of revisions to this access arrangement take effect*

Clause 3.17 of the Code, under which APA GasNet made its 2008–2012 access arrangement defines 'revision commencement date' as:[622]

> *a date upon which the next revisions to the Access Arrangement are intended to commence.*

Similarly, the term 'revision commencement date' is defined in r. 3 of the NGR as:

> *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.*

The AER considers that cl 3(9) of Schedule 1 operates to transition a revision commencement date from a transitional access arrangement to a subsequent access arrangement. The AER does not consider that cl 3(9) otherwise alters the meaning of the term revision commencement date under the NGL. In any event, for the reasons outlined below, the AER considers that the scope of the term 'revision commencement date' under the NGR and Code is the same. To put it another way, the AER does not accept that cl 3(9) of Schedule 1 of the NGR operates to broaden the meaning of the term 'revision commencement date' under the NGR such that a revision commencement date could be valid under the Code but not under the NGL.

The definition of "revision commencement date" in the NGR and Code refer to "the date" and "a date" respectively. Clause 3(9) of Schedule 1 similarly refers to "a date." They do not refer to multiple possible dates or to processes or mechanisms to determine dates. This is one of the reasons that the AER considers that a process or mechanism to determine a revision commencement date is not a valid "revision commencement date". Rather, a revision commencement date must be a specific, fixed date. Therefore, the AER considers that the part of the revision commencement date definition contained in the 2008–12 access arrangement which refers (in the alternative) to a mechanism rather than a date is invalid:

> *The later of… the date on which approval of revision to this access arrangement take effect*

Furthermore, the revision commencement date in both the NGR and the Code, is the date on which revisions are intended to commence. It is not expressed as the date on which they actually commence. The AER considers that the use of the word 'intended' strongly supports the view that a revision commencement date must be a fixed date that is set at the time the access arrangement is made. The reference to an intended date indicates that both the NGR and the Code contemplate that the revision commencement date may be different from the actual date on which the access arrangement takes effect. Permitting a revision commencement date that is unknown and crystallises on the occurrence of a particular event will remove any possibility that the intended and actual dates will differ. The use of the word "intended" in the definition of "revision commencement date" indicates this was not the contemplated outcome. Indeed, the word 'intended' would become redundant if the 'revision commencement date' was not specified as a fixed date in advance.

The similar definitions of "revision commencement date" in both the Code and NGR suggest the terms were intended to have the same scope. Further support for the proposition that the revision commencement date must be a single, fixed, date set in advance is found in the NGR. First, r 92(3)

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622 Code, clause 3.17.

operates to deal with a situation where the actual date on which the revision to the access arrangement comes into effect differs from the intended date. In circumstances where the revision commencement date was set by reference to the "date on which approval to [a] access arrangement take effect", the application of r 92(3) would be avoided. The AER considers that any interpretation of "revision commencement date" which avoids the mechanism that policy makers included in the NGRs to deal with a delay in approval of the subsequent access arrangement arises was not intended. Therefore, it should be avoided. Second, the definition of access arrangement period in rule 3 of the NGR includes the following relevant note after subparagraph (f):

> *Note:*
>
> *One should bear in mind that the actual date on which a revision takes effect may differ from a revision commencement date stated in the access arrangement (which is a date fixed some time in advance as the intended date for the revision to take effect). The revision commencement date is relevant to the definition of the access arrangement period only until the revision actually takes effect and the date thus crystallises. (emphasis added)*

This Note lends further support for the AER's approach to the construction of the phrase 'revision commencement date' as a single date, fixed in advance.

Approval of the revision commencement date in the 2008–12 access arrangement

The definition of revision commencement date in the 2008-12 access arrangement forms part of an access arrangement that the ACCC approved. However the AER does not accept that this earlier approval requires it to accept the extended definition (which includes the date on which approval of revisions to the access arrangement come into effect) for the purpose of applying r 92(3) and fixing reference tariffs for the new access arrangement period. As explained above, the AER considers that to do so would be inconsistent with the construction the term "revision commencement date" in rule 3 of the NGR. It necessarily follows that the AER also considers that the definition the ACCC approved is also inconsistent with the Code's definition.

Further, a revision commencement date of 1 January 2013, is consistent with the 2008-2012 access arrangement's other provisions.

The 2008–2012 access arrangement sets the timeframe for the third and fourth access arrangement periods as follows:[623]

> *Third Access Arrangement Period means the Access Arrangement Period commencing on 1 January 2008 and ending on 31 December 2012.*
>
> *Fourth Access Arrangement Period means the Access Arrangement Period commencing on 1 January 2013.*

These are fixed dates.

Also, as mentioned above, the 2008–2012 access arrangement provides no information for determining reference tariffs after 31 December 2012. Specifically, the access arrangement does not appear to contemplate that there would be some, effectively unregulated, period between the third and fourth access arrangement periods during which existing tariffs would continue to apply.

In these circumstances the AER considers that 1 January 2013 is the "revision commencement date" for the purpose of applying r 92(3).

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623 GasNet Australia *Access Arrangement 2008-2012*, Section 9.

The AER has reconsidered its approach

The AER acknowledges that it did not apply rule 92(3) for the Amadeus Gas Pipeline and the Roma to Brisbane Pipeline access arrangement final decisions to account for the delay in the commencement of revisions to these access arrangements.[624] However, based on further analysis of the Code and the NGR as set out above, the AER considers that rule 92(3) should apply in circumstances where the revisions to an access arrangement commence on a date after the end of the previous access arrangement period. This represents a change of position to the AER's previous decisions. However, the AER now considers that this is the correct interpretation of the relevant provisions and accordingly rule 92(3) should apply to APA GasNet in the current circumstances.

12.4.4 Update to definition of terms in the access arrangement

The AER considers that there is scope to provide greater clarity in the drafting of the revisions commencement date. Therefore, the AER considers that it is appropriate for the definitions of revision commencement date be amended as set out in revision 1.3. This amendment is aimed at removing the potential for confusion that may arise in future access arrangement decisions.

12.4.5 Cost pass through

Carbon cost event

The AER approves APA GasNet's proposed carbon cost event.

Consideration

APA GasNet's proposed carbon cost event differs from the definition proposed by the AER in the following ways:

1. Under the AER proposed event an application for a pass through could only be made once it was possible to calculate the carbon costs for a regulatory year without estimation
2. The APA GasNet proposed event allows an application for a pass through to be made if, for a given regulatory year, the Service Provider becomes liable for carbon costs (part of which may be an estimate)
3. The APA GasNet proposed event contains a true-up or reconciliation once it possible to calculate the carbon costs for a regulatory year without estimation. The proposed true-up mechanism is the same as that approved by the AER for Allgas.

The AER considers there are benefits in adopting the approach proposed by APA GasNet. This approach enables APA GasNet to apply for a pass through of carbon costs for a given regulatory year where it is liable for those costs before a full reconciliation and purchase of carbon certificates has taken place. Accordingly, APA GasNet will be able to apply for the pass through once a Regulatory Year ends (31 December). Any such application will, unless it is unusually complex, be completed and approved by the following 1 January, enabling the variation to be included in that year's tariff variation. This means that carbon costs will start to be recovered in the Regulatory Year after APA GasNet becomes liable for them.

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[624] AER, *Final decision, Roma to Brisbane* Pipeline 2012–13 to 2016–17, pp. 41-44.
AER, *Final decision, Access arrangement proposal for the Amadeus Gas Pipeline 1 August 2011 – 30 June 2016*, pp. 113-129.

Once the final carbon liability is known, the true up mechanism allows for a reconciliation to take place to account for any adjustments. Any tariff changes resulting from this will occur two Regulatory Years after the initial liability was incurred.

The AER considers that APA GasNet's proposal of an initial approval based on the year in which liability is incurred, including estimated liability, with a true-up to reconcile any differences once final liability is known is appropriate and reasonable. It also allows APA GasNet to recover costs within a reasonable period of time whilst making certain that there is no over or under recovery. Finally, avoids causing price shocks two years after liability for the costs being passed on was incurred.

The AER considers that these outcomes are consistent with the NGO because they promote the efficient investment in and operation of natural gas services and are in the long term interests of consumers with respect to price.

True-Up mechanism

The true up mechanism process will require APA GasNet to submit its true up figures and supporting information to the AER at the same time it submits its annual reference tariff variation proposal to the AER.

The true up figures and supporting information that APA GasNet will include are set out in line items (1) – (9) in figure 12.4 on page 143 of its Revised access arrangement submission.

Once the AER has received the true up figures and supporting information from APA GasNet it will then assess the information using the true up mechanism to determine the cost pass through amount for the following year.

The AER will notify APA GasNet of the cost pass through amount for the following year at the same time as it notifies APA GasNet of its approval/disapproval of the annual reference tariff variation proposal.

The cost pass-through amount will be applied as part of the annual tariff variation for the relevant regulatory year.

Previous regulatory year

In its submission APA GasNet sets out its proposed definition for a carbon cost event.[625] This definition is slightly different to the definition proposed in clause 4.7.2 of its access arrangement. The definition in the submission contains the additional phrase 'or a previous Regulatory Year' at the end of the first sentence.

Draft decision

In its original access arrangement proposal, APA GasNet proposed an opex allowance with a true up for actual costs compared to forecast costs which were included as an opex allowance.[626] The true-up was to take place once final costs were known to reconcile actual costs against the forecast costs.

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625 APA GasNet, *Revised proposal*, November 2012, p. 144.
626 APA GasNet, Access arrangement submission - 31 March 2012, p. 223.

The AER did not approve APA GasNet's opex allowance. This was because there was (and continues to be) uncertainty surrounding whether APA GasNet or AEMO will be the party responsible for paying the carbon costs.

The uncertainty arises because Victoria is a Declared Wholesale Gas Market. This means that the operation of APA GasNet's network is conducted by AEMO. It is presently unclear whether APA GasNet or AEMO is the party responsible for paying the carbon tax with respect to carbon produced in operating the network.

Because APA GasNet's proposed carbon cost event used forecast figures aligned with the opex allowance and the AER did not approve APA GasNet's opex allowance, it rejected APA GasNet's proposed carbon cost event. The AER proposed a new definition for the carbon cost event to apply once it was possible for APA GasNet to calculate its carbon costs for a regulatory year without the use of estimation.

This approach was based on the approach the AER took in its decision on APA's Roma to Brisbane pipeline. The definition proposed by the AER in Roma to Brisbane included a true up that would take place once final carbon costs were known. However, the Roma to Brisbane process did contain an opex allowance and the pass through process was to account for any variance between the forecast and actual costs.

While the two approaches proposed by the AER were similar, they differed in one core respect. The Roma to Brisbane definition relied on an opex forecast. The APA GasNet definition did not. Under the Roma to Brisbane approach the pass through event was designed to reconcile the difference between the forecast and actual costs. Under the APA GasNet approach the pass through event was designed to recover all the carbon costs.

APA GasNet has proposed a new carbon cost event definition. The new definition provides that a carbon cost event occurs when the Service Provider becomes liable for a carbon cost (part of which may be an estimate). The definition provides further that actual carbon costs and associated revenues are to be reconciled at the time it is possible for the Service Provider to calculate the carbon costs without use of estimation.

Submissions

APA GasNet has submitted to the AER that generally, actual carbon cost liability will not be known until at least 8 months after the end of a relevant regulatory year.[627] APA GasNet contended that if it was required to wait until actual carbon costs were known before it could make a carbon pass though application, the result would be that the costs were recovered two years after they were incurred.

APA GasNet submits that this delay will distort the price signals to consumers that form the policy intent behind the carbon costs scheme.[628]

APA GasNet refers to the approach proposed by Allgas, and approved by the AER,[629] under Allgas' application for a tax change event to cover carbon costs. APA GasNet states that given the remaining uncertainty surrounding carbon cost liability and that carbon costs have been removed from the forecast opex, it proposes the carbon cost pass through and true up mechanism proposed by

627 APA GasNet, *Revised proposal*, November 2012, p. 138.
628 APA GasNet, *Revised proposal*, November 2012, p. 137 & p. 139.
629 AER Decision, Allgas energy cost pass through application June 2012, p. 14.

Allgas.[630] APA GasNet states that it considers the Allgas approach to be more appropriate to its circumstances than Roma to Brisbane because the later contained an opex allowance whereas Allgas did not.

Insurance cap event

The AER approves APA GasNet's insurance cap event.

APA GasNet largely adopted the AER's definition of an insurance cap event. APA GasNet made minor amendments. It submitted that it revised the text to be consistent with the terms and definitions included in the access arrangement revision proposal.[631]

The AER considers that that APA GasNet's amendments do not affect the meaning or operation of the definition.

APA GasNet has not included the second part of factor (e), as proposed by the AER. APA GasNet has removed the phrase ' or a previous period in which access to the pipeline services was regulated'. APA GasNet has not given any reasons for removing this phrase.

The AER included the second part of factor (e) to ensure that APA GasNet was able to pass through costs that exceeded the insurance limit on a policy held in the previous regulatory period. The AER considers that there may be circumstances where the insurance cap event is not triggered until after the relevant regulatory period expires. For instance where litigation is involved. The AER considers that where the relevant policy limit for an insurance policy that was held in a previous regulatory period is exceeded, it is consistent with the NGO to allow a pass through application. The AER does not consider that it would be reasonable to preclude APA GasNet from applying for a pass through simply because the event occurred across the transition from one access arrangement period to another.

The AER considers that the policy limit referred to in the definition should be defined as the greater of the actual policy limit at the time of the event that gives rise to the claim and the policy limit at the time the AER makes its final decision on APA GasNet's access arrangement proposal for the 2013–17 access arrangement period. Further, the AER requires the policy limit to be defined with reference to the forecast operating expenditure allowance for the 2013–17 access arrangement period, approved by the AER in its Final Decision.

A network business, acting efficiently and prudently in managing its risks, is expected to take out an insurance policy that provides an efficient level of insurance coverage. It is appropriate to include provision in the cost pass through mechanism to allow the AER to determine whether any excess costs that are not covered under such a policy can be recovered from customers. This may occur in circumstances where a prudent network business has obtained an efficient level of insurance coverage, consistent with the standard expected and approved in its forecast operating expenditure allowance, but due to circumstances beyond its control, the policy coverage does not cover the costs incurred once a claim is made on that policy.

The kinds of circumstances that may lead to such an excess cannot be self-insured nor could the network business have taken actions to reasonably prevent these circumstances from occurring, or to substantially mitigate the relevant cost impact. Where this is the case, the AER does not consider that

630 APA GasNet, *Revised proposal*, November 2012, p. 139.
631 APA GasNet, *Revised proposal*, November 2012, p. 144.

the network business should bear the costs in excess of their insurance policy coverage. A network business is not in a position to manage the risk of such circumstances occurring as they are beyond its control. It is therefore a legitimate cost that the network business incurs in the provision of reference services, that should be recovered from customers by way of a cost pass through. In these circumstances, the pass through of these costs will not undermine the incentives for the network business to efficiently and prudently manage the risks that are within its control.

APA GasNet's base forecast operating expenditure allowance includes a component for insurance coverage. There is an expectation that APA GasNet will expend that component to obtain an efficient level of insurance coverage, but the AER cannot compel APA GasNet to actually do this.

This raises the risk that APA GasNet might under-insure by obtaining a level of insurance cover lower than that contemplated in the forecast operating expenditure allowance determined in the AER's access arrangement final decision, and then pass through any costs that exceed its insurance cap. In these circumstances, customers are effectively paying twice—for the premiums of an efficient level of insurance as reflected in the forecast operating expenditure allowance, and through the cost pass through mechanism for costs that should have otherwise been covered by that efficient level of insurance.

To address this risk, the AER requires APA GasNet to amend the definition of an Insurance Event so that it is defined with reference to an efficient insurance policy limit as contemplated in the forecast operating expenditure allowance. This ensures that consumers pay for the premium as contemplated in the forecast operating expenditure allowance and beyond this may only pay for any excess loss incurred by the network business that would otherwise be considered an efficient cost.

The AER considers that the amended definition of an insurance event is a preferable alternative that complies with the NGL and is consistent with the NGR and NGO. As previously defined, the inclusion of an Insurance Event in the pass through regime may result in customers effectively paying twice. This is not in the long term interests of consumers, and therefore is inconsistent with the NGO. However, it is in the long term interests of consumers to allow a network business to recover costs that are legitimately outside of its control. The recovery of such costs is also consistent with ensuring that the network business is provided a reasonable opportunity to recover at least its efficient costs, as is consistent with the revenue and pricing principles.

Procedure for relevant pass through event variations

APA GasNet has largely adopted the changes required by the AER. However, APA GasNet has split the changes across two separate clauses, to retain its existing structure.[632]

In assessing the appropriateness of a particular tariff review mechanism, the AER must have regard to the desirability of consistency between regulatory arrangements for similar services.[633] A consistent approach places all regulated Service Providers on a level playing field. Where the AER applies consistent factors these Service Providers will be provided with a degree of certainty that similar facts will lead to a similar outcome. This creates regulatory certainty and results in a more consistent outcome.

The AER considers these outcomes to be consistent with the NGO because a more certain environment promotes the efficient operation and use of natural gas services. Consistency and

632 APA GasNet, *Revised proposal*, November 2012, p. 146.
633 NGR. 97(3)(d).

certainty are also likely to reduce administrative costs faced by the AER and the gas network owners.[634]

The AER has sought to balance consistency and administrative efficiency[635] with a structure that takes account of APA GasNet's previous access arrangement.[636]

Review factors

APA GasNet proposed amendments to two of the approval factors required by the AER. The AER does not approve these amendments.

In its revised proposal, APA GasNet did not set out any reasons for these amendments.

APA GasNet made two substantive changes to the 6 assessment factors proposed by the AER:

- It changed factor (a) from;
  - 'the costs to be passed through are for delivery of pipeline services' to
  - 'the costs to be passed through are costs that have been or will be incurred in connection with the delivery of one or more Pipeline Services'
- It changed factor (b) from:
  - ' the costs are incremental to costs already allowed for in reference tariffs' to
  - 'the costs are incremental to costs already allowed for in Reference Tariffs or are costs in respect of which no allowance has been made;

In the absence of any supporting reasons, the AER notes the following. In formulating the factors to take into account when making a decision on a proposed cost pass through application, the AER sought to develop a consistent approach. The AER considers that a consistent approach will lead to efficiency. This is because the AER will be able to apply the same process across applications and develop expertise in the relevant procedures. It will also avoid the risk of confusion arising from inconsistent but similar procedures.

With respect to factor (a), the AER considers that APA GasNet's proposal is less certain than the AER's proposal. APA GasNet's proposal uses the phrase 'in connection with'. The AER considers that pass through of costs should only be allowed for costs that are incurred in providing the reference service. This is clear from the definitions of the pass through events. Each of the approved cost pass through events refers to 'costs of providing the Reference Service'. Accordingly, the AER considers that the phrase proposed by APA GasNet may result in a broader application than what is intended by the cost pass through mechanism. In contrast, the definition proposed by the AER is clearer and demonstrates the need for a direct link between the costs and the services. The costs are for the delivery of pipeline services. For these reasons, the AER does not approve APA GasNet's amendment to factor (a).

With respect to factor (b), the AER considers that APA GasNet's proposed amendment extends beyond costs that are incremental to what has already been allowed for in the reference tariffs to

634 NGR. 97(3)(b).
635 NGR. 97(3)(b) and (d).
636 NGR. 97(3)(c).

"costs in respect of which no allowance has been made". The AER considers that this amendment would act to provide for the consideration of costs that are not related to the reference services. Costs that are allowed for in reference tariffs are the costs of providing reference services. Costs that are incremental to these are connected to the provision of reference services. If no allowance has been made for a cost, in reference tariffs, it is not a cost related to the provision of a reference service. Approving APA GasNet's amendment would require the AER to take into account costs that were not connected to or incurred in providing the reference tariff.

Further, the AER does not approve specific allowances for opex. Rather, it approves a broad opex allowance. APA GasNet can then determine its operational priorities and allocate that allowance as appropriate. Where a new cost arises, APA GasNet may choose to reallocate its spending priorities to take account of the varied cost outlook. APA GasNet's amendment would allow it to seek a pass through if any new costs arose. Permitting this would not be consistent with the NGO because it would not promote the efficient operation and use of natural gas services in the long term interest of consumers with respect to price.

Carbon cost event

The AER approves the addition of a reference to materiality for the purposes of the carbon cost event.

APA GasNet has included an addition under the first paragraph in clause 4.7.2 to provide that if a carbon cost event occurs, the Service Provider must apply to the AER for a cost pass through if it materially decreases the cost of providing the reference service. Any such adjustment will take effect from the next 1 January.

The AER considers that this amendment acts to require APA GasNet to apply for negative pass throughs of carbon costs. This ensures that consumers benefit if carbon costs are materially lower than forecast. It also makes it clear when the adjustment will take place from. The AER considers that this is consistent with the NGO because it is in the long term interests of consumers with respect to price.

Extensions

The AER does not approve the substitution of the word 'will' with 'may' under the extension process.

APA GasNet has amended the provision that provides for the extension of the review period by the AER. The amendment states that the review period may be extended for any time taken by the AER to obtain information from the Service Provider, expert advice or consult about the notification. Under the AER's proposed mechanism, the word 'will' was used instead of 'may'.

The amendment proposed by APA GasNet acts to make the extension optional rather than automatic. The AER considers that in the absence of detailed provisions setting out how it 'may' extend the review period and continuing notice requirements, the amendment could create uncertainty, confusion and disputes. This would not be consistent with the NGO because it would not promote the efficient operation and use of natural gas services or be in the long term interests of consumers with respect to price.

The AER considers that the automatic extension of the review period acts to avoid this risk of uncertainty or confusion.

For the reasons discussed below, the AER does not approve clauses 4.7.2 and 4.7.4. The AER proposes amendments to these clauses to make them acceptable.

12.5 Revisions

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

Revision 12.1

Insert the following text to Schedule D proposed access arrangement

Separately report contracted AMDQ CC volume and actual injection volume under of the price control model.

Revision 12.2

Replace the first paragraph of section 4.7.5 of the proposed access arrangement with the following:

Service Provider will notify the AER in respect of any Reference Tariff adjustments such that adjustments occur on the first of January of a future Year. The initial notification will be made at least 50 Business Days before the date of implementation and include:

(a) the proposed adjustments to the Reference Tariffs; and

(b) an explanation and details of how the proposed adjustments have been calculated.

Revision 12.3

Replace the second paragraph of section 1.5 of the proposed access arrangement with the following:

The nominated revision commencement date is 1 January 2018.

Revision 12.4

Insert the following paragraphs in section D.3 of the proposed access arrangement

For the price control formula, the target revenue (TR) for 2013 is 50.08m in nominal 2013 dollars. Further, the total volume withdrawn from the VTS for 2013, excluding NRRV, is 104.097 PJ. These adjustments are to account for the late commencement date on the 1 July 2013 instead of 1 January 2013 for the fourth access arrangement period.

Replace the first equation for section D.3 with the following

ATR = VATR + PTA + CFA - FIDA + SIDA

Insert the following paragraphs to section D.3:

FIDA is for 2014 only and is the estimated amount of the adjustment required to account for the 6 month of delay.

SIDA is for 2015 only and is the correction to the FIDA. SIDA may be positive or negative.

Replace the definition of Target EDD and Actual EDD under section D5 of the proposed access arrangement with the following

Target EDD for 2014 to 2017 is the measure of annual EDD as expected in a calendar year as set out in Table 4.4 of the access arrangement information

Target EDD for 2013 is 829 and is the measure of EDD as expected for the period from 1 July 2013 to 31 December 2013

Actual EDD for 2014 to 2017 is the actual measured EDD for a calendar year, as reported in the AEMO APR or otherwise made available by AEMO

Actual EDD for 2013 is the actual measured EDD for the period from 1 July 2013 to 31 December 2013, as reported in the AEMO APR or otherwise made available by AEMO

Insert the following in section D of the proposed access arrangement

D.8 First interval of delay adjustment

The First interval of delay adjustment (FIDA) will be calculated as part of 2014 annual tariff variation submission and represents the estimated amount of the adjustment required to account for the 6 month delay. It will be included as a component in the price control formula for the determination of tariffs for 2014. It is calculated in nominal 2013 dollar terms based on the following formula:

FIDA = Estimated weather adjusted VW from 1 January 2013 to 30 June 2013 x (2012 average tariff - 2013 average tariff)

FIDA = 94.22PJ x (0.554 - 0.481) = 6.87m

D.9 Second interval of delay adjustment

The Second interval of delay adjustment (SIDA) will be calculated as part of 2015 annual tariff variation submission as a correction to the determination of FIDA, using the correct actual values of all factors required in the determination of FIDA. It will be included as a component in the price control formula for the determination of tariffs for 2015.

SIDA = Recalculated FIDA - FIDA

where Recalculated FIDA is the same calculation for FIDA, except that it is to use the actual values for VW, EDD and CPI.

Revision 12.5

Replace factors (a) and (b) in clause 4.7.2 with the following

(a) the costs to be passed through are for the delivery of pipeline services

(b) the costs are incremental to costs already allowed for in reference tariffs

Revision 12.6: Insert the following phrase at the end of factor (e) of the definition of insurance cap event in clause 4.7.2:

'or a previous period in which access to the pipeline services was regulated'.

Revision 12.7

In the second sentence of the third paragraph of clause 4.7.4 replace 'may' with 'will'.

Revision 12.8

Delete section A2 and A3 in Schedule A of the access arrangement proposal and replace it with the following:

A.2 Injection Tariffs

(a) Injection at Longford Injection Zone

Matched Withdrawal Zone	Injection Tariff ($/GJ, for the 10 Day Injection Volume)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
All Withdrawal Zones except LaTrobe, Maryvale, Tyers, West Gippsland and Lurgi	2.1473	14%	3%	0%
LaTrobe & Maryvale	0.3806	14%	3%	0%
Tyers & Lurgi	0.5428	14%	3%	0%
West Gippsland	1.2884	14%	3%	0%

(b) Injection at Culcairn Injection Zone

Matched Withdrawal Zone	Injection Tariff ($/GJ, for the 10 Day Injection Volume)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
All Withdrawal Zones except Interconnect	1.7425	14%	3%	0%
Interconnect	0.4309	14%	3%	0%

(c) Injection at Port Campbell Injection Zone

Matched Withdrawal Zone	Injection Tariff ($/GJ, for the 10 Day Injection Volume)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
All Withdrawal Zones except Western, South West and SEAGas Pipeline	2.1273	14%	3%	0%
South West	0.7484	14%	3%	0%

(d) Injection at Pakenham Injection Zone

Matched Withdrawal Zone	Injection Tariff ($/GJ, for the 10 Day Injection Volume)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
All Zones	0.3466	14%	3%	0%

(e) Injection at Dandenong Injection Zone

Matched Withdrawal Zone	Injection Tariff ($/GJ, for the 10 Day Injection Volume)	X-factor
All Zones	-	NA

(f) AMDQ CC

Matched Withdrawal Zone	Injection Tariff ($/GJ, for the 10 Day Injection Volume)	X-factor
All Zones	0.0125	0%

A.3 Withdrawal Tariffs

(a) Transmission Delivery Tariff

Subject to the exceptions in clauses A.3(b), A.3(c), A.3(d), A.3(e) and A.3(f) of this Schedule, the Withdrawal Tariffs are as follows:

Withdrawal Zone Number	Withdrawal Zone Name	Transmission delivery tariff D ($/GJ)	Transmission delivery tariff V ($/GJ)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
1	LaTrobe	0.1572	0.1573	14%	3%	0%
25	Maryvale	0.0541	-	0%	0%	0%
2	West Gippsland	0.1879	0.2072	14%	3%	0%
3	Lurgi	0.2186	0.2571	14%	3%	0%
4	Metro North West	0.3473	0.3268	14%	3%	0%
5	Calder	0.7363	0.9134	14%	3%	0%
6	South Hume	0.4454	0.4505	14%	3%	0%
7	Echuca	0.8604	1.2759	14%	3%	0%
8	North Hume	0.8762	1.1306	14%	3%	0%
9	Western	0.6779	0.9548	14%	3%	0%
10	Murray Valley	1.2889	1.7875	14%	3%	0%
11	Interconnect	1.0018	1.0018	14%	3%	0%
13	South West	0.1570	0.1572	14%	3%	0%
17	Wodonga	0.7788	1.6137	14%	3%	0%
18	Tyers	0.1935	0.2091	14%	3%	0%
19	NSW Export	0.7918	0.0000	0%	0%	0%
20	Metro South East	0.3473	0.3268	14%	3%	0%
21	Warrnambool	0.0950	0.1594	0%	0%	0%
22	Koroit	0.2003	0.5324	0%	0%	0%
24	Geelong	0.1879	0.2212	14%	3%	0%

(b) System Export Tariff

Where a Connection Point in an Injection Zone services an export of gas from the VTS to a Connected Transmission Pipeline, gas Injected at that Injection Zone and Withdrawn through that Connection Point is subject to the System Export Tariff specified below, instead of the Withdrawal Tariff specified in clause A.3(a) of this Schedule.

Withdrawal Zone Number	Connected Transmission Pipeline name	System export tariff ($/GJ)	X-factor
31	VicHub	0.0000	0%
33	SEA Gas Pipeline	0.0205	0%

(c) Transmission Refill Tariff

Where a Connection Point services a Storage Facility, all gas Withdrawn through that Connection Point is subject to the Transmission Refill Tariff specified below, instead of the Withdrawal Tariff specified in clause A.3(a) of this Schedule.

Withdrawal Zone Number	Storage Facility Name	Transmission Refill tariff ($/GJ)	X-factor
23	LNG	0.0500	0%
32	WUGS	0.0500	0%

(d) Cross System Withdrawal Tariff

If:

(i) gas is Withdrawn at a Connection Point, other than a Connection Point servicing a Storage Facility, located on an Injection Pipeline other than the Interconnect Pipeline; and

(ii) that Withdrawal is a Matched Withdrawal with respect to an Injection Zone other than the Injection Zone for that Injection Pipeline,

then the Withdrawal is subject to the following Cross System Withdrawal Tariff in addition to the applicable Injection Tariff and Withdrawal Tariff.

Injection Pipeline	Cross System Withdrawal Tariff D ($/GJ)	Transmission delivery tariff V ($/GJ)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
All	0.1904	0.1696	14%	3%	0%

(e) Matched Withdrawals - Culcairn

If a Withdrawal in one of the following Zones is a Matched Withdrawal relating to Injections in the Culcairn Zone, then the following Matched Withdrawal Tariffs apply instead of the tariffs described in clause A.3(a) of this Schedule:

Withdrawal Zone Number	Withdrawal Zone Name	Transmission delivery tariff D ($/GJ)	Transmission delivery tariff V ($/GJ)	2014 X-factor	2014 X-factor	2016 and 2017 X-factor
8	North Hume	0.3197	0.3691	14%	3%	0%
11	Interconnect	0.1572	0.0000	14%	3%	0%
17	Wodonga	0.1756	0.2046	14%	3%	0%

(f) Matched Withdrawals - Metro (South East)

If a Withdrawal in the Metro South East Zone is a Matched Withdrawal relating to Injections in the Pakenham Zone, then the following Matched Withdrawal Tariffs apply instead of the tariffs described in clause 1.3(a) of this Schedule:

Withdrawal Zone Number	Withdrawal Zone Name	Transmission delivery tariff D ($/GJ)	Transmission delivery tariff V ($/GJ)	2014 X-factor	2015 X-factor	2016 and 2017 X-factor
20	Metro South East	0.1534	0.1723	14%	3%	0%

13 Non-tariff components

APA GasNet'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 APA GasNet's revised access arrangement proposal. These include APA GasNet's proposed capacity trading requirements,[637] queuing policy,[638] extension and expansion requirements, and terms and conditions on which the reference service will be provided.

13.1 Final Decision

The AER does not approve the termination process in clause F8(b) of APA GasNet's revised access arrangement proposal. The AER approves the remaining terms and conditions in APA GasNet's revised access arrangement proposal.

The AER approves APA GasNet 's capacity trading requirements, queuing arrangements, extension and expansion policy and terms and conditions for the change of receipt or delivery points. The AER does not approve APA's revision submission date and review commencement date.

13.2 Terms and conditions

13.2.1 Final decision

The AER's does not approve the termination process in clause F8(b) of APA GasNet's revised access arrangement proposal. The AER approves the remaining terms and conditions in APA GasNet's revised access arrangement proposal.

13.2.2 Revised access arrangement proposal

APA GasNet's revised access arrangement proposal in relation to terms and conditions adopts each of the AER's required amendments. APA Gasnet proposed a further amendment to clause which F8(b) expands on the AER's required amendment

13.2.3 Assessment approach

The AER's assessment approach for terms and conditions is set out in 12.1.3 in chapter 12 of part 2 of the draft decision.

The AER received a submission from Australian Power and Gas which made general comments on APA GasNet's terms and conditions.[639] However, it did not refer to any specific terms and conditions.

13.2.4 Reasons for the decision

Revision 12.2 of the AER's draft decision required APA GasNet to amend the termination process in clause F8 of its Transmission Payment Deed.[640] The AER considered that it is not consistent with the

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637 NGR, r. 105.
638 NGR, r. 103.
639 Australian Power and Gas, re APA GasNet access arrangement draft decision 1 January 2013 to 31 December 2017, October 2012, p. 2.

NGO to permit APA GasNet to terminate the Transmission Payment Deed where a user has disputed an invoice. APA GasNet should not be able to incorrectly charge a user and then terminate the Transmission Payment Deed if the User disputes the invoice.[641]

APA GasNet adopted the AER's required revision. However, it included a further amendment.

APA GasNet submitted that the limitation on terminating the Transmission Payment Deed where a user has disputed an invoice, should only be applied where the User is disputing the invoice in good faith. APA GasNet stated that such an amendment will protect Users who have been incorrectly charged, but will not permit users to postpone payment of invoices by initiating spurious claims.[642] APA GasNet has amended the limitation in clause F8(b) to refer to a "bona fide dispute".

The AER acknowledges APA GasNet's concern that subjecting the right to termination to the resolution of a dispute opens the potential for baseless disputes to be lodged as a means of delaying termination.

However, the AER considers that APA GasNet's proposed amendment acts to create further uncertainty and creates a new avenue for disputes. It will be unclear when a dispute is bona fide. Such a term leaves broad scope for interpretation and disagreement.

A User may be incentivised to assert any dispute was bona fide. On the other hand, APA GasNet may be incentivised to assert that a dispute was not bona fide. Accordingly, the AER considers that if APA GasNet was to assert that a dispute was not bona fide, and terminate the Transmission Payment Deed, this would most likely lead to a dispute over the validity of the termination. Such an outcome would be likely to increase costs, which is not in the long term interests of consumers with respect to price.

The AER considers that APA GasNet's proposed amendment is not consistent with the NGO. This is because it creates potential uncertainty and is likely to promote additional disputes and litigation. This is not in the long term interests of consumers with respect to price. The AER considers that it is reasonable to restrict the application of clause F8 in circumstances where a dispute has been made, without the additional limitation proposed by APA GasNet.

13.3 Capacity trading requirements

13.3.1 Final decision

The AER approves APA GasNet 's capacity trading requirements.

13.3.2 Revised Proposal

APA GasNet amended its capacity trading requirements to state that there are no applicable capacity trading requirements.[643]

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640 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.237.

641 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p. 229.

642 APA GasNet, Revised access arrangement proposal, Access Arrangement Submissions, p. 148.

643 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.231.

13.3.3 Assessment approach

The AER's assessment approach for terms and conditions is set out in 12.2.3 in chapter 12 of part 2 of the draft decision.

13.3.4 Reasons for the decision

Revision 12.3 of the AER's draft decision required APA GasNet to amend its access arrangement proposal to state that there are no applicable capacity trading requirements for the purposes of rules 48(1)(f) and 105(1) of the NGR.[644] APA GasNet has adopted the AER's required amendment.

The AER did not receive any further information and for the reasons set out in its draft decision accepts APA GasNet's proposed capacity trading requirements.[645]

13.4 Queuing arrangements

13.4.1 Final decision

The AER's final decision is to accept APA GasNet's queuing arrangements.

13.4.2 Revised proposal

APA GasNet proposed the same queuing arrangements approved by the AER in the AER's draft decision.

13.4.3 Assessment approach

The AER's assessment approach for terms and conditions is set out in 12.3.3 in chapter 12 of part 2 of the draft decision.

13.4.4 Reasons for the decision

In its draft decision the AER proposed to accept APA GasNet 's queuing arrangements.[646] The AER did not receive any further information and for the reasons set out in its draft decision accepts APA GasNet's proposed queuing arrangements.[647]

13.5 Extension and expansion requirements

13.5.1 Final decision

The AER accepts APA GasNet's extension and expansion policy.

13.5.2 Revised proposal

APA GasNet proposed the same queuing arrangements approved by the AER in the AER's draft decision.

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644 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.237.

645 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.232.

646 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.233.

647 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p. 232.

13.5.3 Assessment approach

The AER's assessment approach for terms and conditions is set out in 12.4.3 in chapter 12 of part 2 of the draft decision.

13.5.4 Reasons for the decision

In its draft decision the AER proposed to accept APA GasNet 's extension and expansion requirements.[648] The AER did not receive any further information and for the reasons set out in its draft decision accepts APA GasNet's proposed extension and expansion requirements.[649]

13.6 Terms and conditions for changing receipt or delivery points

13.6.1 Final decision

The AER accepts APA GasNet's terms and conditions for the change of receipt or delivery points.

13.6.2 Revised proposal

APA GasNet proposed the same terms and conditions for changing receipt or delivery points approved by the AER in the AER's draft decision.

13.6.3 Assessment approach

The AER's assessment approach for terms and conditions is set out in 12.5.3 in chapter 12 of part 2 of the draft decision.

13.6.4 Reasons for the decision

In its draft decision the AER proposed to accept APA GasNet's proposed terms and conditions for changing receipt or delivery points.[650] The AER did not receive any further information and for the reasons set out in its draft decision accepts APA GasNet's proposed terms and conditions for the change of receipt or delivery points.[651]

13.7 Review dates

13.7.1 Final decision

The AER does not approve APA GasNet's proposed revision submission date and review commencement date. Following discussions with the AER, APA GasNet accepted an alternative review commencement date of 1 January 2018. The date proposed by the AER for APA GasNet's revision submission date is 1 January 2017.

In its revised proposal, APA GasNet proposed a revision submission date of 1 July 2017 "or four years from the commencement date of this Access Arrangement, whichever is the later" and a review commencement date of "the later of 1 January 2018 and the date on which approval of revisions to this Access Arrangement take effect".

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[648] AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.234.

[649] AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.234.

[650] AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.235.

[651] AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.236.

13.7.2 Assessment approach

The AER's assessment approach for terms and conditions is set out in 12.6.3 in chapter 12 of part 2 of the draft decision.

13.7.3 Reasons for the decision

In its draft decision, the AER accepted the revision commencement date proposed by APA GasNet which is the same as put forward in its revised proposal.[652] However, on further review, the AER informed APA GasNet that the date proposed was not acceptable because a revision commencement date must be a specific time, that is, a fixed, singular date. In order to remove the potential for confusion that may arise in future Access Arrangement decisions, the AER proposed removing the 'floating' aspect of the definition so that the date was set at 1 January 2018.

In an email of 22 February 2013, APA GasNet objected to the change in part because it considered its drafting was workable. Nonetheless, APA GasNet "in keeping with the parties' mutual objective of co-operation" did not oppose the proposed change".

Taking into account the above relevant information, the AER does not approve APA GasNet's revision commencement date as it is not consistent with the general rule in r. 50(1) of the NGR. The AER proposes a revision commencement date of 1 January 2018 which APA GasNet has agreed to accept. On this same basis, the AER also proposes a fixed review submission date of 1 January 2017 which is consistent with r. 50(1) as it is four years from APA GasNet's last revision commencement date.[653]

13.8 Revisions

The AER proposes the following revision to make APA GasNet's access arrangement acceptable.

Revision 13.1: Amend clause F8(b) of the Transmission Payment Deed by deleting the following phrase between the words 'Shipper' and 'and has':

has a bona fide dispute in respect of an amount due under the invoice.

Revision 13.2: Delete clause 1.5 of the proposed access arrangement and replace it with the following:

The Revisions Submission Date is 1 January 2017 (**Revisions Submission Date**).

The Revisions Commencement Date is 1 January 2018 (**Revisions Commencement Date**).

Service Provider may also at any time between the commencement of this Access Arrangement and the Revisions Submission Date, submit revisions to this Access Arrangement to the AER under Rule 52.

652 AER, Draft decision, APA GasNet access arrangement proposal for 1 January 2013 – 31 December 2017, September 2012, Part 2, p.237.

653 See 12.4.3 of the Tariff Variation Mechanism chapter of this Final Decision.