



# **Access arrangement draft decision**

**Envestra Ltd**

**2013–17**

**Part 1**

September 2012

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## Shortened forms

Shortened form	Full title
2008-12 access arrangement	Access arrangement for Envestra effective from 1 January 2008 to 31 December 2012 inclusive
2008-12 access arrangement period	1 January 2008 to 31 December 2012 inclusive
2013-17 access arrangement period	1 January 2013 to 31 December 2017
2018-22 access arrangement	Access arrangement for Envestra effective from 1 January 2018 to 31 December 2022 inclusive
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
access arrangement information	Envestra Limited, Access arrangement information, 30 March 2012
access arrangement proposal	Envestra Limited, Access arrangement proposal, 30 March 2012
capex	capital expenditure
CAPM	capital asset pricing model
CPI	consumer price index
Code	National Third Party Access Code for Natural Gas Pipeline Systems
DRP	debt risk premium
Envestra	Envestra Limited (ACN 078 551 685)
Envestra Albury	Envestra's distribution network in Albury, NSW and surrounding regions
Envestra Victoria	Envestra's distribution network in Victoria
ESC	Essential Services Commission (Victoria)
MRP	market risk premium
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
opex	operating expenditure
PTRM	post tax revenue model
RAB	regulatory asset base
RFM	roll forward model
RPP	revenue pricing principles
WACC	weighted average cost of capital

## Summary

This is the AER's draft decision on Envestra's access arrangement for the 2013–17 access arrangement period for the Envestra Albury and Envestra Victoria networks. It includes the AER's draft decision on reference tariffs as well as terms and conditions for access to Envestra's distribution pipelines. In making its draft decision the AER applied the laws and rules governing gas access arrangements.

The draft decision sets out the AER's assessment of Envestra's access arrangement proposals, and details a number of revisions that the AER requires Envestra make to its proposals to make them acceptable under the National Gas Rules. Envestra can lodge revised proposals following the draft decision, and the AER will make a final decision on the revised proposals.

## Draft decision

The AER's draft decisions on the total expected revenue derived from Envestra's reference services are:

- Envestra Victoria—\$853.5 million (\$nominal)
- Envestra Albury—\$29.5 million (\$nominal).

In addition, the AER's draft decision on ancillary reference service revenues are \$13.0 million (\$nominal) and \$0.9 million (\$nominal) for Envestra's Victorian and Albury networks respectively.

The AER's draft decision on smoothed reference service revenues represents a 29.3 per cent and 17.1 per cent reduction of Envestra's proposed smoothed revenues over the 2013–17 access arrangement period for its Victoria and Albury networks respectively.<sup>1</sup>

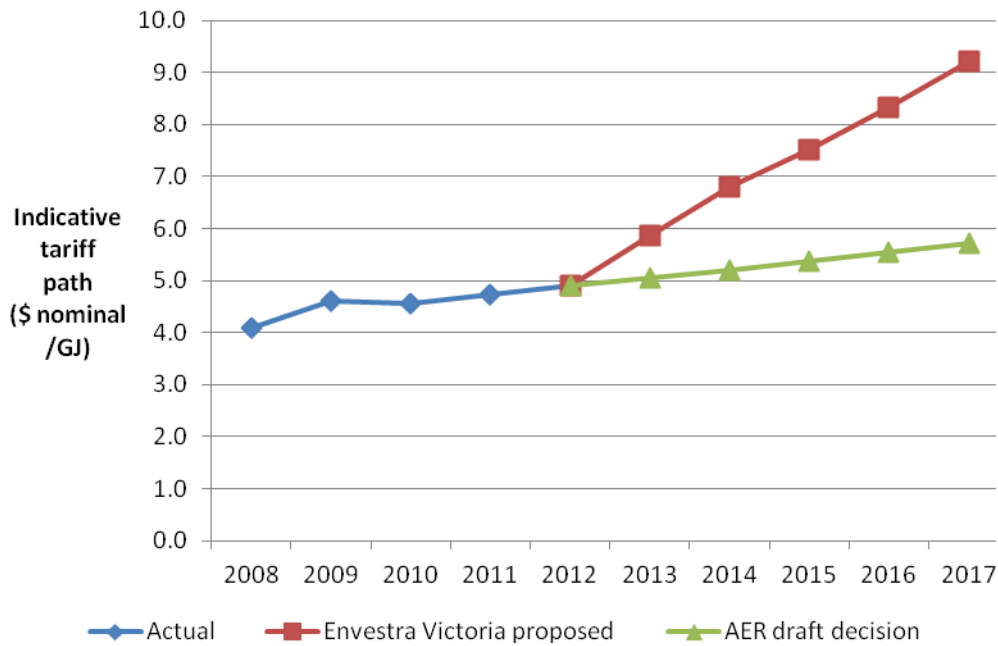
## Indicative tariffs

This draft decision will result in reference tariffs for Envestra Victoria being approximately 29 per cent lower on average and Envestra Albury being approximately 17 per cent lower over the 2013–17 access arrangement period (in nominal dollar terms) compared to Envestra's proposed tariffs. It will also result in reference tariffs for Envestra Victoria being 17 per cent higher on average and Envestra Albury being 16 per cent higher than in the 2008–12 access arrangement period. The indicative tariff path arising from the AER's draft decision compared with that in Envestra's proposal for Envestra Victoria and Envestra Albury are shown in figures 1 and 2.

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<sup>1</sup> The AER's smoothed revenues are derived from the AER's smoothed tariffs. Smoothed tariffs multiplied by forecast demand equals the smoothed revenue. The smoothed revenues are equal in net present value terms to Envestra's unsmoothed building block revenue requirements.

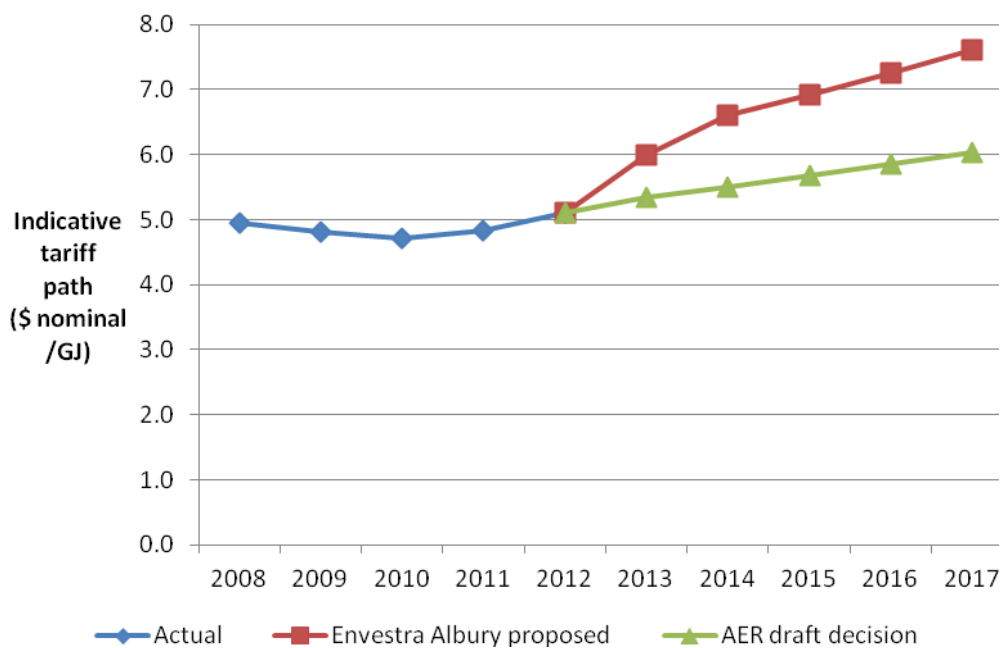
**Figure 1** Indicative reference tariff paths for Envestra Victoria's reference services from 2013 to 2017 (\$/GJ, nominal)



Source: AER analysis.

Note: This chart shows an indicative tariff path, based on forecast revenues and forecast demand for Envestra's network. Envestra's actual tariffs will first be updated on 1 July 2013 to reflect the AER's decision. For this reason, the indicative 2013 tariff above is an average of the higher 2012 tariffs, and lower 2013 tariffs (from 1 July 2013 to 31 December 2013) to reflect the AER's decision. On 1 January 2014, the AER's draft decision forecasts that actual tariffs will increase to reflect CPI.

**Figure 2** Indicative reference tariff paths for Envestra Albury's reference services from 2013 to 2017 (\$/GJ, nominal)



Source: AER analysis.

Note: This chart shows an indicative tariff path, based on forecast revenues and forecast demand for Envestra's network. Envestra's actual tariffs will first be updated on 1 July 2013 to reflect the AER's decision. For this reason, the indicative 2013 tariff above is an average of the higher 2012 tariffs, and lower 2013 tariffs (from 1 July 2013 to 31 December 2013) to reflect the AER's decision. On 1 January 2014, the AER's draft decision forecasts that actual tariffs will increase to reflect CPI.

## Impact on residential bills

In Envestra's Victorian and Albury distribution networks, gas distribution reference services comprise approximately 31 per cent and 25 per cent of an average residential gas bill, respectively.<sup>2</sup>

The draft decision on Envestra Victoria will result in an approximate increase of \$7 per annum to an average residential bill over the 2013–17 access arrangement period. This compares with an estimated increase of \$57 per annum (\$nominal) that would have resulted from Envestra Victoria's proposal.

The draft decision on Envestra Albury will result in an approximate increase of \$5 per annum to an average residential bill over the 2013–17 access arrangement period. This compares with an increase of \$22 per annum (\$nominal) that would have resulted from Envestra Albury's proposal.

## Key differences between the draft decision and Envestra's access arrangement proposal

Key differences between the draft decision and Envestra's proposal are in regards to the rate of return, forecast capital expenditure (capex) and forecast operating expenditure (opex).

### Rate of return

The rate of return relates to the cost of financing capital assets, such as providing a return on equity or paying interest on loans. The draft decision is to set a rate of return of 7.16 per cent (compared with Envestra's proposed 9.06 per cent). While the AER accepts most of Envestra's rate of return proposal, it does not accept Envestra's proposed risk free rate. Envestra proposed adopting a long term historical average risk free rate in the cost of equity. The AER's view is that a relatively short averaging period, sampled as close as practicably possible to the commencement of the access arrangement period, would better reflect current market conditions and risks.

### Capital expenditure

The draft decision is to approve \$315.4 million (\$2011) of the \$764.9 million (\$2011) of capex proposed by Envestra for Envestra Victoria (a reduction of approximately 59 per cent). For Envestra Albury, the AER's draft decision is to approve \$5.6 million (\$2011) of the \$8.2 million (\$2011) proposed by Envestra. While a number of proposed capex projects were accepted, the AER rejected aspects of Envestra's proposed mains replacement program where these were assessed as not necessary or prudent and efficient. However, a new mains replacement pass through event is proposed for low pressure (LP) to high pressure (HP) mains replacement. This will provide Envestra the flexibility to access funding where a change in circumstances leads it to undertake addition LP to

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<sup>2</sup> The AER derived this estimate based on annual consumption of 60GJ per annum. This is consistent with data sourced from the ESC's published standing offer bills contained in its *Energy retailers comparative performance report - Pricing 2010–11*, and Envestra's approved tariffs for 2010 and 2011. The averages of the tariffs across Envestra's distribution zones applied in the AER's analysis uses a weighted average of volume by tariff class.

HP mains replacement above the approved levels. Reductions were also made to IT and overheads capex to bring these in line with industry standards. Materials and labour cost escalators have also been reduced.

### **Operating expenditure**

The draft decision is to approve \$293.9 million (\$2011) of the \$364.8 million (\$2011) of opex proposed by Envestra (a reduction of approximately 19 per cent) for Envestra Victoria. For Envestra Albury, the AER's draft decision is to approve an increase opex of \$13.4 million (\$2011) (Envestra proposed \$12.3 million (\$2011)). Envestra proposed a number of 'step changes' to allow for adjustments to a base level estimate of annual opex. The AER accepted some of these but rejected others where these did not relate to a change in circumstances or did not reflect efficient opex. As with capex, reductions were also made to the proposed materials and labour cost escalators.

### **Next steps**

Envestra is given the opportunity to address this draft decision by submitting a revised access arrangement proposal by 9 November 2012.

The AER invites submissions from interested parties in response to its draft decision and Envestra revised proposal. The deadline for submissions is 7 January 2013. Further information on providing a submission can be found at: <http://www.aer.gov.au/node/4810>

Once the AER has considered submissions and Envestra's revised proposal, it will publish its final decision in March 2013.



# 1 About the review

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, including Envestra, and the Victorian gas transmission network. 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 distribution networks are subject to full regulation, which requires a service provider<sup>3</sup> 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 distribution pipeline.<sup>4</sup>

## 1.1 Overview of the service provider

Envestra Limited is a publicly listed company that owns natural gas distribution networks across Australia. Envestra owns around 23 000 kilometres of natural gas distribution networks serving over 1.1 million customers in Victoria, South Australia, Queensland, New South Wales and the Northern Territory.

Envestra's Victorian gas network includes the distribution mains, inlets, meters, regulators and ancillary equipment that are used to provide pipeline services in Victoria. It serves the northern, outer eastern and southern areas of Melbourne, Mornington Peninsula, rural communities in northern, eastern and north-eastern Victoria, and south-eastern rural townships in Gippsland. Envestra's Victorian gas network comprises around 9900 kilometres of mains delivering gas to around 575 000 customers.

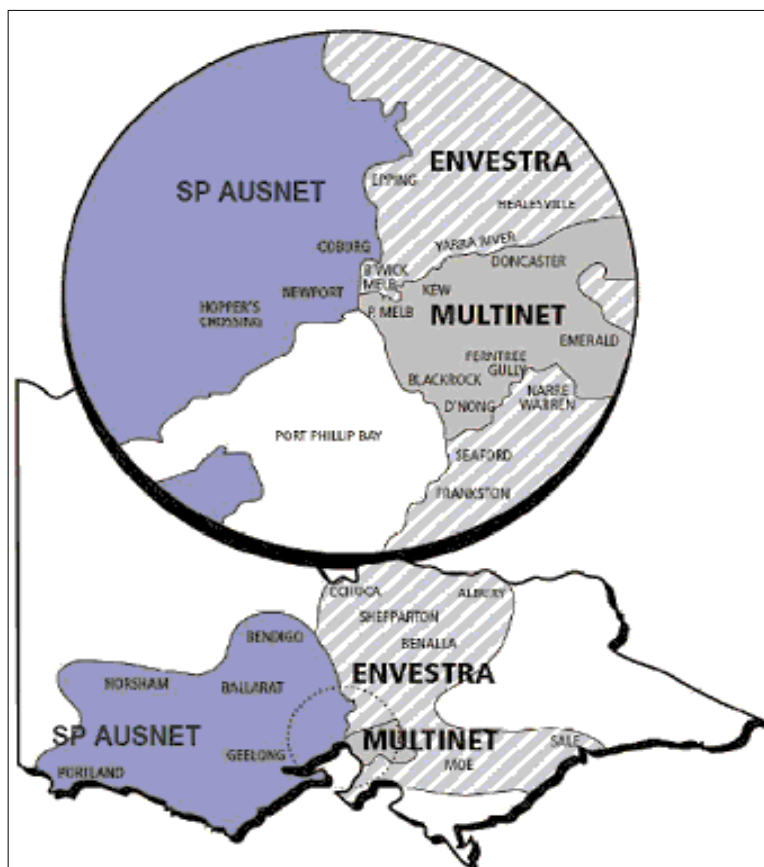
Envestra's Albury gas network includes the distribution mains, inlets, meters, regulators and ancillary equipment that are used to provide pipeline services. It serves the city of Albury and its environs, extending to Jindera to the north of Albury. Envestra's Albury gas network delivers gas to around 20 000 customers.

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<sup>3</sup> Under s.8 of the NGL a service provider is a person who owns, controls or operates a gas pipeline.

<sup>4</sup> Providers of gas distribution services typically negotiate contracts to sell pipeline services to customers such as energy retailers. Section 322 of the NGL provides that contracts between service providers and users may differ from those approved by the AER as part of an access arrangement review. In the event of a dispute, however, a user or prospective user may request dispute resolution by the AER under Chapter 6, Part 3 of the NGL. In the event that the AER makes an access determination in order to resolve the dispute, it must give effect to the access arrangement: s. 189.

**Figure 1.1 Map of the Victorian gas distribution networks**



### 1.1.2 Regulation prior to 1 July 2008

The Essential Services Commission of Victoria (ESCV) made the previous determination on Envestra's access arrangement for the period 1 January 2008 to 31 December 2012. The ESCV made its determination in accordance with the provisions of the National Third Party Access Code for Natural Gas Pipeline Systems (the Code).

Responsibility for the regulation of Victorian gas networks transferred from the ESCV to the AER on 1 July 2008 as part of the move towards the national regulation of the energy market. This current determination process is the first full assessment by the AER of the access arrangements of the Victorian gas distribution businesses under the NGL and the NGR.

## 1.2 The relevant requirements of the NGL and the NGR

This access arrangement draft decision specifies the amendments that the AER considers are required in order for Envestra's access arrangement proposal to be approved. These amendments have been identified by assessing each element of Envestra's access arrangement proposal in accordance with the relevant requirements set out in the NGL and the NGR. It is important to recognise that the requirements in the NGL and the NGR relevant to (and accordingly, the assessment required of) a particular element of Envestra's access arrangement proposal may differ.

For example, the NGR ascribes different levels of discretion—namely full, limited or no discretion—when making certain decisions on an access arrangement proposal. Specifically:

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.<sup>5</sup>

For these reasons, each element of Envestra's access arrangement proposal has been assessed individually in separate attachments in this draft decision. The requirements relevant to each element are also set out in each of these attachments.

However, there are two overarching requirements that apply to the assessment of Envestra's 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.<sup>6</sup> 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.

Consistent with this, r. 100 of the NGR, 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 where it considers appropriate to do so.<sup>7</sup> Section 23 of the NGL relevantly provides:

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

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<sup>5</sup> NGR, r. 40.

<sup>6</sup> NGL, s. 28(1).

<sup>7</sup> NGL, s. 28(2).

(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
- (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.

Ultimately, in order to properly take into account the RPP and to determine whether it will or is likely to contribute to the achievement of the NGO, a holistic assessment of an access arrangement proposal must be undertaken. This is because an access arrangement is a complex instrument that is more than just the sum of its elements or component parts. An access arrangement also represents a balance between the possible outcomes, reflecting the AER's judgment on the level of scrutiny and the form of examination afforded to all relevant material before it.

That balance also recognises that there are interlinkages between different elements of an access arrangement. These interlinkages 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 contribute to achieving, among other things, efficient investment in and operation of Envestra's gas distribution network in the long term interests of consumers whilst providing Envestra with a reasonable opportunity to recover at least its efficient costs and effective incentives to promote economic efficiency.

## 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.<sup>8</sup> 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

(b) to understand the basis and derivation of 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 (see section 1.3.4 below). 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.<sup>9</sup> 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.<sup>10</sup>

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.<sup>11</sup> The AER must include a statement of the reasons for the draft decision.<sup>12</sup> 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.<sup>13</sup>

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<sup>8</sup> NGL, s. 132.

<sup>9</sup> NGR, r. 58(1).

<sup>10</sup> NGR, r. 58(2).

<sup>11</sup> NGR, r. 59(1); r. 71(2).

<sup>12</sup> NGR, r. 59(4).

<sup>13</sup> NGR, r. 59(2).

### 1.3.1 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.<sup>14</sup> It follows that if the AER withholds its approval to any element of an access arrangement proposal, then the proposal cannot be approved.<sup>15</sup>

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.<sup>16</sup> 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.<sup>17</sup>

### 1.3.2 Revision of access arrangement proposal and commencement of public consultation

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.<sup>18</sup> 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.<sup>19</sup> The amendments must be limited to those necessary to address matters raised in the access arrangement draft decision unless the AER approves further amendments.<sup>20</sup>

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.<sup>21</sup> 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.

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.<sup>22</sup>

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<sup>14</sup> NGR, r. 41(1).

<sup>15</sup> NGR, r. 41(2).

<sup>16</sup> NGR, r. 64(1).

<sup>17</sup> NGR, r. 65(2).

<sup>18</sup> NGR, r. 59(2).

<sup>19</sup> NGR, r. 60(1).

<sup>20</sup> 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.

<sup>21</sup> NGR, r. 59(5)(b) & (c)

<sup>22</sup> NGR, r. 62(1).

An access arrangement final decision is a decision to approve, or to refuse to approve, an access arrangement proposal.<sup>23</sup> An access arrangement final decision, like an access arrangement draft decision, must include a statement of the reasons for the decision.<sup>24</sup> The final decision must also be published on the AER's website.

### 1.3.3 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.<sup>25</sup> 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.<sup>26</sup>

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.<sup>27</sup> 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.<sup>28</sup>

### 1.3.4 Completeness of Envestra's access arrangement information

The NGR require a service provider to submit, together with an access arrangement proposal, supporting information explaining the basis and derivation of each element of the access arrangement.<sup>29</sup> Incomplete or deficient access arrangement information can impede and delay the AER's consultation and decision making processes.

Prior to receiving Envestra's access arrangement proposal, the AER consulted with Envestra to develop and refine the Regulatory Information Notice (RIN) and regulatory templates. A RIN is a compulsory information gathering notice that the AER prepares and serves on a service provider. A service provider must provide the AER with the information, and prepare, maintain or keep information in the manner and form, specified in a RIN.<sup>30</sup> The purpose of the RIN was to obtain information from Envestra to assist the AER in assessing its access arrangement proposal.

Upon receiving Envestra's access arrangement proposals, the AER conducted a preliminary assessment of the proposals and access arrangement information against the requirements of the NGR. Following this assessment, the AER considered Envestra's access arrangement information to be deficient as it failed to include a nominated averaging period. The AER requires an averaging period in order to conduct a proper assessment of the proposed weighted average cost of capital.

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<sup>23</sup> NGR, r. 62(2).

<sup>24</sup> NGR, r. 62(4).

<sup>25</sup> NGR, r. 62(7).

<sup>26</sup> NGR, r. 11.

<sup>27</sup> NGR, r. 11(1)(c).

<sup>28</sup> NGR, r. 13.

<sup>29</sup> NGR, r. 42(1).

<sup>30</sup> NGL, s. 46.

Pursuant to r. 43, the AER required Envestra to submit further access arrangement information as an addendum to the information already submitted. The time taken to correct this deficiency was disregarded for the purposes of calculating AER decision making time.

## 1.4 Public Consultation

The NGR require the AER 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 Envestra's access arrangement proposal. The AER considered all submissions in making this draft decision.

The AER also hosted a workshop on the proposed terms and conditions. The workshop provided retailers and distributors (including Envestra) with a forum to identify and discuss key issues arising from the proposed amendments to the non-price terms and conditions of the distributors' access arrangements.

Table 1.1 below outlines the various stages of public consultation that the AER has undertaken as part of the review process, and upcoming consultation following this draft decision. The AER may also hold a public forum and industry workshop following the release of the AER's draft decision.

Submissions on Envestra's revised proposals are due 7 January 2012. Further information on providing a submission to the AER can be found at: <http://www.aer.gov.au/node/14473>

**Table 1.1 Scheduled dates for key stages in the decision making process**

Key stages in the decision making process	Scheduled date
AER received Envestra proposal	30 March 2012
Envestra proposal published	2 May 2012
Industry workshop on terms and conditions	18 May 2012
AER draft decision released	10 September 2012
Envestra revised proposal to be submitted	9 November 2012
Submissions on revised proposal due	7 January 2013
Release of AER final decision	March 2013

### 1.4.2 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.

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.<sup>31</sup> In summary, the AER is authorised 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.<sup>32</sup>

Before disclosing information, 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 NGL process described above 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.

## 1.5 Structure of decision paper

This draft decision paper addresses Envestra's access arrangement proposal for both the Victorian and Albury gas distribution networks. The AER decided to combine the two draft decisions having regard to the size of the Albury network and the similarities between the two access arrangement proposals.

The draft decision paper is set out as follows:

- Part 1: AER draft decision – draft decision on access arrangement proposal and summary of reasons
- Part 2: attachments – detailed analysis of the various components of the draft decision (excluding analysis based on confidential information)
- Part 3: appendices – detailed discussion of common, technical issues
- Part 4: confidential appendices – sections of the AER's analysis that include protected information

In making its draft decision, the AER considered Envestra's access arrangement proposal and supporting information, submissions by interested parties and specialist advice provided to the AER by engineering, financial and economic experts.

The attachments to the AER's draft decision contain the AER's more detailed analysis. AER analysis that refers to protected information is contained in a confidential appendix to the decision.

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<sup>31</sup> NGL, ss. 324 to 329 (Division 1 of Part 2 of Chapter 10 of the NGR).

<sup>32</sup> NGL, s. 329(1).

## 2 AER approach

As the owner and operator of a gas distribution network, Envestra is required to submit an access arrangement to the regulator for approval. An access arrangement sets out the terms and conditions under which third parties can use a pipeline. It must specify at least one reference service likely to be sought by a significant part of the market, and a reference tariff for that service. As the national energy regulator, the AER is required to assess Envestra's proposed gas access arrangement for the 2013–17 access arrangement period.

In order to assess Envestra's proposal, the AER must first identify the covered pipeline that will be regulated through the access arrangement. That is, the 'reference services' covered by the access arrangement. For this draft decision the reference service is essentially the haulage reference services provided by Envestra which provide for the injection, withdrawal and conveyance of gas on its gas distribution network. This is discussed in more detail in section 3 and attachment 1 of the draft decision.

The AER's then undertakes the more substantial task of assessing and providing a draft decision on:

- tariffs for regulated pipeline services (reference services)
- non-tariff terms and conditions for reference and ancillary services.

### 2.1 Tariffs for reference services

Assessing tariffs for reference services involves first assessing the total revenue required to deliver Envestra's distribution services. Consistent with the NGR, the AER uses the building block approach to determine the total revenue allowance. Total revenue under the building block approach is set out in r. 76 of the NGR and comprise of the following capital and non-capital costs relating to pipeline services:

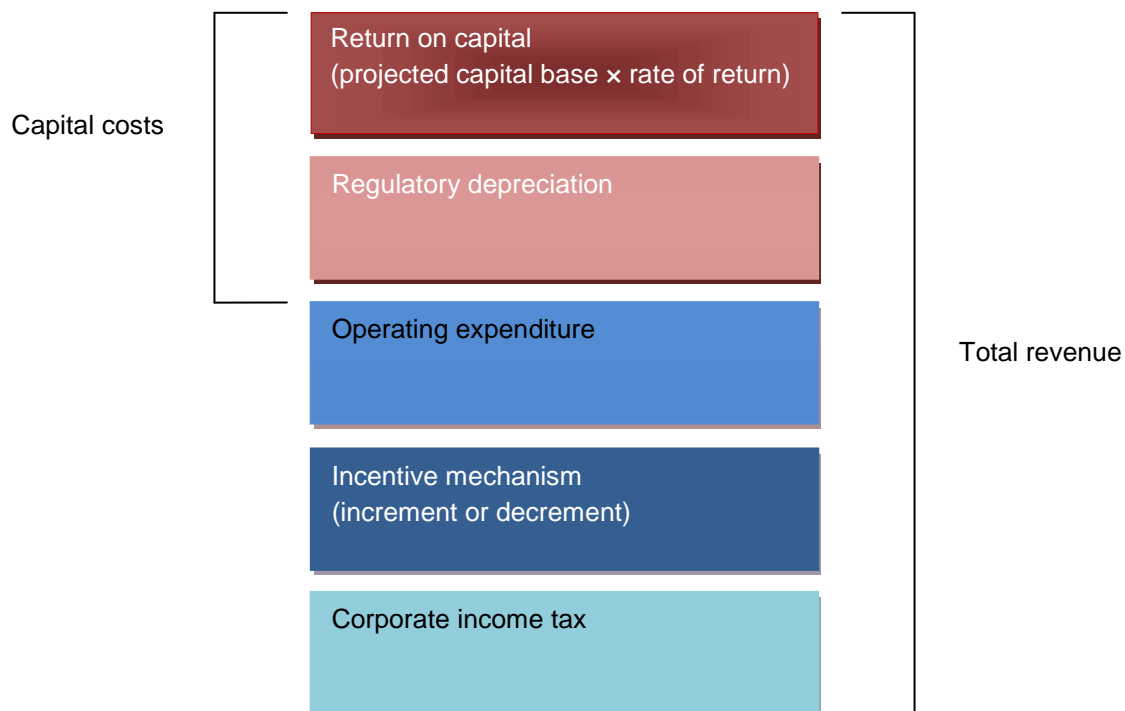
- a return on the projected capital base incorporating:
  - the capital base – section 5 and attachment 2
  - capital expenditure (which forms part of the capital base) – section 6, attachment 3 and confidential appendix A
  - a rate of return – overview section 7, attachment 4 and appendix B
- regulatory depreciation of the projected capital base – section 8 and attachment 5
- forecast operating expenditure – section 9, attachment 6
- increments and decrements resulting from an incentive mechanism<sup>33</sup> – section 10, and attachment 7
- corporate income tax<sup>34</sup> – section 11 and attachment 8.

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<sup>33</sup> This may relate to operating expenditure and/or capital expenditure depending on the incentive mechanism.

This is illustrated in Figure 2.1.<sup>35</sup>

**Figure 2.1 Building block approach**



These building blocks are taken into account in determining Envestra's total revenue. That total revenue in general terms, is a forecast of its efficient cost of providing gas distribution services. For the AER's draft decision on Envestra's required revenue, see section 3.

Once total revenue is determined, revenue is allocated to reference and other pipeline services. The tariffs for the reference services are determined with regard to the recovery of the total revenue required to provide those services and the forecast demand for those services. Hence, demand forecasts are an important component of the AER's draft decision on tariffs for reference services. Demand is discussed in section 12 and attachment 9.

In relation to tariffs, the access arrangement also details:

- how tariffs for reference services will be set (section 13 and attachment 10 relate to tariff setting)
- the mechanism for varying tariffs annually and arrangements for varying tariffs in certain pre-specified conditions (section 14 and attachment 11 discuss the tariff variation mechanism).

## 2.2 Non-tariff terms and conditions

Non-tariff terms and conditions essentially define the commercial relationship between the network service provider and users. In considering Envestra's proposal, the AER assesses whether Envestra's

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<sup>34</sup> This will be included as a building block revenue component in the estimate of corporate income tax payable under the post-tax framework or in the return on the capital under the pre-tax framework. The AER employs the post-tax framework.

<sup>35</sup> AER, *Access arrangement guidelines*, March 2009, p. 55.

proposed terms and conditions are consistent with the NGL and the broader regulatory framework. While parties can agree on terms that are different to those set out in Envestra's access arrangement proposal, the AER's approved terms and conditions can act as a starting point for negotiations.

The AER's consideration of the access arrangement's non-tariff components is set out in section 15, attachments 12, and appendix D.

## **2.3 What the AER considers in reaching its draft decision**

The AER's draft decision on Envestra's 2013–17 access arrangement has been made in accordance with the relevant sections of the NGL and NGR.

In forming its draft decision, the AER has:

- considered Envestra's access arrangement proposal and other supporting information provided by Envestra
- considered submissions from interested parties
- considered views expressed at stakeholder events
- undertaken its own analysis to verify the information provided by Envestra
- considered expert advice or analysis commissioned in relation to certain aspects of Envestra's access arrangement proposal.

The release of this draft decision was delayed because of deficiencies in Envestra's proposal and a lack of responsiveness by Envestra to a number of AER information requests. Envestra failed to provide adequate responses to certain information requests and there have been significant delays in providing requested information. This impeded the AER's assessment process and led to delays in completing the draft decision.

## 3 Total revenue requirements and the impact on price

Envestra's total revenue, in general terms, is a forecast of its efficient cost of providing gas distribution services.

The total revenue set out in this draft decision has been determined by assessing each element of Envestra's access arrangement proposal. These elements include the building blocks, which have been assessed to ensure that they are consistent with the costs that would be incurred by an efficient service provider in providing gas distribution services. This also includes taking into account any relevant interlinkages that exist between the elements of Envestra's access arrangement proposal.

These elements are discussed in more detail in the remainder of the overview, as well as in the attachments to this draft decision. The interlinkages are discussed in chapter 16 of this draft decision.

This chapter also includes some analysis on the likely impact of this draft decision on prices for end consumers. This analysis has been undertaken with reference to the AER's draft decision on tariffs.

### 3.1 Draft decision

The AER's draft decision on the total (smoothed) expected revenues derived from Envestra's reference services are:

- Envestra Victoria—\$853.5 million (\$nominal)
- Envestra Albury—\$29.5 million (\$nominal).

These (smoothed) reference service revenues are calculated by smoothing the total building block revenue requirements (net of ancillary reference services revenues) of \$858.3 million and \$29.8 million (\$nominal) for Envestra's Victorian and Albury networks respectively.

The AER's draft decision on Envestra's ancillary reference service revenue over the 2013–17 access arrangement period is:

- Envestra Victoria—\$13.0 million (\$nominal)
- Envestra Albury—\$0.8 million (\$nominal)

The (smoothed) reference service revenue requirements are 29.3 per cent and 17.1 per cent lower than Envestra's proposed (smoothed) reference services revenue over the 2013–17 access arrangement period for its Victorian and Albury networks respectively.<sup>36</sup> The AER accepts that many aspects of Envestra's proposed access arrangement proposal are consistent with the requirements of the NGR. However, the AER has not approved all elements. The key elements of the AER's draft decision that would reduce Envestra's proposed revenues include:

- the rate of return

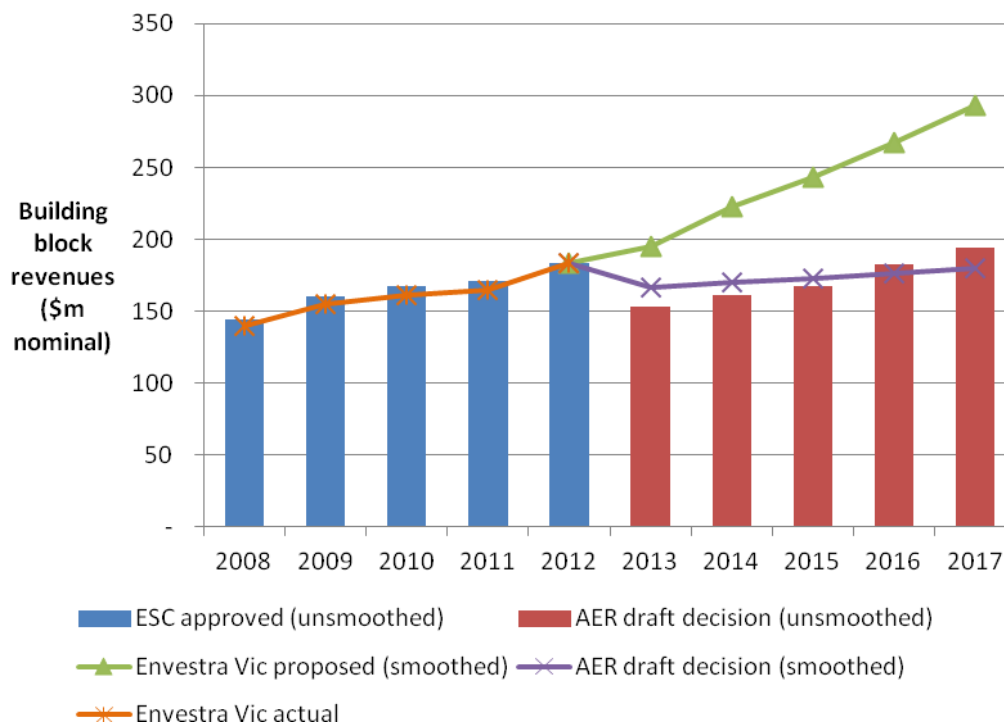
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<sup>36</sup> The AER's smoothed revenues are derived from the AER's smoothed tariffs. Smoothed tariffs multiplied by forecast demand equals the smoothed revenue. The smoothed revenues are equal in net present value terms to Envestra's unsmoothed building block revenue requirements.

- capital expenditure (capex)
- operating expenditure (opex).

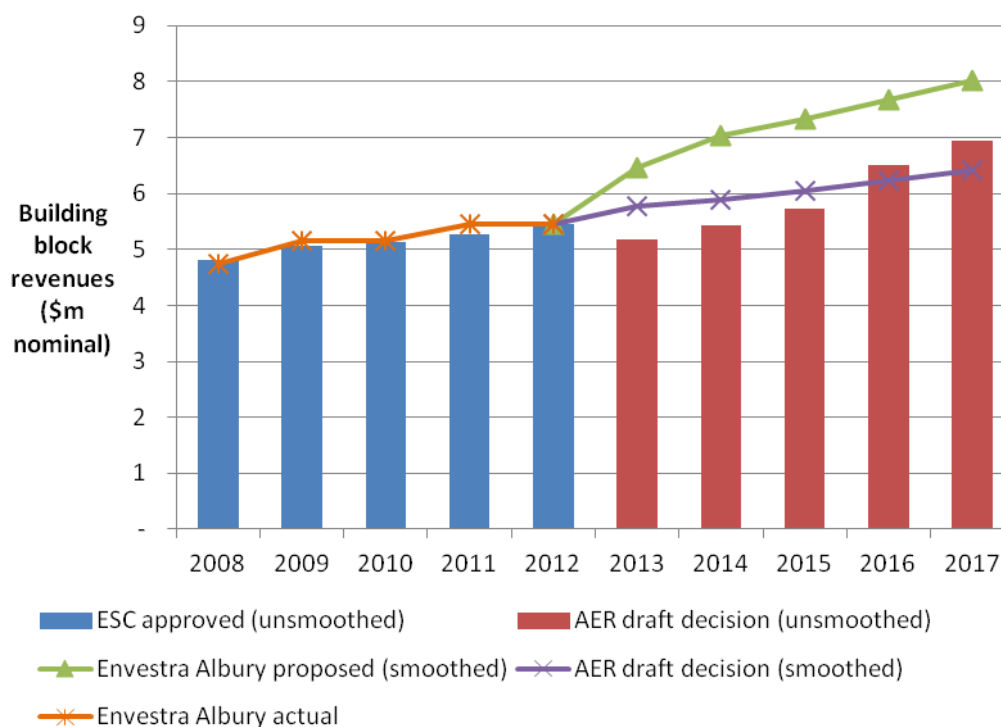
Figure 3.1 and Figure 3.2 compares Envestra's proposal with the AER's draft decision for revenues over the 2013–17 access arrangement period and the revenue approved by the ESC over the 2008–12 access arrangement period for the Victorian and Albury networks. As illustrated below, Envestra's proposed smoothed revenues for the 2013–17 access arrangement period are 48 per cent and 42 per cent higher than the ESC allowed revenues over the 2008–12 access arrangement period for the Victorian and Albury networks respectively.

**Figure 3.1 AER's draft decision compared to Envestra Victoria's proposed revenue requirement and approved revenue for 2008–12 (\$million, nominal)**



Source: AER analysis.

**Figure 3.2 AER's draft decision compared to Envestra Albury's proposed revenue requirement and approved revenue for 2008–12 (\$million, nominal)**



Source: AER analysis.

The AER's draft decision on Envestra's total revenue is arrived at by summing the 'building blocks' that were set out earlier in section 2.1 of this document. These building blocks for Envestra's Victorian and Albury networks are displayed in Table 3.1 and Table 3.2, and are each discussed in greater detail in this overview and the attachments to the document.

**Table 3.1 AER's draft decision on Envestra Victoria's proposed revenue requirements for its reference services (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Return on capital	79.4	84.3	89.3	92.7	96.4	442.0
Regulatory depreciation	12.1	14.4	18.2	21.0	23.3	88.9
Operating expenditure	61.0	63.3	65.7	68.2	70.6	328.9
Efficiency carry-over	2.2	-1.0	-8.1	-2.5	-	-9.4
Net corporate income tax	1.1	2.7	4.5	5.7	6.8	20.9
Annual building block revenue requirement (unsmoothed)	155.8	163.7	169.7	185.1	197.1	871.3
Less: ancillary reference services revenue	2.4	2.5	2.6	2.7	2.8	13.0
Net reference tariff services revenue	153.4	161.2	167.1	182.4	194.3	858.3
X factor (per cent)	2.75%	0.00%	0.00%	0.00%	0.00%	n/a

Annual expected revenue requirement (smoothed)	164.6	167.2	170.4	173.7	177.6	853.5
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Source: AER analysis.  
n/a Not applicable.

The effects of the AER's draft decision on each of the building blocks for Envestra's Victorian and Albury networks, and on Envestra's proposed total (unsmoothed) revenue requirement are shown in Figure 3.3 and Figure 3.4. These show that the AER's draft decision will reduce Envestra's proposals for the return on capital, opex, depreciation and tax building blocks.

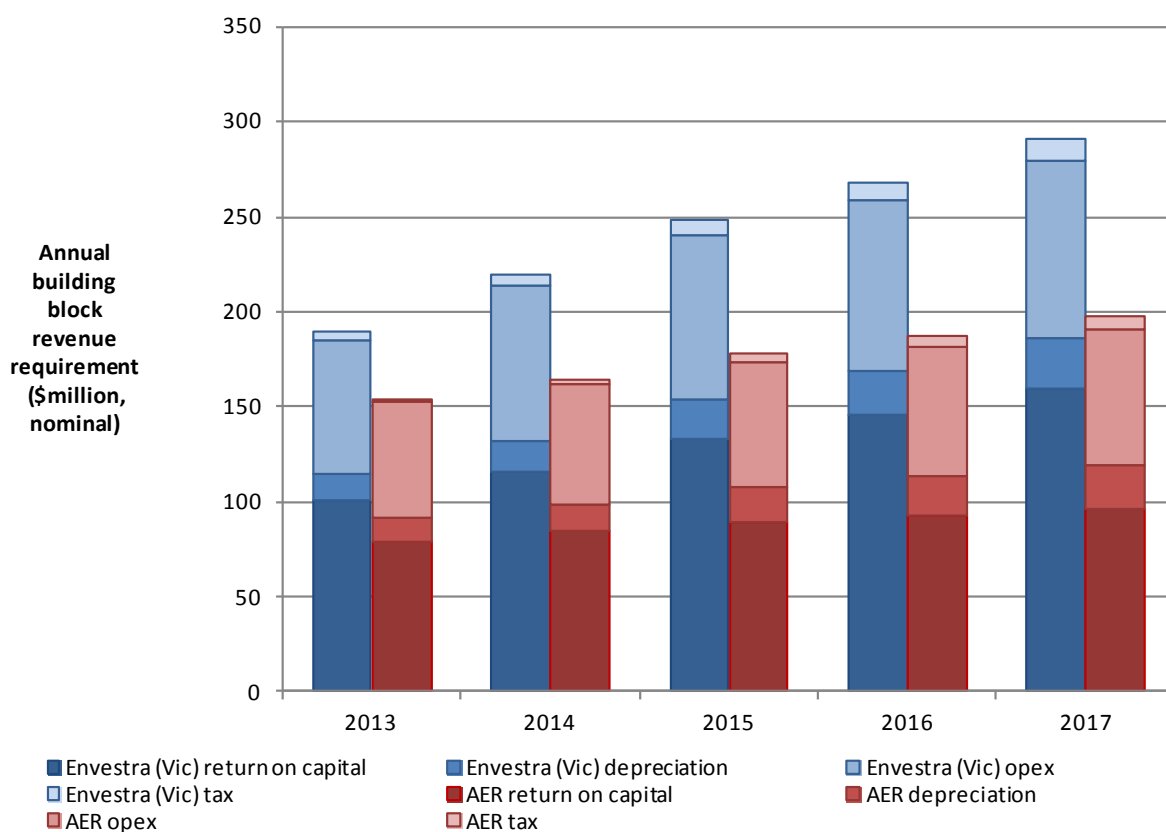


**Table 3.2 AER's draft decision on Envestra Albury's proposed revenue requirements for its reference services (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Return on capital	2.5	2.5	2.6	2.6	2.6	12.7
Regulatory depreciation	0.5	0.6	0.8	0.9	0.9	3.8
Operating expenditure	2.8	2.9	3.0	3.1	3.2	15.0
Efficiency carry-over	-0.7	-0.7	-0.8	-0.2	-	-2.4
Net corporate income tax	0.2	0.3	0.3	0.4	0.4	1.5
Annual building block revenue requirement (unsmoothed)	5.3	5.6	5.9	6.7	7.1	30.6
Less: ancillary reference services revenue	0.2	0.2	0.2	0.2	0.2	0.8
Net reference tariff services revenue	5.2	5.4	5.7	6.5	6.9	29.8
X factor (per cent)	3.4%	0.0%	0.0%	0.0%	0.0%	n/a
Annual expected revenue requirement (smoothed)	5.6	5.7	5.9	6.1	6.2	29.5

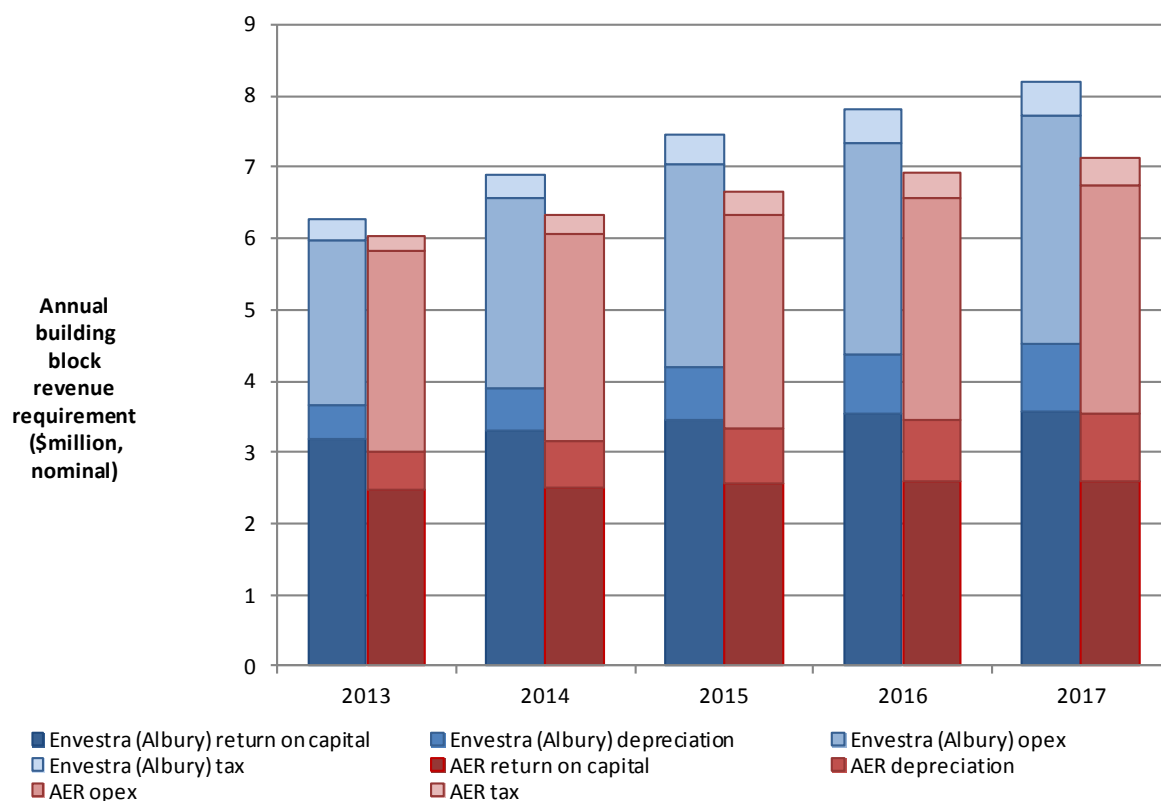
Source: AER analysis.  
n/a Not applicable.

**Figure 3.3 AER's draft decision and Envestra Victoria's proposed revenue requirement (unsmoothed), by building block (\$million, nominal)**



Source: AER analysis.

**Figure 3.4 AER’s draft decision and Envestra Albury’s proposed revenue requirement (unsmoothed), by building block (\$million, nominal)**



Source: AER analysis.

### 3.1.2 Sensitivity analysis

This section provides additional analysis to consider how revenue has changed between Envestra’s proposal and this draft decision and the key drivers of this.

The AER’s draft decision is to approve smoothed revenue requirements for Envestra’s reference services over the 2013–17 access arrangement period of:

- Envestra Victoria—\$853.5 million (\$nominal)
- Envestra Albury—\$29.5 million (\$nominal).

In addition, the AER’s draft decision on ancillary reference service revenues are \$13.0 million (\$nominal) and \$0.8 million (\$nominal) for Envestra’s Victorian and Albury networks respectively.

The AER’s draft decision on smoothed reference service revenues represents a 29.3 per cent and 17.1 per cent reduction of Envestra’s proposed smoothed revenues over the 2013–17 access arrangement period for its Victorian and Albury networks respectively.

The reductions are primarily driven by differences between Envestra’s proposal and the draft decision on:

- rate of return, which has reduced from 9.06 per cent to 7.16 per cent

- forecast net capex, which have reduced from \$871.7 million (\$nominal) to \$354.2 million (\$nominal) (a reduction of approximately 59 per cent) and from \$9.3 million (\$nominal) to \$6.4 million (\$nominal) (a reduction of approximately 32 per cent) for Envestra's Victorian and Albury networks respectively
- forecast opex<sup>37</sup>, which have reduced from \$411.2 million to \$306.5 million (a reduction of approximately 25.5 per cent) and from \$13.1 million (\$nominal) to \$11.7 million (a reduction of approximately 10.4 per cent) for Envestra's Victorian and Albury networks respectively.

Table 3.3 and Table 3.4 show that total unsmoothed revenues would be \$171.12 million (\$nominal) or 14.17 per cent lower and \$4.32 million (\$nominal) or 12.08 per cent lower than Envestra's proposed total revenues for its Victorian and Albury networks respectively, when the AER's draft decision rate of return is adopted.

**Table 3.3 Changes to Envestra Victoria's proposed total unsmoothed revenue, when AER's draft decision WACC parameters are adopted**

	Envestra Victoria's proposal (per cent)	AER's draft decision (per cent)	Revenue change (\$million, nominal)	Revenue change (per cent)
Risk free rate	3.99 (for debt) 5.99 (for equity)	2.98	-161.47	-13.37
DRP	3.92	3.76	-7.22	-0.60
Debt raising cost benchmark	0.15	0.093	-2.47	-0.20
WACC	9.06	7.16	-171.12	-14.17

Source: AER analysis.

Notes: The above scenario analysis was undertaken using the proposed Post-tax Revenue Model, with the formulae in the 'WACC' sheet corrected for the AER's approach.

- (a) The AER has accepted Envestra's proposed method for calculating the risk free rate used to determine the cost of debt. The difference between this risk free rate and the AER's draft decision, therefore, is due entirely to the AER's draft decision relying on data from a more recent indicative averaging period. That is, Envestra's proposed rate is based on market data from November–December 2011, whereas the AER's draft decision is based on market data from July–August 2012. The AER will update this data for its final decision to reflect Envestra's final averaging period. In contrast, the AER has not accepted Envestra's proposed method for calculating the risk free rate used to determine the cost of equity. Hence, the difference between the AER's risk free rate and that proposed by Envestra (for equity).
- (b) The difference between the DRP proposed by Envestra and the AER's draft decision predominantly reflects the difference in indicative averaging periods (as explained for the risk free rate). The AER, however, has also amended the bond sample relied on by Envestra to extrapolate the Bloomberg fair value curve. This amendment, albeit minor, is discussed in greater detail in attachment 4 of this draft decision.
- (c) The impact from each individual parameter change does not add up to the total impact of the WACC change (last row in the table). This is due to the interaction of individual parameters that contribute to calculating the WACC.

**Table 3.4 Changes to Envestra Albury's proposed total unsmoothed revenue, when AER's draft decision WACC parameters are adopted**

	Envestra Albury's proposal (per cent)	AER's draft decision (per cent)	Revenue change (\$million, nominal)	Revenue change (per cent)
Risk free rate	3.99 (for debt) 5.99 (for equity)	2.98	-4.09	-11.44

<sup>37</sup> Includes carryover amounts.

DRP	3.92	3.76	-0.18	-0.51
Debt raising cost benchmark	0.15	0.108	-0.05	-0.13
WACC	9.06	7.16	-4.32	-12.08

Source: AER analysis.

Notes: The above scenario analysis was undertaken using the proposed Post-tax Revenue Model, with the formulae in the 'WACC' sheet corrected for the AER's approach.

- (a) The AER has accepted Envestra's proposed method for calculating the risk free rate used to determine the cost of debt. The difference between this risk free rate and the AER's draft decision, therefore, is due entirely to the AER's draft decision relying on data from a more recent indicative averaging period. That is, Envestra's proposed rate is based on market data from November–December 2011, whereas the AER's draft decision is based on market data from July–August 2012. The AER will update this data for its final decision to reflect Envestra's final averaging period. In contrast, the AER has not accepted Envestra's proposed method for calculating the risk free rate used to determine the cost of equity. Hence, the difference between the AER's risk free rate and that proposed by Envestra (for equity).
- (b) The difference between the DRP proposed by Envestra and the AER's draft decision predominantly reflects the difference in indicative averaging periods (as explained for the risk free rate). The AER, however, has also amended the bond sample relied on by Envestra to extrapolate the Bloomberg fair value curve. This amendment, albeit minor, is discussed in greater detail in attachment 4 of this draft decision.
- (c) The impact from each individual parameter change does not add up to the total impact of the WACC change (last row in the table). This is due to the interaction of individual parameters that contribute to calculating the WACC.

Table 3.5 and Table 3.6 show that total unsmoothed revenues, based on the AER's draft decision forecast capex, would be \$92.8 million (\$nominal) or 7.7 per cent and \$0.8 million (\$nominal) or 2.2 per cent lower than Envestra's proposed total proposed revenues for its Victoria and Albury networks respectively. They also show that when the AER's draft decision opex is adopted, the total unsmoothed revenues would be around \$104.7 million (\$nominal) or 8.7 per cent and \$1.4 million (\$nominal) or 3.8 per cent lower than Envestra's proposed total revenues for its Victoria and Albury networks respectively.

**Table 3.5 Changes to Envestra Victoria's proposed total unsmoothed revenue, when AER's draft decision capex and opex forecasts are adopted**

	Envestra Victoria's proposal (\$million, nominal)	AER's draft decision (\$million, nominal)	Revenue change (\$million, nominal)	Revenue change (per cent)
Capex	871.7	354.2	-92.8	-7.7
Opex <sup>a</sup>	411.2	306.5	-104.7	-8.7

Source: AER analysis.

(a) Includes carryover amounts.

**Table 3.6 Changes to Envestra Albury's proposed total unsmoothed revenue, when AER's draft decision capex and opex forecasts are adopted**

	Envestra Albury's proposal (\$million, nominal)	AER's draft decision (\$million, nominal)	Revenue change (\$million, nominal)	Revenue change (per cent)
Capex	9.3	6.4	-0.8	-2.2
Opex <sup>a</sup>	13.1	11.7	-1.4	-3.8

Source: AER analysis.

(a) Includes carryover amounts.

## 3.2 Impact on prices

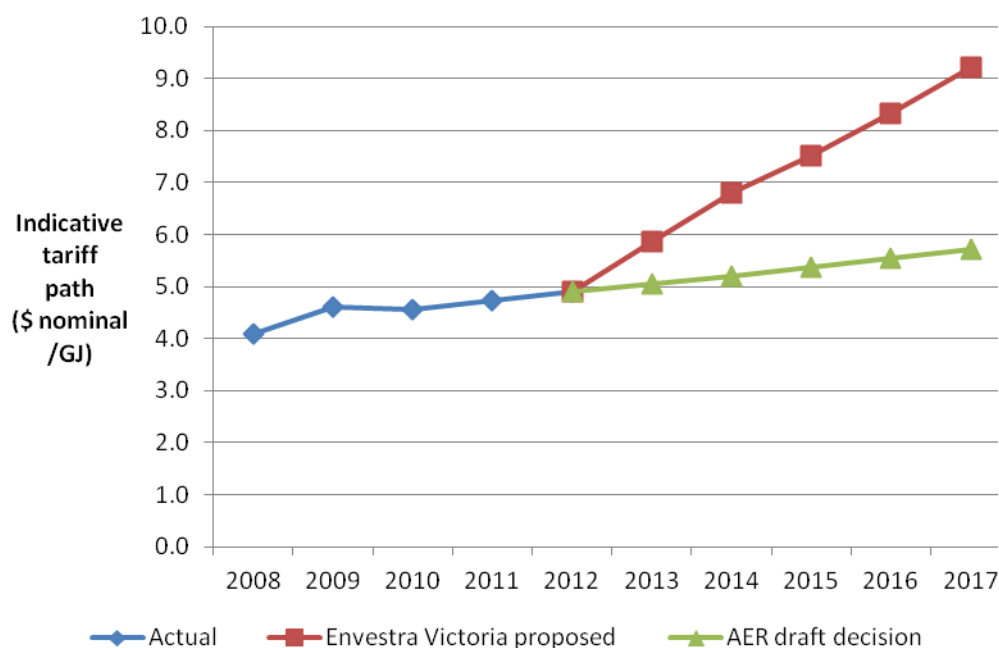
### 3.2.1 Reference tariffs

The effect of the AER's draft decision on Envestra's forecast reference tariffs for its reference services can be estimated by comparing these with Envestra's forecast reference tariffs. Using this approach the AER estimates that the draft decision will result in reference tariffs being 28.7 per cent and 17.4 per cent lower on average over the 2013–17 access arrangement period in nominal dollar terms than Envestra's proposed tariffs for its Victorian and Albury networks respectively.

The AER's draft decision will result in average reference service distribution charges (\$/GJ of demand) for Envestra's Victoria and Albury networks over the 2013–17 access arrangement period that are 17.4 per cent and 16.3 per cent respectively higher than average reference service charges per GJ for the 2008–12 access arrangement period.

These higher reference tariffs are largely driven by the effects of inflation. The AER's draft decision has reduced revenues in real terms compared to the 2008–2012 access arrangement period, and results in no real price increases (known as X factors). The indicative tariff paths arising from the AER's draft decision compared with that in Envestra's proposal for its Victoria and Albury networks are shown in Figure 3.5 and Figure 3.6 respectively.

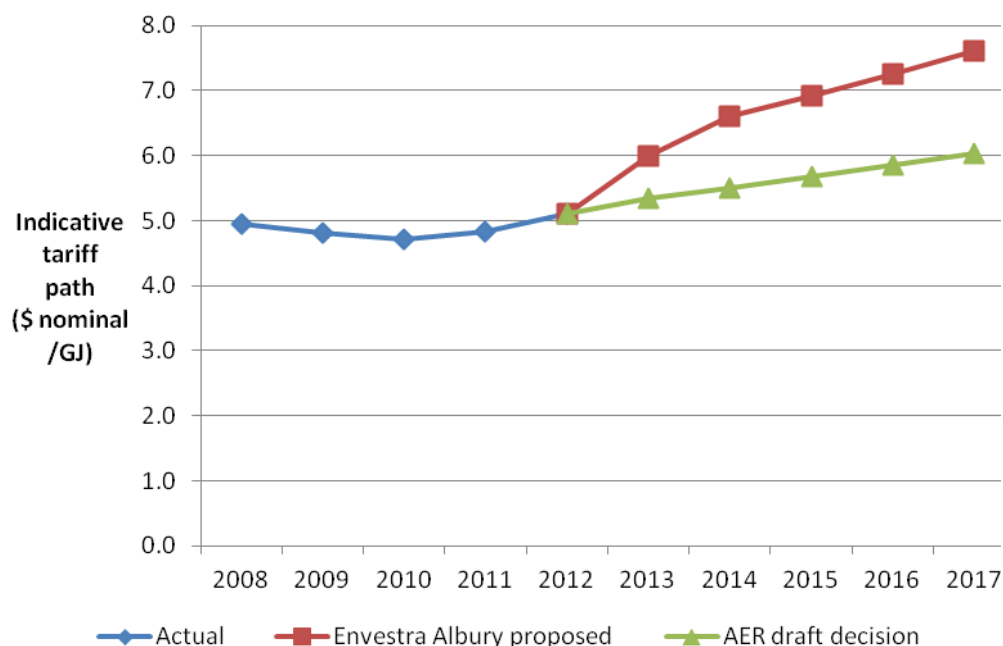
**Figure 3.5 Indicative reference tariff paths for Envestra Victoria's reference services from 2013 to 2017 (\$/GJ, nominal)**



Source: AER analysis.

Note: This chart shows an indicative tariff path, based on forecast revenues and forecast demand for Envestra's network. Envestra's actual tariffs will first be updated on 1 July 2013 to reflect the AER's decision. For this reason, the indicative 2013 tariff above is an average of the higher 2012 tariffs, and lower 2013 tariffs (from 1 July 2013 to 31 December 2013) to reflect the AER's decision. On 1 January 2014, the AER's draft decision forecasts that actual tariffs will increase to reflect CPI.

**Figure 3.6 Indicative reference tariff paths for Envestra Albury's reference services from 2013 to 2017 (\$/GJ, nominal)**



Source: AER analysis.

Note: This chart shows an indicative tariff path, based on forecast revenues and forecast demand for Envestra's network. Envestra's actual tariffs will first be updated on 1 July 2013 to reflect the AER's decision. For this reason, the indicative 2013 tariff above is an average of the higher 2012 tariffs, and lower 2013 tariffs (from 1 July 2013 to 31 December 2013) to reflect the AER's decision. On 1 January 2014, the AER's draft decision forecasts that actual tariffs will increase to reflect CPI.

### 3.2.2 Average retail customer bill

Across Envestra's Victoria and Albury networks, the proportion of the average residential gas bill attributable to gas distribution reference tariffs is estimated to be approximately 31 per cent and 25 per cent respectively.<sup>38</sup>

If the increase in distribution tariffs from the AER's draft decision was passed through to end consumers of Envestra's Victoria and Albury networks, the typical residential bill<sup>39,40</sup> could be

<sup>38</sup> The AER derived an estimate of the proportion of distribution charges that contribute to the typical residential and non-residential (businesses) customer bills based on annual consumption of 60GJ and 500 GJ per annum, respectively. This is consistent with data sourced from the ESC's published standing offer bills contained in its *Energy retailers comparative performance report – Pricing 2010–11*, and Envestra's approved tariffs for 2010 and 2011. The averages of the tariffs across Envestra's distribution zones applied in the AER's analysis uses a weighted average of volume by tariff class.

<sup>39</sup> The AER has calculated a typical residential bill to be \$1132 per year for Envestra Victoria customers and \$1171 per year for Envestra Albury customers. The typical residential bill for Envestra Victoria was calculated as the average standing offer contract for a customer consuming 60 GJ per annum. The average was calculated across each of Envestra's distribution zones. Standing offer prices charged by retailers represent charges applied to those customers who have not switched from their incumbent or local retailer.

<sup>40</sup> Envestra Albury's retail prices are regulated by IPART. Residential and non-residential bills were calculated based upon information contained in IPART's price comparator website, [www.myenergy.offers.nsw.gov.au](http://www.myenergy.offers.nsw.gov.au), viewed on 31 August 2012. The residential bill is based upon bi-monthly billing with consumption of 10 GJ per bill, and the non-residential offers based upon annual consumption of 500 GJ applying actual tariffs from market offers available from Origin and TRUEnergy, exclusive of discounts and GST.

expected to increase on average by up to \$7 and \$5 (\$nominal) per year respectively. Envestra's proposal would have resulted in an average \$57 and \$22 (\$nominal) increase in bills per year respectively.

Similarly, the AER's draft decision on Envestra's access arrangement proposal for its Victoria and Albury networks is expected to contribute towards estimated average price increases for non-residential customers<sup>41</sup> of \$29 per annum and \$27 per annum respectively. Envestra's proposal would have resulted in an average \$235 and \$106 (\$ nominal) increase in bills per year respectively.

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<sup>41</sup> The AER has calculated a typical non-residential bill to be \$6786 per year for Envestra Victoria customers and \$8333 per year for Envestra Albury customers. The typical non-residential bill for Envestra Victoria was calculated as the average standing offer contract for a customer consuming 500 GJ per annum. The average was calculated across each of Envestra's distribution zones. Standing offer prices charged by retailers represent charges applied to those customers who have not switched from their incumbent or local retailer. The Envestra Albury non-residential bill calculations are based on current market offers published by IPART.

## 4 Services covered by the access arrangement

A service is deemed a reference service if it is a pipeline service that is likely to be sought by a significant part of the market.<sup>42</sup> The full draft decision and the AER's detailed reasons and analysis on the services covered by the access arrangement can be found in attachment 1.

### 4.1 Draft decision

Envestra provides for two proposed categories of reference services, with one of those categories divided between residential and non residential. Each proposed category allows for the injection, conveyance and withdrawal of gas. However, the categories are restricted to users that hold a retail authorisation issued under Part 5 of the National Energy Retail Law. This Part is not in force in Victoria. The AER considers that a significant part of the market is likely to seek reference services that do not contain this restriction. Accordingly, the AER does not approve Envestra's proposed reference services. Envestra's proposed ancillary services are carried over from its current access arrangement. The AER considers that these services are likely to be sought by a significant part of the market.

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<sup>42</sup> NGR r. 101(2).



## 5 Capital base

The capital base is the value of Envestra's capital assets—including gas distribution pipelines, connections, IT systems, plant and equipment, motor vehicles and buildings—that are required to provide reference services. The capital base is the value on which Envestra can earn a rate of return. Further, Envestra is allowed to earn a depreciation allowance (or a return of capital) on assets in its capital base. Hence, the capital base is an important input to the return on capital and depreciation building blocks and accordingly, the revenue requirement.

As part of this draft decision, the AER is required to assess Envestra's proposed opening values for the capital base of its Victoria and Albury networks for each year of the 2008–12 and 2013–17 access arrangement periods. This involves the AER:

- Confirming the value of the opening capital base at 1 January 2008 (the first year of the 2008–12 access arrangement period). This involves assessing whether Envestra's actual capex in 2007 is conforming capex and adjusting for differences between actual conforming capex and estimated capex for 2007.<sup>43</sup> Conforming capex is essentially that which would have been undertaken by an efficient distribution service provider in providing reference services.
- Rolling forward the opening capital base as at 1 January 2008 to determine the closing capital base as at 31 December 2012.<sup>44</sup> This involves, for each year:
  - adding conforming actual capex and any speculative capex (which became conforming capex) or redundant assets that were reused during the 2008–12 access arrangement period
  - removing forecast depreciation, any capital contributions, any redundant assets and any disposals
  - indexing the roll forward for actual inflation.
- Using the AER's draft decision on forecast depreciation, capex, disposals and inflation for the 2013–17 access arrangement period to roll forward Envestra's projected capital base for each year of that access arrangement period. In particular, conforming forecast capex is added to the capital base while forecast depreciation and disposals are removed from the capital base. Forecast inflation is used to index the resulting capital base.

Following this process, the AER's draft decision includes forecast values of Envestra's capital bases as at 1 January 2013 and forecast closing capital bases at 31 December 2017.

The full draft decision and the AER's detailed reasons and analysis on the capital base can be found in attachment 2.

### 5.1 Draft decision

The AER does not approve Envestra's proposed opening capital bases as at 1 January 2013 of:

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<sup>43</sup> This is required because the 2008–12 access arrangement was agreed in 2007, and hence capex in 2007 was estimated rather than actual.

<sup>44</sup> This closing capital base is also used as the value of the opening capital base as at 1 January 2013 for the 2013–17 access arrangement period.

- Envestra Victoria—\$1116.3 million (\$nominal)
- Envestra Albury—\$35.2 million (\$nominal).

This is because the AER considers that some of Envestra's inputs into the capital base roll forward model do not comply with the NGR.<sup>45</sup> These include:

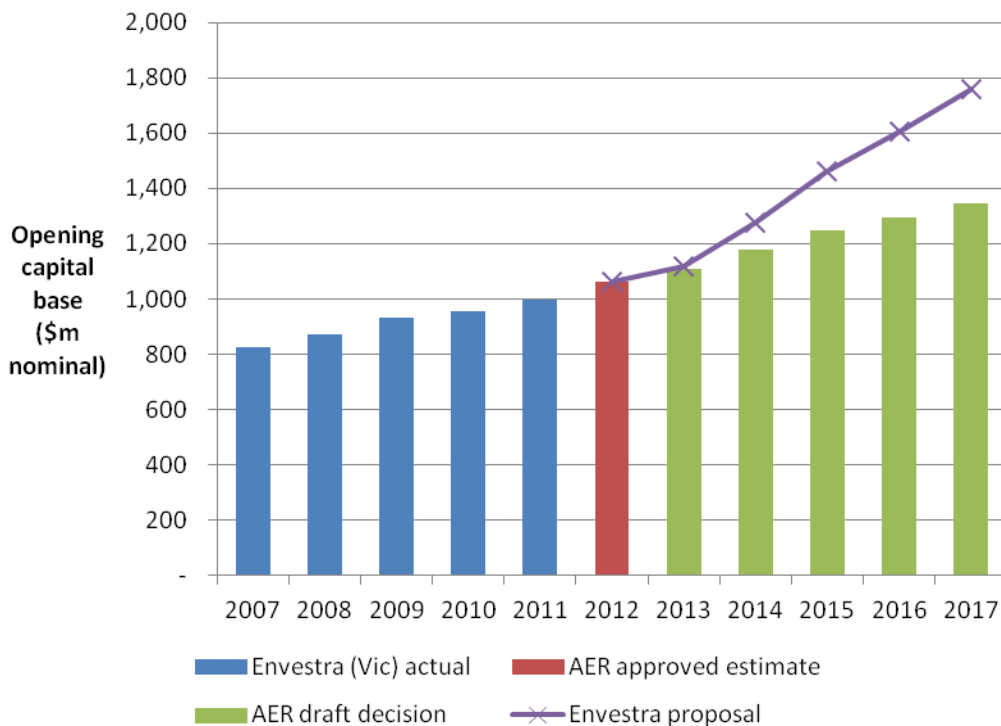
- Envestra's proposed indexation of the capital base
- Envestra's revised estimate for capex in 2012
- minor amendments to ensure consistency with historical regulatory accounts.

After adjusting these inputs, the AER has determined opening capital bases as at 1 January 2013 of:

- Envestra Victoria—\$1109.7 million (\$nominal)
- Envestra Albury—\$34.6 million (\$nominal).

Figure 4.1 and figure 4.2 show Envestra's past actual opening capital base values compared to forecast values.

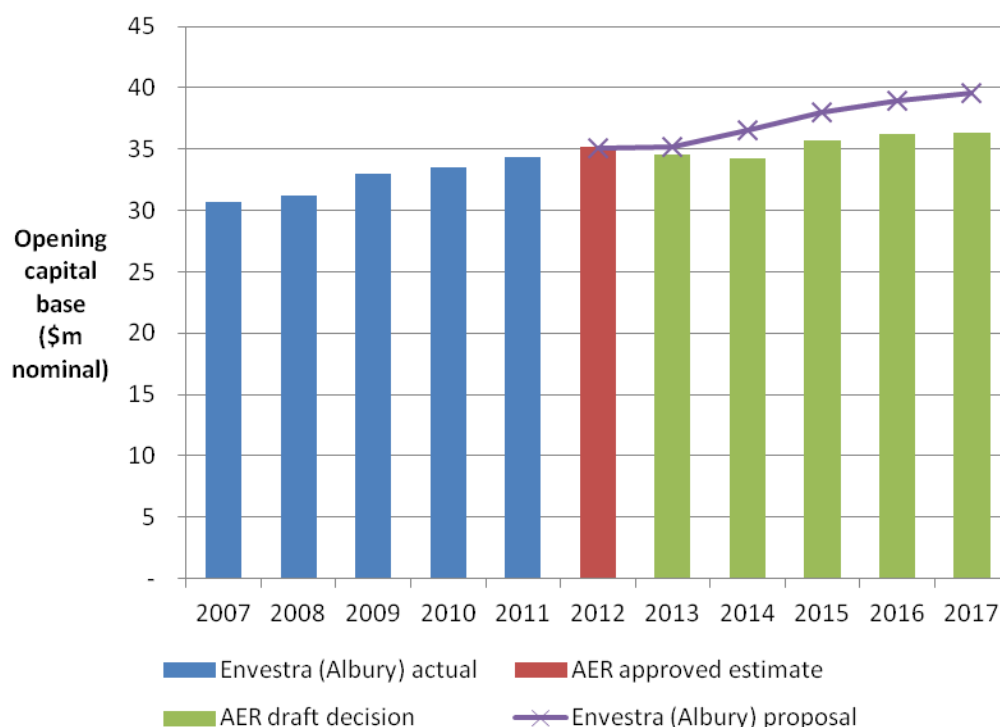
**Figure 5.1 Envestra Victoria's past and forecast opening capital base and the AER's draft decision on the opening capital base (\$million, nominal)**



<sup>45</sup> NGR, r. 77(2).

Source: AER analysis.

**Figure 5.2** Investra Albury's past and forecast opening capital base and the AER's draft decision on the opening capital base (\$million, nominal)



Source: AER analysis.

Table 5.1 and table 5.2 show the AER's draft decision on the roll forward of Envestra's capital base during the 2008–12 access arrangement period.

**Table 5.1** AER's draft decision on Envestra Victoria's capital base roll forward for the 2008–12 access arrangement period (\$million, 2012)

	2008	2009	2010	2011	2012
Opening capital base	984.5	1 005.9	1 014.4	1 030.0	1 059.9
Net capex	55.5	46.2	56.8	73.7	95.6 <sup>a</sup>
Less: depreciation	34.1	37.8	41.1	43.8	45.8
Closing capital base	1 005.9	1 014.4	1030.0	1059.9	1109.7
Opening capital base at 1 January 2013					1109.7

Source: AER analysis.

(a) The AER has approved 2012 capex values equal to the ESC's benchmark capex, adjusted for actual growth. This is consistent with the ESC's capex incentive scheme and is discussed in attachment 2.

**Table 5.2 AER's draft decision on Envestra Albury's capital base roll forward for the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012
Opening capital base	35.3	35.6	35.6	35.6	35.2
Net capex	1.5	1.3	1.3	1.1	0.8
Less: depreciation	1.2	1.3	1.3	1.4	1.5
Closing capital base	35.6	35.6	35.6	35.2	34.6
Opening capital base at 1 January 2013					34.6

Source: AER analysis.

Based on the above opening capital bases for 1 January 2013, and the AER's draft decisions on forecast capex, depreciation, and inflation, the AER has determined projected closing capital bases as at 31 December 2017 of:

- Envestra Victoria—\$1375.1 million (\$nominal)
- Envestra Albury—\$37.1 million (\$nominal).

Table 4.3 and table 4.4 set out the projected roll forward of the capital bases during the 2013–17 access arrangement period.

**Table 5.3 AER's draft decision on projected capital base roll forward for Envestra Victoria during the 2013–17 access arrangement period (\$million, nominal)**

	2013	2014	2015	2016	2017
Opening capital base	1109.7	1177.6	1247.7	1295.1	1346.6
Net capex	79.9	84.5	65.6	72.5	51.7
Less: depreciation	39.8	43.8	49.4	53.3	57.0
Indexation	27.7	29.4	31.2	32.4	33.7
Closing capital base	1177.6	1247.7	1295.1	1346.6	1375.1

Source: AER analysis.

**Table 5.4 AER's draft decision on projected capital base roll forward for Envestra Albury during the 2013–17 access arrangement period (\$million, nominal)**

	2013	2014	2015	2016	2017
Opening capital base	34.6	35.1	35.8	36.2	36.4
Net capex	1.1	1.3	1.2	1.1	1.7

Less: depreciation	1.4	1.5	1.7	1.8	1.9
Indexation	0.9	0.9	0.9	0.9	0.9
Closing capital base	35.1	35.8	36.2	36.4	37.1

Source: AER analysis.

## 5.2 Summary of analysis and reasons

The AER approves some aspects of Envestra's proposal for the opening capital bases as at 1 January 2013 including:

- To use the opening capital bases at 1 January 2007 as the basis from which to roll forward the capital bases (the values being consistent with those adopted in the ESC's final decision for the 2008–12 access arrangement period).
- The use of forecast depreciation for the 2008–12 access arrangement period as approved by the ESC.

However, the AER considers that a number of Envestra's proposed inputs into the capital base roll forward model overstate the value of the opening capital bases as at 1 January 2013 and consequently, the projected closing capital bases as at 31 December 2017. In particular, the AER does not agree with Envestra's approach in the following areas:

- Envestra's proposed inflation of the capital base would result in six months of unnecessary additional CPI adjustment. This would overstate the value of the opening capital base as at 1 January 2013. In addition, by applying six months of additional inflation, Envestra's proposal creates an inconsistency between inflation applied to tariffs and inflation applied to the capital base. Hence, the AER's draft decision is to adjust the opening capital bases for six years of inflation, rather than six and a half years of inflation.
- Envestra's 2008–12 access arrangement included a capex incentive scheme. However, Envestra has not applied the ESC's capex incentive scheme. To make 2012 capex consistent with the ESC's capex incentive scheme the AER has replaced Envestra's estimated 2012 capex with benchmark (forecast) 2012 capex adjusted for actual growth.
- Envestra's initial conforming net capex amounts were for some years inconsistent with its audited historical regulatory accounts.<sup>46</sup> The AER has made several minor amendments to Envestra's proposed capex for the 2008–11 period to correct for these discrepancies.
- The draft decision on forecast capex and depreciation form inputs into the roll forward for the projected capital base for the 2013–17 access arrangement period. These need to be adopted in place of Envestra's proposed forecast capex and depreciation. See overview sections 5 and 7 and attachments 3 and 5 for more on the AER's draft decision on these matters.

<sup>46</sup> The AER identified these discrepancies with Envestra, who provided a revised roll forward model to reconcile the values: Envestra, *Response to AER information request 10 regarding the reconciliation of 2007-2011 proposal capex with Envestra's audited regulatory accounts*, 19 June 2012.

These adjustments result in a \$6.6 million and \$0.6 million reductions to Envestra's proposed opening capital bases at 1 January 2013 for its Victoria and Albury networks respectively. The AER's draft decision is for opening capital bases of \$1109.7 million and \$34.6 million (\$nominal) as at 1 January 2013 for Envestra's Victoria and Albury networks respectively. Based on these, and the AER's draft decisions on forecast capex, depreciation, and inflation, the AER has determined projected closing capital bases as at 31 December 2017 of \$1375.1 million and \$37.1 million (\$nominal) for Envestra's Victoria and Albury networks respectively.

The AER also does not approve Envestra's proposal to use actual depreciation rather than forecast depreciation to establish its opening capital bases as at 1 January 2018.<sup>47</sup> The AER considers the use of forecast depreciation (approved in the final decision for this access arrangement review) to roll forward the capital base from 2013–17 at the next access arrangement review is a preferable alternative that complies with the requirements of the NGO and the revenue and pricing principles.<sup>48</sup> See attachment 2 for more on the AER's draft decision on the capital bases and reasons for this.

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<sup>47</sup> Envestra, *Access arrangement information*, March 2012, pp. 166–167.

<sup>48</sup> NGL, ss.23 and 24.

## 6 Capital expenditure

Forecast capital expenditure (capex) is a forecast of the cost of new assets that are likely to be required by a network business during an access arrangement period for the efficient operation of the network. As well as assessing forecast capex, the AER reviews actual capex undertaken during the previous access arrangement period. The final approved level of capex is used in conjunction with the opening capital base, rate of return and depreciation as an input in the return on capital building block.

Capex is broken down into several categories:

- augmentation capex – assets that expand the capacity of the network or provide connections to new customers
- refurbishment and upgrade capex – used to replace or upgrade aging, obsolete or inefficient assets
- non-network capex – including IT, plant and equipment, motor vehicles and buildings.

An efficient network business will require capex for one or more of these categories during an access arrangement period. Factors that will influence the required level of capex include the age and condition of existing assets, changes in the number of customers connected to the network, changes in the demand profile of customers, and general "stay in business" requirements of the business.

The AER assesses the capex forecasts of regulated gas network businesses to determine whether they conform to the criteria set out within the NGR. In particular, the forecast capex must:

- be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances
- be expenditure that would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing pipeline services
- be shown that one of the following criteria is met:
  - the capex has a positive economic value
  - the expected present value of the incremental revenue exceeds the expenditure
  - the capex is necessary to either:
    - maintain and improve the safety of services
    - maintain the integrity of services
    - comply with a regulatory obligation or requirement
    - maintain capacity to meet levels of demand existing at the time the capex is incurred
  - the capex is justifiable as a combination of the preceding two dot points.

Envestra proposed a total forecast capex of \$773.1 million (\$2011) for the 2013–17 access arrangement period. The AER must accept Envestra's forecast capex if it is satisfied that it is conforming capex as specified in the NGR.<sup>49</sup>

In assessing Envestra's proposed capex for both the previous and upcoming regulatory access agreement periods, the AER reviewed Envestra's proposal and supporting material. This included information on Envestra's reasoning and, where relevant, business cases, audited regulatory accounts, and other relevant information. In addition, the AER engaged consultants to review aspects of Envestra's capex proposals.

The full draft decision and the AER's detailed reasons and analysis on capital expenditure can be found in attachment 3.

## 6.1 Draft decision

### Envestra Victoria

The AER's draft decision is to approve Envestra's proposed \$277.9 million (\$2011) total net capex for 2007–11<sup>50</sup> as conforming capex for the purpose of setting the capital base for 2007-11 (see chapter 5 and attachment 2). For the 2013-17 access arrangement period, the AER's draft decision is to approve \$315.4 million (\$2011) of Envestra's proposed \$764.9 million (\$2011) total capex.

Figure 6.1 shows actual and ESC approved capex for 2008-11, Envestra's proposed capex and the AER's draft decision on capex for 2012-17.

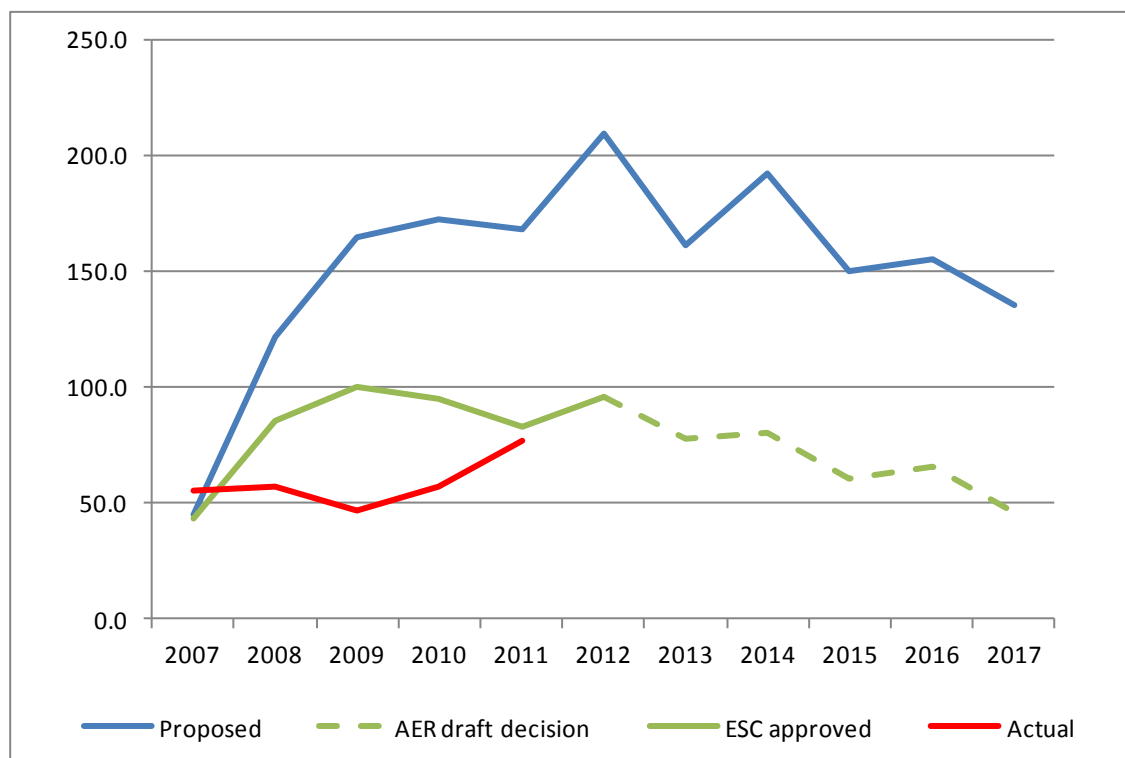
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<sup>49</sup> NGR, r. 40.

<sup>50</sup> The AER has not assessed the capex for 2012. The AER is required under the NGR to properly reflect any increments or decrements arising from the operation of the ESC's capex incentive scheme. The AER has applied the transitional provision. This requires the AER to include in the capital base roll forward benchmark capex for 2012, adjusted for actual growth. At the next access arrangement review, the AER will assess whether Envestra's actual capex for 2012 is conforming capex under the NGR.



**Figure 6.1 Comparison of Envestra Albury past and forecast total capex and AER draft decision (\$million, 2012)**



**Table 6.1 Comparison of AER approved<sup>(a)</sup> and Envestra Victoria's proposed capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	Proposed	Approved <sup>(a)</sup>	Difference
Mains replacement	328.6	73.9	-77.5%
Residential connections	141.7	95.6	-32.5%
Commercial/industrial connections	25.6	14.9	-41.8%
Residential meter replacement	28.1	21.6	-23.2%
Commercial/industrial meter replacement	7.7	7.1	-7.9%
Augmentation	52.0	27.6	-46.8%
IT	19.3	15.5	-19.9%
SCADA	1.1	1.0	-8.7%
Other	53.2	18.5	-65.2%
Gas Extensions	19.7	–	-100.0%
Overheads	97.5	46.2	-52.6%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>774.4</b>	<b>321.9</b>	<b>-58.4%</b>
Customer contributions	9.5	6.5	-31.1%
Government contributions	–	–	0.0%

NET TOTAL CAPITAL EXPENDITURE	764.9	315.4	-58.8%
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Source: AER analysis, Envestra.

Notes: (a) Including AER material and labour escalation adjustments and network management fee.

## Envestra Albury

The AER's draft decision is to approve Envestra's proposed \$6.1 million (\$2011) total net capex for 2007–2011 as conforming capex for the purpose of setting the capital base for 2007-11. For the 2013-17 access arrangement period, the AER's draft decision is to approve \$5.6 million (\$2011) of Envestra's proposed \$8.2 million (\$2011) total capex.

Table 6.2 is a comparison of Envestra's proposed capex for its Albury network and the AER's draft decision on capex for the 2013-17 access arrangement period by category.

**Table 6.2 Comparison of AER approved<sup>(a)</sup> and Envestra Albury's proposed capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	Proposed	Approved <sup>(a)</sup>	Difference %
Mains replacement	0.04	0.04	-8.1%
Residential connections	3.88	2.71	-30.1%
Commercial/industrial connections	0.19	0.13	-32.3%
Residential meter replacement	0.38	0.35	-8.7%
Commercial/industrial meter replacement	0.15	0.13	-8.7%
Augmentation	0.53	0.47	-12.4%
IT	0.70	0.56	-19.3%
SCADA	0.11	0.10	-9.0%
Other	0.87	0.01	-98.8%
Gas Extensions-NGEP	–	–	0.0%
Overheads	1.37	1.10	-20.1%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>8.23</b>	<b>5.60</b>	<b>-32.0%</b>
Customer contributions	–	–	0.0%
Government contributions	–	–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>8.23</b>	<b>5.60</b>	<b>-32.0%</b>

Source: AER analysis, Envestra.

Notes: (a) Includes AER material and labour escalation adjustments and network management fee.

## 6.2 Summary of analysis and reasons

### 6.2.1 Envestra Victoria

While the AER has accepted a number of Envestra's capex proposals, it has made some amendments. The main amendments are in the categories of mains replacements, residential and commercial/industrial connections, augmentation, IT and capital overheads.

#### **Mains replacements**

Distribution mains are the pipes that convey gas to service pipes at each end user point. Envestra proposed mains replacement capital expenditure of \$328.6 million (\$2011, escalated direct costs) for two mains replacement programs:

- Low pressure pipe replacement – the AER draft decision is to approve the replacement program but to reduce the scale of works proposed. The AER proposes to use historic volumes delivered over the 2008-11 period to set the scale of works. The AER considers that this level of works reflects a robust benchmark for what a prudent and efficient service provider would undertake. However, to allow for changing circumstances, the AER proposes to allow for a pass through event to apply, where the trigger event is the completion of approved volumes. The AER has reduced Envestra's average unit rate as it does not consider the proposed average unit rate provides a reasonable basis for estimating the unit rates.
- Ad hoc mains replacements and service renewal program – Envestra forecast a step up in the number of renewals in 2013. The reason for this was not justified by Envestra. The AER interpolated the number of services from 2012 to the proposed number in 2017, and determined that the step up in ad hoc service renewal capex was not arrived at on a reasonable basis. The AER's application of an alternative forecast results in reduced capex.

These amendments result in a 77 per cent reduction Envestra's proposed mains replacement capex (from \$328.6 million to \$73.9 million).

#### **Residential and commercial/industrial connections**

Distribution businesses have a regulatory obligation to connect residential and commercial/industrial customers to the distribution network upon request. The capex associated with connecting customers to the distribution network generally includes the cost of new mains, gas service pipe from the main to the meter, and the meter.

The AER's draft decision is to reduce forecast capex for customer connections. Due to conflicting information over a number of information requests, the AER did not consider the abolishment rate to be arrived at on a reasonable basis. The AER used another Victorian service provider's abolishment rate as a substitute. Envestra based its unit rates on a simple average of 2009 and 2010 unit rates plus adjustments for recent contractor rates. Envestra failed to substantiate the uplift associated with the contractor rates. The AER considers that, given the nature of the tendering process that Envestra undertakes, a 2008–11 average provides a better estimate of future unit rates. Envestra's forecast volumes and unit rates is not arrived at on a reasonable basis and did not produce the best estimates possible in the circumstances. The AER's application of an alternative forecast results in reduced capex. These amendments result in a 33 per cent reduction Envestra's proposed residential connections capex (from \$141.7 million to \$95.6 million) and a 42 per cent reduction in its proposed commercial/industrial connections capex (from \$25.6 million to 14.9 million).

## Augmentation

Envestra proposed augmentation capex to provide for:<sup>51</sup>

- Reinforcement of network areas that are vulnerable to gas supply constraints, as well as improvements to reduce the likelihood of gas outages occurring.
- A network that is capable of continuously satisfying the demand for services, particularly in high growth areas.
- The availability of high pressure gas in a manner that supports the systematic and planned replacement of low pressure mains.

The AER considers that the majority of Envestra's augmentation expenditure is justifiable as it is necessary to maintain or improve the safety and integrity of services. However, the AER has reduced the level of approved expenditure on some augmentation projects. This is due to an adjustment to Envestra's growth or load forecasts which, in the AER's assessment, were not arrived at on a reasonable basis.

These amendments result in a 47 per cent reduction in Envestra's proposed augmentation capex in Victoria (from \$52.0 million to \$27.6 million).

## Overheads

The level of overheads is reduced. The AER does not consider, on the basis of the approved projected capital base, that the scale of Envestra's business is going to change such that a step up in the fixed proportion of overheads is warranted. The AER has reduced overheads to align better with historic levels of capital overheads. These amendments result in a 53 per cent reduction in Envestra's proposed overheads in Victoria (from \$97.5 million to \$46.2 million).

## Other (non-demand)

The AER has not approved a number of projects in "Other non-demand" capex are not approved. Reasons for this include that the expenditure does not meet the definition of capex, the forecast was not arrived at on a reasonable basis or such projects would not be undertaken by a prudent and efficient service provider. These amendments result in a 65 per cent reduction in Envestra's proposed other non-demand capex in Victoria (from \$53.2 million to \$18.5 million).

## Labour and materials cost escalators

The AER is not satisfied Envestra's proposed labour and material cost escalators were arrived at on a reasonable basis or represent the best possible forecast of labour and material costs over the 2013-2017 access arrangement period.<sup>52</sup> Instead, the AER considers forecast annual increases in the labour price index (LPI) should be used to forecast labour costs and the consumer price index (CPI) should be used to forecast network materials prices. Appendix C contains the AER's consideration of the real cost escalators proposed by Envestra.

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<sup>51</sup> Envestra, AAI, 30 March 2012, p.123.

<sup>52</sup> Appendix C contains the AER's more detailed consideration of the real cost escalators proposed by Envestra.

## Other categories

The AER's draft decision also includes revisions in the following categories of capex:

- Two IT programs were not approved as the AER did not consider them to constitute capex that would be undertaken by a prudent or efficient service provider.
- Envestra's Extension capex program is not approved as the forecast was not arrived at on a reasonable basis and would not be undertaken by a prudent or efficient service provider at this time.
- Contributions associated with the customer connections program are scaled back.

All of the above taken together results in a 59 per cent reduction to Envestra's proposed capex (from \$764.9 million to \$315.4 million). See attachment 3 for the AER's draft decision on forecast capex and reasons for this.

### 6.2.2 Envestra Albury

The AER's draft decision on forecast capex for Envestra's Albury network also contains a number of similar reductions. These reductions relate to:

- Residential and commercial/industrial connections capex.
- Certain projects within Envestra's "Other non-demand" capex.
- Overheads.
- Material and labour cost escalation.

The reasons and analysis for these are broadly the same as those discussed above for Envestra's Victorian network.

All of the above taken together results in a 32 per cent reduction to Envestra's proposed capex (from \$8.23 million to \$5.60 million).

## 7 Rate of return

The rate of return is one of the inputs to the building block approach used by the AER to determine total revenue for each regulatory year of the access arrangement period. 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.<sup>53</sup>

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

The AER's detailed reasons for its decision on the rate of return are provided in attachment 4, with additional reasons on some matters set out in appendix B.

### 7.1 Draft decision

The AER does not approve Envestra's proposed (indicative) rate of return of 9.06 per cent. The AER withholds its approval because, in the AER's opinion, 7.16 per cent (subject to updating) is a preferable alternative that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.<sup>54</sup>

Envestra's proposed rate of 9.06 per cent is based on market data from November–December 2011. The AER's draft decision rate of 7.16 per cent is based on market data from July–August 2012. Envestra's proposed rate of return method, if also applied to market data from July–August 2011, would result in a proposed rate of 8.40 per cent.

Both Envestra's proposed rate of return method, and the AER's method in this draft decision, will be updated using market data for the risk free rate and debt risk premium (DRP) updated closer to the time of the final decision. The AER's draft decision method involves updating the risk free rate used in both the cost of equity and cost of debt. Envestra's proposed method involves only updating the risk free rate used in the cost of debt.

The AER considers a 7.16 per cent rate of return (subject to updating) provides Envestra with a reasonable opportunity to recover at least the efficient costs of capital financing. Consequently, the AER expects Envestra will be able to attract funds to support the efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers.

The AER agrees with the following aspects of Envestra's proposed rate of return method:

- 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 market risk premium (MRP) of 6 per cent

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<sup>53</sup> NGR, r. 87.

<sup>54</sup> The AER's adoption of this rate is subject to the risk free rate and debt risk premium parameters being updated closer to the date of the final decision.

- adopting an equity beta of 0.8.
- specifying the cost of debt as the debt risk premium over the risk free rate
- determining the debt risk premium by defining the benchmark bond as a 10 year Australian corporate bond with a BBB+ credit rating and measuring the benchmark bond rate using the extrapolated Bloomberg BBB rated seven year fair value curve
- extrapolating the Bloomberg BBB rated seven year fair value curve to a 10 year maturity (consistent with the definition of the benchmark bond) using paired bond analysis<sup>55</sup>
- adopting a 60 per cent gearing ratio
- adopting the inflation forecasting method based on short term Reserve Bank of Australia (RBA) forecasts and the mid-point of the RBA's inflation targeting band

But the AER does not agree with the following aspect of Envestra's proposal:

- adopting a long term historical average risk free rate in the cost of equity. Rather, the AER adopts a short term averaging period sampled as close as practicably possible to the commencement of the access arrangement period, as explained in section 7.2.1.

Table 7.1 sets out the individual WACC parameters and consequent (indicative) rate of return determined by the AER.

**Table 7.1 AER's draft decision on Envestra's rate of return (nominal)**

Parameter	Envestra proposal	AER draft decision
Nominal risk free rate (cost of equity)	5.99%	2.98% <sup>a</sup>
Nominal risk free rate (cost of debt)	3.99% <sup>a</sup>	2.98% <sup>a</sup>
Equity beta	0.8	0.8
Market risk premium	6%	6%
Debt risk premium	3.92% <sup>a</sup>	3.76% <sup>a</sup>
Gearing level	60%	60%
Inflation forecast	2.5% <sup>a</sup>	2.5% <sup>a</sup>
Gamma	0.25	0.25
Nominal post-tax cost of equity	10.80% <sup>a</sup>	7.78% <sup>a</sup>
Nominal pre-tax cost of debt	7.91% <sup>a</sup>	6.74% <sup>a</sup>
Nominal vanilla WACC	9.06% <sup>a</sup>	7.16% <sup>a</sup>

Source: ACCC decision; Envestra, *Access arrangement proposal*, March 2012 and AER analysis.

(a) Indicative only. The risk free rate, debt risk premium and inflation forecast will be updated closer to the date of the final decision.

<sup>55</sup> The AER agrees with Envestra's proposed paired bonds extrapolation method, including the selection criteria to choose the paired bonds. However, Envestra appears to have incorrectly applied the selection criteria in its proposal. Accordingly, the AER has corrected this error in applying Envestra's proposed paired bonds extrapolation method.

The rate of return in this draft decision (7.16 per cent) is similar to the rate of return determined by the AER recently in the APTPPL final decision (7.31 per cent).<sup>56</sup> However, the rate of return in this decision for Envestra is lower than the rate of return determined by the AER in decisions before that time. The fact that the overall rate of return in this decision is lower than in previous decisions does not of itself make it unreasonable. The cost of debt in this decision makes up 60 per cent of the overall rate of return. The AER and Envestra agree on the approach to determining the cost of debt. The cost of debt has fallen by approximately one per cent compared with AER decisions from earlier this year.<sup>57</sup> Hence, the AER and Envestra agree that this reduction reflects changing conditions in the market for funds. This provides the AER with a degree of comfort that a fall in the overall rate of return, in itself, is not unreasonable.

Envestra's concerns surround the cost of equity and the extent to which the cost of equity determined by the AER in this decision is lower than that determined in previous decisions. A lower cost of equity contributes to a lower overall rate of return.

The AER acknowledges that Envestra was concerned with the impact of the lower risk free rate on its overall rate of return. The AER has carefully considered the consequences of the low CGS yields and is confident that CGS yields remain the most appropriate proxy of the risk free rate in Australia. This position is supported by advice from the Reserve Bank of Australia (RBA). The AER has also considered whether or not the MRP should be increased from that used in previous decisions. The AER remains of the view that a 6 per cent MRP is commensurate with prevailing conditions in the market for funds.

## 7.2 Reasons for draft decision

In forming this draft decision, the AER has considered an extensive range of material on the rate of return. This includes Envestra's access arrangement proposal, the other Victorian gas service providers' proposals, and the submissions into these reviews from users. The AER has also sought a range of expert advice to assist in making these decisions—from the RBA, Treasury, AOFM, Professor McKenzie, Associate Professor Partington and Associate Professor Lally.<sup>58</sup>

In this review, Envestra proposed a 6 per cent MRP but adopted a long run historical average risk free rate (5.99 per cent) for the cost of equity because it considered the AER's approach to the cost of equity in previous decisions resulted in a cost of equity that is too low in current market conditions. The other Victorian gas distribution service providers also proposed this approach. APA GasNet held a similar concern but proposed a different approach. APA GasNet proposed a higher MRP (8.5 per cent).

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<sup>56</sup> AER, *Final decision: APT Petroleum Pipeline Pty Ltd, Access arrangement final decision, Roma to Brisbane Pipeline 2012–13 to 2016–17*, August 2012, p. (AER, *Final decision: APTPPL access arrangement*, August 2012).

<sup>57</sup> AER, *Final distribution determination, Aurora Energy Pty Ltd 2012–13 to 2016–17*, April 2012, p. 29, (AER, *Final decision: Aurora distribution determination*, April 2012)

<sup>58</sup> Reserve Bank of Australia, *Letter to the ACCC: The Commonwealth Government Securities Market*, 16 July 2012; Australian Treasury and Australian Office of Financial Management, *Letter to the ACCC: The Commonwealth Government Securities Market*, 18 July 2012; M. McKenzie, and G. Partington; *Report to the AER: Review of regime switching framework and critique of survey evidence*, 7 September 2012; M. McKenzie and G. Partington, *Report to the AER: Review of NERA report on the Black CAPM*, 24 August 2012; M. Lally, *The cost of equity and the market risk premium*, 25 July 2012; M. Lally, *The risk free rate and the present value principle*, 22 August 2012.



On the other hand, BHP Billiton submitted that the MRP is between 5-6 per cent. The Energy Users Coalition of Victoria (EUCV) considered the AER should adopt a 5 year term for the risk free rate and an equity beta of 0.65. The 5 year term and 0.65 equity beta were adopted by the ERA in its access arrangement decision for the Dampier to Bunbury Natural Gas Pipeline (DBNGP). The Tribunal found no error in ERA's position on these matters. Incorporating any of the changes proposed by users to the term, equity beta or MRP would result in a lower cost of equity than applying the AER's approach from previous decisions.

In this draft decision, the AER has maintained its cost of equity approach of adopting a prevailing risk free rate (currently 2.98 per cent), an equity beta of 0.8 and a 6 per cent MRP.

In this review, Envestra proposed adopting the extrapolated Bloomberg fair value curve to estimate the DRP.<sup>59</sup> This results in a DRP of 3.82 based on current market data.<sup>60</sup> The other Victorian gas service providers also proposed this approach.<sup>61</sup> BHP Billiton considered this method was appropriate but also considered there was merit in the AER exploring alternative methods.<sup>62</sup>

On the other hand, the EUCV considered the DRP should be no more than 195 basis points above the risk free rate (based on a 5 year term).<sup>63</sup> The EUCV noted this resulted in a DRP similar to the ERA's approach.

In the ATCO and DBNGP matters, the Tribunal upheld the use of the 'bond yield' approach adopted by the ERA.<sup>64</sup> Under this approach the DRP is estimated by averaging observed bond yields that meet certain criteria.<sup>65</sup> The Tribunal did, however, direct the ERA to amend the simple averaging process used to aggregate these bond yields.<sup>66</sup> The Tribunal also provided guidance on the relevance of various criteria and the use of a more complex weighted average.<sup>67</sup> Such a weighted average was implemented by the ERA on remittal.<sup>68</sup> If the bond-yield approach (with the weighting method adopted in the ERA's re-determination) was applied to Envestra, the DRP would be 2.72 per cent.<sup>69</sup>

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<sup>59</sup> Envestra, *Access arrangement submission: Part A*, 30 March 2012.

<sup>60</sup> This estimate reflects the paired bonds sample proposed by Envestra.

<sup>61</sup> Envestra, *Access arrangement information*, 30 March 2012; APA GasNet, *Access arrangement submission*, 31 March 2012; Envestra, *Access arrangement information*, 30 March 2012.

<sup>62</sup> BHP Billiton, *Submission to the AER: APA GasNet access arrangement proposal*, 29 June 2012, p. 17.

<sup>63</sup> EUCV, *Submission to the AER: APA GasNet access arrangement proposal*, 18 June 2012, p. 50.

<sup>64</sup> Though the AER and ERA operate under different legislative instruments, the sections relevant to the determination of the rate of return are identical. Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012, paragraphs 167, 180; and Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012, paragraphs 280–282, 287.

<sup>65</sup> Specifically, all bonds (sourced from Bloomberg) were from Australian companies, denominated in Australian dollars and issued in Australia. Further, bonds could be either fixed or floating and either bullet, callable or putable. Different scenarios used other slightly different criteria, such as a minimum term (two or five years), and a range of credit ratings (BBB-/BBB/BBB+ or BBB/BBB+).

<sup>66</sup> Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012, paragraphs 176, 180, 187; Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012, paragraphs 290, 310–313.

<sup>67</sup> More specifically, the Tribunal endorsed the use of the ERA's 'scenario 2', which encompassed a minimum credit rating of BBB and a minimum term of two years. It also suggested that it would be appropriate to apportion weight by considering both term to maturity and issuance amount for the relevant bonds.

<sup>68</sup> ERA, *Revised decision, Access arrangement revisions for the Mid-West and South-West Gas Distribution System*, 25 June 2012, pp. 5–12.

<sup>69</sup> Based on Envestra's indicative averaging period, this 'bond-yield approach' estimate incorporates 60 bonds with an average term to maturity of 5.94 years.

Consistent with the AER's observations previously, the AER considers that the Bloomberg fair value curve continues to provide DRP estimates which are higher than other potential approaches (such as the ERA's approach). The Bloomberg fair value curve also provides estimates which are high in comparison to recent bond issuances from firms with similar characteristics to the benchmark firm. For these reasons, the AER has commenced an internal review into alternatives to the Bloomberg fair value curve. The AER will advise of a public consultation process on the development of an alternative in due course. However, the AER does not expect to implement any new method in time for Envestra's forthcoming access arrangement period. This follows the Tribunal's previous comments on the consultation approach that should be adopted in the development of any new approach.<sup>70</sup>

In this draft decision, the AER has maintained adoption of the extrapolated Bloomberg BBB rated fair value curve. This currently provides a cost of debt of 6.74 per cent, or DRP of 3.76 per cent.<sup>71</sup>

Taking Envestra's proposal and the submissions from stakeholders together, the AER considers that the rate of return in this draft decision (subject to updating) satisfies the criterion of the NGR.<sup>72</sup>

### 7.2.1 Risk free rate

The AER does not agree with Envestra's proposed method for estimating the risk free rate used in the cost of equity.

The risk free rate calculated using the method determined in this draft decision is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. This method involves estimating the risk free rate by reference to the yield on 10 year CGS bonds sampled over a period as close as practicably possible to the commencement of the access arrangement period.

The AER considers 10 year CGS yields are the most appropriate proxy for the risk free rate because:

- CGS are low risk
- the CGS market is liquid and functioning well, as confirmed by advice from the Reserve Bank of Australia (RBA), the Australian Treasury and the Australian Office of Financial Management (AOFM)<sup>73</sup>
- the RBA advised 'CGS yields are the most appropriate measure of a risk free rate in Australia'.<sup>74</sup>

The AER and Envestra agree on the proxy for the risk free rate.

However, Envestra proposed the risk free rate be calculated using a historical averaging period over the last 20 years. In contrast, the AER considers the most appropriate averaging period for

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<sup>70</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2)* [2012] ACompT 3, 11 January 2012, paragraphs 95, 118, 120–121; see also Australian Competition Tribunal, *Application by APT Allgas Energy Ltd* [2012] ACompT 5, 11 January 2012.

<sup>71</sup> This estimate reflects an adjustment to Envestra's proposed extrapolation approach. This adjustment is discussed in detail in attachment 4 of this draft decision.

<sup>72</sup> R. 87, NGR.

<sup>73</sup> Australian Treasury and Australian Office of Financial Management, *The Commonwealth Government Securities Market*, July 2012.

<sup>74</sup> Reserve Bank of Australia, *The Commonwealth Government Securities Market*, July 2012.

determining the risk free rate is a short period (10-40 business days), as close as practicably possible to the commencement of the regulatory period, because:

- at any point in time, the prevailing risk free rate is the benchmark that the expected return on a risky investment must exceed (by a magnitude equal to the risk premium for the risky investment)
- prevailing 10 year CGS yields reflect the risk free rate over the appropriate forward looking investment horizon (which is 10 years)
- CGS yields are market determined—that is, prevailing CGS yields reflect the return that investors are willing to receive in current market conditions on an investment that is almost default risk free
- this approach promotes the regulatory objective that the present value of a service provider's expected revenue should match the present value of a service provider's expected expenditure (plus or minus any efficiency rewards or penalties)
- the use of prevailing CGS yields is consistent with the use of the building block model because this model is designed to uphold the present value principle, as advised by Associate Professor Lally
- the use of prevailing CGS yields is consistent with the use of the CAPM. In the ActewAGL matter, both the expert for the AER (Associate Professor Lally) and the expert for the service provider (Greg Houston) agreed on this point.<sup>75</sup>
- this approach provides an unbiased method for determining the risk free rate
- advice from Professor McKenzie and Associate Professor Partington, and from Associate Professor Lally supported the use of a prevailing risk free rate.<sup>76</sup>

The AER recognises CGS yields are at historical lows, but that fact does not invalidate any of the above reasons. The current historically low CGS yields reflect what would be expected of a well functioning risk free rate proxy in current demand and supply conditions.<sup>77</sup> In the Telstra matter, the Tribunal stated:

...it is not unusual for yields to move from time to time in order to reflect prevailing market conditions and the expectations about the prospect for prices into the future.<sup>78</sup>

See attachment 4 for more on the AER's draft decision on the rate of return and reasons for its decision.

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<sup>75</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 148.

<sup>76</sup> McKenzie, M. and G. Partington, G., Supplementary report on the market risk premium, 22 February 2012, pp. 11–12; Lally, M., The risk free rate and the present value principle, 22 August 2012, p. 3.

<sup>77</sup> The Treasury and AOFM advice indicates that the movement in the Australian yield curve reflects a range of factors, including the changed stance of monetary policy and global financial market instability. Australian Treasury and Australian Office of Financial Management, *The Commonwealth Government Securities Market*, July 2012.

<sup>78</sup> Australian Competition Tribunal, *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010, paragraph 417.

## 8 Regulatory depreciation

Regulatory depreciation models the nominal value of Envestra's assets over the 2013–17 access arrangement period. It is used to determine the depreciation allowance in Envestra's total revenue requirement under the building block model. Envestra's annual regulatory depreciation allowance is the net total of the straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base.

As part of its proposed access arrangement Envestra is required to provide a forecast of depreciation for the 2013–17 access arrangement period, setting out a depreciation method and demonstrating how the depreciation method has been applied. The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff.

The AER then assesses whether the proposed depreciation schedule complies with the depreciation criteria set out within the NGR. In particular, the depreciation schedule should be designed:

- so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services<sup>79</sup>
- so that each asset or group of assets is depreciated over the economic life of that asset or group of assets<sup>80</sup>
- so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets<sup>81</sup>
- so that (subject to the rules about capital redundancy), an asset is depreciated only once<sup>82</sup>
- so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.<sup>83</sup>

Compliance with these criteria may involve the deferral of a substantial amount of depreciation.

The AER must also take into account the depreciation schedule approved in the 2008–12 access arrangement period,<sup>84</sup> the NGO and the revenue and pricing principles.<sup>85</sup>

The full draft decision and the AER's detailed reasons and analysis on regulatory depreciation are in attachment 5.

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<sup>79</sup> NGR, r. 89(1)(a).

<sup>80</sup> NGR, r. 89(1)(b).

<sup>81</sup> NGR, r. 89(1)(c).

<sup>82</sup> NGR, r. 89(1)(d).

<sup>83</sup> NGR, r. 89(1)(e).

<sup>84</sup> NGR, schedule 1, r. 5(1)(d).

<sup>85</sup> NGL, s 28; NGR r. 100(1). The NGO is set out in NGL, s. 23. The revenue and pricing principles are set out in NGL, s. 24.

## 8.1 Draft decision

The AER's draft decision on Envestra's total regulatory depreciation allowances over the 2013–17 access arrangement period are:

- Envestra Victoria—\$88.9 million (\$nominal) as shown in table 7.1. This represents a reduction of \$12.9 million (\$nominal) or 12.7 per cent of Envestra's proposal.
- Envestra Albury—\$3.8 million (\$nominal) as shown in table 7.2. This represents an increase of \$0.2 million (\$nominal) or 5.2 per cent of Envestra's proposal.

**Table 8.1 AER's draft decision on Envestra Victoria's depreciation allowance (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	39.8	43.8	49.4	53.3	57.0	243.3
Less: indexation on opening capital base	27.7	29.4	31.2	32.4	33.7	154.4
Regulatory depreciation	12.1	14.4	18.2	21.0	23.3	88.9

Source: AER analysis.

**Table 8.2 AER's draft decision on Envestra Albury's depreciation allowance (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	1.4	1.5	1.7	1.8	1.9	8.2
Less: indexation on opening capital base	0.9	0.9	0.9	0.9	0.9	4.4
Regulatory depreciation	0.5	0.6	0.8	0.9	0.9	3.8

Source: AER analysis.

## 8.2 Summary of analysis and reasons

The AER does not approve Envestra's proposed regulatory depreciation allowances over the 2013–17 access arrangement period of \$101.8 million and \$3.8 million (\$nominal) for its Victoria and Albury networks respectively. The AER's draft decision is to make amendments in the following areas:

- The AER considers that the 'Land & buildings' asset class should be split into two separate 'Land' and 'Buildings' asset classes from 1 January 2013 to reflect their different depreciation treatment. In terms of economic life, the AER considers that the 'Buildings' asset class should be assigned a

standard economic life of 50 years<sup>86</sup> whereas the 'Land' asset class should not be assigned a standard economic life reflecting the non-depreciating nature of the asset.

- The AER considers that Envestra's proposed standard economic life of 10 years for the 'SCADA' asset class is too short. The AER notes that the proposed capex for the 'SCADA' asset class is comprised of hardware-related components (such as the Remote Telemetry Units) which have longer standard economic lives. The AER therefore has determined a standard economic life of 15 years is more appropriate.
- The AER accepts Envestra's proposed weighted average method to calculate the remaining economic lives as at 1 January 2013. However, the AER has updated Envestra's remaining economic lives as at 1 January 2013 to reflect the AER's adjustments to Envestra's opening capital base roll forward (discussed in attachment 2).

See attachment 5 for more on the AER's draft decision on depreciation and reasons for its decision.

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<sup>86</sup> This is consistent with the standard economic life approved by the ESC for 2008–12. See ESC, *Envestra GAAR 2008 Revenue Model Further Final Decision*, 2008.

## 9 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other non-capital costs incurred in the provision of reference services.<sup>87</sup> Opex incorporates labour costs and other non-capital costs associated with providing reference services.

The AER is required to assess Envestra's forecast opex to decide whether it is satisfied that the forecast opex complies with applicable criteria prescribed by the NGL and NGR. In particular, opex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services. In addition, opex forecasts must be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.<sup>88</sup>

The regulatory regime provides incentives for Envestra to deliver its required services at the lowest sustainable cost. In particular, if Envestra is able to provide its services at a lower cost than what was forecast in its access arrangement, it is able to 'keep the difference' for a period of five years as provided under its opex incentive mechanism (see chapter 10) during the access arrangement period. Given these incentives, actual opex can be used to effectively reveal the efficient level of opex required in providing reference services. This means that rather than assess all aspects of opex the AER can instead focus on what changes need to be made to this base level of opex. In particular, once the base year is set, the AER only assesses the following adjustments:

- Annual cost trends, to account for forecast labour and material cost changes, output growth and partial productivity growth.
- Step changes, to provide an additional opex allowance where a certain circumstance, requirement or project will require the business to undertake expenditure that is not incorporated in the base year.

Envestra proposed an opex forecast based on a base year roll forward methodology setting 2011 as the base year. It then proposed cost trends and step changes to provide for year on year adjustments to this base level of opex.

The full draft decision and the AER's detailed reasons and analysis on operating expenditure can be found in attachment 6 and appendix C.

### 9.1 Draft decision

The AER's draft decision is to approve \$293.9 million (\$2011) of Envestra's \$364.8 million (\$2011) forecast of opex for the 2013-17 access arrangement period for the Victorian network. The AER's draft decision for Envestra Albury is to approve an increased amount of \$13.4 million of Envestra's \$12.3 million (\$2011) forecast. This reduction of approximately \$70.8 million and increase of \$1.1 million (\$2012) for Envestra Victoria and Envestra Albury respectively, reflects the AER view that a number of elements of Envestra's forecast opex do not comply with the criteria governing opex or the criteria for forecasts and estimates.<sup>89</sup> Specifically for Envestra Albury, it accrued a negative carryover

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<sup>87</sup> NGR, r. 69.

<sup>88</sup> NGR, r. 74.

<sup>89</sup> NGR, r. 91, r. 71

under the efficiency carryover mechanism largely due to liabilities paid from provisions in 2010 and 2011. The increased opex ensures Envestra Albury is not penalised twice for those increases. This is discussed in more detail in the following section.

Table 9.1 shows how Envestra's proposal for its Victorian network opex compares with the AER's draft decision on opex. Figure 9.1 shows how the AER's draft decision for opex compares to Envestra's proposal, its opex in the 2008–12 access arrangement period, and the opex approved by the ESC for this period. Table 9.2 and Figure 9.1 presents the same information as it relates to Envestra Albury. In the 2008–12 access arrangement period, Envestra's actual opex has been on average the same as the ESC approved opex in Victoria and 1.5 per cent higher in Albury. Envestra's proposed total opex represents a 39.8 per cent real increase on actual expenditure in the current period in Victoria and 43 per cent in Albury.

**Table 9.1 Envestra Victoria proposed and approved opex (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	63.8	71.8	75.4	76.0	77.8	364.8
AER's draft decision	57.5	58.1	58.8	59.5	60.1	293.9
Difference	-6.3	-13.7	-16.6	-16.5	-17.7	-70.8

Source: AER analysis

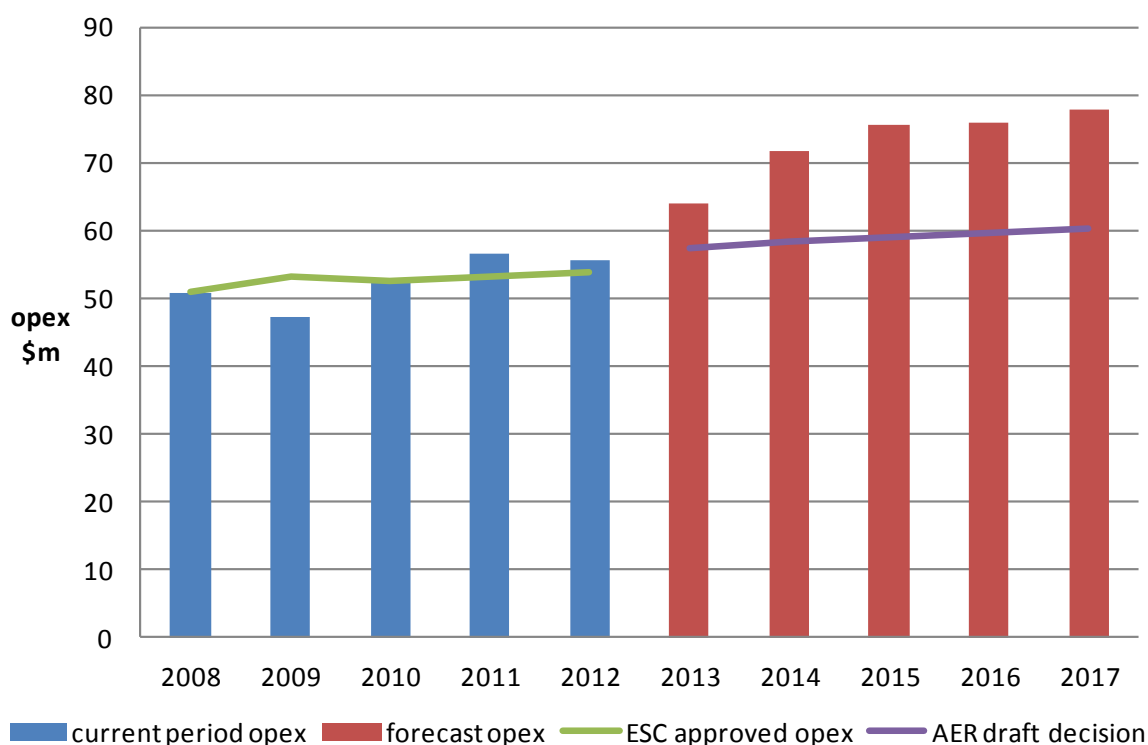
**Table 9.2 Envestra Albury proposed and approved opex (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	2.1	2.4	2.5	2.6	2.7	12.3
AER's draft decision	2.7	2.7	2.7	2.7	2.7	13.4
Difference	0.5	0.3	0.2	0.2	0.0	1.1

Source: AER analysis

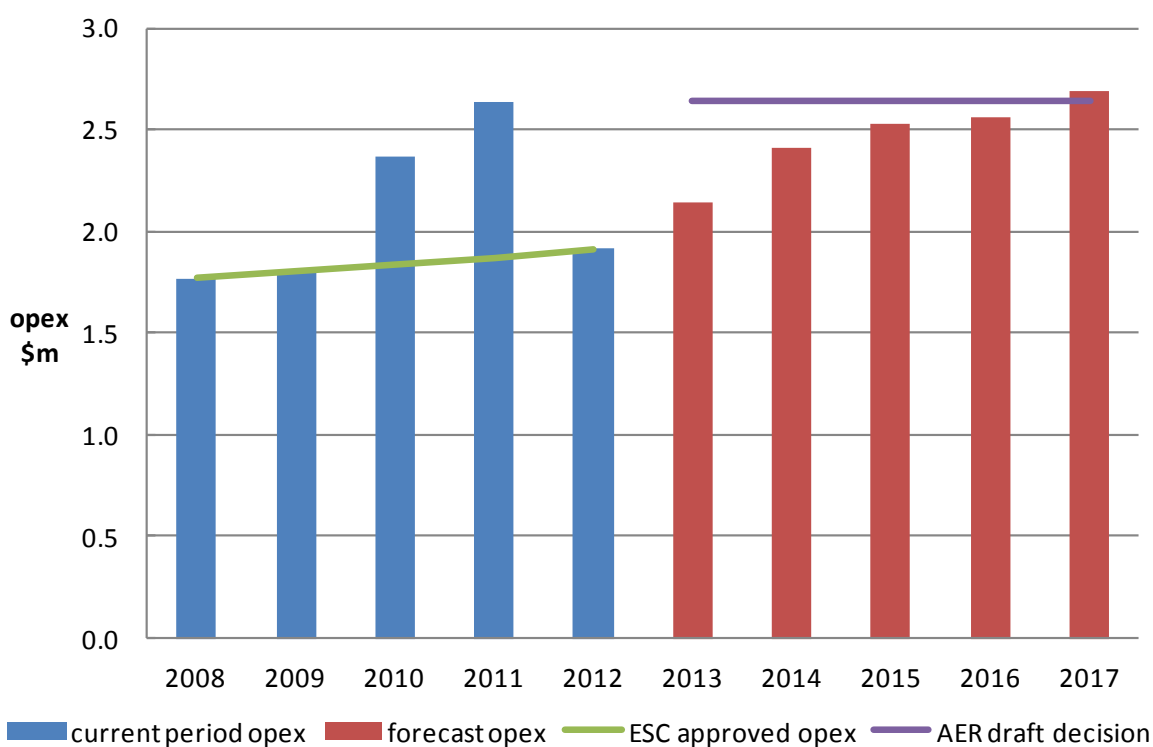


**Figure 9.1 Envestra Victoria total proposed and approved opex (\$m, \$2011)**



Note: Current period opex includes liabilities paid from provisions but excludes movements in provisions.

**Figure 9.1 Envestra Albury total proposed and approved opex (\$m, \$2011)**



Note: Current period opex includes liabilities paid from provisions but excludes movements in provisions. Increased expenditure in 2010 and 2011 relates to liabilities paid from provisions.

## 9.2 Summary of analysis and reasons

Table 9.3 shows the factors driving opex and differences between Envestra's proposed opex and the AER's draft decision on opex for Envestra Victoria for the total 2013–17 access arrangement period. Table 9.4 shows the factors driving opex and differences between Envestra's proposed opex and the AER's draft decision on opex for Envestra Albury for the total 2013–17 access arrangement period.

**Table 9.3 Envestra Victoria proposed and AER's draft decision on opex (\$million, 2011)**

	Envestra proposal	AER draft decision	Difference
Base year costs	251.8	255.2	3.4
Errors	-0.1		0.1
Labour cost escalation	21.7	5.4	-16.3
Materials cost escalation	14.0	-	-14.0
Network growth	3.7	3.6	-0.1
Step changes	42.7	6.7	-35.9
NMF	16.1	11.2	-4.9
Incentive fee	3.0	-	-3.0
ARS	11.7	11.7	-0.0
<b>Total</b>	<b>364.8</b>	<b>293.9</b>	<b>-70.8</b>

Source: AER analysis

**Table 9.4 Envestra Albury proposed and AER's draft decision on opex (\$million, 2011)**

	Envestra proposal	AER draft decision	Difference
Base year costs	9.1	11.8	2.7
Errors	-0.0		0.0
Labour cost escalation	0.5	0.2	-0.3
Materials cost escalation	0.6	-	-0.6
Network growth	0.1	0.1	0.0
Step changes	0.8	0.2	-0.6
NMF	0.5	0.4	-0.1
Incentive fee	-	-	-
ARS	0.7	0.7	-
<b>Total</b>	<b>12.3</b>	<b>13.5</b>	<b>1.1</b>

Source: AER analysis

As can be seen from Table 9.3 and Table 9.4, the main differences between Envestra's proposed opex and the AER's draft decision on opex relate to step changes and differences in the labour cost escalation. These and other differences are discussed below.

## 9.2.2 Base year costs

Envestra proposed 2011 as the base year, proposing base year expenditure as 2011 actual expenditure less certain costs. The base year costs are determined by taking actual opex from the fourth year of the 2008–12 access arrangement period, indexing these figures and making any required adjustments.

The AER's base year estimate for opex is set on the basis of actual 2011 costs incurred by Envestra. In forming this estimate, the AER made adjustments to the costs incurred by Envestra in 2011 to remove movement in provisions and licence fees.

The AER did not accept the proposed removal of network development costs from the 2011 base year. The AER considers the removal of this cost from the base year is inconsistent with the correct operation of the opex incentive mechanism (discussed in chapter 10). This requires that the base year for determining opex is consistent with the actual opex used to calculate any carryovers arising from the incentive mechanism. Network development expenditure was included in both the actual and forecast opex for the purposes of calculating the efficiency carryover under the incentive mechanism. The AER therefore has not removed this expenditure from the 2011 base year for the purpose of forecasting Envestra's 2013–17 opex allowance.

Provision accounts are used to set aside amounts for the payments of liabilities of uncertain timing or amount for when they arise. A movement in provision occurs when the amount set aside differs to the amount paid out. Envestra's opex forecast for Envestra Victoria included movements in provisions. Envestra's opex forecast for Envestra Albury effectively did not include any expenses for liabilities paid from provision accounts for the 2013–17 access arrangement period. The AER considers the movement in these provisions does not represent actual costs incurred in a given year and should be removed from the base year expenditure. The AER also considers the removal of movements in provision from the base year opex is consistent with the correct operation of the opex incentive mechanism (discussed in chapter 10). In calculating the carryover of efficiency gains and losses under the opex incentive mechanism the AER removed the movement in provisions from Envestra's actual opex. The AER has therefore removed the movement in provisions from actual opex in 2011 for Envestra Victoria and included the liabilities paid from provision in 2011 for Envestra Albury.

The AER's base year estimate is also different to Envestra's estimate because of some other minor adjustments to reflect errors made by Envestra about the actual costs it incurred in 2011, and to remove licence fees, which are recovered through the price control mechanism.

## 9.2.3 Labour and material cost escalators

The AER is not satisfied Envestra's proposed labour and material cost escalators were arrived at on a reasonable basis or represent the best possible forecast of labour and material costs over the 2013–17 access arrangement period.<sup>90</sup> The AER considers forecast annual increases in the labour price index (LPI), as forecast by Deloitte Access Economics represent the best possible forecast of labour costs over the 2013-17 access arrangement period. The AER considers that the consumer price

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<sup>90</sup> Appendix C contains the AER's more detailed consideration of the real cost escalators proposed by Envestra.

index (CPI) represents the best possible forecast of network materials prices. Appendix C contains the AER's consideration of the real cost escalators proposed by Envestra.

## 9.2.4 Step changes

Step changes allow for additional funding where the service provider faces a new requirement or change in circumstance requiring it to undertake additional expenditure that was not accounted for in the base year level of opex. Examples of step changes include new safety regulations requiring additional opex on an ongoing basis, opex related to a new capital project or other new legislative requirements. In assessing Envestra's proposed step changes the AER has considered whether these are consistent with that which would 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. Where the AER considers these step changes meet this requirement an incremental increase in base year opex is included in total forecast opex.

In general, the AER considers an increase in opex is not consistent with the above requirement where the additional expenditure is intended to comply with a regulatory requirement or industry standard that has not changed since the 2008–12 access arrangement period. In such cases, it is the AER's view that such expenditure would already be included in base opex for a prudent service provider acting in accordance with accepted good industry practice to achieve the lowest sustainable cost of delivering pipeline services.

In some cases, a program of expenditure may be consistent with the above requirement but might not justify an incremental increase in the total opex allowance as it should already be covered in the base level of opex. For instance, if a program of expenditure is intended to improve productivity, the AER would generally consider that there is sufficient expenditure in the base opex in order to fund the program.

The AER's assessment of proposed step changes also recognises that a service provider's opex program will not be exactly the same from year to year. For example, actual opex in the base year reflects both recurrent expenditure and non-recurrent expenditure. That is, some of the expenditure will be ongoing while some will be related to one-off occurrences. When forecasting opex for the 2013–17 access arrangement the AER has not sought to estimate all non-recurrent (or one-off) expenditure incurred in the base year. In this way, the base year will inevitably include some opex that will not be undertaken in all other years.

Given this, the AER does not automatically consider there should be a step change in opex solely because a program of expenditure was not undertaken in the base year but needs to be undertaken in the 2013–17 access arrangement period. Instead, the AER considers on a case by case basis whether base year opex would be likely to be sufficient in order to fund the proposed program of opex or whether a step up in opex is required. This avoids potential asymmetries that would occur if all additional opex requirements for the 2013–17 access arrangement were included as step changes without subtracting any one-off or non-recurrent opex that is inevitably included in the base year.

In considering the above, the AER made a number of revisions to Envestra's proposed step changes. These adjustments lead to Envestra's proposed step change related opex being reduced from \$42.7 million to \$3.2 million for Envestra Victoria and \$0.81 million to \$0.08 million for Envestra Albury.

## 9.2.5 Network growth

Envestra stated that it will incur additional opex as the number of customers on the network increases. It forecast it would connect, on average, 12 000 net new volume customers to the network in each year of the 2013–17 access arrangement period.<sup>91</sup>

The AER considers Envestra's forecast expenditure for incremental growth was arrived at on a reasonable basis and represents the best forecast possible in the circumstances and delivers a total opex forecast consistent with achieving the lowest sustainable cost of delivering pipeline services.<sup>92</sup>

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<sup>91</sup> Envestra, *Victorian Access Arrangement Information*, 30 March 2012, p. 105.

<sup>92</sup> NGR, r. 74(2), r. 91(1)

## 10 Incentive mechanisms

Incentive mechanisms offer service providers 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 relative to opex or capex 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. This five year period corresponds to the length of the access arrangement period.

The AER is required under transitional arrangements to ensure increments or decrements resulting from the operation of the incentive mechanism in Envestra's current access arrangement, are properly reflected increments or decrements in its total revenue.<sup>93</sup>

The AER must also consider whether the incentive mechanism proposed by Envestra will encourage efficiency in the provision of services by the service provider and is consistent with the revenue and pricing principles.<sup>94</sup>

The full draft decision and the AER's detailed reasons and analysis on incentive mechanisms can be found in attachment 7.

### 10.1 Draft decision

The AER does not approve Envestra Victoria's proposed carryover of \$4.7 million (\$2012) from the 2008–12 access arrangement period because it has not been calculated according to the incentive mechanism in Envestra Victoria's current access arrangement. The AER has calculated that Envestra Victoria accrued a total carryover of –\$8.6 million (\$2012) during the 2008–2012 access arrangement period (Table 10.1).

**Table 10.1 AER draft decision on Envestra carryover from the 2008–2012 access arrangement period (\$million, 2012)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	4.8	2.6	–1.1	–1.6	–	4.7
AER draft decision	2.1	–1.0	–7.5	–2.2	–	–8.6
Difference	–2.6	–3.6	–6.4	–0.7	–	–13.3

Source: Envestra Victoria Access Arrangement Information, pp. 177–178, Envestra Vic PTRM , AER analysis

Similarly, the AER does not approve Envestra Albury's proposed carryover of zero from the 2008–12 access arrangement period, which was also not calculated in accordance with the efficiency sharing mechanism set out in its 2008–12 access arrangement. The AER calculated that Envestra Albury has instead accrued –\$2.3 million (\$2012) to be carried over from the 2008–12 access arrangement period (Table 10.2).

<sup>93</sup> NGR, Schedule 1, clause 5(1)(a).

<sup>94</sup> NGR, rule 98.

**Table 10.2 AER draft decision on Envestra Albury carryover from the 2008–12 access arrangement period (\$million, 2006)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	–	–	–	–	–	–
AER draft decision	–0.7	–0.7	–0.7	–0.2	–	–2.3
Difference	–0.7	–0.7	–0.7	–0.2	–	–2.3

Source: AER analysis.

The AER does not approve Envestra Victoria and Envestra Albury's proposal to not include an incentive mechanism to apply to opex in the 2013–17 access arrangement. The AER may require the inclusion of one or more incentive mechanisms to encourage efficiency in the provision of services by Envestra Victoria and Envestra Albury.<sup>95</sup> The AER has decided to require Envestra Victoria's and Envestra Albury's access arrangements include the incentive mechanism set out in attachment 7.

The AER approves Envestra Victoria and Envestra Albury's proposal to not include an incentive mechanism to apply to capex in the 2013–17 access arrangement.

## 10.2 Summary of analysis and reasons

In carrying over incentives from the 2008–12 access arrangement period, the AER considers that the adjustments Envestra made to benchmark opex<sup>96</sup> were not consistent with Envestra's 2008–12 access arrangement for either Albury or Victoria. The AER also found errors in the actual opex Envestra used to calculate the carryover.<sup>97</sup> In particular, the AER considers Envestra did not account for movements in provisions to ensure the expenditure used to calculate carryover amounts reflected the actual expenditure incurred. For these reasons, the AER recalculated the carryover amounts using the approach set out in Envestra's access arrangement for 2008–12.

Envestra Victoria and Envestra Albury proposed to not include an incentive mechanism to apply to either opex or capex in their 2013–17 access arrangements. Envestra considered its outsourcing contract with the APA Group will provide sufficient incentives to achieve lower costs.<sup>98</sup>

The AER does not accept Envestra's proposal not to include an incentive mechanism applying to opex in the 2013–17 access arrangement. Envestra's forecast opex is based on its historical opex in a single year, consistent with the AER's general approach to determining forecast opex allowances. The AER considers it important to give Envestra a continuous incentive to reduce costs through the operation of an incentive mechanism. An incentive mechanism applying to opex would encourage efficiency in the provision of services by Envestra Victoria and Envestra Albury and is consistent with the revenue and pricing principles.

<sup>95</sup> NGR, r. 98.

<sup>96</sup> In particular, Envestra did not remove its licence fees from actual opex for 2011, which it did for the other years, and included an incorrect estimate of its network management fee for 2011.

<sup>97</sup> Some items were included that should not have been since they did not form part of the benchmark opex.

<sup>98</sup> Envestra, *Victoria Access arrangement information* March 2012, p. 179; Envestra, *Albury Access arrangement information* March 2012, pp. 163–164.

See attachment 7 for more on the AER's draft decision on incentive mechanisms and reasons for its decision.



# 11 Corporate income tax

The estimated cost of corporate income tax is one of the building blocks used to determine the total revenue requirement for Envestra over the 2013–17 access arrangement period.

Envestra adopted the post-tax framework to derive its revenue requirement for the 2013–17 access arrangement period.<sup>99</sup> Under the post-tax framework, a separate corporate income tax allowance is calculated as part of the building block assessment.

The AER uses the PTRM to produce an estimate of the taxable income that would be earned by an efficient company operating Envestra’s business. The AER modelled Envestra’s tax expenses over the access arrangement period using a benchmark 60 per cent gearing. Tax depreciation is calculated using a separate tax asset base. All tax expenses are offset against the service provider’s forecast revenue to estimate the taxable income. The statutory income tax rate of 30 per cent is then applied to the estimated taxable income to arrive at a notional amount of tax payable. The AER then applies a discount to this to account for the assumed utilisation of imputation credits (gamma), which has a value of 0.25. This amount is then included as a separate building block in determining Envestra’s total revenue.<sup>100</sup>

The full draft decision and the AER’s detailed reasons and analysis on corporate income tax can be found in attachment 8.

## 11.1 Draft decision

The AER’s draft decision on Envestra’s corporate income tax allowances over the 2013–17 access arrangement period are:

- Envestra Victoria—\$20.9 million (\$nominal) as shown in table 10.1. This represents a reduction of \$19.4 million (\$nominal) or 48.2 per cent of Envestra’s proposal.
- Envestra Albury—\$1.5 million (\$nominal) as shown in table 10.2. This represents a reduction of \$0.5 million (\$nominal) or 23.5 per cent of Envestra’s proposal.

Based on the approach to modelling the cash flows in the PTRM for this draft decision, the AER has derived effective tax rates of 23.73 per cent and 33.87 per cent for Envestra’s Victorian and Albury networks respectively.

**Table 11.1 AER’s draft decision on corporate income tax allowance for Envestra Victoria (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Tax payable	1.5	3.6	6.0	7.7	9.1	27.9
Less: value of imputation credits	0.4	0.9	1.5	1.9	2.3	7.0

<sup>99</sup> Envestra, *Post tax revenue model, March 2012*.

<sup>100</sup> NGR, r. 76(c).

Net corporate income tax allowance	1.1	2.7	4.5	5.7	6.8	20.9
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Source: AER analysis.

**Table 11.2 AER's draft decision on corporate income tax allowance for Envestra Albury (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Tax payable	0.3	0.4	0.4	0.5	0.5	2.0
Less: value of imputation credits	0.1	0.1	0.1	0.1	0.1	0.5
Net corporate income tax allowance	0.2	0.3	0.3	0.4	0.4	1.5

Source: AER analysis.

## 11.2 Summary of analysis and reasons

The AER accepts most of Envestra's methods for calculating its corporate income tax allowance. However, the AER adjusted several of Envestra's proposed inputs to the PTRM for calculating the corporate income tax allowance, which include:

- The opening tax asset base as at 1 January 2013, including:
  - Amendments to tax additions from 2007–12 to be consistent with the AER's draft decision on the roll forward of the capital base (attachment 2).
  - Splitting the 'Land & buildings' asset class into two separate asset classes of 'Land' and 'Buildings' as set out in the AER's draft decision on depreciation (attachment 5).
  - Correcting minor formulae errors in the proposed tax roll forward model.
- The tax depreciation approach for the 'Land & buildings' asset class in group 7 tax assets:
  - Consistent with the 2008–12 access arrangement, the AER considers that the 'Buildings' asset class should be depreciated using the straight-line method.
  - The AER has not assigned a tax depreciation method for the 'Land' asset class due to the non-depreciating nature of this asset.

In addition, there are various other changes to the building block components in this draft decision that impact forecast revenues (for example, the capital base and opex). These will consequently affect the forecast corporate income tax allowance.

## 12 Demand forecasts

The NGR requires an access arrangement to include a forecast of pipeline demand over the access arrangement period and the basis on which the forecast has been derived. Demand is an important input into the derivation of Envestra's reference tariffs for its Victorian and Albury gas distribution networks. In particular, understanding how much each reference service is likely to be used over the five year period allows the AER to determine the quantum of each tariff and the overall efficient allocation of tariffs. Demand forecasts also affect opex and capex linked to network growth. For example, if gas demand decreases and revenue remains largely unchanged, this is likely to result in higher tariffs. However, lower demand could also be expected to reduce capex and opex, somewhat offsetting this effect. Conversely, higher demand could be expected to reduce tariffs, other things being equal.

The AER is required to assess Envestra's demand forecasts to determine whether they have been arrived at on a reasonable basis and represent the best forecast possible in the circumstances, pursuant to r. 74 of the NGR.

The full draft decision and the AER's detailed reasons and analysis on demand forecasts can be found in attachment 9.

### 12.1 Draft decision

The AER approves Envestra's forecasting methodology as a reasonable basis for determining its forecasts. However, the AER does not approve Envestra's proposed demand forecasts as they do not comply with rule 74(2). The AER's draft decision makes revisions to Envestra's demand forecast proposals in respect of the use of effective degree day (EDD) and heating degree days (HDD) for .

### 12.2 Summary of analysis and reasons

In applying its forecasting methodology, Envestra used some assumptions and data sets that have biased the modelling results. In particular:

- Estimates of effective degree day (EDD) used by Envestra to weather normalise historic gas consumption were based on a projection of EDD between 2005 and 2011, rather than historic data.
- The heating degree days (HDD) data used by Envestra for its Albury network is not the most current data available.

For these reasons the AER considers that Envestra's demand forecasts are not arrived at on a reasonable basis and do not represent the best forecasts possible in the circumstances.<sup>101</sup> The AER's draft decision makes adjustments to the EDD used by Envestra to weather normalise historic gas consumption and updates the HDD data to include data from 2011.

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<sup>101</sup> NGR, rule 74(2).

## 13 Tariff setting – distribution pipelines

An access arrangement must set out how a service provider intends to charge for reference services. The NGR requires that the access arrangement information must include an explanation of the basis for setting reference tariffs, including the method used to allocate costs, and a demonstration of the relationship between costs and tariffs.<sup>102</sup>

The AER is required to assess Envestra's proposed reference tariffs against the provisions established by r. 93 and r. 94 of the NGR, and the revenue and pricing principles and the NGO, both established by the NGL. In particular, r. 94 requires that:

- Customers must be divided into tariff classes on the basis of what is economically efficient and the need to avoid unnecessary transaction costs.
- For each tariff class, the revenue recovered should be between the total cost of providing that reference service and the avoidable cost of not providing that reference service to those customers.
- Where a tariff consists of two or more charging parameters, each parameter must:
  - take into account the long run marginal cost of the reference service (or element of the service to which the parameter relates)
  - be determined with regard to the transaction costs associated with the tariff (or each charging parameter) and whether customers belonging to the relevant tariff class are able or likely to respond to price signals.
- However, if the above point means that a service provider may not recover its expected revenue, the tariffs must be adjusted to ensure recovery of expected revenue with minimum distortion to efficient patterns of consumption.

The AER's role also includes an assessment of Envestra's proposed reference services to which the reference tariff applies.

The full draft decision and the AER's detailed reasons and analysis on tariff setting can be found in attachment 10.

### 13.1 Draft decision

The AER's draft decision is to approve Envestra's proposed structure of reference tariffs for the 2013–17 access arrangement period. The AER is satisfied that the proposed structure of the reference tariffs complies with the requirements under rules 93 and 94 of the NGR.

However, the quantum of the proposed reference tariffs must be amended as set out in attachment 10 of this draft decision to reflect the AER's draft decision on forecast total revenue and forecast demand.

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<sup>102</sup> NGR, r. 72(1)(j), 95(1) and 95(3)(a).

## 14 Tariff variation mechanism

The reference tariff variation mechanism:

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

The AER assessed Envestra's access arrangement proposal against the tariff variation mechanism requirements of the NGL and NGR. The full draft decision and the AER's detailed reasons and analysis on the tariff variation mechanism can be found in attachment 11.

### 14.1 Draft decision

The AER does not approve Envestra's proposed tariff variation mechanisms for the 2013-17 access arrangement period. The AER considers that some elements of Envestra's proposed tariff variation mechanism are not consistent with the NGL and the NGR or that there are alternatives to some elements of Envestra's proposal that better meet the NGL and RPP.

### 14.2 Summary of analysis and reasons

The AER's draft decision is to make the following amendments to Envestra's proposed tariff variation mechanism:

- Rebalancing constraint for the annual tariff variation formula—the draft decision does not accept Envestra's proposal to increase its rebalancing constraint. A rebalancing constraint is a mechanism that restricts the amount that a tariff can vary on an annual basis. The AER is not convinced that the current rebalancing constraint has inhibited Envestra's ability to achieve cost reflective pricing in previous regulatory periods and hence, is not convinced of the need to increase this. Further, a higher rebalancing constraint could lead to increased price volatility and potential price shocks. In sum, the AER considers that the current magnitude of rebalancing constraint in combination with the cost pass through provisions under the NGR provides Envestra with a reasonable opportunity to recover at least its efficient costs, consistent with the RPP.
- Revenue equalisation—the initial reference tariffs and X factors must be amended to reflect the changes to forecast total revenue and forecast demand.
- Cost pass through events—the AER requires two of Envestra's proposed pass through events to be removed, revisions to be made to the definitions of two further pass through events and a new pass through event to be included:
  - Amendment of the network user failure event to remove the reference to insolvency. The AER was of the view that this reference did not add to the definition of the event.
  - Amendment of the definition of the proposed 'tax change event'—Envestra's proposed definition referred to a direct and material impact on the revenue received. The AER

considers this is not relevant; the relevant consideration is that the event is an uncontrollable event that impacts on costs to the business.

- Amendment of the definition of 'insurance event'—Envestra's proposed definition would have meant that this pass through event would have been triggered when the service provider incurred costs beyond its insurance policy limit. The AER is concerned that this definition could alter the incentive to obtain adequate insurance where an insurance cap exists (as it would allow such costs to be passed through to users). To address this, the policy limit should be defined by reference to the policy coverage funded through the 2013-17 base opex allowance for Envestra in this decision. In addition, in assessing whether this pass through event should apply the AER should consider the efficiency of Envestra's decisions and actions in relation to the risk of a pass through event, including whether Envestra has taken action to mitigate the risk of the event occurring or the magnitude of the costs of the event.
- Inclusion of a new cost pass through event to allow Envestra to undertake further low pressure mains replacement where it has exceeded the AER's approved volumes (which were set with reference to historic volumes delivered over the 2008-11 access arrangement period). This relates to the AER's draft decision on capex (overview section 6 and attachment 3).
- Inclusion of a new NECF event to allow Envestra to recover any expenditure it incurs in implementing the NECF once it commences in Victoria. The NECF has not yet commenced in Victoria and there is uncertainty surrounding when it will be adopted. For this reason, the AER did not approve Envestra's proposed opex step change for NECF related expenditure. However, the AER considers that Envestra should be able to recover through this pass through event any expenditure it incurs in implementing NECF once it is adopted in Victoria.

See attachment 7 for more on the AER's draft decision on incentive mechanisms and reasons for its decision.

## 15 Non-tariff components

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

The AER has considered the non-tariff components of Envestra's access arrangement proposal including capacity trading requirements, queuing requirements, extension and expansion requirements, and terms and conditions on which the reference service will be provided.

The AER's reasons for its draft decision on the above non-tariff components are provided in attachment 12 and appendix D.

### 15.1 Draft decision

The AER has decided to accept most of Envestra's terms and conditions. The AER accepts Envestra's terms and conditions that it considers are consistent with the NGO. The AER received submissions that do not support the AER's draft decision for some of those terms and conditions. The AER has addressed these submissions and reasons for its decision are provided in attachment 12.

The AER requires minor amendments to Envestra's capacity trading requirements, its terms and conditions for a change of receipt or delivery point and its review submission date. The AER proposes to accept Envestra's proposal in relation to queuing arrangements, its extensions and expansions policy, and its revision commencement date.

### 15.2 Summary of analysis and reasons

The AER has undertaken significant consultation in the process of assessing Envestra's proposed terms and conditions for this draft decision. The AER held an industry workshop, and considered stakeholder submissions and Envestra's response to those submissions.

The AER sought to facilitate increased engagement between Envestra and retailers on Envestra's proposed terms and conditions. The objective was to foster agreement between Envestra and key users on the proposed terms and conditions prior to the release of the AER's draft decision where possible, and to highlight areas of significant disagreement or particular concern.

As part of this engagement process, the AER hosted a workshop attended by representatives of the three Victorian gas distribution network owners and a number of retailer businesses. This workshop provided each of the parties attending with an opportunity to discuss the network owners' proposed terms and conditions.

Discussion during the workshop centred on the impact that NECF would have on the structure of the proposed terms and conditions. Further, participants highlighted inconsistencies in the terms and conditions across access arrangements, which could increase retailer transaction costs. The minute of the workshop is available on the AER's website at: <http://www.aer.gov.au/node/14473>

At the workshop, the gas network owners committed to consider the retailers' submissions and seek to resolve any disputes prior to the release of the AER's draft decision in September 2012. They also

committed to take steps to minimise inconsistencies across their access arrangements, and clarify any drafting ambiguities.

Following the workshop, the AER received submissions on terms and conditions from some retailers, which identified areas of concern and gave reasons for those concerns (discussed in more detail below). The AER subsequently wrote to Envestra giving it the opportunity to consider the submissions made by stakeholders in response to its proposal.

The AER seeks further feedback from stakeholders on terms and conditions in their submissions to this draft decision. The AER expects that Envestra will undertake further consultation with users before it submits its revised access arrangement to the AER. The AER may hold another terms and conditions workshop to facilitate the parties' understanding of the operation of the terms and conditions.



## 16 Interlinkages between decision components

In assessing each element of Envestra's access arrangement, including the building blocks, the AER has taken into account the interlinkages between the building blocks and between the elements of Envestra's access arrangement proposal. Examples of interlinkages between the elements include:

- Rate of return and the weighted average cost of capital parameters—there are various interlinkages between these parameters, including that the AER has determined each of them on the basis of a 10 year investment horizon, the 60 per cent gearing ratio affects the estimation of the equity beta, and the debt risk premium and the assumed utilisation of imputation credits (gamma) affects the estimation of the market risk premium.
- Forecast opex allowance and the incentive mechanism—the use of actual opex in establishing the forecast opex allowance and the efficiency carryover resulting from the operation of the efficiency carryover mechanism is necessary to preserve the rewards or penalties associated with the efficiency of a service provider's operations.
- Capex and opex allowances and the cost pass through mechanism—the cost pass through mechanism allows a service provider to recover costs that are uncontrollable and not otherwise provided in the forecast capex and opex allowances. This for example relates to certain costs for additional mains replacement and costs associated with the commencement of NECF in Victoria, which were not included as part of the forecast allowances (see attachments 3, 6 and 11).
- Non price terms and condition and opex—the efficient level of insurance that the AER has allowed for in Envestra's forecast opex is determined to some extent by how risk is allocated through its terms and conditions (see attachments 6 and 12).

Capex and opex—capex can result in potentially higher or lower opex depending on whether, for example, that capex goes to network augmentation (increased opex could be required to support new systems) or replacement of aging assets (which can require higher maintenance opex) (see attachments 3 and 6).



# **Access Arrangement draft decision**

**Envestra Ltd**

**2013–17**

**Part 2**

**Attachments**

September 2012

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## Shortened forms

Shortened form	Full title
2008-12 access arrangement	Access arrangement for Envestra effective from 1 January 2008 to 31 December 2012 inclusive
2008-12 access arrangement period	1 January 2008 to 31 December 2012 inclusive
2013-17 access arrangement period	1 January 2013 to 31 December 2017
2018-22 access arrangement	Access arrangement for Envestra effective from 1 January 2018 to 31 December 2022 inclusive
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
access arrangement information	Envestra Limited, Access arrangement information, 30 March 2012
access arrangement proposal	Envestra Limited, Access arrangement proposal, 30 March 2012
capex	capital expenditure
CAPM	capital asset pricing model
CPI	consumer price index
Code	National Third Party Access Code for Natural Gas Pipeline Systems
DRP	debt risk premium
Envestra	Envestra Limited (ACN 078 551 685)
Envestra Albury	Envestra's distribution network in Albury, NSW and surrounding regions
Envestra Victoria	Envestra's distribution network in Victoria
ESC	Essential Services Commission (Victoria)
MRP	market risk premium
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
opex	operating expenditure
PTRM	post tax revenue model
RAB	regulatory asset base
RFM	roll forward model
RPP	revenue pricing principles
WACC	weighted average cost of capital

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# 1 Pipeline Services

The NGR includes a number of requirements with respect to:

- identifying the pipeline which the access arrangement relates to<sup>1</sup> and
- the services which Envestra proposes to offer to provide by means of that pipeline.<sup>2</sup>

## 1.1 AER's draft decision

The AER considers that Envestra has met its obligations to describe the pipeline services and specify the reference services that it proposes to offer. The AER approves Envestra's proposed ancillary reference services but does not approve its proposed reference services.

## 1.2 Envestra's proposal

In clause 2 of its access arrangement proposal, Envestra proposes two reference services: a volume haulage service and a demand haulage service.<sup>3</sup> The volume haulage service is split between residential and non-residential. The allocation between these two services is made on the basis of the purpose for which 50 percent or more of the gas delivered to that delivery point was used. The services are defined by reference to the type of delivery point they relate to. Delivery points are separately defined as *demand* delivery points or *volume* delivery points. A demand delivery point is defined by reference to the maximum volume of gas delivered. A volume delivery point is defined as a delivery point that is not a demand delivery point.

- Clause 2.4 provides that a negotiated service is a service that is different to a reference service and that any User or Prospective User may request a negotiated service.

## 1.3 Assessment approach

In its access arrangement proposal Envestra is required to specify all reference services.<sup>4</sup> A reference service is a pipeline service that is likely to be sought by a significant part of the market.<sup>5</sup> A pipeline service is a:

- service provided by means of a pipeline, including a:
  - haulage service
  - service facilitating the interconnection of pipelines
- service ancillary to one of these services.<sup>6</sup>

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<sup>1</sup> NGR, r. 48(1)(a).

<sup>2</sup> NGR, r. 48(1)(b).

<sup>3</sup> Envestra, *Access arrangement proposal*, 30 March 2012, p. 5.

<sup>4</sup> NGR, r. 48(1)(c), NGR, r. 101(1).

<sup>5</sup> NGR, r. 101(2).

- A reference service must also be consistent with the NGO.<sup>7</sup>

The AER's approach to assessing these requirements involves first identifying the covered pipeline that will be regulated through the access arrangement. This involves identifying:

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

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

- calculate the reference tariff
- determine the other non-tariff terms and conditions which will form part of the access arrangement.<sup>8</sup>

## 1.4 Reasons for decision

### Identification of the pipeline

The AER assessed whether Envestra appropriately identified the pipeline to which the access arrangement relates.<sup>9</sup> Envestra identified the pipeline in clause 1 of the access arrangement proposal. Clause 1 references a map that is contained in Annexure A. The AER considers that this annexure sufficiently identifies the geographical area covered by Envestra's gas distribution network. Clause 1 also references a website at which a description of Envestra's Victorian gas distribution network can be found.

### Description of the pipeline services

The AER considers that the pipeline services that Envestra proposes to offer are adequately described. Envestra has described the pipeline services being offered as reference services, ancillary reference services and negotiated services in clause 2 of its access arrangement proposal.

### Reference services

The AER does not approve Envestra's proposed reference services. The AER requires Envestra to amend its proposed reference services in accordance with revisions 1 and 2.

The AER is concerned with the qualification that a volume haulage service and a demand haulage service is only available to Network Users that hold a retail authorisation issued under Part 5 of the National Energy Retail Law. The AER considers that these services should not be restricted to network users that hold a retail authorisation. The AER considers

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<sup>6</sup> NGL, s. 2.

<sup>7</sup> NGR, r. 100(a).

<sup>8</sup> Such as queuing requirements, extension and expansion requirements, and capacity trading requirements.

<sup>9</sup> NGR, r. 48(1)(a).

that access to Envestra's network may be sought by parties that do not hold a retail authorisation. Envestra's proposed definition would exclude these parties from receiving reference services.

The AER does not consider that it is consistent with the NGO and r. 48(1)(c) of the NGR to limit the service offered to network users who hold a retail authorisation. The Purpose of r. 48(1)(c) is to specify the reference service, not who the service will be available to. The proposed services should be available to all access seekers. The AER considers that the focus of r. 101(2) is on whether a significant part of the market is likely to seek the service, not the category of person the service will be made available to. Accordingly, the AER does not consider that the reference services should contain the proposed qualification.

Further, the National Energy Retail Law (NERL) is part of the NECF reform package and has not been adopted in Victoria yet. Accordingly, until NECF is adopted, it is not possible for a party to hold a retail authorisation under Part 5 of the NERL.

The AER requires the qualification that 'the Demand Haulage Service and Volume Haulage Service (as applicable) is only available to Users who hold a retail authorisation issued under Part 5 of the National Energy Retail Law' be removed from the definition of a Demand Haulage Service and a Volume Haulage Service.

The AER considers that consistency with the NGO requires a mechanism for the re-assessment or re-allocation of the classification of a delivery point. As clause 2.2.3 is drafted, Envestra is provided with a broad discretion. The AER considers that this discretion is not in the long term interests of consumers with respect to price, an aspect of the NGO. The AER considers that this clause should be amended to provide for a network user to request a re-classification of a delivery point and to specify when the re-classification commences from.

The AER's draft decision is based on the current definitions of a reference service and rebateable service. These definitions are currently the subject of a proposed rule change.<sup>10</sup> The AEMC is presently considering whether any rule change is to take effect for the purposes of the review of the Victorian gas access arrangements for 2013-17.<sup>11</sup> In the event that the AEMC determines in its 1 November 2012 final rule determination that the rule change is to apply to the current review, Envestra may need to take this into account when revising its proposal if the rule change affects its proposal.

### **Ancillary reference services**

The ancillary reference services proposed by Envestra are consistent with those in the current access arrangement.

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<sup>10</sup> On 5 August 2011 the AER submitted a rule change proposal to amend the definition of a reference service and rebateable service in the NGR. The AEMC released its draft rule determination in March 2012. On 27 July 2012, the AEMC extended the time for the making of its final rule determination to 1 November 2012.

<sup>11</sup> On 13 September 2012, the AEMC released a Consultation Paper on the rule change which specifically invites comments on "the operation and application of the final rule to access arrangement reviews already in progress" and the need for "transitional arrangements if the final rule was to apply to access arrangements that are currently being assessed by the AER" (pg 26). See: <http://www.aemc.gov.au/gas/rule-changes/open/reference-service-and-rebateable-service-definitions.html>



The AER considers that the proposed ancillary reference services are likely to be sought by a significant part of the market. It is possible that there are other services that may also be sought by a significant part of the market. However, submissions received by the AER did not address whether there are any services provided by Envestra that are not included as ancillary reference services, but are services that are likely to be sought by a significant part of the market. As a result, there is insufficient evidence before the AER to find that any such services are ancillary reference services.

The AER received submissions from AGL and Origin on ancillary reference services.<sup>12</sup> Concerns in the submissions were general in nature. The submissions did not identify any specific services not currently provided as ancillary reference services which the submitting party considered should be included as ancillary reference services

AGL's submission stated that there did not appear to be any logical reason why some services are included in the definition of ancillary reference services, while others are excluded. AGL included meter and gas installation testing as an example of what it considers is the inconsistent approach taken by the three distribution businesses. AGL did not state whether it believes meter and gas installation tests are accessed by a significant part of the market, and whether these tests should be included in the definition of ancillary reference services.

AGL stated that its preference is to include services that can only be performed by the monopolistic service providers in the definition of ancillary reference services.<sup>13</sup>

The AER notes AGL's preference. However, AGL does not provide a list of specific ancillary services that it believes are likely to be sought by a significant part of the market and should therefore be included as ancillary reference services.

Origin also submitted that the definition of ancillary and excluded (negotiated) services is not consistent across the three distribution businesses. Origin proposes that the definitions be made consistent. Origin submits that all monopoly services other than standard haulage services should be defined as ancillary.<sup>14</sup> However, Origin's submission does not specify exactly what services it believes are likely to be sought by a significant part of the market.

### 1.4.1 Non reference services

Non reference services (negotiated or excluded services) are outside the scope of an access arrangement. Therefore, the AER's decision in respect of Envestra's access arrangement proposal does not extend to such services.

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<sup>12</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment A; Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 3.

<sup>13</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment A.

<sup>14</sup> Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 3.

Envestra's proposal defines negotiated services as a network service that is not a reference service.<sup>15</sup> Envestra provides a process for negotiating negotiated services.<sup>16</sup> No specific negotiated services are listed by Envestra.

An access arrangement is required to contain pipeline services that are reference services.<sup>17</sup> If a service is unlikely to be sought by a significant part of the market, it will not be a reference service— it will be a negotiated or excluded service.

AGL submitted that excluded or negotiated services charges are becoming less transparent and more arbitrary. It considers that the number of disputes between service providers and retailers about negotiated services has increased in recent years. AGL submitted that after it questioned the veracity and reasonableness of certain negotiated service charges with one service provider, the service provider threatened to withdraw its services unless AGL signed an excluded services agreement.

AGL submitted that service providers have little incentive to perform distribution services in a timely manner (as they exclude their liability). Further, since third parties do not provide some of those services, AGL claims that retailers have no option but to accept the service provider's quoted negotiated service charges. AGL submitted that negotiated services should therefore be listed and their corresponding fees included in the access arrangement.<sup>18</sup>

AGL has not provided specific details of any negotiated or excluded services that it considers would be sought or likely to be sought by a substantial part of the market i.e. reference services or ancillary services. In the absence of any specific examples, the AER is unable to assess whether there are any such services.

In reaching its final decision, the AER will consider any submissions it receives in response to this draft decision. This includes submissions about further possible reference services or ancillary reference services. If a party making submissions considers that there are such services, it should give reasons why it considers they are likely to be sought by a significant part of the market.

In the absence of further evidence, the AER will monitor these non reference services, the associated revenues, and demand during the access arrangement period. The AER will reconsider whether such services should be part of the reference service, ancillary reference services, or additional reference services, at the next access arrangement review.

## 1.5 Revisions

**Revision 1:** Amend clause 2.2.1 of the access arrangement proposal as follows:

Delete the final paragraph which reads:

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<sup>15</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 2.4.

<sup>16</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 6.2.

<sup>17</sup> NGR, rr. 48(1)(c) and. 101(2); NGL, s. 2.

<sup>18</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

The Volume Haulage Service is only available to Users who hold a retail authorisation issued under Part 5 of the National Energy Retail Law.

**Revision 2:** Amend clause 2.2.2 of the access arrangement proposal as follows:

Delete the final paragraph which reads:

The Demand Haulage Service is only available to Users who hold a retail authorisation issued under Part 5 of the National Energy Retail Law.

**Revision 3:** Amend clause 2.2.3 of the access arrangement proposal as follows:

Delete the final paragraph and insert the following

A classified DP will retain its classification for the purposes of this Access Arrangement (and for the purposes of each Agreement) until such time as it is re-classified by Envestra. The Reference Tariff applicable in respect of the DP will be determined from time to time on the basis of the classification of the DP.

If either the Network User or the Shared Customer requests the reclassification of a DP, Envestra must within 10 business days consider whether the DP should be re-classified, taking into account (a) and (b). Where a DP is re-classified, Envestra must determine the applicable Reference Tariff

**Revision 4:** Amend clause 6.4 of the access arrangement proposal as follows:

Delete the following phrase:

In addition, if a User, or Prospective User, wishes to obtain the Volume Haulage Service or the Demand Haulage Service then the User or Prospective User must hold a retail authorisation issued under Part 5 of the National Energy Retail Law.

## 2 Capital base

The capital base roll forward accounts for the value of Envestra'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 Envestra's opening capital bases as at 1 January 2013 for the 2013–17 access arrangement period. The AER is also required to make a decision on Envestra's projected capital base for the 2013–17 access arrangement period. This attachment presents the AER's draft decision on these matters.

### 2.1 Draft decision

The AER does not approve Envestra's proposed opening capital bases as at 1 January 2013 of:

- Envestra Victoria—\$1116.3 million (\$nominal)
- Envestra Albury—\$35.2 million (\$nominal).

This is because the AER considers that some of Envestra's inputs into the capital base roll forward model (RFM) do not comply with the NGR.<sup>19</sup> These include:

- Envestra's proposed indexation of the capital base
- Envestra's revised estimate for capex in 2012
- minor amendments to ensure consistency with historical regulatory accounts.

After adjusting these inputs, the AER has determined opening capital bases as at 1 January 2013 of:

- Envestra Victoria—\$1109.7 million (\$nominal)
- Envestra Albury—\$34.6 million (\$nominal).

Table 2.1 and Table 2.2 summarise the AER's draft decision on the roll forward of Envestra's capital base during the 2008–12 access arrangement period.

**Table 2.1 AER's draft decision on capital base roll forward for Envestra Victoria during the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012
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<sup>19</sup> NGR, r. 77(2).

Opening capital base	984.5	1005.9	1014.4	1030.0	1059.9
Net capex	55.5	46.2	56.8	73.7	95.6 <sup>a</sup>
Less: depreciation	34.1	37.8	41.1	43.8	45.8
Closing capital base	1005.9	1014.4	1030.0	1059.9	1109.7
Opening capital base at 1 January 2013					1109.7

Source: AER analysis.

(a) The AER has approved 2012 capex values equal to the ESC's benchmark capex, adjusted for actual growth. This is consistent with the ESC's capex incentive scheme and is discussed in section 2.4.2.

**Table 2.2 AER's draft decision on capital base roll forward for Envestra Albury during the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012
Opening capital base	35.3	35.6	35.6	35.6	35.2
Net capex	1.5	1.3	1.3	1.1	0.8
Less: depreciation	1.2	1.3	1.3	1.4	1.5
Closing capital base	35.6	35.6	35.6	35.2	34.6
Opening capital base at 1 January 2013					34.6

Source: AER analysis.

The AER approves some aspects of Envestra's proposal to determine the opening capital base as at 1 January 2013. These include:

- the opening capital base at 1 January 2007, which is consistent with the value adopted in the ESC's further final decision for the 2008–12 gas access arrangement review
- the use of forecast depreciation as set by the ESC.

Based on the approved opening capital bases and the AER's draft decisions on forecast capex, depreciation, and inflation, the AER has determined projected closing capital bases as at 31 December 2017 of:

- Envestra Victoria—\$1375.1 million (\$nominal)
- Envestra Albury—\$37.1 million (\$nominal).

Table 2.3 and Table 2.4 set out the projected roll forward of the capital bases during the 2013–17 access arrangement period.

**Table 2.3 AER's draft decision on projected capital base roll forward for Envestra Victoria during the 2013–17 access arrangement period (\$million, nominal)**

	2013	2014	2015	2016	2017
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Opening capital base	1109.7	1177.6	1247.7	1295.1	1346.6
Net capex	79.9	84.5	65.6	72.5	51.7
Less: depreciation	39.8	43.8	49.4	53.3	57.0
Indexation	27.7	29.4	31.2	32.4	33.7
Closing capital base	1177.6	1247.7	1295.1	1346.6	1375.1

Source: AER analysis.

**Table 2.4 AER's draft decision on projected capital base roll forward for Envestra Albury during the 2013–17 access arrangement period (\$million, nominal)**

	2013	2014	2015	2016	2017
Opening capital base	34.6	35.1	35.8	36.2	36.4
Net capex	1.1	1.3	1.2	1.1	1.7
Less: depreciation	1.4	1.5	1.7	1.8	1.9
Indexation	0.9	0.9	0.9	0.9	0.9
Closing capital base	35.1	35.8	36.2	36.4	37.1

Source: AER analysis.

## 2.2 Envestra's proposal

Envestra proposed adopting opening capital bases as at 1 January 2008 of:

- Envestra Victoria—\$822.1 million (\$2006).<sup>20</sup> This included an increase of \$15.4 million from the previous access arrangement review. The increase was included to reflect the difference between the ESC's approved capex for 2007 and actual capex for 2007.
- Envestra Albury—\$29.4 million (\$2006).<sup>21</sup> This included a reduction of \$0.1 million from the previous access arrangement review. The increase was included to reflect the difference between the ESC's approved capex for 2007 and actual capex for 2007.

<sup>20</sup> Envestra, *Victorian Access arrangement information*, March 2012, p. 141.

<sup>21</sup> Envestra, *Albury Access arrangement information*, March 2012, p. 124.

Based on the opening capital bases as at 1 January 2008 and the roll forward of the capital bases in the 2008–12 access arrangement period, Envestra proposed opening capital bases as at 1 January 2013 of:

- Envestra Victoria—\$1116.3 million (\$nominal), as shown in Table 2.5.
- Envestra Albury—\$35.2 million (\$nominal), as shown in Table 2.6.

**Table 2.5 Envestra's proposed capital base roll forward for Victoria during the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012
Opening capital base	984.5	1005.9	1014.4	1030.0	1059.9
Net capex <sup>a</sup>	55.5	46.2	56.8	73.7	95.3
Less: depreciation	34.1	37.8	41.1	43.8	45.8
Closing capital base	1005.9	1014.4	1030.0	1059.9	1109.4
Six months CPI adjustment					6.9
Opening capital base at 1 January 2013					1116.3

Source: Envestra, *Roll forward model*, March 2012.

(a) Envestra's proposed net capex amounts are equal to gross capex less customer contributions.

**Table 2.6 Envestra's proposed capital base roll forward for Albury during the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012
Opening capital base	35.2	35.5	35.6	35.5	35.1
Net capex	1.5	1.3	1.3	1.1	1.4
Less: depreciation	1.2	1.3	1.3	1.4	1.5
Closing capital base	35.5	35.6	35.5	35.1	35.0
Six months CPI adjustment					0.2
Opening capital base at 1 January 2013					35.2

Source: Envestra, *Roll forward model*, March 2012.

## 2.2.2 Capital expenditure in the 2008–12 access arrangement period

Envestra indicated it has incurred capex in the 2008–12 access arrangement period of:

- Envestra Victoria—\$311.8 million (\$nominal)<sup>22</sup>
- Envestra Albury—\$6.3 million (\$nominal)<sup>23</sup>.

These amounts included actual capex from 2007–11, and Envestra's 'best estimate' of actual capex for 2012.

Envestra proposed that these amounts conform to the NGR requirements and should be included in the opening capital bases for the 2013–17 access arrangement period as set out in Table 2.7 and Table 2.8. The capex proposed under each category driver is discussed in more detail in attachment 3.

<sup>22</sup> Envestra, *Victorian Access arrangement information*, March 2012, p. 139.

<sup>23</sup> Envestra, *Albury Access arrangement information*, March 2012, p. 123.



**Table 2.7 Envestra's proposed conforming capital expenditure for Victoria during the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012	Total
Mains and services	39.9	31.5	44.1	58.8	75.8	250.1
Meters	10.5	8.4	9.3	9.4	12.5	50.1
Land and buildings	–	–	–	–	–	–
SCADA	0.3	0.1	0.2	0.2	0.2	1.1
Computer equipment	0.2	0.2	0.5	0.2	0.3	1.3
Other assets	4.6	6.0	2.7	5.0	6.5	24.9
Total net capex	55.5	46.2	56.8	73.7	95.3	327.5

Source: Envestra Victoria, *Roll forward model*, March 2012.

**Table 2.8 Envestra's proposed conforming capital expenditure for Albury during the 2008–12 access arrangement period (\$million, 2012)**

	2008	2009	2010	2011	2012	Total
Mains and services	0.7	0.8	0.5	0.7	0.9	3.7
Meters	0.5	0.3	0.6	0.2	0.2	1.8
Land and buildings	–	–	–	–	–	–
SCADA	–	–	–	–	–	–
Computer equipment	–	–	–	–	–	–
Other assets	–	–	–	–	–	–
Total net capex	1.3	1.1	1.1	0.9	1.1	5.5

Source: Envestra Albury, *Roll forward model*, March 2012.

### 2.2.3 Adjustment to the capital base for inflation in the 2008–12 access arrangement period

Envestra proposed to roll forward its capital bases in real 2006 dollar terms, and then apply a CPI adjustment to determine the opening capital bases as at 1 January 2013. Specifically, Envestra proposed to apply 6.5 years of actual inflation to index the opening capital base from real 2006 dollars to real 2012 dollars for insertion into the post-tax revenue model (PTRM). It has in determined the 6.5 years of actual inflation as:

- six years using annual changes in September–September CPI<sup>24</sup>
- an additional half year using the change between September 2011 CPI and March 2012 CPI to arrive at an opening capital base as at 1 January 2013.<sup>25</sup>

<sup>24</sup> Envestra, *Victoria access arrangement information*, March 2012, p. 140; Envestra, *Albury access arrangement information*, March 2012, p. 124.

Envestra proposed that applying an additional six months of CPI to the closing capital bases for 2012 was necessary to convert the closing asset values to be consistent with the AER's nominal framework.

#### 2.2.4 Depreciation in the 2008–12 access arrangement period

Envestra proposed to depreciate its capital bases in the roll forward for the 2008–12 access arrangement using forecast straight-line depreciation, as approved by the ESC in its 2008–12 gas access arrangement review.<sup>26</sup>

#### 2.2.5 Projected capital base over the 2013–17 access arrangement period

Envestra proposed projected closing capital bases as at 31 December 2017 of:

- Envestra Victoria—\$1886.1 million (\$nominal)<sup>27</sup>
- Envestra Albury—\$40.9 million (\$nominal).<sup>28</sup>

The projected roll forward of the capital bases during the 2013–17 access arrangement period is shown in Table 2.9 and Table 2.10. Envestra has included in its capital base projection:

- forecast inflation of 2.50 per cent per annum<sup>29</sup>
- forecast straight-line depreciation, which is discussed in more detail in attachment 5. However, Envestra proposed to use actual depreciation to determine the roll forward of the opening capital bases at the next access arrangement review for the 2018–22 access arrangement period.<sup>30</sup>

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<sup>25</sup> Envestra, *Victoria access arrangement information*, March 2012, p. 141; Envestra, *Albury access arrangement information*, March 2012, p. 125.

<sup>26</sup> Envestra, *Victoria access arrangement information*, March 2012, p. 140; Envestra, *Albury access arrangement information*, March 2012, p. 124.

<sup>27</sup> Envestra, *Victoria access arrangement information*, March 2012, p. 144.

<sup>28</sup> Envestra, *Albury access arrangement information*, March 2012, p. 128.

<sup>29</sup> Envestra, *Victoria access arrangement information*, March 2012, p. 144; Envestra, *Albury access arrangement information*, March 2012, p. 128.

<sup>30</sup> Envestra, *Victoria access arrangement information*, March 2012, p. 144; Envestra, *Albury access arrangement information*, March 2012, p. 128.

**Table 2.9 Envestra's proposed projected capital base roll forward for Victoria during the access arrangement period (\$million, nominal)**

	2013	2014	2015	2016	2017
Opening capital base	1116.3	1275.1	1463.2	1606.3	1757.3
Net capex	172.4	205.0	164.1	174.8	155.3
Less: depreciation	41.5	48.8	57.5	64.0	70.4
Indexation	27.9	31.9	36.6	40.2	43.9
Closing capital base	1275.1	1463.2	1606.3	1757.3	1886.1

Source: Envestra, *Victoria access arrangement information*, March 2012, p. 144.

**Table 2.10 Envestra's proposed projected capital base roll forward for Albury during the access arrangement period (\$million, nominal)**

	2013	2014	2015	2016	2017
Opening capital base	35.2	36.6	38.0	39.0	39.6
Net capex	1.8	2.0	1.7	1.4	2.3
Less: depreciation	1.4	1.5	1.7	1.8	1.9
Indexation	0.9	0.9	0.9	1.0	1.0
Closing capital base	36.6	38.0	39.0	39.6	40.9

Source: Envestra, *Albury access arrangement information*, March 2012, p. 128.

## 2.3 Assessment approach

The AER is required to consider the transitional provisions of the NGR in relation to the assessment of Envestra's proposals. This is because Envestra's access arrangements for the 2008–12 access arrangement period were ongoing when the new access regime came into force.<sup>31</sup> Rule 79 of the NGR provides that actual or forecast capex (new facilities investment) approved by a Relevant Regulator under section 8.21 of the National Gas Code is taken to be a decision by the AER that the capex conforms with the new capex criteria.<sup>32</sup>

<sup>31</sup> NGR, Schedule 1, clause 1(1)(a).

<sup>32</sup> NGR, Schedule 1, clause 3(2)(a).

The AER's approach to assessing Envestra's projected capital bases is consistent with that in previous gas decisions reviewed under the NGR.<sup>33</sup> In accordance with rr. 77(2) and 78 of the NGR, the AER applied three steps to calculate the projected capital base:

- First, the AER confirms the value of the opening capital base for the first year of the 2008–12 access arrangement period (in this case, 1 January 2008). Typically, this requires the AER to make an adjustment to account for any difference between actual and estimated capex in the final year of the previous access arrangement period (in this case, 2007). This adjustment is also subject to any changes made in the AER's assessment of conforming capex for that year.
- Second, the opening capital base as at 1 January 2008 is rolled forward to determine the closing capital base as at 31 December 2012. This closing capital base is also used as the value of the opening capital base for the access arrangement period as at 1 January 2013. This involves:<sup>34</sup>
  - adding conforming actual capex for each year—this requires assessing the capex and determining that it is consistent with the provisions of the 2008–12 access arrangement and historical regulatory accounts
  - removing forecast depreciation for each year based on the approach approved for the 2008–12 access arrangement
  - removing any capital contributions during the 2008–12 access arrangement period
  - adding any speculative capex or redundant assets that were reused during the 2008–12 access arrangement period
  - removing any redundant assets and disposals during the 2008–12 access arrangement period
  - indexing the roll forward each year for actual inflation.
- Third, the capital base is projected over the 2013–17 access arrangement period by rolling forward the opening capital base as at 1 January 2013 to 31 December 2017. This involves taking the opening capital base:<sup>35</sup>
  - adding forecast conforming capex for each year
  - removing forecast depreciation for each year
  - removing the forecast value of assets to be disposed of during the 2013–17 access arrangement period

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<sup>33</sup> AER, *Final decision: Jemena access arrangement*, June 2010; AER, *Final decision: Country Energy Gas access arrangement*, March 2010; AER, *Final decision: ActewAGL access arrangement*, March 2010; AER, *Final decision: Envestra arrangement proposal Qld*, June 2011; AER, *Final decision: Envestra Ltd access arrangement proposal for the SA gas network 2011–2016*, June 2011 (AER, *Final decision: Envestra access arrangement SA*, June 2011); AER, *Final decision: APT Allgas access arrangement*, June 2011; AER, *Final decision: NT Gas access arrangement*, July 2011. AER, *Final decision: Roma to Brisbane Pipeline 2012–13 to 2016–17*, April 2012.

<sup>34</sup> NGR, r. 77(2).

<sup>35</sup> NGR, r. 78.

- indexing the capital base each year for forecast inflation.

## 2.4 Reasons for draft decision

The AER considers Envestra's proposed inputs into the capital base roll forward overstate the value of the opening capital bases at 1 January 2013 and consequently the projected closing capital bases as at 31 December 2017. The AER considers these inputs are not consistent with r. 77(2) and r. 73 of the NGR respectively. In particular, the AER considers:

- Envestra's proposed inflation of the capital base will result in six months of unnecessary additional CPI adjustment. This will overstate the value of the opening capital bases as at 1 January 2013.
- The ESC's capex incentive scheme should apply in full to 2012 capex, but Envestra has not applied the ESC's approach.
- Envestra's initial conforming net capex amounts were for some years inconsistent with its audited historical regulatory accounts.<sup>36</sup>
- Envestra's proposed forecast capex and depreciation inputs used to roll forward the projected capital bases for the 2013–17 access arrangement period need to be amended. The AER considers that these proposed inputs do not meet the requirements of the NGR (see attachments 3 and 5 respectively).

The AER has also made other minor amendments to the roll forward of Envestra's capital bases, which are discussed in the following sections. These amendments are individually necessary for consistency with relevant NGR requirements. The AER's detailed assessment follows.

### 2.4.1 Opening capital base in the 2008–12 access arrangement period

The AER approves Envestra's proposed opening capital bases as at 1 January 2008 of:

- Envestra Victoria—\$984.5 million (\$2012)
- Envestra Albury—\$35.2 million (\$2012).

These amounts include the AER's adjustment to the ESC's approved opening capital bases for the difference between forecast and actual capex for 2007. The AER approves Envestra's proposed adjustments to the opening capital bases to reflect actual capex for 2007. The AER considers its draft decision therefore meets the requirements under the NGR.<sup>37</sup>

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<sup>36</sup> The AER identified these discrepancies with Envestra, who provided a revised RFM to reconcile the values. Envestra, *Response to AER information request 10 regarding the reconciliation of 2007-2011 proposal capex with Envestra's audited regulatory accounts*, 19 June 2012.

<sup>37</sup> NGR, r. 77(2)(a).

## 2.4.2 Conforming capital expenditure in the 2008–12 access arrangement period

The AER's assessment of conforming capex is set out in attachment 3. In determining the opening capital bases as at 1 January 2013, the AER assessed whether Envestra's proposed capex amounts for the 2008–12 access arrangement are properly accounted for in the capital base roll forward.

The AER accepts that Envestra's proposed capex for the 2008–12 access arrangement period is properly included in the capital base roll forward and is consistent with the requirements of the NGR,<sup>38</sup> except for the following:<sup>39</sup>

- 2012 capex—the AER has replaced Envestra's estimated 2012 capex with benchmark (forecast) 2012 capex adjusted for actual growth. This is consistent with the ESC's capex incentive scheme for the 2008–12 access arrangement period<sup>40</sup>
- minor reconciliation differences between Envestra's proposal and Envestra's audited regulatory accounts.

In total, the AER's amendments to the capex amounts for the 2008–12 access arrangement period result in:

- Envestra Victoria—a reduction of \$55.2 million or 17 per cent of Envestra's proposal
- Envestra Albury—an increase of \$0.5 million or 10 per cent of Envestra's proposal.

The AER's draft decision on conforming net capex amounts as used in the capital base roll forward are set out in Table 2.11 and Table 2.12.

**Table 2.11 AER's approved conforming net capex for Envestra Victoria for 2007 and the 2008–12 access arrangement period (\$million, 2012)**

Asset class	2007	2008	2009	2010	2011	2012	Total
Mains and services	41.5	40.0	31.5	44.1	58.8	81.3	255.7
Meters	9.0	10.5	8.4	9.3	9.4	9.6	47.2
Land and building	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SCADA	0.0	0.3	0.1	0.2	0.2	0.4	1.2
Computer equipment	0.2	0.2	0.2	0.5	0.2	0.4	1.4
Other assets	4.8	4.6	6.0	2.7	5.0	3.9	22.3
Total net capex	55.5	55.5	46.2	56.8	73.7	95.6	327.8

Source: AER analysis.

Note: Totals may not add due to rounding.

<sup>38</sup> NGR r. 77(2)(b).

<sup>39</sup> The AER's detailed analysis of conforming capex by project and driver is in attachment X.X

<sup>40</sup> Essential Services Commission, *Gas access arrangement review 2008–12, Final decision*, March 2008, pp. 431–432.

**Table 2.12 AER's approved conforming net capex for Envestra Albury for 2007 and the 2008–12 access arrangement period (\$million, 2012)**

Asset class	2007	2008	2009	2010	2011	2012	Total
Mains and services	0.7	0.9	0.9	0.6	0.9	0.5	4.5
Meters	0.4	0.6	0.4	0.7	0.2	0.3	2.6
Land and building	–	–	–	–	–	–	–
SCADA	–	–	–	–	–	–	–
Computer equipment	–	–	–	–	–	–	–
Other assets	–	–	–	–	–	–	–
Total net capex	1.1	1.5	1.3	1.3	1.1	0.8	7.1

Source: AER analysis.

Note: Totals may not add due to rounding.

### Adjustments to 2012 capex

The AER does not approve Envestra's proposed capex estimate for 2012 because it does not properly reflect increments or decrements arising from the operation of the ESC's capex incentive scheme.<sup>41</sup> In attachment 7 the AER has addressed the application of the ESC's capex incentive scheme from 2008–11. However, the ESC's capex incentive scheme required a distinct approach to the treatment of capex in the final year of an access arrangement period. Specifically, the ESC's approach to dealing with capex in the final year of an access arrangement period as part of its capex incentive scheme requires the following for this access arrangement review:<sup>42</sup>

- The 2012 capex to be included in the opening capital base as at 1 January 2013 should be set as the adjusted benchmark 2012 capex.
- This adjusted benchmark 2012 capex is based on the ESC's approved benchmark 2012 capex at the previous access arrangement review. The benchmark capex is then adjusted for customer growth, meter replacement and low pressure pipeline replacement.

Envestra has instead proposed revised estimates of its actual capex for 2012. This approach changes the power of the capex incentive for 2012 compared to other years in the 2008–12 access arrangement period.

The AER will roll into the capital base Envestra's actual (conforming) capex for 2012 at the next access arrangement review. The AER considers that this approach properly applies the ESC's capex incentive scheme for the full period. This will ensure Envestra fully receives any benefits or penalties for capex that diverges from the benchmark set by the ESC. The AER's adjustments to benchmark 2012 capex are set out in Table 2.13.

<sup>41</sup> NGR Schedule 1, Clause 5(1)(a).

<sup>42</sup> Essential Services Commission, *Gas access arrangement review 2008–12, Final decision*, March 2008, pp. 431–432.

**Table 2.13 AER's approved benchmark capex for Envestra Victoria for 2012 (\$million, 2012)**

Asset class	Allocated ESCV benchmark <sup>a</sup>	Benchmark adjustment	AER approved 2012 capex
Mains and services	80.7	0.8	81.5
Meters	10.2	- 0.7	9.6
Land and building	-	-	-
SCADA	0.4	-	0.4
Computer equipment	0.4	-	0.4
Other assets	3.9	-	3.9
Total	95.6	0.2	95.8

Source: AER analysis.

(a) These values total to the ESC's benchmark capex for 2012 set in the access arrangement review for the 2008-12 access arrangement period.

**Table 2.14 AER's approved benchmark capex for Envestra Albury for 2012 (\$million, 2012)**

Asset class	Allocated ESCV benchmark <sup>a</sup>	Benchmark adjustment	AER approved 2012 capex
Mains and services	0.7	-0.1	0.5
Meters	0.7	-0.4	0.3
Land and building	-	-	-
SCADA	-	-	-
Computer equipment	-	-	-
Other assets	-	-	-
Total	1.4	-0.6	0.8

Source: AER analysis.

(a) These values total to the ESC's benchmark capex for 2012 set in the access arrangement review for the 2008-12 access arrangement period.

The AER's draft decision results in a reduction to Envestra's proposed opening capital bases as at 1 January 2013 of approximately:

- Envestra Victoria \$6.6 million (\$nominal), or 0.5 per cent of Envestra's proposal
- Envestra Albury \$0.6 million (\$nominal), or 2 per cent of Envestra's proposal.

However, this value will be updated for actual 2012 capex at the time of the next access arrangement review. Envestra will only gain or lose the return on capital associated with the difference between the approved benchmark 2012 capex and actual 2012 capex for five years, as discussed below. The following sections explain the operation of the ESC's approach for final year capex in an access arrangement period, and the AER's proposed approach to updating the capital base for actual 2012 capex at the next access arrangement review.



## Operation of the ESC's approach for final year capex

In applying its capex incentive scheme, the ESC took the following steps:<sup>43</sup>

1. At the time of the ESC's access arrangement review, actual capex for the final year (year 5) of an access arrangement period was not yet known. The ESC therefore included in the capital base roll forward an amount equal to the benchmark capex for that year, as estimated at the earlier access arrangement review. To recognise growth in the network, the ESC adjusted this benchmark capex for growth in customers, meter replacement and replacement of low pressure pipelines.
2. At the next access arrangement review, the ESC included actual capex in the capital base roll forward for the final year of the earlier access arrangement period, replacing the adjusted benchmark capex for that year.
3. The ESC made no adjustment for the accumulated return on capital associated with any difference between actual capex and the adjusted benchmark capex.

The final step allowed the service provider to gain or lose the return on capital associated with the difference between actual and the adjusted benchmark capex for five years. This ensured the power of the capex incentive scheme was the same for the final year as for the other years during the access arrangement period.

## AER's approach to updating the capital base for actual capex

The AER does not operate any capex incentive schemes similar to the ESC's. Accordingly, the AER does not typically need to set an adjusted benchmark capex for the final year of an access arrangement period to preserve incentives. Instead, it requires service providers to provide their best forecast of capex for the final year of the access arrangement period. This minimises any difference between forecast and actual capex that needs to be adjusted from the capital base at the next access arrangement review. At the next access arrangement review, the AER will adjust the capital base for:

- the difference between the forecast and actual capex for the final year of the earlier access arrangement period (2017)
- the five year accumulated return on capital associated with the difference between the forecast and actual capex for the final year of the earlier access arrangement period (2017).

The AER has decided not to include a capex incentive scheme for the 2013–17 access arrangement period (see attachment 7). Under the NGR, the AER must ensure that revenue calculations for the 2013–2017 access arrangement period properly reflect increments or decrements resulting from the operation of the ESC's capex incentive mechanism.<sup>44</sup> This requires the AER to approve an adjusted benchmark capex for 2012, which will be updated for actual capex at the next access arrangement review. At that time, the AER will not adjust the capital base for the five year accumulated return on capital associated with the difference between the adjusted benchmark and actual capex for 2012. This is contrary to the AER's standard approach, as noted above, but is required to properly reflect increments or

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<sup>43</sup> Essential Services Commission, *Gas access arrangement review 2008–12, Final decision*, March 2008, pp. 431–432.

<sup>44</sup> NGR, Schedule 1, clause 5(1)(a).

decrements resulting from the operation of ESC's capex incentive scheme. Following this, the AER will have completed the application of the ESC's capex incentive scheme.

### Reconciliation with regulatory accounts

The AER has made minor amendments to Envestra's proposed capex during the 2008–12 access arrangement period to correct discrepancies with historical regulatory accounts. The AER queried these discrepancies with Envestra. Envestra confirmed the reconciliation differences and stated that the regulatory accounts were correct.<sup>45</sup> These amendments result in minor reductions to Envestra's opening capital bases as at 1 January 2013, and affect the allocation of disposals and customer contributions between asset classes

### 2.4.3 Indexation of the capital base

The AER does not approve Envestra's total proposed indexation of the capital base because it will over compensate Envestra's for the effects of inflation. The AER has applied six years of inflation to calculations in real 2006 dollar terms to determine the opening capital base as at 1 January 2013.

The AER accepts Envestra's initial application of six years of actual CPI to inflate real 2006 dollar terms to real 2012 dollar terms. However, the AER does not approve Envestra's proposal to adjust the opening capital base at 1 January 2013, valued in real 2006 dollar terms, for a further half year of inflation or six and a half years in total. The AER has therefore adjusted the opening capital base for six years of inflation, or six months less than Envestra's proposal. This indexation of the capital base is consistent with the AER's standard approach. This will result in a reduction to Envestra's proposed opening capital base as at 1 January 2013 of:

- Envestra Victoria—\$7 million (nominal), or 0.6 per cent
- Envestra Albury—\$0.2 million (nominal), or 0.6 per cent.

An approach for indexation of the capital base is necessary to account for the effects of inflation on the real value of an asset at any point in time under the regulatory framework applying to Envestra. Envestra has recognised this by proposing to apply inflation in its capital base roll forward. Under Envestra's fixed principle 4.7(A)(a) as approved by the ESC, the opening capital base at the start of the fourth access arrangement period (1 January 2013) must be adjusted to take account of 'changes in CPI since 1 January 2003'.<sup>46</sup> However, it does not specify how this CPI should be calculated. The NGR requires that the AER must take this fixed principle into account.<sup>47</sup> The AER accepts that it is necessary to index the capital base for inflation, and considers that only one year of inflation should be consistently applied for each regulatory year.

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<sup>45</sup> Envestra, *Response to AER information request 10 the reconciliation of 2007-2011 proposal capex with Envestra's audited regulatory accounts*, 20 June 2012.

<sup>46</sup> Envestra, *Victorian distribution system access arrangement part B—Reference tariff policy and reference tariffs*, June 2008, p. 12; Envestra, *Albury distribution system access arrangement part B—Reference tariff policy and reference tariffs*, June 2008, p. 12;

<sup>47</sup> NGR, Schedule 1, clause 5(b).

Typically, the AER presents its revenue modelling in nominal dollar terms, which is equivalent to real dollar terms for each year. This requires one year of CPI to be applied to the capital base values each year. In contrast, the ESC applied all of its capital base roll forward modelling in real dollar terms for a fixed year, such as real 2006 dollar terms. The ESC then converted this capital base value using a single CPI adjustment at the end of the access arrangement period. Provided both approaches use the same CPI adjustments and the same capital base inputs, this would result in equivalent values.

All data in the ESC's decision for the 2008–12 access arrangement period were expressed in real 2006 dollar terms. The AER considers that the ESC's further final decision models for the 2008–12 access arrangement period indicate that opex and capex expenditures are assumed to be incurred on average in the middle of the year. The AER considers that the '1 July 2006' label in the ESC's model refers to its assumed timing of opex and capex. However, the closing capital base for each year is valued at the end of that regulatory year.

The AER has reached this conclusion because:

- over the life of the assets in the capital base, the service provider will not be over or under compensated for inflation when both tariffs and the capital base are consistently escalated by the same method for determining the annual change in CPI
- by applying six months of additional inflation, Envestra's proposal creates an inconsistency between inflation applied to tariffs and inflation applied to the capital base
- the ESC's cash flow timing assumptions suggest the closing capital base was valued at the end of the regulatory year.

### **Consistency with the annual tariff variation mechanism**

The AER has examined the ESC's models for the 2008–12 access arrangement period. These models confirmed that consistent with the tariff variation mechanism, costs (including the capital base roll forward) prior to 2007 were escalated by annual actual CPI. Annual inflation adjustment to tariffs was based on the annual change in the September–September CPI. Specifically, the inflation adjustment used the annual change in price levels (as represented by the CPI) ending in September before the commencement of the regulatory year in January. For example, the inflation adjustment to the capital base from regulatory year 2006 to regulatory year 2007 would be calculated as the change in CPI from September 2005 to September 2006. The ESC used a CPI that did not perfectly overlap with the regulatory year because of the timing with making the annual tariff variation before the regulatory year has ended. Therefore, the September–September CPI used by the ESC is a proxy of annual price change in a regulatory year for tariff setting purposes. This particular CPI is used to approximate the annual increases in the economy's price level over the year that occurred.

The period over which the annual rate of inflation is approximated is not a reference to the price level of expenditures at a particular point in time. Instead it is an approximation of inflation for a regulatory year based on the change in CPI over an annual period three months prior to the regulatory year. The AER also uses the September–September CPI for calendar year regulatory control periods because it is the most recent index available at the time when

tariffs are approved.<sup>48</sup> The AER applies this CPI approach in both tariff variation mechanisms and in the roll forward model.

The AER's capital base roll forward employs cash flow timing assumptions that are broadly the same as the ESC's approach. These are:

- the opening capital base is at the start of the regulatory year
- the closing capital base is at end of the regulatory year
- capex is incurred on average in the middle of the regulatory year.<sup>49</sup>

Accordingly, the AER and the ESC approaches result in consistent treatment of CPI between asset values and the CPI-X tariff variation mechanism. The AER considers that by applying six months of additional inflation, Envestra's proposal creates an inconsistency between inflation as applied to the tariffs and inflation as applied to the capital base.

### Analysis of the ESC's cash flow timing assumptions

The ESC addressed proposals for working capital in its decision for the 2003–07 access arrangement. To assess the proposals, the ESC defined a revenue benchmark to ensure that the net present value (NPV) of revenue would equate to the NPV of costs (the NPV=0 condition). The ESC's analysis was not directly related to inflation, but it demonstrated aspects of the ESC's assumptions about the timing of cash flows. From these assumptions, the AER can draw inferences about the intended application of inflation. The ESC set out its revenue benchmark as shown in Figure 2.1.

**Figure 2.1 Analysis of the ESC's cash flow timing assumptions**

$$-RAB_{Open} + \sum_{i=1}^{365} \frac{R_i - O \& M_i - Capex_i}{(1+r)^{i/365}} + \frac{RAB_{Close}}{(1+r)} = 0$$

where  $O \& M_i$  is the operating and maintenance expenditure on day  $i$ ,  $Capex_i$  is the capital expenditure on day  $i$ ,  $RAB_{Open}$  and  $RAB_{Close}$  are the regulatory asset values at the start and finish of the year, and  $r$  is the (effective annual) discount rate.<sup>837</sup>

Source: Essential Services Commission, *Review of gas access arrangements, Final decision*, October 2002, p. 429.

This formula is consistent with the ESC's cash flow timing assumptions.<sup>50</sup> It implies that the building block expenditures are incurred at various points throughout the year, with costs on a particular day (day  $i$ ) identified by the subscript 'i'. To make sure that the NPV=0 condition is met, revenues were set precisely equal to costs. To achieve this, all costs were therefore

<sup>48</sup> AER, *Final decision, Victorian electricity distribution network service providers Distribution determination 2011–2015*, October 2010, p. 455.

<sup>49</sup> Essential Services Commission, *Review of gas access arrangements, Final decision*, October 2002, pp. 425–426.

<sup>50</sup> Essential Services Commission, *Review of gas access arrangements, Final decision*, October 2002, pp. 425–426.

discounted using the change in price levels from the start of the year to the day on which the expenditures are incurred. Further, all revenues (and prices) were discounted by the change in price levels. For example, expenditures on the 100th day of an access arrangement period would need to be discounted by exactly the inflation in prices from day 1 of the period to day 100.

In practice it is not feasible to measure changes in the price level for every day of a year, or to forecast or measure precisely on which days of an access arrangement period the expenditures are incurred. It is also not practically possible to update tariffs (and therefore revenues) on a daily basis. As a result, it is necessary to use a simplifying assumption, such as an assumption that operating or capital expenditures are incurred evenly throughout the year. Under this assumption, these expenditures are adjusted for inflation on an annual basis.

Similarly, the ESC considered the appropriate discount rate between the opening capital base and the closing capital base is exactly one full year of change in the price level, approximated by the CPI. The AER will use the same annual CPI method as the ESC used to update tariff levels for the purposes of rolling forward the capital base. Therefore, the AER considers it is incorrect to add an additional six months of inflation to convert the closing capital base for 2012 into the opening capital base for 2013. This would create an inconsistency between how tariffs have been updated and the way the capital base is updated in the roll forward process.

#### 2.4.4 Depreciation used in the 2008–12 access arrangement period

The AER approves Envestra's proposal to roll forward the capital bases to 1 January 2013 using forecast depreciation (straight-line method) as approved in the previous access arrangement review for the 2008–12 access arrangement period. The use of forecast depreciation to determine the opening capital bases is consistent with the AER's standard approach to depreciation for gas distribution service providers.<sup>51</sup>

The AER must subtract from the capital base depreciation calculated in accordance with the relevant access arrangement as required under the NGR.<sup>52</sup> In its previous access arrangement review, the ESC calculated a benchmark depreciation allowance for Envestra, based on its forecast capex allowance over the 2008–12 access arrangement period.<sup>53</sup> The ESC had also previously used forecast depreciation to determine the opening capital base. The AER therefore accepts that Envestra's proposed approach is consistent with the relevant provisions in the 2008–12 access arrangement and therefore with the NGR.<sup>54</sup>

#### 2.4.5 Projected capital base during the 2013–17 access arrangement period

The AER's forecast of Envestra's projected capital bases at 31 December 2017 is:

- Envestra Victoria—\$1375.1 million (\$nominal), a reduction of \$511.0 million or 27 per cent from Envestra's proposal

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<sup>51</sup> For example, AER, *Final decision: Jemena access arrangement proposal*, June 2010, p. 92; AER, *Final decision: APT Allgas access arrangement*, June 2011, p. 13; AER, *Final decision: Envestra access arrangement Qld*, June 2011, p. 25; AER, *Final decision: Envestra access arrangement SA*, June 2011, p. 28.

<sup>52</sup> NGR, r. 77(2)(d).

<sup>53</sup> ESC, *Gas access arrangement review 2008–12, Final decision*, March 2008, p. 439.

<sup>54</sup> NGR, r. 77(2)(d).

- Envestra Albury—\$37.1 million (\$nominal), a reduction of \$4 million or 9 per cent from Envestra's proposal.

This is because of the AER's draft decision having amended the inputs to the determination of the projected capital base. The AER has amended the inputs as follows:

- Reduced Envestra's proposed opening capital bases as at 1 January 2013 to reflect the changes required in this attachment.
- Reduced Envestra's proposed forecast capex allowances by:<sup>55</sup>
  - Envestra Victoria—\$517 million (nominal) or 59 per cent
  - Envestra Albury—\$3 million or 32 per cent.
- Amended Envestra's proposed forecast depreciation allowances by:<sup>56</sup>
  - Envestra Victoria—\$13 million reduction or 13per cent
  - Envestra Albury—\$0.2 million increase or 5 per cent.

The capital bases at the commencement of the 2018–22 access arrangement period will be subject to adjustments consistent with the NGR.<sup>57</sup> These adjustments are not limited to, but include:

- the difference between actual and forecast capex for 2012 (the final year of the 2008–12 access arrangement period)
- actual inflation and approved depreciation over the 2013–17 access arrangement period.

### **Depreciation to be used to roll forward the capital base from 2013–17 at the next access arrangement review**

The AER does not approve Envestra's proposal to use actual depreciation rather than forecast depreciation to establish its opening capital bases as at 1 January 2018.<sup>58</sup> The AER considers the use of forecast depreciation to roll forward the capital base from 2013–17 at the next access arrangement review is a preferable alternative that complies with the requirements of the national gas objective<sup>59</sup> and the revenue and pricing principles.<sup>60</sup> In particular, the AER considers the forecast depreciation approach:

- is better suited to the dynamics of the gas distribution sector because of the inherent flexibility for service providers to defer maintenance and replacement expenditure
- will therefore limit Envestra's incentive to defer capex that the AER has approved as prudent and efficient

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<sup>55</sup> The AER's detailed assessment of the proposed forecast capex allowances is set out in attachment 3.

<sup>56</sup> The AER's detailed assessment of the proposed forecast depreciation allowances is set out in attachment 5.

<sup>57</sup> NGR, r. 77(2).

<sup>58</sup> Envestra, *Access arrangement information*, March 2012, pp. 166–167.

<sup>59</sup> NGL, s. 23.

<sup>60</sup> NGL, s. 24.

- is consistent with the ESC's approach for determining Envestra's opening capital base, and with the AER's approach for all other gas distribution networks it regulates. This includes Envestra's Queensland and South Australian gas distribution networks<sup>61</sup>
- is also consistent with the approach outlined in the AER's Access Arrangement Guideline.<sup>62</sup>
- The AER considers the forecast depreciation approach will therefore promote more efficient investment in Envestra's networks in the long term interests of natural gas users.<sup>63</sup> It will do so by limiting Envestra's incentive to defer efficient pipeline investment that has been approved in its building block revenue allowance.

### **Dynamics of the gas distribution sector**

The AER considers that expenditure is more easily deferred in the gas distribution sector than in, for example, electricity distribution. In electricity distribution, relatively minor equipment failures can totally disrupt services. In contrast, gas service is unlikely to be interrupted through an increase in unaccounted for gas unless a major breach occurs. This provides gas distributors with relatively greater flexibility in the timing of replacement capex than electricity distributors. During the 2008–12 access arrangement period, Envestra did in fact defer capex. In some circumstances, deferrals of expenditure can be efficient. However, the AER considers that Envestra should be provided with an additional incentive that might cause it to defer efficient expenditure. Using forecast depreciation to roll forward the capital base will limit the resulting incentive for Envestra to defer efficient expenditure. This incentive is discussed below.

### **Capex incentive due to the depreciation approaches**

The AER has concerns with Envestra's proposed depreciation approach for the 2013–17 capital base roll forward and its potential impact on Envestra's incentive to defer capex. Over the 2008–12 access arrangement period, Envestra Victoria has spent approximately \$74 million (\$2012) less than the amounts approved by the ESC. Even after accounting for efficiency gains as recognised in the ESC's capex incentive scheme, Envestra has spent below its approved allowance. This is discussed in greater detail in attachment 7. The AER considers that Envestra's proposal to use an actual depreciation approach may create a stronger incentive for Envestra to defer approved capex in order to retain the excess depreciation to be recovered over the 2013–17 access arrangement period. In contrast, the use of forecast depreciation limits Envestra's incentive to defer expenditure included in its approved capex allowance. It does so as follows:

- the AER calculates Envestra's return on capital and depreciation based on the opening capital base and projected capex for the 2013–2017 access arrangement period
- if Envestra spends less than its capex allowance, Envestra will recover more return on capital than it would have if it had forecast accurately at the access arrangement review. Envestra will retain this excess under either depreciation approach

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<sup>61</sup> AER, *Final decision, Envestra Ltd access arrangement proposal for the Qld gas network, 1 July 2011–30 June 2016*, June 2011, p. 25; AER, *Final decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016*, June 2011, p. 28.

<sup>62</sup> AER, *Final access arrangement guideline*, March 2009, pp. 65–66.

<sup>63</sup> NGL, s. 24(3)(a).

- however, under the forecast depreciation approach, Envestra's capital base will have more depreciation removed from it than it would have if Envestra forecast accurately at the access arrangement review. This will result in a lower capital base at the next access arrangement review, and therefore lower projected return on capital and depreciation allowances for future periods.
- In contrast, if Envestra underspends using an actual depreciation approach, Envestra will retain the return on capital arising from the difference between actual and forecast capex, and its capital base will only depreciate based on its actual capex. As such, Envestra will also retain the excess depreciation allowance it recovered during the 2013–17 access arrangement period. Envestra will keep all of the benefits of under-expenditure, creating a stronger incentive to defer capex programs that are approved as efficient and prudent. The AER therefore considers in these circumstances it is not appropriate to increase the capex incentive by using an actual depreciation approach for the 2013–17 capital base roll forward at the next access arrangement review.

## 2.5 Revisions

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

**Revision 2.1:** Make all necessary amendments to reflect the AER's draft decision on the roll forward of the capital bases for the 2008–12 access arrangement period, as set out in Table 2.1 and Table 2.2.

**Revision 2.2:** Make all necessary amendments to reflect the AER's draft decision on the projected opening capital bases for the 2013–17 access arrangement period, as set out in Table 2.3 and Table 2.4.

**Revision 2.3:** Make all necessary amendments to reflect the AER's draft decision on net capex by asset class during the 2008–12 access arrangement period, as set out Table 2.11 and Table 2.12.

**Revision 2.4:** Make all necessary amendments to reflect the AER's draft decision on the use of forecast depreciation to roll forward the opening capital bases from 2013–17 at the next access arrangement review, as set out in section 2.4.5.



## 3 Capital expenditure

This attachment outlines the AER's assessment of Envestra's<sup>64</sup> proposed capital expenditure (capex) for 2007-11 and forecast capex for the 2013-17 access arrangement period.

### 3.1 Draft decision

#### Conforming capital expenditure for 2007-11

##### Victorian network

The AER approves \$277.9 million (\$2011) total net capex for 2007-11 as conforming capex under r. 79(1) of the NGR.

For the purpose of the capital base roll forward, the AER has adopted the ESC's benchmark capex for 2012, adjusted for actual growth. Table 3.1 shows approved capex for 2007-11 by category.

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<sup>64</sup> Throughout this attachment, the AER refers to Envestra Victoria and Envestra Albury separately and also collectively as 'Envestra'

**Table 3.1 AER approved capital expenditure by category over 2007–11 (\$million, 2011)**

Category	2007	2008	2009	2010	2011	2012 <sup>(a)</sup>
Mains replacement	9.2	8.6	3.8	7.4	22.0	31.0
Residential connections	19.8	24.2	21.7	22.1	25.4	24.7
Commercial/industrial connections	5.3	3.1	2.5	2.1	2.2	1.5
Residential meter replacement	2.4	2.3	1.7	2.2	2.4	4.0
Commercial/industrial meter replacement	0.7	0.8	0.5	0.5	0.5	0.4
Augmentation	3.8	2.2	6.1	7.0	3.4	14.4
IT	0.2	0.2	0.1	1.2	2.8	0.4
SCADA	–	–	–	–	–	0.4
Other	4.3	2.7	0.3	2.1	1.0	1.0
Gas Extensions	–	2.5	1.7	2.8	4.5	4.1
Overheads	7.9	8.3	6.7	8.0	10.2	10.6
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>53.6</b>	<b>55.0</b>	<b>45.1</b>	<b>55.3</b>	<b>74.5</b>	<b>92.6</b>
Customer contributions	–	1.9	0.7	1.8	3.4	0.2
Government contributions	–	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>53.6</b>	<b>53.1</b>	<b>44.4</b>	<b>53.5</b>	<b>71.2</b>	<b>92.3</b>
Adjustment to reconcile with regulatory accounts	–	0.5	0.3	1.3	–	–
<b>Adjusted net capex</b>	<b>53.6</b>	<b>53.6</b>	<b>44.7</b>	<b>54.8</b>	<b>71.2</b>	<b>92.3</b>

Source: AER analysis.

Notes: (b) As set out in Attachment 2, the AER has approved 2012 capex values equal to the ESC's benchmark capex, adjusted for actual growth.

### Albury network

The AER approves \$6.1 million (\$2011) total net capex for 2007–11 as conforming capex under r. 79(1) of the NGR.

For the purpose of the capital base roll forward, the AER has adopted the ESC's benchmark capex for 2012, adjusted for actual growth.

Table 3.2 shows approved capex for 2007–11 by category.

**Table 3.2 AER approved capital expenditure by category over 2007–11 (\$million, 2011)**

Category	2007	2008	2009	2010	2011	2012 <sup>(a)</sup>
Mains replacement	0.01	0.00	0.01	0.03	0.04	0.01
Residential connections	0.48	0.78	0.65	0.51	0.63	0.51
Commercial/industrial connections	0.25	0.05	0.08	0.05	0.14	0.06
Residential meter replacement	0.14	0.36	0.28	0.13	0.02	0.02
Commercial/industrial meter replacement	0.03	0.04	0.03	0.01	0.02	0.01
Augmentation	0.01	–	0.03	0.31	–	–
IT	–	–	–	–	0.00	0.00
SCADA	–	–	–	–	–	–
Other	–	–	–	–	–	0.02
Gas Extensions	–	–	–	–	–	–
Overheads	0.17	0.23	0.20	0.19	0.16	0.19
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>1.09</b>	<b>1.47</b>	<b>1.28</b>	<b>1.23</b>	<b>1.02</b>	<b>0.82</b>
Customer contributions	–	–	–	–	–	–
Government contributions	–	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>1.09</b>	<b>1.45</b>	<b>1.28</b>	<b>1.23</b>	<b>1.02</b>	<b>0.82</b>

Source: AER analysis.

Notes: (a) As set out in Attachment 2, the AER has approved 2012 capex values equal to the ESC's benchmark capex, adjusted for actual growth

## Conforming capital expenditure for the 2013–17 access arrangement period

### Victorian network

The AER approves \$315.4 million (\$2011) of Envestra's proposed \$764.9 million (\$2011) total net capex for 2013–17 as conforming capex under r. 79(1) of the NGR.

Table 3.3 shows approved capex for the 2013–17 access arrangement period by category.

**Table 3.3 AER approved capital expenditure<sup>(a)</sup> by category over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	27.6	17.7	13.3	8.9	6.4
Residential connections	20.1	19.4	19.2	18.5	18.4
Commercial/industrial connections	3.7	3.5	3.3	2.1	2.3
Residential meter replacement	2.5	5.0	3.3	8.1	2.6
Commercial/industrial meter replacement	1.0	1.3	1.8	1.5	1.4
Augmentation	4.3	8.0	2.1	11.5	1.8
IT	3.8	7.6	3.1	0.2	0.7
SCADA	0.2	0.2	0.2	0.2	0.2
Other	3.9	5.3	4.4	2.6	2.3
Gas Extensions	–	–	–	–	–
Overheads	8.5	10.1	8.6	10.4	8.7
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>75.7</b>	<b>78.0</b>	<b>59.4</b>	<b>63.9</b>	<b>44.9</b>
Customer contributions	1.3	1.3	1.3	1.3	1.3
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>74.4</b>	<b>76.7</b>	<b>58.1</b>	<b>62.6</b>	<b>43.6</b>

Source: AER analysis.

Notes: (a) Including AER material and labour escalation adjustments and network management fee.

Table 3.4 shows Envestra's proposed capex compared with the AER's approved allowance for each category.

**Table 3.4 Comparison of AER approved and Envestra's proposed capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	Proposed	Approved <sup>(a)</sup>	Difference %
Mains replacement	328.6	73.9	-77.5%
Residential connections	141.7	95.6	-32.5%
Commercial/industrial connections	25.6	14.9	-41.8%
Residential meter replacement	28.1	21.6	-23.2%
Commercial/industrial meter replacement	7.7	7.1	-7.9%
Augmentation	52.0	27.6	-46.8%
IT	19.3	15.5	-19.9%
SCADA	1.1	1.0	-8.7%
Other	53.2	18.5	-65.2%
Gas Extensions	19.7	–	-100.0%
Overheads	97.5	46.2	-52.6%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>774.4</b>	<b>321.9</b>	<b>-58.4%</b>
Customer contributions	9.5	6.5	-31.1%
Government contributions	–	–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>764.9</b>	<b>315.4</b>	<b>-58.8%</b>

Source: AER analysis, Envestra.

Notes: (a) Including AER material and labour escalation adjustments and network management fee.

The reasons for the AER's reductions are:

- The LP to HP mains replacement program volumes are reduced in line with the annual average volumes delivered over the 2008–11 period. A pass through provision is provided to allow for changes in circumstances that may encompass a change in volumes. The average unit rate is reduced due to the AER's assessment that Envestra's model does not provide a reasonable basis for estimating the unit rates. The medium pressure program is not approved as Envestra has not justified the program, as required under r. 79(2) of the NGR.
- For ad hoc service renewals capex Envestra forecast a step up in the number of renewals in 2013. This was not justified. The AER interpolated the number of services from 2011 to the proposed number in 2017.
- Residential and commercial/industrial connections capex is reduced due to reductions in volumes and unit rates. Due to conflicting information over a number of information requests, the AER did not consider the abolishments rate to be arrived at on a reasonable basis. The AER used another Victorian distribution business' abolishment rate as a substitute. Envestra based its unit rates on a simple average of 2009 and 2010 unit rates plus adjustments for recently tendered contractor rates. Envestra failed to substantiate the uplift associated with the contractor rates. The AER considers that given the nature of the tendering process which Envestra undertakes that a 2008-11 average provides a better estimate of future unit rates.
- The knowledge management system<sup>65</sup> proposed by Envestra under IT capex is not approved as Envestra has failed to adequately identify the regulatory change event that is driving the proposed expenditure. The interval meter data management<sup>66</sup> project proposed by Envestra is not approved as Envestra has not provided evidence that the project is necessary to meet network safety or integrity requirements or regulatory obligations.
- Some augmentation projects are not approved or have expenditure reductions due to Envestra's use of growth or load forecasts which are either not arrived at on a reasonable basis or do not support the need for the proposed augmentation solution.
- Certain projects within Envestra's other non-demand capex program do not comply with r. 79(1) of the NGR as the AER does not consider they would be undertaken by a prudent and efficient service provider. Additionally, some projects do not comply with r. 74 of the NGR as the AER does not consider Envestra has demonstrated that the estimated or forecast capex for these projects was arrived at on reasonable basis or is the best possible forecast in the circumstances.
- Envestra's proposed extensions capex is not approved as it does not comply with r. 79(2)(b) of the NGR.
- Residential and commercial/industrial meter replacement capex has been reduced as a result of an error in the unit rates incorporated into Envestra's capex forecast model.
- Overheads were reduced to reflect that the scale of Envestra's business is not expected to change significantly from the 2008–12 access arrangement period and so overheads should not change significantly either. An adjustment is made for variable overheads in line with changes in capital expenditure between years.

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<sup>65</sup> Envestra, *Victoria Access Arrangement Information*, March 2012, p.125

<sup>66</sup> Envestra, *Victoria Access Arrangement Information*, March 2012, p.130

- Material and labour cost escalation is reduced.

## Albury network

The AER approves \$5.6 million (\$2011) of Envestra's proposed \$8.2 million (\$2011) total net capex for 2013–17 as conforming capex under r. 79(1) of the NGR.

Table 3.5 shows approved capex for the 2013–17 access arrangement period by category:

**Table 3.5 AER approved capital expenditure<sup>(a)</sup> by category over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	0.01	0.01	0.01	0.01	0.01
Residential connections	0.47	0.54	0.56	0.58	0.57
Commercial/industrial connections	0.03	0.03	0.03	0.03	0.03
Residential meter replacement	0.07	0.06	0.10	0.06	0.05
Commercial/industrial meter replacement	0.03	0.03	0.03	0.02	0.02
Augmentation	0.01	–	–	–	0.46
IT	0.14	0.28	0.11	0.00	0.03
SCADA	0.02	0.02	0.02	0.02	0.02
Other	0.00	0.00	0.00	0.00	0.00
Gas Extensions	–	–	–	–	–
Overheads	0.19	0.23	0.21	0.21	0.25
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>0.97</b>	<b>1.20</b>	<b>1.07</b>	<b>0.93</b>	<b>1.43</b>
Customer contributions	–	–	–	–	–
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>0.97</b>	<b>1.20</b>	<b>1.07</b>	<b>0.93</b>	<b>1.43</b>

Source: AER analysis, Envestra.

Notes: (a) Including NMF and AER material and labour escalation adjustments and network management fee.



Table 3.6 shows Envestra's proposed capex compared with the AER's approved allowance for each category.

**Table 3.6 Comparison of AER approved<sup>(a)</sup> and Envestra's proposed capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	Proposed	Approved <sup>(a)</sup>	Difference %
Mains replacement	0.04	0.04	-8.1%
Residential connections	3.88	2.71	-30.1%
Commercial/industrial connections	0.19	0.13	-32.3%
Residential meter replacement	0.38	0.35	-8.7%
Commercial/industrial meter replacement	0.15	0.13	-8.7%
Augmentation	0.53	0.47	-12.4%
IT	0.70	0.56	-19.3%
SCADA	0.11	0.10	-9.0%
Other	0.87	0.01	-98.8%
Gas Extensions-NGEP	–	–	0.0%
Overheads	1.37	1.10	-20.1%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>8.23</b>	<b>5.60</b>	<b>-32.0%</b>
Customer contributions	–	–	0.0%
Government contributions	–	–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>8.23</b>	<b>5.60</b>	<b>-32.0%</b>

Source: AER analysis, Envestra.

Note: (a) Including AER material and labour escalation adjustments and network management fee.

The reasons for the AER's reductions are:

- Residential and commercial/industrial connections capex is reduced due to reductions in volumes and unit rates. Due to conflicting information over a number of information requests, the AER did not consider the abolishments rate to be arrived at on a reasonable basis. The AER used another Victorian distribution business' abolishment rate as a substitute. Envestra based its unit rates on a simple average of 2009 and 2010 unit rates plus adjustments for recently tendered contractor rates. Envestra failed to substantiate the uplift associated with the contractor rates. The AER considers that given the variability in the unit rates that a 2008-11 average provides a better estimate of future unit rates.
- The knowledge management system<sup>67</sup> proposed by Envestra under IT capex is not approved as Envestra has failed to adequately identify the regulatory change event that is driving the proposed expenditure. The interval meter data management<sup>68</sup> project proposed by Envestra is not approved as Envestra has not provided evidence that the

<sup>67</sup> Envestra, *Albury Access Arrangement Information*, March 2012, p.114

<sup>68</sup> Envestra, *Albury Access Arrangement Information*, March 2012, p.116

project is necessary to meet network safety or integrity requirements or regulatory obligations.

- Certain projects within Envestra's other non-demand capex program are not projects that would be undertaken by a prudent and efficient service provider. Envestra has also not demonstrated that these projects were built up from a reasonable forecast.
- Overheads were reduced to reflect that the scale of Envestra's business is not expected to change significantly from the 2008–12 access arrangement period and so overheads should not change significantly either. An adjustment is made for variable overheads in line with changes in capital expenditure between years.
- Material and labour cost escalation is reduced.

## 3.2 Envestra's Proposal

### 2007–11 period

#### Victorian network

Envestra's proposed net total capex of \$275.8 million (\$2011) for 2007–11. This is 29 per cent below the benchmark allowance approved by the ESC.

**Table 3.7 Envestra proposed conforming capital expenditure over 2007–12 (\$million, 2012)**

Category	2007	2008	2009	2010	2011	2012
Mains replacement	9.2	8.6	3.8	7.4	22.0	31.8
Residential connections	19.8	24.2	21.7	22.1	25.4	22.1
Commercial/industrial connections	5.3	3.1	2.5	2.1	2.2	4.3
Residential meter replacement	2.4	2.3	1.7	2.2	2.4	2.6
Commercial/industrial meter replacement	0.7	0.8	0.5	0.5	0.5	1.2
Augmentation	3.8	2.2	6.1	7.0	3.4	14.8
IT	0.2	0.2	0.1	1.2	2.8	0.4
SCADA	0.0	0.0	0.0	0.0	0.0	0.0
Other	4.3	2.7	0.3	2.1	1.0	1.4
Gas Extensions	0.0	2.5	1.7	2.8	4.5	3.7
Overheads	7.9	8.3	6.7	8.0	10.2	11.7
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>53.6</b>	<b>55.0</b>	<b>45.1</b>	<b>55.3</b>	<b>74.5</b>	<b>94.1</b>
Customer contributions	0.0	1.9	0.7	1.8	3.4	1.9
Government contributions	0.0	0.0	0.0	0.0	0.0	0.0
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>53.6</b>	<b>53.1</b>	<b>44.4</b>	<b>53.5</b>	<b>71.2</b>	<b>92.2</b>

Source: Envestra.

## Albury network

Envestra proposed net total capex of \$6.1 million (\$2011) for 2007–11. This is 19 per cent below the benchmark allowance approved by the ESC.

**Table 3.8 Envestra proposed conforming capital expenditure over 2007–12 (\$million, 2012)**

Category	2007	2008	2009	2010	2011	2012
Mains replacement	0.01	0.00	0.01	0.03	0.04	0.01
Residential connections	0.48	0.78	0.65	0.51	0.63	0.57
Commercial/industrial connections	0.25	0.05	0.08	0.05	0.14	0.15
Residential meter replacement	0.14	0.36	0.28	0.13	0.02	0.37
Commercial/industrial meter replacement	0.03	0.04	0.03	0.01	0.02	0.03
Augmentation	0.01	–	0.03	0.31	–	–
IT	–	–	–	–	0.00	–
SCADA	–	–	–	–	–	–
Other	–	–	–	–	–	0.02
Gas Extensions	–	–	–	–	–	–
Overheads	0.17	0.23	0.20	0.19	0.16	0.22
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>1.09</b>	<b>1.47</b>	<b>1.28</b>	<b>1.23</b>	<b>1.02</b>	<b>1.38</b>
Customer contributions	–	–	–	–	–	–
Government contributions	–	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>1.09</b>	<b>1.47</b>	<b>1.28</b>	<b>1.23</b>	<b>1.02</b>	<b>1.38</b>

Source: Envestra.

## 2013–17 access arrangement period

### Victorian network

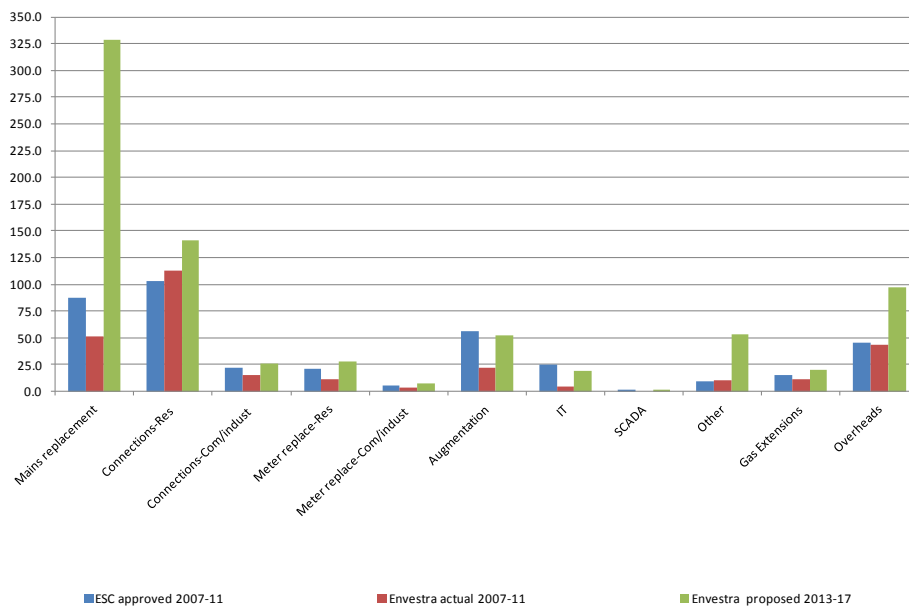
Envestra proposed net total capex of \$764.9 million (\$2011) for the 2013–17 access arrangement period. This represents a real increase of 142 per cent over the benchmark approved by the ESC for the 2008–12 access arrangement period (see Figure 3.1 below).

**Table 3.9 Envestra proposed capital expenditure by category over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	65.7	72.8	62.3	63.2	64.7
Residential connections	27.0	27.8	28.5	28.8	29.5
Commercial/industrial connections	4.8	5.0	5.0	5.2	5.6
Residential meter replacement	2.8	6.5	4.3	11.1	3.3
Commercial/industrial meter replacement	1.1	1.5	2.1	1.6	1.4
Augmentation	4.3	27.2	2.8	14.5	3.1
IT	7.2	7.9	3.3	0.2	0.8
SCADA	0.2	0.2	0.2	0.2	0.2
Other	13.3	15.7	10.8	6.8	6.7
Gas Extensions	10.4	–	7.7	1.3	0.2
Overheads	20.4	23.0	18.9	18.8	16.3
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>157.2</b>	<b>187.7</b>	<b>146.0</b>	<b>151.7</b>	<b>131.8</b>
Customer contributions	1.9	1.9	1.9	1.9	1.9
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>155.3</b>	<b>185.8</b>	<b>144.1</b>	<b>149.8</b>	<b>129.9</b>

Source: AER analysis of Envestra's proposal.

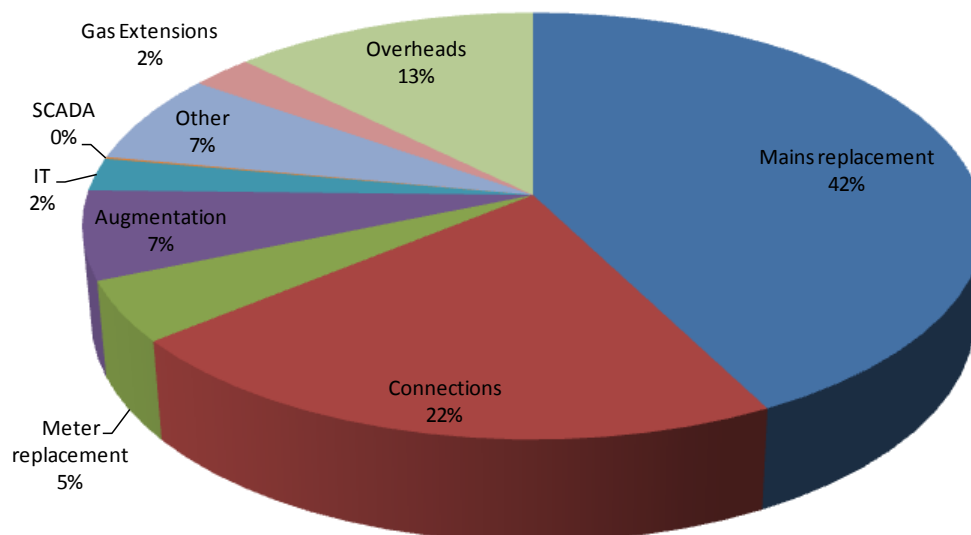
**Figure 3.1 Comparison of Envestra's past approved, actual and proposed capex (\$million, 2011)**



Source: AER analysis.

The major components of the forecast gross total expenditure are mains replacement (42 per cent), customer connections (22 per cent), overheads (13 per cent), other capex (7 per cent) and augmentation capex (7 per cent) (see Figure 3.2).

**Figure 3.2 Composition of Envestra's total capex for 2013–17 (\$million, 2011)**



Source: AER analysis.

### Albury network

Envestra Albury proposed net total capex of \$8.2 million (\$2011) for the 2013–17 access arrangement period, representing a real increase of 29 per cent over the benchmark approved by the ESC for the 2008–12 access arrangement period (see Figure 3.3).

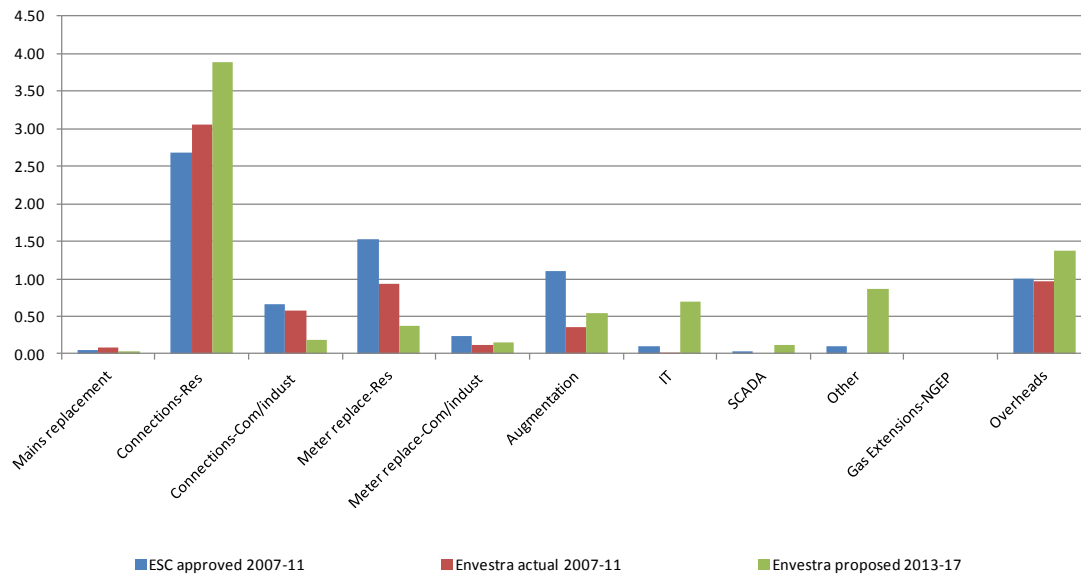
**Table 3.10 Envestra proposed capital expenditure by category over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	0.01	0.01	0.01	0.01	0.01
Residential connections	0.68	0.75	0.80	0.82	0.84
Commercial/industrial connections	0.04	0.04	0.04	0.03	0.04
Residential meter replacement	0.07	0.07	0.12	0.07	0.06
Commercial/industrial meter replacement	0.03	0.03	0.04	0.03	0.03
Augmentation	0.01	–	–	–	0.53
IT	0.26	0.29	0.12	0.00	0.03
SCADA	0.02	0.02	0.02	0.02	0.02

Other	0.34	0.31	0.12	0.05	0.05
Gas Extensions	–	–	–	–	–
Overheads	0.29	0.30	0.25	0.21	0.32
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>1.73</b>	<b>1.83</b>	<b>1.52</b>	<b>1.23</b>	<b>1.92</b>
Customer contributions	–	–	–	–	–
<b>Government contributions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>1.73</b>	<b>1.83</b>	<b>1.52</b>	<b>1.23</b>	<b>1.92</b>

Source: AER analysis of Envestra's proposal.

**Figure 3.3 Comparison of Envestra's past approved, actual and future proposed capex (\$million, 2011)**

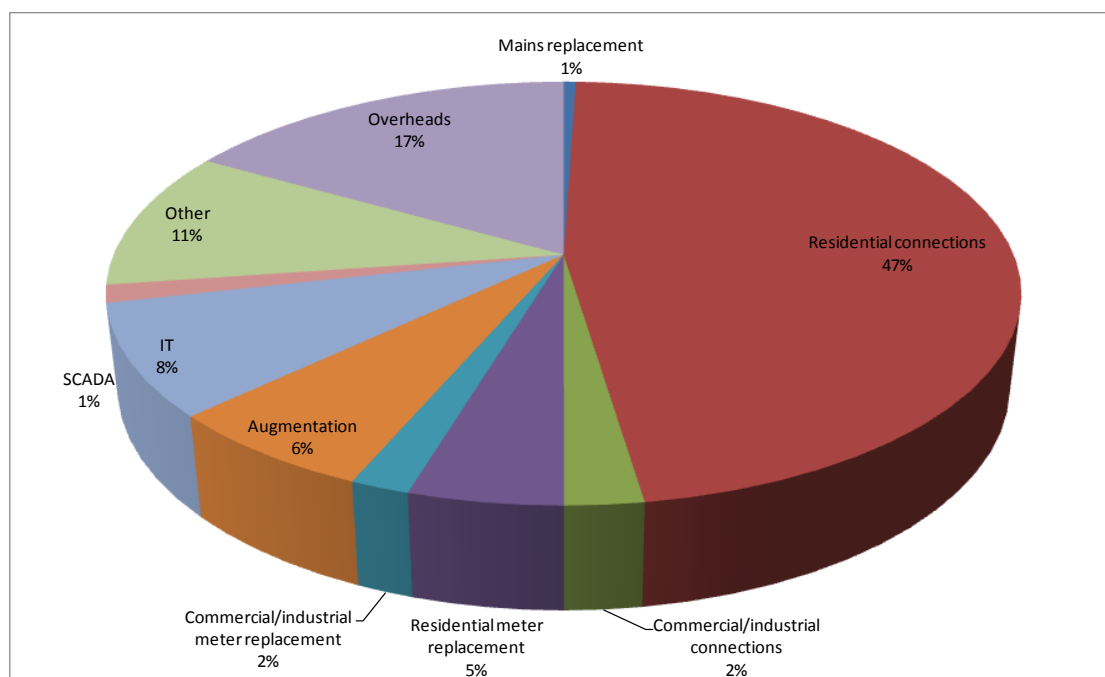


Source: AER analysis.

The major components of the forecast gross total expenditure are customer connections (47 per cent), overheads (17 per cent), other capex (11 per cent) and information technology (8 per cent) (see Figure 3.4 below).



**Figure 3.4 Composition of Envestra's total capex for 2013–17 (\$million, 2011)**



Source: AER analysis.

### 3.3 Assessment approach

#### NGR requirements for conforming capital expenditure

The AER must accept, as part of the opening capital base for the access arrangement period, any conforming capex made (or to be made) during the earlier access arrangement period.

The AER must also consider forecast conforming capex for the access arrangement period as part of calculating the projected capital base for the access arrangement period.<sup>69</sup>

Capex will be conforming if it:

- meets the definition of capex in r. 69 of the NGR. Capex is defined as costs and expenditure of a capital nature incurred to provide, or in providing, pipeline services
- is based on a forecast or estimate which is supported by a statement of the basis of the forecast or estimate required under r. 74(1) of the NGR. In accordance with r. 74(2) of the NGR, any forecast or estimate submitted must:
  - be arrived at on a reasonable basis
  - represent the best forecast or estimate possible in the circumstances<sup>70</sup>
- conforms with the capex criteria in r. 79 of the NGR. There are two essential criteria that must both be met under this rule:

<sup>69</sup> NGR, r. 78.

<sup>70</sup> NGR, r. 74(2).

- The expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of providing services; and
- The expenditure must be justifiable on one of four grounds set out in r. 79(2) of the NGR.

The four grounds set out in r. 79(2) of the NGR can be summarised as follows. The capex must either:

- have an overall economic value that is positive
- demonstrate an expected present value of the incremental revenue that exceeds the expenditure
- be necessary to maintain and improve the safety of services, or maintain the integrity of services, or comply with a regulatory obligation or requirement, or maintain capacity to meet levels of demand existing at the time the capex is incurred, or
- be justifiable as a combination of the preceding two dot points.

The AER has limited discretion when making decisions under r. 79 and r. 40(2) of the NGR.<sup>71</sup> The AER must approve a particular element of the access arrangement proposal if that element complies with the applicable requirements of the NGR and NGL and is consistent with any criteria set out in the NGR or NGL.

### **Assessment of conforming capital expenditure**

The AER considers the access arrangement information provided by Envestra in assessing its proposed capex. The AER will not approve certain information and forecasts provided by Envestra if the information does not meet the requirements set out in the NGR.<sup>72</sup> The AER must exercise its economic regulatory functions in a manner that will or is likely to contribute to the achievement of the NGO.<sup>73</sup> For instance, having regard to the NGO, the AER takes the view that a prudent service provider will seek cost efficiencies through continuous improvements, and that customers ultimately share in these benefits. This also provides the service provider with a reasonable opportunity to recover at least its efficient costs in accordance with the revenue and pricing principles.

In assessing Envestra's proposed capex in the earlier access arrangement period, the AER reviewed Envestra's supporting material. This included information on Envestra's reasoning and, where relevant, business cases, audited regulatory accounts, and other relevant information. This information helped the AER identify the whether capex over the earlier access arrangement period was conforming capex and, in turn, whether that capex should be included in the opening capital base in accordance with r. 77 (2)(b) of the NGR.

Although the capital base roll forward relates to the 2008–12 access arrangement period, the AER is also required to adjust for the difference between actual and forecast capex in the

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<sup>71</sup> NGR, r. 40(2), r. 79(6).

<sup>72</sup> For instance, r. 74 of the NGR requires estimates and forecasts to be made on a reasonable basis, amongst other things.

<sup>73</sup> NGL, s. 28(1).

capital base.<sup>74</sup> Generally, the final year of the previous access arrangement period is based on forecast capex (in this case, 2007). Therefore, the AER's assessment of conforming capex includes the regulatory years for 2007–11. This is because:

- 2007 capex—at the previous access arrangement review, the ESC did not yet have actual capex for 2007. The ESC therefore included in the capital base benchmark (forecast) capex for 2007, adjusted for actual growth. Since actual capex is now available for 2007, the AER has assessed whether Envestra's actual capex for 2007 is conforming capex under the NGR.<sup>75</sup> This conforming capex is then included in the capital base roll forward.<sup>76</sup>
- 2008–11 capex—for this access arrangement review, the AER has the actual capex for 2008–11. Consistent with 2007 capex, the AER has assessed whether Envestra's actual capex for 2008–11 is conforming under the NGR for inclusion in the capital base roll forward.<sup>77</sup>
- 2012 capex—for this access arrangement review, the AER does not yet have actual capex for 2012. The AER is required under the NGR to properly reflect any increments or decrements arising from the operation of the ESC's capex incentive scheme.<sup>78</sup> The AER has therefore adopted the ESC's approach for 2012 capex. This requires the AER to include in the capital base roll forward benchmark (forecast) capex for 2012, adjusted for actual growth. At the next access arrangement review, the AER will assess whether Envestra's actual capex for 2012 is conforming capex under the NGR.<sup>79</sup>
- The AER's detailed analysis of the capex incentive scheme is set out in attachment 7, and its application to the capital base roll forward is addressed in attachment 2 of the AER's draft decision.

In assessing whether Envestra's proposed capex in the projected capital base complies with the capex criteria in r. 79(1) of the NGR, the AER assessed the key drivers for the capex. The AER relied upon the following information:

- The access arrangement information (AAI) - this document outlines Envestra's program of capital expenditure and describes the main drivers of increased capital expenditure;
- The Capacity Management Plan, Asset Management Plan, Mains Replacement Plan and appendices which provided specific expenditure detail<sup>80</sup>
- RIN Template - Victoria and Albury RIN template.xls
- Final Capital Mapping Spreadsheet 28-3-2012.xls
- Business cases which detail expenditure requirements of specific projects<sup>81</sup>
- Capex forecast model<sup>82</sup>

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<sup>74</sup> NGR, r. 77(2)(a)

<sup>75</sup> NGR, r.79(1)

<sup>76</sup> NGR, r.77(2)(b)

<sup>77</sup> NGR, r. 79 and r.77(2)(b)

<sup>78</sup> Schedule 1, clause 5.

<sup>79</sup> NGR, r. 79(1).

<sup>80</sup> Envestra, *Access Arrangement Information: Attachments 7.2, 7.3, 7.4, 30 March 2012.*

<sup>81</sup> Envestra, *Access Arrangement Information: Appendix 6.1, 30 March 2012.*

- Unit rates spreadsheet.xlsx<sup>83</sup>
- Submissions received in the course of consulting on the access arrangement proposal<sup>84</sup>

Initially the AER assessed whether the proposed capex is justified on one of the four grounds under NGR r. 79(2).

The AER then assessed the prudence and efficiency of the proposed capex. For analysis purposes the capex was broken into categories depending on whether the expenditure is driven by:

- Growth in demand - extensions, connections, augmentation
- Replacement on the basis of asset life, obsolescence, safety or regulatory obligations - mains, services, meters, regulators, city gates, IT, SCADA, or
- Other - new regulatory or safety obligations, opex or reliability improvements.

For each category of expenditure the scope, timing and cost of the proposed expenditure was considered in order to form a view on the prudence and efficiency of the expenditure. The assessment also considered whether cost forecasts have been arrived at on a reasonable basis and represent the best forecast possible in the circumstances.

A combination of the following approaches was used by the AER to assess efficiency and prudence of Envestra's proposed capex:

#### *Assessing competitive tender processes for outsourced activities*

Outsourcing to specialist providers of a particular service is a common means by which businesses in the economy are able to gain access to economies of scale and scope and other efficiencies.

Where the gas businesses have used tendered rates as the basis of proposed unit costs, the AER relied on its conceptual approach to assessing outsourcing arrangements. This approach is outlined in its Final decision for the Victorian electricity distribution network service providers Distribution determination 2011–15.<sup>85</sup>

The first stage of the conceptual framework is a 'presumption threshold' designed to be an initial filter to determine which contracts can be presumed to reflect efficient costs that would be incurred by a prudent operator.

In undertaking this 'presumption threshold' assessment, the AER considers:

- Did the service provider have an incentive to agree to non-arm's length terms at the time the contract was negotiated (or at its most recent re-negotiation)?

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<sup>82</sup> Envestra, *Access Arrangement Information: Attachment 7.6*, 30 March 2012.

<sup>83</sup> Envestra, *Access Arrangement Information: Attachment 7.5*, 30 March 2012.

<sup>84</sup> Submissions were received from the Energy Users Coalition of Victoria, Origin Energy, AGL and Australian Power and Gas.

<sup>85</sup> AER, *Final decision for the Victorian electricity distribution network service providers, Distribution determination 2011–2015*, October 2010, pp.150–151.

- If yes, was a competitive open tender process conducted in a competitive market?

In the absence of an incentive to agree to non-arm's length terms, the AER considers it reasonable to presume a contract price reflects efficient costs. The AER also considers this presumption to be reasonable where an incentive to agree to non-arm's length terms exists but the contract was the outcome of a competitive open tender process in a competitive market.

Where an arrangement 'passes' the presumption threshold, the AER considers the starting point for setting future expenditure allowances should be the contract price itself, with limited further examination required. This further examination involves checking whether the contract wholly relates to the relevant services and whether the (efficient) contract price already compensates for risks or costs provided for elsewhere in the building blocks.

#### *Revealed cost approach*

The revealed cost approach considers information revealed by the past performance of a gas business. Under the ex ante regime, gas businesses are rewarded for spending less capex than allowed by the regulator. This incentive enables the AER to place some reliance on the historical costs of a gas business when reviewing its forecast capex. The AER used historical costs and volumes as an indicator of efficient costs and volumes for the Victorian gas businesses. In particular, the AER used historical total costs, unit costs and volumes in assessing connections, mains and services replacements, meter replacements, SCADA and IT.

The revealed cost approach is an accepted industry practice. Many gas businesses, including Envestra, have used this approach as a basis to forecast expenditure proposals. This approach has also been used previously by the ESC in its assessment of access arrangement proposals for the Victorian gas businesses and the AER in its past reviews.

#### *Benchmarking against the other businesses' proposed unit costs and volumes*

The AER also conducted comparative analysis of unit costs Envestra has used to develop its capex forecast. In particular, the AER undertook a high level benchmarking of a selection of Envestra's unit costs against similar unit costs of the other Victorian gas businesses. Where required some adjustment for compositional difference was made. This comparison was used for assessing connections, mains and services replacements, meter replacements, SCADA and IT.

Where this benchmarking indicated that Envestra's capex may not be efficient, the AER undertook a detailed review of Envestra's proposal. The AER's detailed review involved consideration of relevant documentation and the impact of factors expected to differ from the past and/or from the other Victorian gas businesses.

The AER recognises that forecast efficient costs may legitimately depart from those revealed through past performance, and compared with other gas businesses. For example, gas businesses may discover more efficient processes over time. The gas businesses may propose they can best achieve their safety, reliability or regulatory obligations by incurring expenditure to implement new, more efficient processes, and include such expenditure in their proposed forecast capex. The AER assumed that operating processes would only be changed (from revealed, or otherwise efficient processes) if they are likely to result in efficiency gains (in the absence of any information to suggest other reasons for the change).

Where the AER considered that future cost savings should result from capex investments, the AER took this into consideration in determining Envestra's opex allowance.

#### *Specialist technical advice*

The AER engaged IT and engineering consultants to provide specialist technical advice on the prudence and efficiency of IT projects and augmentation projects.

#### *Cash flow analysis for equity raising costs*

To determine the amount of equity raising costs, the AER has undertaken an assessment of benchmark cash flows calculated in the PTRM. Under this method, a prudent service provider, acting efficiently will first exhaust the cheapest sources of funding through the use of internal cash flows before using more expensive external sources of equity financing. The cash flow modelling approach used by the AER incorporates this assumption to determine if any external equity financing would be required based on the AER's capex forecast for Envestra.

## **3.4 Reasons for decision**

### **3.4.1 Conforming capital expenditure for 2007–11**

The AER considers that the \$275.8 million (\$2011) net capex incurred by Envestra's Victorian network for 2007–11 is conforming capex that complies with r. 79(1) of the NGR.

The AER considers that the \$6.09 million (\$2011) net capex incurred by Envestra's Albury network for 2007–11 is conforming capex that complies with r. 79(1) of the NGR.

In reaching this view the AER has considered the following factors:

- Envestra's Victorian network capex was 112.8 million (29 per cent) under the ESC approved amount of \$387.9 million for 2007–11.
- Envestra's Albury network capex was 1.4 million (19 per cent) under the ESC approved amount of \$7.5 million for 2007–11.
- Envestra spent less than the ESC benchmark on its Victorian network in 9 out of 11 categories. In eight categories, the underspend was greater than 25 per cent below the benchmark allowance - see Table 3.11.
- Envestra spent less than the ESC benchmark on its Albury network in 8 out of 11 categories. In six categories, the underspend was greater than 25 per cent below the benchmark allowance. - see Table 3.12.
- The largest underspends occurred in the low pressure mains replacement, IT and augmentation categories:
  - In the low pressure mains replacement category, Envestra spent \$37.7 million less than the benchmark allowance on its Victoria network. This was due to Envestra only undertaking 298 kms of mains replacement compared to approved volumes of 449 kms on its Victoria network.

- In the augmentation category, Envestra spent \$33.5 million and \$0.75 million less than the ESC benchmark allowance on its Victorian and Albury networks, respectively. Augmentation capex was lower than forecast due to the deferrals of works.
- In the IT category, Envestra spent \$20 and \$0.1 million less than the ESC benchmark allowance on its Victorian and Albury networks, respectively. IT capex was lower than forecast due to the deferrals of works.
- Envestra stated that the deferrals of works across a number of capex categories was due to the GFC:

"...the GFC led to significantly higher debt and equity finance costs and reduced the availability of finance to levels that were not anticipated when business plans underpinning the 2008 to 2012 Access Arrangement were put in place. The GFC prevented Envestra from completing its planned capital expenditure program..."<sup>86</sup>

Envestra overspent the ESC allowance for residential customer connections by some 10 per cent and 70 per cent in its Victorian and Albury networks respectively. This was attributed to a greater number of new connections than forecast in every year and higher unit costs due to greater cost pressure because of market conditions during 2007–11.

In its submission to the AER, the Energy Users Coalition of Victoria (EUCV) highlighted that Envestra has generated a significant financial benefit by considerably underspending its capex allowance(s) in the current period.<sup>87</sup> Envestra stated that the underspend related to a difficulty in raising capital during the GFC. The EUCV stated that Envestra has sought an allowance which is more than double what is demonstrably efficient capex for the 2013–17 access arrangement period.<sup>88</sup>

**Table 3.11 Victorian network - Comparison of ESC approved and Envestra capital expenditure over 2007–11 (\$million, 2011)**

Capex category	ESC Approved	Envestra actual	Difference
Mains replacement	87.8	51.0	-41.8%
Residential connections	103.2	113.1	9.6%
Commercial/industrial connections	22.2	15.2	-31.5%
Residential meter replacement	21.2	11.0	-48.1%
Commercial/industrial meter replacement	5.5	3.1	-44.0%
Augmentation	56.0	22.5	-59.9%
IT	24.6	4.6	-81.3%

<sup>86</sup> Envestra Victoria, *Access Arrangement Information*, 30 March 2012, p. 42; Envestra Albury, *Access Arrangement Information*, 30 March 2012 p. 39.

<sup>87</sup> EUCV, *Victorian Gas Distribution Revenue Reset, applications from Envestra, Multinet and SP AusNet, A response by Energy Users Coalition of Victoria, Response to Envestra's Access Arrangement Proposal*, June 2012, p. 17. (EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012).

<sup>88</sup> EUCV, *Response to SP AusNet's Access Arrangement Proposal*, June 2012, p. 21.

SCADA	2.0	–	-100.0%
Other	9.2	10.4	13.0%
Gas Extensions	15.2	11.6	-23.7%
Overheads	45.6	41.0	-10.0%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>392.3</b>	<b>283.5</b>	<b>-27.7%</b>
Customer contributions	2.4	7.7	215.5%
Government contributions		–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>389.9</b>	<b>275.8</b>	<b>-29.3%</b>
Adjustment to reconcile with regulatory accounts	–	2.2	–
Adjusted net capex	389.9	277.9	-28.7%

Source: ESC, Envestra.

**Table 3.12 Albury network - Comparison of ESC approved and Envestra capital expenditure over 2007–11 (\$million, 2011)**

Capex category	ESC Approved	Envestra actual	Difference
Mains replacement	0.05	0.09	69.8%
Residential connections	2.68	3.06	14.3%
Commercial/industrial connections	0.67	0.57	-14.7%
Residential meter replacement	1.53	0.93	-39.3%
Commercial/industrial meter replacement	0.24	0.12	-47.8%
Augmentation	1.11	0.36	-67.9%
IT	0.10	0.00	-99.0%
SCADA	0.04	–	-100.0%
Other	0.11	–	-100.0%
Gas Extensions-NGEP	–	–	0.0%
Overheads	0.99	0.96	-3.4%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>7.52</b>	<b>6.09</b>	<b>-18.9%</b>
Customer contributions	–	–	0.0%
Government contributions	–	–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>7.52</b>	<b>6.09</b>	<b>-18.9%</b>

Source: ESC, Envestra.



### 3.4.2 Conforming capital expenditure for the 2013–17 access arrangement period

The AER approved amounts in this section do not include the AER's adjustment to Envestra's proposed labour and material cost escalation factors and network management fee. For the final AER approved amounts which include these adjustments see Table 3.3. The AER's assessment of labour and material cost escalation is contained in Appendix D of the AER's draft decision. The AER's assessment of Envestra's network management fee is contained in appendix E of the AER's draft decision.

The AER approves \$325.8 million (\$2011)<sup>89</sup> of Envestra's proposed \$748.7 million total net capex for its Victorian network over the 2013–17 access arrangement period (see Table 3.13).

**Table 3.13 Victorian network - AER approved capital expenditure over the 2013–17 access arrangement period (\$million, 2011)<sup>(a)</sup>**

Category	2013	2014	2015	2016	2017
Mains replacement	27.7	18.5	14.0	9.3	6.7
Residential connections	20.2	20.3	20.3	19.6	19.4
Commercial/industrial connections	3.7	3.7	3.5	2.2	2.4
Residential meter replacement	2.5	5.3	3.6	8.7	2.8
Commercial/industrial meter replacement	1.0	1.4	1.9	1.6	1.6
Augmentation	4.3	8.3	2.2	12.1	1.9
IT	3.8	7.8	3.2	0.2	0.7
SCADA	0.2	0.2	0.2	0.2	0.2
Other	3.8	5.7	4.9	2.8	2.5
Gas Extensions	–	–	–	–	–
Overheads	8.5	10.1	8.2	10.0	8.1
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>75.7</b>	<b>81.2</b>	<b>62.2</b>	<b>66.8</b>	<b>46.5</b>
Customer contributions	1.3	1.3	1.3	1.3	1.3
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>74.3</b>	<b>79.9</b>	<b>60.8</b>	<b>65.5</b>	<b>45.2</b>

Source: AER analysis, Envestra.

Note: (a) Excluding AER adjustment for material and labour escalation and the network management fee

<sup>89</sup> Excluding AER adjustment for material and labour escalation and the network management fee

The AER approves \$5.7 million (\$2011)<sup>90</sup> of Envestra's proposed \$7.7 million total net capex for its Albury network over the 2013–17 access arrangement period (see Table 3.14).

**Table 3.14 Albury network - AER approved capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	0.01	0.01	0.01	0.01	0.01
Residential connections	0.44	0.56	0.59	0.59	0.62
Commercial/industrial connections	0.02	0.03	0.03	0.03	0.03
Residential meter replacement	0.07	0.07	0.11	0.06	0.05
Commercial/industrial meter replacement	0.03	0.03	0.03	0.02	0.03
Augmentation	0.01	–	–	–	0.50
IT	0.13	0.27	0.11	0.00	0.03
SCADA	0.02	0.02	0.02	0.02	0.02
Other	0.00	0.00	0.00	0.00	0.00
Gas Extensions	–	–	–	–	–
Overheads	0.17	0.22	0.20	0.19	0.24
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>0.90</b>	<b>1.20</b>	<b>1.10</b>	<b>0.93</b>	<b>1.53</b>
Customer contributions	–	–	–	–	–
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>0.90</b>	<b>1.20</b>	<b>1.10</b>	<b>0.93</b>	<b>1.53</b>

Source: AER analysis

Note: Excluding AER adjustment for material and labour escalation and the network management fee

The AER's analysis of the capex driver categories is presented below.

### Mains replacement

Distribution mains are the pipes which convey gas to service pipes at each end user point. The distribution mains replacement program consists of proactive and reactive replacement programs. In general, the proactive program involves upgrading the low and medium pressure mains to high pressure mains. This reduces the safety risk associated with aging cast iron and unprotected steel pipes and provides increased ability to manage demand growth. Reactive replacement of mains is required where repairs are not possible and urgent replacement of mains is required to manage gas escape.

<sup>90</sup> Excluding AER adjustment for material and labour escalation and the network management fee.

### *Victoria network*

Envestra proposed mains replacement capital expenditure of \$321.7 million (\$2011, escalated direct costs, excluding overheads) for the following mains replacement programs for its Victorian network:

- Low pressure pipe replacement (low pressure to high pressure block mains renewal) program, and
- Ad hoc mains replacements and service renewal program.

The AER's assessment of each of these parts is set out below.

In its submission to the AER, the EUCV noted that the large step up in mains replacement capex for the next access arrangement period is driven by the need to replace old lead sealed mains.<sup>91</sup>

Given Envestra's mains replacement target for 2020 and replacement works in the current period, the EUCV submitted that the increase in mains replacement costs from the 2008–12 access arrangement period to the 2013–17 access arrangement period should be commensurate with Envestra's forecast of a 50 per cent increase in the volume of mains replaced.<sup>92</sup> In contrast, Envestra's proposal represents a 250 per cent increase in mains replacement cost. The EUCV estimated that Envestra's proposed mains replacement cost in the 2013–17 access arrangement period to be \$445 per metre in contrast to \$181 per metre in the 2008–12 access arrangement period.<sup>93</sup> The AER has taken account of historical costs in assessing Envestra's proposed mains replacement capex.

#### **Low pressure pipe replacement - block mains renewal**

To mitigate the risk of mains failure and address supply reliability issues the distribution businesses are proactively replacing low pressure distribution mains (and some medium pressure as required) with high pressure polyethylene (PE) mains. Block replacement of LP mains is undertaken by working geographically inwards from HP mains areas, which are typically located in outer suburban areas.

Envestra's proposed capital expenditure of \$282.7 million (\$2011, unescalated direct costs, excluding overheads) for its LP mains replacement program for the 2013–17 access arrangement period for the Victorian network (see Table 3.15).

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<sup>91</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, p. 20.

<sup>92</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, p. 20.

<sup>93</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, p. 20.

**Table 3.15 Envestra Victoria's low pressure pipe replacement proposal (\$million, 2011)<sup>(a)</sup>**

	2013	2014	2015	2016	2017	2013–2017
Length (km)	150	140	125	116	106	636
Unit cost (\$/m)	398	454	420	463	507	444
Total cost (\$ million)	59.7	63.6	52.6	53.5	53.5	282.7

Source: Envestra.<sup>94</sup>

Notes: (a) Unescalated direct costs, excluding overheads

### Volumes

In assessing Envestra's proposed volumes the AER has taken into account whether the volume of mains replacement is necessary to maintain network safety and integrity, as required by r.79(2)(c) of the NGR, and prudent and efficient, under r.79(1)(a) of the NGR.

The AER does not consider that the volumes proposed by Envestra in excess of the annual average historical volumes are necessary or prudent and efficient. The historical volumes have been sufficient to meet Envestra's chosen level of risk in the 2008–12 access arrangement period. Without evidence to the contrary, the AER considers that Envestra is able to address any change in risk through the alternative programs available while still undertaking the rate of mains replacement which it undertook in 2008–11.

The AER's assessment of what is necessary and prudent and efficient, takes into account:

- the nature of the mains replacement program generally,
- evidence presented by Envestra regarding its proposed mains replacement program for 2013–17 and completion of its mains replacement program to date, and
- the applicable legislative and regulatory requirements or obligations.

Envestra proposed undertaking 636 km of low pressure (LP) to high pressure (HP) mains replacement in the 2013–17 access arrangement period.

The low pressure to high pressure mains replacement program was initiated during the 2003–07 access arrangement review. The ESC stated that the consensus between the Office for Gas Safety (succeeded by the ESV), the ESC and the distribution businesses was that there was a need to "develop and implement a long-term program to progressively replace the cast iron part of the network"<sup>95</sup>. In setting the period over which the low pressure mains should be replaced the ESC considered whether the proposed replacements were necessary to maintain the safety and reliability of each distributor's system.<sup>96</sup>

<sup>94</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 122.

<sup>95</sup> ESC, *Review of Gas Access Arrangements Final Decision*, October 2002, p. 117.

<sup>96</sup> ESC, *Review of Gas Access Arrangements Final Decision*, October 2002, p. 117.

The period for replacement is not fixed or determined under legislation or a regulatory instrument. It is a period proposed by the ESC following consultation with the Office for Gas Safety and the distribution businesses based on factors known or assumed at that time, in early 2003. That proposed period for completion of mains replacement originally varied from 22, to 30, to 40 years depending on the particular distributor.

All of the distribution businesses have varied their delivery compared with their original schedule for the 2003–07 and 2008–12 access arrangement periods. The ESV is currently reviewing the distribution businesses prioritisation and approach to mains replacement.

In the 2008–12 access arrangement period, Envestra proposed an annual volume of 137 km (a total volume of 685 km)<sup>97</sup> of low pressure mains replacement but actually delivered an annual average of 53 km of low pressure mains replacement between 2008–11. For the 2008-11 period, Envestra was funded \$79.1 million (\$2012, direct escalated costs, excluding overheads) for the proposed 420 km but it only expended \$37.1 million (\$2012, direct escalated costs, excluding overheads).

As noted above, ESV is currently reviewing the distribution businesses prioritisation and approach to mains replacement. However, because of how the regulatory framework operates, consumers have paid gas prices reflective of the higher volumes approved in the previous regulatory period, not the actual volumes completed.

Envestra justified its proposed low pressure to high pressure mains replacement capex on the basis of maintaining safety, reliability and the need to meet regulatory obligations. Specifically, Envestra stated that the aims of the pipeworks program are to:

- reduce the incidence of gas leaks and therefore improve the safety of the services (r. 79(2)(c)(i) of the NGR)
- maintain the integrity of gas services (eliminate outages due to water ingress, supply loss arising from leak repair works, poor pressure or loss supply at customers' premises due to peak loading on low pressure mains) (r. 79(2)(c)(ii) of the NGR)
- to maintain capacity to meet levels of demand for services in areas where low pressure mains are unable to satisfy peak demand or allow the connection of new customers (r. 79(2)(c)(iv) of the NGR)
- enable Envestra to comply with s.32 of the *Gas Safety Act* (r.79(2)(c)(iii) of the NGR).<sup>98</sup>

Envestra stated that s. 32 the *Gas Safety Act 1997 (Vic)* (Gas Safety Act) requires Envestra to meet safety obligations as set out below.<sup>99</sup>

All distribution businesses have a statutory general obligation under s. 32 of the *Gas Safety Act* to "manage and operate each of its facilities to minimise as far as practicable" the hazards and risks to the safety of the public and customers arising from gas, interruptions to the conveyance or supply of gas and the reinstatement of an interrupted gas supply.<sup>100</sup> The

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<sup>97</sup> The ESC approved an annual average volume of 114 km (or a total of 570 km).

<sup>98</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 121.

<sup>99</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 121.

<sup>100</sup> "Facility" means, amongst other things, a pipeline: s 3(1) of the *Gas Safety Act 1997 (Vic)*.

obligation also includes minimising hazards and risks of damage to public property and the property of customers arising from gas.

Distributors also have obligations under the Gas Distribution System Code (Version 9, Schedule 1, Part A) including to ensure continuity of supply by maintaining gas pressure above the minimum levels specified in the Code.

The AER notes that there are no specific legislative safety or reliability requirements which mandate a certain volume of mains replacement to be undertaken within a specified timeframe. Envestra stated that it "does not have regulatory or legal obligations to replace a defined length of mains each year"<sup>101</sup>.

Rather, the *Gas Safety Act* requires a distributor in deciding what is "practicable" to have regard to a number of factors: the severity of the hazard or risk in question; the state of knowledge about the hazard or risk and any ways of removing or mitigating the hazard or risk; the availability and suitability of ways to remove or mitigate the hazard or risk; and the cost of removing or mitigating the hazard or risk.<sup>102</sup>

Envestra stated that some years ago it undertook breakage zone modelling to identify areas of mains that had a propensity to crack. Envestra states that it has replaced the zones identified as "high breakage zone[s]"<sup>103</sup>.

Envestra also noted that:

"age is not a determinant of the useful life of a main. Approximately 30% of mains have been in service for more than 80 years, some of which are in better condition than others of lesser age which have been replaced because of their condition and associated risk"<sup>104</sup>.

Distribution businesses meet their safety obligations, not just through the LP to HP mains replacement program, but through a mix of proactive and reactive programs. Despite the level of under delivery of the mains replacement program in the current access arrangement period, Envestra stated that it achieved its safety and reliability obligations through other risk mitigation measures.<sup>105</sup> The risk mitigation activities include:

- comprehensive assessment of gas leaks,
- undertaking regular leak surveys,
- undertaking routine syphon pump programs where water in mains problems are common,
- piecemeal replacement, and

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<sup>101</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 7.

<sup>102</sup> *Gas Safety Act 1997 (Vic)*, s. 3(1).

<sup>103</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 7, Attached letter to ESV/Attachment A, p. 3.

<sup>104</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 7, Attached letter to ESV/Attachment A, p. 5.

<sup>105</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 7.

- monitoring of odorant levels to ensure that leaking gas can be detected and reported by the public.<sup>106</sup>

The optimal mix of programs depends on the relative costs and effectiveness in achieving the distribution business' chosen level of risk.

The risk level the distribution businesses are exposed to and are prepared to adopt appears to vary between businesses and change over time:

- There are different safety risks associated with the different networks. For example there are different quantities of cast iron and unprotected steel across the distribution networks, which creates different risk profiles across the businesses.
- Different distribution businesses have shown that they have different risk tolerances. For example, networks which have less cast iron and unprotected steel are choosing to replace these mains at a faster rate than other networks which have more.
- Distribution businesses also make trade-offs between where they allocate their total capex allowance. This may lead to distribution businesses varying the safety risk they are willing to bear over time in relation to low pressure mains.

In considering what volume of mains replacement is necessary and efficient and prudent, the AER has taken into account these above variables which are informed by the applicable safety requirements. In particular, there is no specific volume of mains replacement to meet the adopted safety level, as safety may be addressed through a mixture of programs. Hence, the AER considers that the volume and timing of the mains replacement program is somewhat at the discretion of the gas business and potentially subject to the changing risk profile of the networks and resource availability.

Envestra stated that it has under delivered due to credit constraints associated with the GFC.<sup>107</sup> Envestra stated that it is currently meeting its safety and reliability obligations while delivering a lower volume of mains replacement than approved by the ESC.<sup>108</sup>

The AER accepts that Envestra is currently meeting its safety and reliability obligations while delivering a lower volume of mains replacement than approved by the ESC. The AER has no evidence to indicate otherwise. The credit constraints associated with the GFC has revealed that the least cost mix of work required to meet Envestra's safety and reliability obligations involves lower volumes of mains replacement than was proposed by Envestra for the 2008–12 access arrangement period.

The AER considers that the annual average volume of mains undertaken between 2008 and 2011 reveals the volume of mains replacement, which in concert with the other proactive and reactive mains programs, has enabled Envestra to meet their safety obligations.

The AER does not consider that the volumes proposed by Envestra in excess of the annual average historical volumes are necessary or prudent and efficient. The historical volumes have been sufficient to meet Envestra's chosen level of risk in the 2008–12 access

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<sup>106</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p.7, Attached letter to ESV/Attachment A, p. 4.

<sup>107</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 21.

<sup>108</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 7.

arrangement period. The AER considers that, as it has done in the past, Envestra will be able to address any change in risk through the alternative programs available while still undertaking the rate of mains replacement which it has undertaken in 2008–11. In arriving at this decision, the AER has taken into account the distributor's safety obligations and the means available to it to comply with these obligations. In particular, there is no fixed period for completion of the mains replacement program, a program which is currently under review by the ESV. In addition, there are no mandatory volume requirements under the *Gas Safety Act*. Instead, there are a variety of options available to distributors to address the existing safety obligations and a range of considerations under the *Gas Safety Act* which allow distributors to balance risk and cost. Therefore, on the evidence before it, the AER does not consider that a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services, would undertake mains replacement at the volumes Envestra has proposed.

The AER is mindful that proactive replacement of mains involves a longer-term objective of eventually replacing all low pressure mains for safety and reliability reasons. Distribution businesses may alter the timing in response to changing risk and capital availability. The AER also notes that the program is currently being reviewed by the ESV.

The AER does not want to limit the scope for businesses to legitimately respond to changed market conditions through altering the mix of risk management programs. This may require the ability to alter the volume of mains replacement delivered. Consistent with *Gas Safety Act*,<sup>109</sup> this may be driven by factors such as new information on safety risks and changes in the relative costs of different methods for mitigating or removing safety risks.

For this reason, the AER considers that a pass through event should apply, where the trigger event is the completion of total approved volumes<sup>110</sup> (the annual average of the historical volumes achieved for the 2008–11 period applied to the 2013–17 access arrangement period).

On completion of total approved volumes, the distribution business will be able to submit a cost pass through application seeking to adjust the volume of mains replacement for the remainder of the access arrangement period. In responding to this application the AER will consider:

- the volumes of mains replacement proposed (above approved historical volumes) for the remainder of the access arrangement period
- the efficient unit cost associated with the proposed program of works at a suburb level (as is currently submitted)
- the additional return on capital accruing to the distribution business because the mains replacement program has been completed in a shorter time frame than was initially approved

If approved, as part of the annual tariff variation process, the distribution business will receive the revenue associated with the approved volumes and unit rates. Distribution businesses will

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<sup>109</sup> *Gas Safety Act 1997 (Vic)*, s. 45.

<sup>110</sup> For Envestra the total approved volume is 265km, which is the average of the annual volumes of main replacement delivered over 2008-11, multiplied by 5 years.



receive the same return on and return of capital expenditure as they would have if the volume undertaken had been approved at the commencement of the access arrangement.

The provision of a pass through provides distribution businesses with the ability to apply for approval of additional volumes of mains replacement should it become apparent that changing circumstances warrant an alteration of their replacement programs. This provides the businesses with an incentive to deliver those volumes at an efficient cost.

The AER notes that the mains replacement work is outsourced by Envestra. On the basis of confidential information provided to the AER by Envestra, the AER does not believe the pass through provision will materially change the level of certainty that Envestra currently has over future works.

Within the low pressure mains replacement program is a project line to replace some other mains over the 2013–17 access arrangement period. On the basis of confidential information, the AER notes that this work has not been undertaken in the 2008–12 access arrangement period. Envestra has not provided any justification for this program for the 2013–17 access arrangement period. Based on the information before it, the AER does not consider that this project is prudent and justified under r. 79(2)(c)(i)-(iii) of the NGR. On the basis that this project is not consistent with r. 79(1)(a) of the NGR, the AER does not approve the amount associated with this program.

#### *Unit rates*

Envestra proposed an average unit cost for LP mains renewal of \$495/metre (\$2011, escalated direct cost, excluding overheads) for the 2013–17 access arrangement period. This is 218 per cent higher in real terms than the average unit cost of \$156/metre (\$2011, escalated direct cost, excluding overheads) for the 2008–11 access arrangement period. Envestra stated that this is largely due to the work progressing towards Melbourne's inner city suburbs which are a more difficult and demanding work environment.

Envestra produced unit rates for its mains replacement program by building a model with two types of inputs:

- suburb factors (including congestion, rockiness, traffic management) and
- 2011–12 tender prices for cost of mains laying, pipe, rock, traffic management, tie-ins, cut offs, service replacement, repositioning of meters, relocation of fitting lines, regulatory boxes and property reinstatement.<sup>111</sup>

Envestra claimed that the model was externally consistent by comparing the model's unit rates for five suburbs against the results of 2012–13 tenders for those suburbs.<sup>112</sup>

In assessing Envestra's approach to formulating the unit rates the AER considered:

- the use of the tendered unit rates within the model

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<sup>111</sup> Envestra, *Access Arrangement Information: Attachment 7.5B Unit rates Victoria MRP.xlsx*, 30 March 2012.

<sup>112</sup> Envestra, *Response to information request 4 of 18 May 2012, received 30 May 2012*, preamble to question 31, p. 11.

- the internal consistency of the model,
- the external consistency of the model (in this case Envestra proposed validating the model against 2012–13 tendered rates), and
- how the unit rates produced for particular types of suburbs within the Envestra model compared with similar types of suburbs across the other two distribution businesses.

As Envestra's model relied upon 2011–12 tender rates as an input, the AER sought to verify the unit rates and determine that these rates were established under competitive tender conditions. The AER requested that Envestra provide the 2011–12 tender terms of reference, Envestra's evaluation of the tender responses and the awarded contracts which specify the unit rates used as model inputs. This information showed that Envestra derived the model unit rates by taking a simple average of some of the tendered quotes provided.<sup>113</sup> Envestra did not provide an explanation for why they had selectively included particular tenders but excluded others<sup>114</sup>. There was a significant variation between the quotes, for example the quotes for one of Envestra's model unit rates were between one sixth of the model unit rate and four and a half times the model unit rate. Envestra argued that it used an average to reflect that it awards work to a number of tenderers to avoid becoming reliant on one tenderer<sup>115</sup>.

The AER accepts that maintaining a panel of tenderers is an efficient approach. However, when awarding specific work, the AER considers that a prudent and efficient business operator would normally select a panel member offering the most competitive rate for the particular works. This practice would be consistent with a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost. The AER considers that Envestra's use of the average of tendered rates is likely to upwardly bias its unit cost estimates. Therefore, the unit rates used in the model are not arrived at on a reasonable basis and do not represent the best forecast or estimate possible in the circumstances (as required by r. 74(2)(a) and (b) of the NGR).

In relation to the internal consistency of the model, the AER has a number of concerns:

- The congestion factor has a significant impact on costs. The congestion factor is multiplied by the labour cost for multiple cost inputs eg. tie-ins and mains laying. It therefore has a significant multiplier effect on the unit rate calculation. The impact of the congestion factor is to either decrease the unit rate by up to 31 per cent, where the congestion factor is less than one, or increase the unit rates by up to 74 per cent, where it is greater than one.
- The AER considers that the congestion cost is captured by other costs in the model including the traffic management, mains insertion cost and mains direct laying cost (which both take into account reinstatement costs), service and metering moving cost, rock, tie-ins and cut-offs. The inclusion of a congestion factor is effectively double counting costs already captured by the above mentioned factors.
- The AER considers that there are anomalies in the congestion factor relativities. These include that:

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<sup>113</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, Misc Capex pp. 11–12.

<sup>114</sup> Both on-panel and off-panel tenderers were variously omitted from the simple average calculation.

<sup>115</sup> Envestra, *Vic GAAR - Envestra - Follow up to request for tender documents*, received 31 July 2012.

- the scale of difference between the congestion factors for some suburbs are considered by the AER to be too great.
- some suburb relativities are considered by the AER to be inconsistent.

To establish the external consistency of its model, Envestra proposed validating five of the model's unit rates against tenders received for the 2012–13 mains program. Envestra initially provided tendered rates which varied from the models forecasts by between 8 per cent lower to 21 per cent higher. In subsequent tender documentation provided to the AER, a further six suburb unit rates were identified.<sup>116</sup> Incorporating these, the model rates were between 8 per cent less and 36 per cent above the unit rates produced in the model. Further, the model rates were 20 per cent above the weighted average of the lowest tender prices for each location. Given the degree of observed variance, the AER does not consider that the model produced robust unit rate estimates and so the model did not provide a reasonable basis for estimating the unit rates as required by r. 74(2)(a) of the NGR.

The AER also undertook high level benchmarking of unit rates across the three distribution businesses. The AER notes that Envestra's forecast average unit costs at \$495/m are more than twice as high as another distribution business. In particular Envestra's rates for high-congestion suburbs are 66 per cent higher than comparable suburbs for another distribution business.

The AER does not approve Envestra's unit rates on the basis that they are not arrived at on a reasonable basis as required by r. 74(2)(a) of the NGR. The AER's decision is based on the following factors as discussed above:

- the lack of internal and external consistency of the Envestra's model for estimating unit rates,
- the use of tendered rates as an input into the model in a way that upwardly biases forecasts, and
- the large difference between Envestra's unit rates and those of the other distribution businesses for comparable suburbs.

The AER considers that an appropriate alternative is to:

- divide the suburbs into three categories (easy, medium, hard) according to the congestion factor in the Envestra model, making adjustments for inconsistencies,
- apply the weighted average of the lowest tender rates<sup>117</sup> for each suburb for which 2012-13 tender results were supplied for the medium category of mains replacement,
- for the easy category of mains replacement, for which no 2012–13 tenders were submitted, apply the actual unit rates for work undertaken in 2008–12 in the same

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<sup>116</sup> Envestra, *Response to information request 34 of 13 July 2012*, received 2 August 2012, p. 1.

<sup>117</sup> A number of tenderers responded with rates for particular suburbs. The lowest unit rate for each suburb was selected from all tenders submitted. The overall unit rate for the medium category was calculated by weighting each suburb's selected unit rate by the respective volume of mains replacement in that suburb.

suburbs that Envestra is proposing to carry out their mains replacement program in 2013–17.<sup>118</sup>

Due to the AER's adjustment to volumes (see above), no mains in the hard category are forecast to be replaced during 2013–17. Thus, no alternative unit rate for the high category is proposed.

#### *Adjusted unit rates*

The AER notes that when Envestra reduced the volume of mains replacement works below the approved amount in the current period, it prioritised the areas with lower unit costs.<sup>119</sup>

Given the reduction in approved volumes for the next period, the AER has adjusted the approved unit rate accordingly. This results in an average unit rate of \$238/metre and a total expenditure of \$63.1 million (\$2011, unescalated direct costs, excluding overheads). The AER notes that, with the reduced volumes prioritised in this way, the works will only reach the easy and medium classes of suburbs.

#### **LP pipe - ad hoc replacements and services renewal - (non mains replacement program)**

Reactive replacement of mains occurs when there are urgent safety or supply issues. The length of mains replaced are typically short lengths of pipe, up to 50 metres.

Inlet services may need to be renewed on a stand-alone basis (unrelated to mains renewal works) where leaks or damage occur and a repair is not viable. The number of services requiring replacement is reducing as more mains replacement is carried out.

For the Victorian network Envestra proposed a capital allowance of \$3.7 million (\$2011, unescalated direct costs, excluding overheads)<sup>120</sup> for unplanned service replacements. Envestra based its forecast expenditure on an average of the actual unit rates for 2009 and 2010 and a declining volume of service renewals based on the mains replacement program.<sup>121</sup>

Envestra proposed transferring the ad hoc mains replacement expenditure amount from capex to opex.<sup>122</sup> This was on the basis that ad hoc mains replacement, as a reactive replacement program, constitutes repair work as it keeps the network functioning within its current configuration (versus the block replacement program which Envestra argued provides enhanced capacity and reliability)<sup>123</sup> Envestra based its opex expenditure for ad hoc mains

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<sup>118</sup> Envestra, *Response (second part) to information request 4 of 18 May 2012*, received 19 June 2012, Q.35 The AER also sought data to show the volumes of works by suburb and calendar year (AER, *Information request 17 of 22 June*, Q.1), but as at 21 September Envestra had not supplied this level of detail.

<sup>119</sup> Envestra, *Response to information request 4 of 18 May 2012*, received 19 June 2012, question 35, p.35.

<sup>120</sup> Envestra, *Response to Information Request 17 of 22 June 2012*, received 22 July 2012, p. 4.

<sup>121</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, 30 March 2012, p. 70.

<sup>122</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 103.

<sup>123</sup> Envestra, *Access Arrangement Information: Attachment 6.1 Business Case V98 Reactive Replacement (opex)*, 30 March 2012, pp.1–2.

replacement for the 2013–17 access arrangement period on an average of the annual total capex for reactive mains replacement from 2008–11.<sup>124</sup>

The AER considers that ad hoc mains replacement is a capital expenditure item and should continue to be assessed as a capital item, consistent with r. 69 of the NGR.

The AER has considered the Australian Accounting Standards Board AASB 116 Property, Plant and Equipment standard, which relates to the recognition of assets relating to property, plant and equipment. AASB 116 paragraph 7(a) requires that the cost of an item of property, plant and equipment be recognised as an asset if it is probable that future economic benefits associated with the item will flow to the entity.

Statement of Accounting Concepts SAC 4 paragraph 18 states that future economic benefits is synonymous with service potential.

Replacement of mains, no matter how small, provides future economic benefits in terms of providing the service of containing and transporting gas to consumers. At installation, the new mains has the characteristics of pipe with a 60 year life thereby incrementally improving the overall pipe asset life and so the service potential of that pipe.

By contrast, the AER considers that repairs of mains is an expense, as defined under SAC 4 paragraph 117, and as described by the AASB in paragraph 12. A repair of the mains asset does not confer future economic benefit, but rather it maintains the existing economic benefit.

Taking into consideration the Accounting Standards, the AER considers that mains replacement should remain classified as capital expenditure.

In assessing Envestra's proposed expenditure the AER requested data for the 2008–11 actual volume and total costs for the ad hoc mains replacement and service renewal programs (see Table 3.16).<sup>125</sup>

**Table 3.16 Envestra proposed ad hoc mains replacement and service renewal data (\$'000, 2011)<sup>(a)</sup>**

	2008	2009	2010	2011	2008-2011 Total
Ad hoc mains replacement (metres)	768	200	228	341	1,537
Ad hoc mains replacement (\$,000 \$2011)					893
Ad hoc services (units)	860	717	628	562	2,767
Ad hoc services (\$,000 \$2011)					5,273

Source: Envestra<sup>126</sup>.

Notes: (a) Direct unescalated costs, excluding overheads; data converted into \$2011 by the AER.

<sup>124</sup> Envestra, *Access Arrangement Information: Attachment 6.1 Business Case V98 Reactive Replacement (opex)*, 30 March 2012, p. 2.

<sup>125</sup> Envestra, *Response to Information Request 17 of 22 June 2012*, received 22 July 2012, p. 3.

<sup>126</sup> Envestra, *Response to Information Request 17 of 22 June 2012*, received 22 July 2012, p. 3.

Given the lumpiness in terms of timing and magnitude of the ad hoc mains replacement expenditure over 2008–11, the AER considers that it is appropriate to forecast the 2013–17 expenditure by calculating the annual average total expenditure over 2008–11 on the basis that this is the best estimate in the circumstances. On the basis of the information supplied to the AER in Table 3.16, which was in the order of the expenditure over 2003–07,<sup>127</sup> the AER approves an annual average expenditure of \$0.223 million (\$2011, direct unescalated costs, excluding overheads) for 2013–17.

For ad hoc services renewal the AER considered the trend in the number of services replaced over 2008–11 and Envestra's forecast of service renewals over the 2013–17 access arrangement period. The AER does not consider that there is a reasonable basis for forecasting a step up in the number of renewals to 600 in 2013 given the gradual decline in the number of service renewals over the 2008–11 period. The AER considers that the decline in service renewals reflects the rollout of the low pressure to high pressure mains replacement program. Therefore in order to provide the best estimate, the AER has interpolated the number of services per year from 562 service renewals in 2011 to 200 service renewals in 2017.

The AER considers that given the variation in the historical unit rates an average unit rate across 2008–11 is more reflective of the unit rates going forward for 2013–17 rather than the 2009–10 average.

This results in revised volumes and unit rates for the ad hoc service renewals program. The AER approves \$2.98 million (\$2011, direct unescalated costs, excluding overheads) for ad hoc service renewals capex for the total 2013–17 access arrangement period .

### **Mains replacement for Albury network**

Envestra did not propose a planned mains renewal program for its Albury network.

Envestra proposed a capital allowance of \$0.05 million (\$2011, escalated direct costs, including overheads)<sup>128</sup> for unplanned mains replacements and service renewals.

The annual average expenditure amount in terms of unescalated direct costs for the 2013–17 access arrangement period is 54 per cent lower than the annual average cost over the 2008–12 access arrangement period. The AER therefore considers that this is a reasonable estimate of expenditure and approves \$0.05 million (\$2011, escalated direct costs, including overheads) total expenditure for ad hoc mains replacement and services renewals.

### **Connections**

Distribution businesses have a regulatory obligation to connect residential and commercial/industrial customers to the distribution network upon request. The capex associated with connecting customers to the distribution network generally includes the cost of new mains, gas service pipe from the main to the meter, and the meter.

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<sup>127</sup> Envestra, *Response to Information Request 18 of 25 June 2012*, received 1 July 2012, p. 5.

<sup>128</sup> Envestra, *Albury Access Arrangement Information*, March 2012, p.120.

The AER considers that connections expenditure is justified under r. 79(2)(c)(iii) of the NGR as it is a regulatory obligation to connect customers to the network.

### **Victoria network**

Envestra has forecast expenditure of \$163.7 million (\$2011, escalated direct costs, excluding overheads) for customer connections capex over the 2013–17 access arrangement period. This amounts to approximately 22 per cent of Envestra's proposed total capex forecast.

Envestra calculated the total capital expenditure for connections by determining the unit costs for mains, inlets and meter components and the forecast number of new connections for Tariff V class customers. The AER agrees with this approach.

Envestra also proposed a unit rate and volume approach for Tariff D. For Tariff D customers expenditure tends to be lumpy in nature due to the customer size and number of the connections. The AER considers an assessment of total expenditure rather than a unit rate and volume assessment is a more appropriate approach to assessing proposed capex.

The expenditure assessed in this section includes connections associated with extending the Envestra network, including under the Regional Development Victoria "Energy for the Regions" program.

In its submission to the AER, the EUCV noted that despite underspending its capex allowance in the current period, Envestra was able to maintain its services at acceptable levels and to connect all customers seeking a connection. Accordingly, the EUCV considered that Envestra's actual capex incurred in the 2008–12 access arrangement period was efficient and that no step up in capex is warranted for the 2013–17 access arrangement period.<sup>129</sup>

In its submission to the AER, Origin Energy noted that Envestra's residential connections capex forecast for the 2013–17 access arrangement period is 25 per cent higher than the 2008–12 period expenditure. Origin queried the increased cost of connections in the 2013–17 access period, given the residential customer growth is comparable to the 2008–12 period.<sup>130</sup>

The AER has taken the EUCV and Origin Energy's observations into account and assessed the basis and justification for the proposed increased capex for connections. This is discussed further in its unit cost analysis section below.

The AER approves residential connections expenditure of \$99.8 million (\$2011, escalated direct costs, excluding overheads) and total commercial/industrial connections expenditure of \$15.6 million (\$2011, escalated direct costs, excluding overheads).

The AER's assessment of connections capex volumes and unit rates is outlined below.

### **Tariff V class customer connections**

Tariff V class customer connections are residential and commercial/industrial customers who consume less than 10 TJ/year. Residential and commercial/industrial customers are

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<sup>129</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, pp. 19–20.

<sup>130</sup> Origin, *Submission to Envestra's access arrangement proposal*, June 2012, p. 2.

considered separately because there are different input requirements, especially in relation to services and meters.

### *Volumes*

Envestra provided Core Energy forecasts of net customer connection numbers, which projected annual average residential net customer growth of 2.1 per cent over 2013–17 (down from actual growth of 2.6 per cent over the 2005–10 period) and commercial net customer growth of 0.8 per cent (up from 0.7 per cent over the 2005–10 period)<sup>131</sup> (see attachment 9 of the AER's draft decision for a discussion of the net customer forecasts).

Envestra calculated the number of new customer connections by deriving the gross number of connections from the sum of net connections and gross customer disconnections.

It is unclear from where Envestra derived its net connections numbers. They are higher than those projected by Core Energy.

Envestra forecast gross residential disconnections of 10 per cent of gross residential connections and gross commercial/industrial disconnections of 50 per cent of gross commercial/industrial connections. Envestra stated that these were based on the average of the gross disconnections to gross connections ratio for each year of 2008–11.<sup>132</sup> It is unclear from where the 50 per cent ratio for gross commercial/industrial connections has been derived as it bears no relationship to the historical data. The AER sought to verify the connection ratios from source data supplied by Envestra<sup>133</sup>. However the total numbers of gross connections and the derived net connections provided as underlying data do not align with the totals in the proposal. The AER undertook cross-business benchmarking of connection rates and notes that Envestra's ratios are considerably higher than another Victorian gas distribution business, which has a similar growth pattern and mix of new estates and infill to Envestra. Given the lack of consistency in data the AER does not consider that the ratios of disconnections to gross connections have been arrived at on a reasonable basis, as required by r. 74(2)(a) of the NGR. The AER considers that an appropriate alternative is to apply the ratios of the other Victorian gas distribution business.

For Tariff V residential connections Envestra derived the split between existing, new and multi-user dwellings based on the 2011 proportions. The AER does not consider it appropriate to base these projections on one year given the variability in the proportions over 2008–11.

Given the above methodological issues, the AER does not consider Envestra's forecast of gross connections to be arrived at on a reasonable basis and does not provide the best estimate in the circumstances as required by r. 74(2) of the NGR.

The alternative forecast that the AER has proposed for Tariff V residential and commercial/industrial customers consists of the following:

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<sup>131</sup> Envestra, *Access Arrangement Information: Attachment 13.1 Core Energy Demand Forecast Report*, 30 March 2012, p. 6.

<sup>132</sup> Envestra, Email "FW: Vic GAAR - Envestra (Vic) - AER information request 25 & 26 - 6 July 2012 Envestra Response 25 July 2012", received 25 July 2012.

<sup>133</sup> Envestra, Email "FW: Vic GAAR - Envestra (Vic) - AER information request 25 & 26 - 6 July 2012 Envestra Response 25 July 2012", received 25 July 2012, Vic Gains and Losses 2008–11 - Follow Up to AER request.xlsx



- for deriving gross customer numbers:
  - Core Energy's projected net customer numbers are used,
  - the historical disconnection to gross connection ratios used by the other Victorian gas distribution businesses for residential and commercial/industrial connections are applied.
- to calculate the existing, multi-user and new home splits for Tariff V residential connections:
  - the average of the 2008–11 splits are applied to the gross connection numbers.

The AER has adjusted the gross customer numbers for the 2013–17 access arrangement period accordingly on the basis that Envestra's forecast was not the best estimate possible in the circumstances as required by r. 74(2)(b) of the NGR. This results in a total reduction of 9,867 gross residential connections and 691 gross commercial/industrial connections over the 2013–17 access arrangement period.

#### *Unit costs*

Envestra proposed a Tariff V residential and Tariff V commercial/industrial connection unit rate based on unit rate estimates for the 2013–17 access arrangement period for mains, inlets and meters cost estimates for new estate, existing and multi-user type connections. In general, a simple average of the 2009 and 2010 unit rate was used and some adjustments were made for changes in contractor and material costs, based on recent tender outcomes.

The AER has a number of concerns with Envestra's forecasting methodology:

- a simple average was used instead of a weighted average. The AER considers that a weighted average is more appropriate than a simple average as it takes into account the influence of volume on unit rates.
- 2009 and 2010 were used as the base years upon which unit rates were forecast. In assessing the appropriateness of choosing 2009 and 2010 as representative years, the AER noticed that the trends across the 2008–11 period varied across the categories. The AER also understands there are variations in the unit rates as there are a number of different tender areas, which each have different unit rates<sup>134</sup>. Depending on the volumes in each area, there will be a fluctuation in the overall unit rate, as this is effectively a weighted unit rate of the work undertaken across the different tender areas.<sup>135</sup> The AER therefore considers that an average across 2008–11 is more appropriate than relying on only 2009 and 2010.
- The AER sought to verify Envestra's claim that increases in unit rates are being driven by increased growth in more expensive areas. The AER considers that the information provided by Envestra did not support its claim<sup>136</sup>. The AER therefore does not approve the cost increases claimed to be associated with growth in more expensive areas.

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<sup>134</sup> Envestra, *Email Follow up to phone meeting on 18 June 2012*, received 26 June 2012.

<sup>135</sup> Envestra, *Email Follow up to phone meeting on 18 June 2012*, received 26 June 2012.

<sup>136</sup> AER, *Information Request 4 of 18 May 2012*, received 30 May 2012; Information Request 8, Question 24 and 25 sent 8 June 2012, Information Request 13, Question 1, sent 15 June 12, Information Request 31, Question 1 and Question 2, sent 11 July 2012, Information Request 37, Questions 1–3, sent 19 July 2012,

- In order to verify the contract-related increase in unit rates and assess the competitiveness of the tender process through which they were finalised, the AER requested that Envestra provide the contracts, the tender terms of reference and the tender evaluation.<sup>137</sup> Envestra provided contracts to the AER, however, these do not corroborate the unit rates proposed by Envestra. The AER has asked Envestra to provide a mapping from the contracts to the proposed unit rates<sup>138</sup> but Envestra stated that it is unable to provide the mapping requested<sup>139</sup>. The AER therefore does not approve any cost increases associated with this claimed increase in tender costs.
- The AER does not consider that material escalation on certain cost inputs should be applied to internal cost build ups as this is captured by the escalation which is applied to the base unit rates as per the capex forecast model. This would be double counting so the AER does not approve the increase in material costs.

The AER has calculated revised unit rates by taking a weighted average of the 2008–11 components.

This results in:

- a Tariff V residential connection unit rate of \$1,610 (\$2011, escalated direct costs, excluding overheads) and AER approved total expenditure for the 2013–17 access arrangement period of \$99.8 million (\$2011, escalated direct costs, excluding overheads) and
- a Tariff V commercial/industrial rate of \$12,151 (\$2011, escalated direct costs, excluding overheads) and AER approved total expenditure for the 2013–17 access arrangement period of \$15.2 million (\$2011, escalated direct costs, excluding overheads).

The AER considers that the capital expenditure is justifiable as it is necessary to comply with a regulatory obligation, under r. 79(2)(c)(iii) of the NGR and that these capex amounts are consistent with r. 79(1)(a) of the NGR.

### Large customer connections (Tariff D)

Large customer connections expenditure was forecast by Envestra on the basis of the number of new connections and the number of upgrades per year multiplied by the associated unit rate.<sup>140</sup>

The AER notes that there is considerable variability in the numbers of gross connections and no strong relationship between the connection numbers and the total cost. Therefore the AER does not consider that a per connection estimate of costs is a reasonable basis for estimating costs for these types of connections.

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Email " RE: Vic GAAR - Envestra - Updated timeline for draft decision" sent 15 August 2012, Envestra, *Response to information request 31 of 11 July 2012*, received 26 July 2012, Question 2, p.2

<sup>137</sup> AER, *Information Request 4*, Question 14, sent 18 May 12, *Information Request 8*, Question 24 and 25 sent 8 June 2012, *Information Request 13*, Question 1, sent 15 June 2012, *Information Request 31*, Question 1 and Question 2, sent 11 July 2012, *Information Request 37*, Questions 1-3, sent 19 July 2012, Email " RE: Vic GAAR - Envestra - Updated timeline for draft decision" sent 15 August 2012.

<sup>138</sup> AER, Email " RE: Vic GAAR - Envestra - Updated timeline for draft decision" sent 15 August 2012.

<sup>139</sup> Envestra, Email " RE: Vic GAAR - Envestra - Updated timeline for draft decision", received 21 August 2012, 120821-Outstanding Responses.doc, pp.2-3.

<sup>140</sup> Envestra, *Access Arrangement Information: Attachment 7.1 Capital Expenditure - Victoria Unit Rates*, 30 March 2012, p. 10.

Furthermore, the AER notes that there is considerable inconsistency in the historical net connection numbers provided by Envestra to the AER. The historical net connection numbers are a key input into forecasting future net connection numbers. The Core Energy Tariff D net connection numbers do not correspond with the RIN and information request response numbers presented by Envestra.

Given the lack of correlation between the total cost and the number of gross connections, and the lack of consistency between the connection numbers presented by Envestra, the AER does not consider that Envestra's forecast has been arrived at on a reasonable basis as required under r.74(2)(a) of the NGR. The AER considers that an appropriate alternative forecast is to project forward an average of the 2008–10 actual expenditure. This results in a total large customer expenditure of \$0.3 million (\$2011, unescalated direct costs, excluding overheads) over the 2013–17 access arrangement period.

In summary, for the Victorian network, the AER approves residential connections expenditure of \$99.8 million (\$2011, escalated direct costs, excluding overheads) and total commercial/industrial connections expenditure of \$15.2 million (\$2011, escalated direct costs, excluding overheads).

### **Albury network**

Envestra has forecast expenditure of \$3.8 million (\$2011, escalated direct costs, excluding overheads) for customer connections capex over the 2013-17 access arrangement period. This amounts to approximately 56 per cent of Envestra's proposed total capex forecast.

The AER approves total expenditure for the 2013–17 access arrangement period of \$2.8 million (\$2011, escalated direct costs, excluding overheads) for Tariff V residential connections and \$0.13 million (\$2011, escalated direct costs, excluding overheads) for Tariff V commercial/industrial connections.

### **Tariff V class customer connections**

Tariff V class customer connections are residential and commercial/industrial customers who consume less than 10 TJ/year. Residential and commercial/industrial customers are considered separately because there are different input requirements, especially in relation to services and meters.

#### *Volumes*

Envestra provided Core Energy forecasts of net customer connection numbers, which projected annual average residential net customer growth of 1.6 per cent over 2013–17 (down from actual growth of 1.9 per cent over the 2005–10 period) and commercial net customer growth of 0.3 per cent (steady at 0.3 per cent over the 2005–10 period)<sup>141</sup> (see attachment 9 of the AER's draft decision for a discussion of the net customer forecasts).

Envestra calculated the number of new customer connections by deriving the gross number of connections from the sum of net connections and gross customer disconnections.

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<sup>141</sup> Envestra, *Access Arrangement Information: Attachment 13.1 Core Energy Demand Forecast Report*, March 2012, p. 6.

It is unclear from where Envestra derived its net connections numbers. They are higher than those projected by Core Energy.

Envestra forecast gross residential disconnections of 8 per cent of gross residential connections and gross commercial/industrial disconnections of 50 per cent of gross commercial/industrial connections. Envestra stated that these were based on the average of the gross disconnections to gross connections ratio for each year of 2008–11.<sup>142</sup> It is unclear from where the 50 per cent ratio for gross commercial/industrial connections has been derived as it bears no relationship to the historical data. The AER sought to verify the connection ratios from source data supplied by Envestra, however the total numbers of gross connections and the derived net connections provided as underlying data do not align with the totals advanced in the proposal. The AER undertook cross-business benchmarking of connection rates and noted that Envestra's ratios were considerably higher than another Victorian gas distribution business, which has a similar growth pattern and mix of new estates and infill to Envestra. Given the lack of consistency across the data sets the AER does not consider that the ratios of disconnections to gross connections have been arrived at on a reasonable basis, as required by r. 74(2)(a) of the NGR. The AER considers that an appropriate alternative is to apply the other Victorian gas distribution business' ratios.

For Tariff V residential connections Envestra derived the split between existing, new and multi-user dwellings based on the 2011 proportions. The AER does not consider it appropriate to base these projections on one year given the variability in the proportions over 2008–11.

Given the above methodological issues, the AER does not consider Envestra's forecast of gross connections to be the best estimate available in the circumstances as required by r. 74(2)(b) of the NGR.

The alternative forecast that the AER has proposed for Tariff V residential and commercial/industrial customers consists of the following:

- for deriving gross customer numbers
  - Core Energy's projected net customer numbers are used
  - the historical disconnection to gross connection ratio used by another Victorian distribution business for residential and commercial/industrial connections are applied
- to calculate the existing, multi-user and new home splits for Tariff V residential connections
  - the average of the 2008–11 splits are applied to the gross connection numbers.

The AER has adjusted the gross customer numbers for the 2013–17 access arrangement period accordingly, on the basis that Envestra's forecast was not the best estimate in the circumstances as required under r. 74(2)(b) of the NGR. This results in a total reduction of 220 gross residential connections and 6 gross commercial/industrial connections over the 2013–17 access arrangement period.

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<sup>142</sup> Envestra, *Follow up to Response to information request 25 and 26 of 6 July*, received 25 July 2012, Vic Gains and Losses 2008-2011 - Follow Up to AER request.xlsx.

### *Unit costs*

Envestra's Tariff V residential and Tariff V commercial/industrial connection unit rate estimates for the 2013–17 access arrangement period are built up from mains, inlets and meters cost estimates for new estate, existing and multi-user type connections. In general a simple average of the 2009 and 2010 unit rates is used, plus adjustments for the latest tender information are applied.

The AER has a number of concerns with Envestra's forecasting methodology:

- a simple average was used instead of a weighted average. The AER considers that a weighted average is more appropriate than a simple average as it takes into account the influence of volume on unit rates.
- 2009 and 2010 were used as the base years upon which most unit rates were forecast. In assessing the appropriateness of choosing 2009 and 2010 as representative years, the AER noticed that the trends across the 2008–11 period varied across the categories. The AER therefore considers that an average across 2008–11 is more appropriate than relying on only 2009 and 2010.
- The AER requested that Envestra provide the contracts, the tender terms of reference and the tender evaluation in order to verify the rates and assess the competitiveness of the tender process.<sup>143</sup> Envestra provided contracts to the AER, however these do not corroborate the unit rates proposed by Envestra. The AER has asked Envestra to provide a mapping from the contracts to the proposed unit rates<sup>144</sup> but Envestra advised that it was unable to provide a mapping. The AER therefore does not approve any cost increases associated with this claimed increase in tender costs. The AER therefore does not approve any cost increases associated with this claimed increase in tender costs.

The AER has calculated revised unit rates by taking a weighted average of the 2008–11 components. This results in:

- a Tariff V residential connection unit rate of \$1,640 (\$2011, escalated direct costs, excluding overheads) and AER approved total expenditure for the 2013–17 access arrangement period of \$2.8 million (\$2011, escalated direct costs, excluding overheads) and
- a Tariff V commercial/industrial rate of \$6,080 (\$2011, escalated direct costs, excluding overheads) and AER approved total expenditure for the 2013–17 access arrangement period of \$0.13 million (\$2011, escalated direct costs, excluding overheads).

The AER considers that the capital expenditure is justifiable as it is necessary to comply with a regulatory obligation, under NGR r. 79(2)(c)(iii) and that these capex amounts are consistent with r. 79(1)(a) of the NGR.

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<sup>143</sup> AER, *Information Request 4 of 18 May 2012*, Question 14; *Information Request 8*, Question 24 and 25 sent 8 June 2012, *Information Request 13*, Question 1, sent 15 June 2012, *Information Request 31*, Question 1 and Question 2, sent 11 July 2012, *Information Request 37*, Questions 1-3, sent 19 July 2012, Email " RE: Vic GAAR - Envestra - Updated timeline for draft decision" sent 15 August 2012

<sup>144</sup> AER, Email " RE: Vic GAAR - Envestra - Updated timeline for draft decision" sent 15 August 2012

## Meter replacements

Meter replacement is an ongoing activity which is necessary to ensure that gas meters in the field are replaced when they fail to accurately read data. The Gas Distribution Code<sup>145</sup> requires that meters read customers' gas usage accurately within an acceptable error tolerance range. Gas meters are continually sampled and tested for accuracy. Based on sample test results, meter families<sup>146</sup> are allocated a life and a forecast replacement date. Sample testing is conducted in accordance with the in-service compliance standard.<sup>147</sup>

The AER considers that Envestra's meter replacement capex complies with r. 79(2)(c)(ii) of the NGR as it is required to maintain the integrity of gas services. Envestra's meter replacement program relates to both residential and industrial and commercial meters and comprises the following sub components:<sup>148</sup>

- Periodic meter changes (PMC)—Meters at the end of their in-service compliance periods (i.e. useful life) are removed from the field and replaced with new or refurbished assets of similar capacity
- Field Life Extension tests – the test procedures allow for meter families to receive either a 1 year, 3 year or 5 year life extension depending upon test results
- Faults/damages – Envestra reactively replaces meters that fail in operation
- Upgrades/downgrades of sites – Envestra upgrades or downgrades a number of meters each year.

The AER considered the basis on which Envestra arrived at its forecasts of the replacement volumes and the cost (on a unit rate basis) of removing and replacing the meters. Specifically, the AER considered the:

- Efficiency and prudence of the proposed meter replacement volumes by examining the age of the meters Envestra is proposing to remove and ensuring this is in a reasonable age range. The AER has determined this reasonable range having regard to the initial 15 year life of meters and the availability of sampling and maintenance techniques to extend meter life beyond 15 years.
- The efficient mix of using refurbished and new meters in meter replacement, and
- Efficiency of proposed unit rates of meters replaced as being reflective of the lowest sustainable input costs.

In its submission to the AER, the EUCV noted that despite underspending its capex allowance in the current period, Envestra was able to maintain its services at acceptable levels and to connect all customers seeking a connection. Accordingly, the EUCV concluded that Envestra's actual capex incurred in the 2007–11 period was efficient and that no step up in capex is warranted for the 2013–17 access arrangement period.<sup>149</sup> The AER understands

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<sup>145</sup> ESC, *Gas Distribution System Code (Version 9.0 effective from 1 January 2009)*, 12 December 2008.

<sup>146</sup> Groups of similar meters installed in the same year.

<sup>147</sup> Services Australia/Services New Zealand, *Gas meters—In service compliance testing AS/NZS 4944:2006*, May 2006.

<sup>148</sup> Envestra, *Response to Information Request 4 of 18 May 2012*, received 8 June 2012, p.15.

<sup>149</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, pp. 19–20.

that meter replacement capex may be uneven in nature and so examined Envestra's proposed cost build-up as-well as the historical level of capex. The AER considers that meter replacement capex for Victoria of \$30.4 million complies with r. 74(2) and r. 79(1) of the NGR. The AER considers meter replacement capex for Albury of \$0.5 million complies with r. 79(1) of the NGR. The AER's consideration of volumes and unit costs is outlined in detail below.

In response to an AER information request, Envestra acknowledged an error in the unit rates incorporated into its capex forecast model for Victoria.<sup>150</sup> Additionally, a detailed breakdown of meter replacement volumes provided to the AER indicated a small discrepancy with those contained in Envestra's capex forecast model for Victoria.<sup>151</sup> Accordingly the AER does not consider that the meter replacement capex for Envestra Victoria complies with r. 74(2) and r. 79(1) of the NGR.

However, the AER considered the corrected volumes and unit rates in detail to examine whether these comply with r. 74(2) or r. 79(1) of the NGR. The AER considers that the corrected volumes and unit rates do comply with r. 74(2) and r. 79(1) of the NGR. Table 3.17 and Table 3.18 show Envestra's proposed network capex for Victoria and Albury, respectively, and the AER's draft decision on meter replacement capex over the 2013–17 access arrangement period.

**Table 3.17 Envestra meter replacement capex for Victoria (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	3.8	7.9	6.3	12.4	4.6	35.0
AER approved	3.5	6.6	5.5	10.4	4.4	30.4
Difference	-0.4	-1.3	-0.7	-2.1	-0.2	-4.6

Source: AER analysis.

**Table 3.18 Envestra meter replacement capex for Albury (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	0.1	0.1	0.1	0.1	0.1	0.5
AER approved	0.1	0.1	0.1	0.1	0.1	0.5
Difference	-	-	-	-	-	-

Source: AER analysis.

### Domestic meter replacements volumes

Domestic meter replacements comprise the bulk of total meter replacements. Envestra proposed to replace 239,980 domestic meters for its Victoria network at a total capex of \$27.5 million (\$2011, escalated direct costs, excluding overheads)<sup>152</sup> over the 2013–17 access arrangement period. Envestra proposed to replace 2942 domestic meters for its Albury

<sup>150</sup> Envestra *Response to AER information request 8 – follow up – 26 June 2012*

<sup>151</sup> Envestra, *Response to Information Request 4 of 18 May 2012*, received 8 June 2012

<sup>152</sup> Envestra, *Access Arrangement Information: Attachment 7.6 Forecast capex model*, 30 March 2012, Unit rate escalations worksheet.

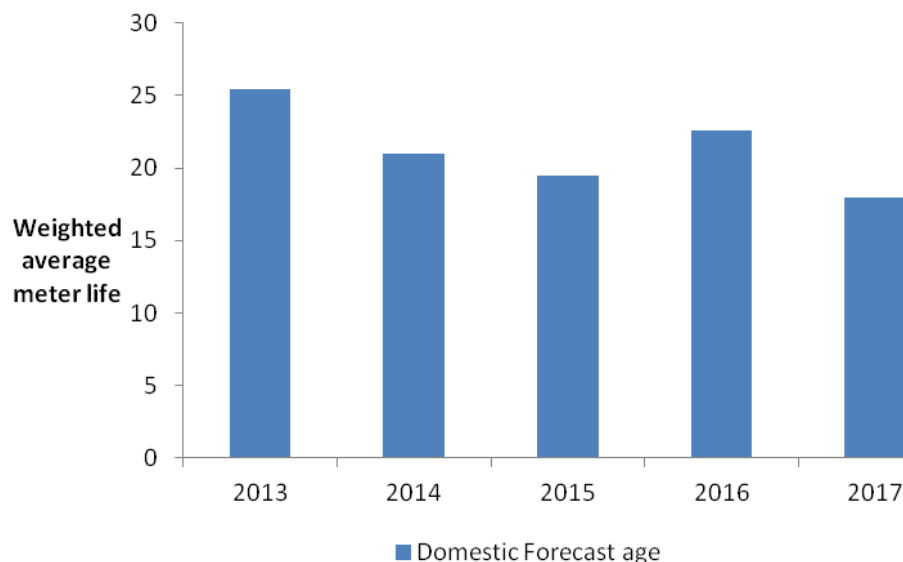
network at a total capex of \$0.35 million (\$2011, escalated direct costs, excluding overheads)<sup>153</sup> capex over the 2013–17 access arrangement period.

### Domestic meter replacements (PMC)

The AER examined the age of the meter families when Envestra proposes to remove the meter from the field.

As demonstrated in Figure 3.5 the average age of meters when Envestra proposes to remove meters from its Victoria network from service ranges from approximately 18 to 25 years. The AER considers this reflects a reasonable average age range for meter replacement. The AER reached this conclusion taking into account the initial life of 15 years and the possibility of extending meter life beyond 15 years as a result of meter sample tests. This range of meter lives suggests that these works are necessary to meet mandated meter operating requirements and that the works are not overstated or undertaken unnecessarily.

**Figure 3.5 Envestra average meter age at time of replacement for Victoria**



Source: AER analysis, Envestra.<sup>154</sup>

Envestra's gas sampling plan states that meter family selection will be based on an economic analysis, and sampling only occurs if there is a sufficient volume of meters in the field for sampling to be economic.<sup>155</sup> The AER understands that due to the small volumes it is not cost effective to conduct a meter sampling regime in the Albury region. Rather, it is preferable to remove all meters in the family from the field when they reach the end of the initial life. The

<sup>153</sup> Envestra, *Access Arrangement Information: Attachment 7.6 Forecast capex model*, 30 March 2012, Unit rate escalations worksheet.

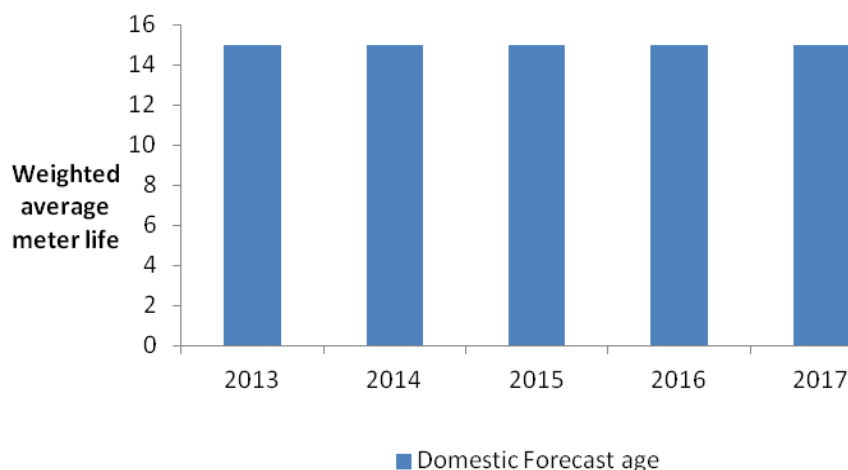
<sup>154</sup> Envestra, Response to information request 4 of 18 May, received 30 June 2012.

<sup>155</sup> Gas Technology Services, *Gas Meter In-Service Compliance Procedure for APA*, 4 November 2011, p.6.



AER therefore considers that it is reasonable to remove these meters shortly before the 15 year initial life expires. Figure 3.6 below depicts the age profile of Envestra's domestic meters for its Albury network being replaced.

**Figure 3.6 Envestra average meter age at time of replacement for Albury**



Source: AER analysis, Envestra.<sup>156</sup>

#### *Field life extension tests*

Envestra stated that its testing program complies with the statistical methods outlined in AS/NZS 4944:2006.<sup>157</sup> In response to a further information request Envestra provided a copy of its Gas Meter In-service Compliance Procedure.<sup>158</sup>

This standard outlines two methods of statistical analysis that can be adopted for in-service compliance testing. Envestra's Gas Meter In-service Compliance Procedure states that it has adopted the "Variables" method of sample testing.<sup>159</sup> The "Variables" method requires a smaller sample size than the "Attributes" method. However, if the meters fail the "Variables" method, then the sample size may be increased and the meter family tested under the "Attributes" method.

The AER examined Envestra's proposed approach and considers that this is a reasonable approach to the statistical sampling and the proposed volumes are reasonable. By first performing sampling under the variables method, Envestra has minimised the total number of

<sup>156</sup> Envestra, *Response to information request 4 of 18 May 2012*, received 8 June 2012, Q18 & 21 *Historical and Forecast Meter Removal.xlsx*

<sup>157</sup> Services Australia/Services New Zealand, *Gas meters—In service compliance testing AS/NZS 4944:2006*, May 2006, p. 7

<sup>158</sup> Envestra, *Response to information request 4 of 18 May 2012*, question 23, received 30 May 2012.

<sup>159</sup> Gas Technology Services, *Gas Meter In-Service Compliance Procedure for APA*, 4 November 2011, p.4

meters that it needs to sample. Therefore, the AER considers the proposed volumes are consistent with r. 74(2) of the NGR and prudent and efficient.

#### *Faulty Meters*

Envestra proposed to replace 4277 meters per annum in Victoria due to meters being faulty. Envestra proposed to replace 164 meters per annum in Albury due to meters being faulty. Envestra indicated that this forecast is based on 2010–11 actual replacements and that this is the most recent data available.<sup>160</sup>

The AER requested additional information about the historical number of meter faults in both Albury and Victoria.<sup>161</sup> Envestra provided additional information on the historical number of meter faults in both Albury and Victoria.<sup>162</sup> This information indicated that the average number of faulty meters replaced over the 2008–12 period was higher than that forecast for the 2013–17 access arrangement period. On this basis, the AER considers that the historical number of meter faults supports the forecast proposed by Envestra and so considers this forecast volume complies with r. 74(2) of the NGR.

#### *Upgrade/Downgrade changes*

Envestra has forecast that it will upgrade/downgrade 400 residential meters per annum in Victoria. Envestra has forecast that it will upgrade/downgrade 1 residential meter per annum in Albury.

The AER requested additional information about the historical number of upgrades and downgrades in both Albury and Victoria.<sup>163</sup> Envestra provided additional information on the historical number of upgrade/downgrade in both Albury and Victoria.<sup>164</sup> This information indicated that the average number of upgrades/downgrades over the 2008–12 access arrangement period was higher than that forecast for the 2013–17 access arrangement period. On this basis, the AER considers that the historical number of upgrades/downgrades supports the forecast proposed by Envestra and so considers this forecast volume complies with r. 74(2) of the NGR.

#### ***Industrial and commercial meter replacements***

Envestra proposed to replace 6794 I&C meters in Victoria with a total capex of \$7.4 million<sup>165</sup> over the 2013–17 access arrangement period. Envestra proposed to replace 222 I&C meters in Albury with a total capex of \$0.14 million<sup>166</sup> over the 2013–17 access arrangement period.

I&C meters are not subject to meter sampling tests, and instead are allocated a deemed meter life and replaced just before the end of the deemed life. Envestra submitted that I&C

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<sup>160</sup> Envestra response to AER information request 4 of 18 May, received 8 June 2012.

<sup>161</sup> AER, *Information request 21 of 2 July 2012*.

<sup>162</sup> Envestra, *Response to information request 21 of 2 July 2012*, received 1 August 2012, p. 2.

<sup>163</sup> AER, *Information request 21 of 2 July 2012*.

<sup>164</sup> Envestra, *Response to information request 21 of 2 July 2012*, received 1 August 2012, p. 2.

<sup>165</sup> Envestra, *Access Arrangement Information: Attachment 7.6 Capex Forecast Model.xlsx*, 30 March 2012, Unit rate escalations worksheet.

<sup>166</sup> Envestra, *Access Arrangement Information: Attachment 7.6 Capex Forecast Model.xlsx*, 30 March 2012, Unit rate escalations worksheet.

meters are changed at 10 year intervals and overhauled, repaired and tested for re-use.<sup>167</sup> The AER requested detailed information from Envestra about the age at which Envestra proposed to replace I&C meters in the 2013–17 access arrangement period<sup>168</sup> and the age at which it has historically removed I&C meters from service.<sup>169</sup> Envestra provided a breakdown of the forecast age at which it proposes to remove I&C meters from the field.<sup>170</sup> The AER notes that Envestra proposes to remove small I&C meters after 15 years and larger I&C meters after 10 years. The AER considers that for I&C meters this is a reasonable approach to meter replacement and concludes that Envestra's meter replacement program complies with r. 79(1) of the NGR.

### Unit rates

Envestra supplied a model demonstrating the component costs of its meter replacement program.<sup>171</sup> This allowed the AER to examine:

- Costs of new and refurbished meters (for both residential and commercial meters)
- Labour costs (including both internal and external labour)
- Other costs—including transport costs and warehousing of refurbished meters

In response to an AER information request, Envestra provided some additional information on the components of its estimate of meter unit costs.<sup>172</sup> Further, Envestra provided contracts demonstrating the costs of new and refurbished meters.<sup>173</sup> The AER also compared the total cost per meter (including purchase costs, refurbishment and installation costs) against other gas distributors and found that Envestra's proposed rates compared favourably against the other gas distributors. Having considered the available information and the overall level of costs proposed by Envestra, the AER considers the corrected unit rates provided by Envestra are prudent, efficient and comply with rule 79(1)(a).

The blended unit rates for the sub components of Envestra's meter replacement program are set out in confidential appendix A.

### Augmentation

Network augmentation capex is directed at increasing the capacity of the existing network to meet demand of existing and future customers. Augmentation capex is required to maintain gas pressure and minimise the risk of gas outages.

Envestra proposed augmentation capex to provide for:

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<sup>167</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, 30 March 2012, p. 92.

<sup>168</sup> AER, *information request 4 of 18 May 2012* and *AER information request 21 of 2 July 2012*, question 2.

<sup>169</sup> AER, *information request 4 of 18 May 2012* and *AER information request 21 of 2 July 2012*, question 3.

<sup>170</sup> Envestra, *Response to information request 21 of 2 July 2012*, received 1 August 2012, p. 3; *PMC Historical FLE damaged upgrades.xlsx*.

<sup>171</sup> Envestra, *Access Arrangement Information: Attachment 7.5A Unit Rates Victoria Spreadsheet.xls* and *Attachment 7.5A Unit Rates Albury Spreadsheet.xls*.

<sup>172</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 3.

<sup>173</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p.1; hard-copy contract documents received from Envestra 13 July 2012.

- Reinforcement of network areas which are vulnerable to gas supply constraints, as well as improvements to reduce the likelihood of gas outages occurring.
- A network that is capable of continuously satisfying the demand for services, particularly in high growth areas.
- The availability of high pressure gas in a manner that supports the systematic and planned replacement of low pressure mains<sup>174</sup>.

Envestra proposed augmentation capex of \$45.8 million (\$2011, unescalated direct costs, excluding overheads) for the Victorian network and \$0.4 million (\$2011, unescalated direct costs, excluding overheads) for the Albury network for the 2013–17 access arrangement period. Envestra's proposed augmentation capex projects are listed in Table 3.19.

**Table 3.19 Envestra's proposed augmentation capital expenditure (\$million, 2011)<sup>(a)</sup>**

Region	Total
H07 - Cranbourne	3.0
H08 - Lynbrook	0.5
H10 - Frankston	0.4
H14 - Wodonga	0.3
H15 - Mornington	0.9
H18 - Thomastown	7.9
H20 - Plenty Valley	0.6
H30 - Traralgar	0.4
H32 - Pakenham	3.3
H35 - Morwell	0.5
Various HP Networks	0.3
H58 - Drouin	0.1
H67 - Berwick	0.9
H70 - Moe	0.2
H83 - Kilmore	0.2
H85 - Echuca	0.2
H90 - Healesville	0.7
HP - Unspecified	3.0
TP13 - Sale	5.3
TP43 - Dandenong - Frankston	0.1
TP44 - Dandenong - Crib Point	16.6
H37 - Traralgon	0.5
<b>Victoria Total</b>	<b>45.8</b>
H54 - Albury	0.4
<b>Albury Total</b>	<b>0.4</b>

Source: Envestra.<sup>175</sup>

<sup>174</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 123.

<sup>175</sup> Envestra, *Access Arrangement Information*, March 2012, p. 124.

Notes: (a) Direct costs excluding escalation and overheads.

In its submission to the AER, the EUCV stated that augmentation capex will be required to support the network to meet small increases in short term gas demand peaks.<sup>176</sup> The EUCV considered that Envestra's historical augmentation capex reflects the requirements to meet the consistent increases in peak demand.<sup>177</sup>

In its submission to the AER, Origin Energy noted that Envestra underspent its augmentation capex allowance in the 2007–11 period by around 50 per cent.<sup>178</sup> Origin stated that the deferral of expenditure in the 2008–12 access arrangement period should have resulted in a significant deterioration in Envestra's network reliability and service integrity.<sup>179</sup>

The AER assessed Envestra's augmentation projects by considering the timing of the proposed works, the capacity benefit which results from the augmentation solution and whether the input cost of each project represents the efficient, lowest sustainable cost. In undertaking this assessment the AER sought input from its engineering consultant, examined the business cases and requested further information from Envestra.

On the basis of advice provided by the AER's engineering consultant, Zincara<sup>180</sup>, the AER considers that the majority of Envestra's augmentation expenditure is justifiable under r. 79(2)(c)(i)-(iii) of the NGR as it is necessary to maintain or improve the safety and integrity of services. The AER does not consider that the augmentation program is justifiable under r.79(2)(c)(iv) of the NGR as this implies that the capacity is inadequate to meet existing demand in which case gas pressures would be below the required minimum standards. A planned augmentation strategy would normally be done in advance of emerging capacity constraints and so would not fall under r. 79(2)(c)(iv) of the NGR.

The AER approves \$25.9 million (\$2011, unescalated direct costs, excluding overheads) of Envestra's \$45.8 million (\$2011, unescalated direct costs, excluding overheads) proposed augmentation capex and for its Victorian network and all of Envestra proposed \$0.4 million capex (\$2011, unescalated direct costs, excluding overheads) for its Albury network (see Table 3.20). The AER considers that this capex complies with r. 79(1) of the NGR for the following reasons:

- The AER considers that Envestra's proposed augmentation solutions are reasonable in light of forecast connections growth to address a decline in gas pressure along the constrained network areas.<sup>181</sup>
- Additionally, the AER has determined that input costs of augmentation projects are within a reasonable range and reflect that of a prudent and efficient service provider.<sup>182</sup>

A number of augmentation projects were proposed to address connections growth within the networks of the Mornington Peninsula and Cranbourne growth corridors. The AER considered the overall area demand and the joint capacity effects of the proposed solutions and found

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<sup>176</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, p. 20.

<sup>177</sup> EUCV, *Response to Envestra's Access Arrangement Proposal* June 2012, p. 20.

<sup>178</sup> Origin Energy, *Submission to Envestra's access arrangement proposal*, June 2012, p. 1.

<sup>179</sup> Origin Energy, *Submission to Envestra's access arrangement proposal*, June 2012, p. 1.

<sup>180</sup> Zincara, *Review of Envestra's Capital Expenditure*, 21 September 2012, pp.8-36.

<sup>181</sup> The forecasts comply with NGR, r. 74 and the proposed capex is justifiable under NGR, r. 79(2)(iii).

<sup>182</sup> The capex complies with NGR, r. 79(1)(a).

them to be prudent and efficient in addressing the network constraints within the Mornington Peninsula and Cranbourne areas.

However, drawing upon the advice of its engineering consultant, Zincara, the AER does not approve capex for the following augmentation projects:

#### *H30 Trafalgar HP network augmentation*

Envestra provided information on modelled fringe point pressures. The AER has considered this information and, based on the advice of Zincara<sup>183</sup>, considers that the augmentation is unlikely to be required within the 2013–17 access arrangement period. The AER does not approve the two projects worth \$0.4 million (\$2011, unescalated direct costs, excluding overheads).

#### *Projects proposed for 2016 for the V59-Pakenham HP network augmentation*

Envestra projected higher growth than the AER consider reasonable, given the comparison of Envestra's projected growth rate to that of the Victorian Department of Planning and Community Development<sup>184</sup>. Given these lower growth projections and the uncertainty surrounding the timing of the proposed development in the area, based on the advice of Zincara<sup>185</sup>, the AER does not consider that the augmentation will be required in the 2013–17 access arrangement period. The AER does not approve the two projects worth \$1.2 million (\$2011, unescalated direct costs, excluding overheads) on the basis that the proposed capex does not comply with r. 79(1) of the NGR and is not justifiable under r. 79(2)(c)(i)-(iii) of the NGR and forecasts of the proposed capex do not comply with r. 74(2)(a) of the NGR.

#### *HP unspecified*

This is a provision for small augmentations that have not been forecast in advance.

The AER does not consider that the amounts projected by Envestra under 'HP unspecified' to be a reasonable forecast as required by r. 74(1)(a) of the NGR. Envestra has forecast an exponential increase in the HP unspecified expenditure over the 2013–17 access arrangement period based on its 2008-12 expenditure profile. Envestra has not justified the significant step up in expenditure for the 2015–17 period.

Based on the advice of Zincara<sup>186</sup>, the AER considers that Envestra has forecast this contingency allowance on the basis that there is greater uncertainty in the outer years. However, while the AER acknowledges that there is likely to be greater forecast uncertainty over time, this uncertainty relates to both this contingency allowance as well as to the specific augmentation projects proposed for the 2013-17 access arrangement period. Hence the AER considers that there is greater uncertainty in whether the specific projects will proceed. Given this uncertainty, the AER considers that augmentation expenditure will be reallocated according to the network priorities in the outer years.

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<sup>183</sup> Zincara, *Review of Envestra's Capital Expenditure*, 21 September 2012, pp.20-21.

<sup>184</sup> Victorian Department of Planning and Community Development, *Victoria in Future 2012 data tables*, Table 6, <<http://www.dpcd.vic.gov.au/home/publications-and-research/urban-and-regional-research/census-2011/victoria-in-future-2012/vif-2012-data-tables>> accessed 11/7/12.

<sup>185</sup> Zincara, *Review of Envestra's Capital Expenditure*, 21 September 2012, pp.21-23.

<sup>186</sup> Zincara, *Review of Envestra's Capital Expenditure*, 21 September 2012, pp.30-31.

Furthermore, the AER has reviewed the project expenditure within the unspecified contingency carried out in 2011 and 2012. Most of the material projects were in the known growth areas of Epping, Cranbourne North, Cranbourne South and Pakenham. Envestra has assessed these areas thoroughly which should reduce the likelihood of other projects arising in the 2013-17 access arrangement period.

In arriving at an alternative forecast the AER considers that the first two years of Envestra's major augmentation projects have been planned in detail and so the \$0.25 million (\$2011, unescalated direct costs, excluding overheads) expenditure forecast in the first two years represents a reasonable estimate of the allocation required to cover unforeseen small projects.

The AER therefore does not approve the \$2.95 million total expenditure proposed over the 2013–17 access arrangement period on the basis that the proposed capex does not comply with r. 79(1)(a) of the NGR and is not justifiable under r. 79(2)(c)(i)-(iii) of the NGR. The AER considers that the forecasts used to calculate the proposed capex do not comply with r. 74(2)(a) of the NGR. The AER approves a capex allowance of \$0.25 million per year, or \$1.25 million (\$2011, unescalated direct costs, excluding overheads) over the 2013–17 access arrangement period.

*TP44 - Dandenong - Crib Point and TP 43 - Dandenong - Frankston*

On the basis of commercial in confidence customer demand information and the advice of Zincara<sup>187</sup>, the AER does not consider that the augmentation is required. The AER therefore does not approve the \$16.6 million (\$2011, unescalated direct costs, excluding overheads) proposed for augmentation of TP44 - Dandenong - Crib Point and the \$0.1 million (\$2011, unescalated direct costs, excluding overheads) proposed for TP43 - Frankston. The proposed capex does not comply with r. 79(1)(a) of the NGR and is not justifiable under r. 79(2)(c)(i)-(iii) of the NGR and forecasts used to calculate the proposed capex do not comply with r. 74(2)(a) of the NGR.

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<sup>187</sup> Zincara, *Review of Envestra's Capital Expenditure*, 21 September 2012, pp.34-35.

**Table 3.20 AER approved augmentation expenditure (\$million, 2011)**

Region	Total
H07 - Cranbourne	3.0
H08 - Lynbrook	0.5
H10 - Frankston	0.4
H14 - Wodonga	0.3
H15 - Mornington	0.9
H18 - Thomastown	7.9
H20 - Plenty Valley	0.6
H30 - Traralgar	0
H32 - Pakenham	2.1
H35 - Morwell	0.5
Various HP Networks	0.3
H58 - Drouin	0.1
H67 - Berwick	0.9
H70 - Moe	0.2
H83 - Kilmore	0.2
H85 - Echuca	0.2
H90 - Healesville	0.7
HP - Unspecified	1.3
TP13 - Sale	5.3
TP43 - Dandenong - Frankston	0
TP44 - Dandenong - Crib Point	0
H37 - Traralgon	0.5
<b>Victoria Total</b>	<b>25.9</b>
H54 - Albury	0.4
<b>Albury Total</b>	<b>0.4</b>

Source: AER analysis.



## Information technology

Envestra's IT capex proposal mainly relates to the upgrade of IT systems that have reached the end of their lifecycles and improvements in Envestra's business processes.<sup>188</sup>

Envestra's proposed capital expenditure of \$17.9 million (\$2011, unescalated direct costs, excluding overheads) for IT projects for the 2013–17 access arrangement period (see Table 3.21). The proposed projects cover both of Envestra's networks, with Envestra allocating capex by customer numbers.

**Table 3.21 Envestra proposed IT capital expenditure<sup>(a)(b)</sup> (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra proposed direct cost	7.3	8.0	3.3	0.2	0.8	19.6

Source: Envestra.<sup>189</sup>

Notes: (a) Escalated direct costs, excluding overheads  
(b) The totals in the Access Arrangement Information (Table 7.4, p.125) do not equal the sum of the business cases.

Envestra submitted that the IT projects comply with r. 79(1) of the NGR and are justifiable under r. 79(2) of the NGR.<sup>190</sup> The majority of the proposed IT projects were approved by the ESC in the 2008–12 access arrangement period, but were deferred by Envestra.

In its submission to the AER, the EUCV noted Envestra's large underspend on IT. In addition, the EUCV highlighted that Envestra's proposed capex for the 2013–17 access period is effectively the same amount that the ESC approved in the 2008–12 period. The EUCV considered it is probable that the IT capex is still needed to undertake the IT work program approved by the ESC in 2008. The EUCV stated that consumers have borne the cost but have not benefitted from the deferral of the expenditure to date.<sup>191</sup>

The AER assessed Envestra's IT projects by considering the justifications for the proposed works, and whether the costs are efficient. In undertaking this assessment the AER examined business cases provided by Envestra, obtained advice from the Nous Group, considered historical costs and external benchmarks, and where necessary requested further information from Envestra.

The AER generally agrees with the EUCV's observation that the IT capex Envestra deferred over the 2008–12 period will be necessary during the 2013–17 period in order to undertake its IT work program.

The AER approves IT capex for all Envestra's proposed IT projects apart from Envestra's proposed amount for the implementation of a knowledge management system and the interval meter data management project. The AER considers that the capex proposed for the knowledge management system does not comply with r. 79(2)(c)(i) or (iii) of the NGR.

<sup>188</sup> This section excludes Envestra's proposed capex for the installation of remote terminal units (see section on SCADA).

<sup>189</sup> Envestra, *Access Arrangement Information*, 12 March 2012, p.125. AER has adjusted the amounts to reconcile with the underlying business cases.

<sup>190</sup> Envestra, *Access Arrangement Information*, 12 March 2012, p.125.

<sup>191</sup> EUCV, *Response to Envestra's Access Arrangement Proposal*, June 2012, pp. 20–21.

Envestra did not adequately identify the specific regulatory change event that is driving the proposed expenditure for this project. The interval meter data management<sup>192</sup> project proposed by Envestra is not approved as Envestra has not provided evidence that the project is necessary to meet network safety or integrity requirements or regulatory obligations. The AER accepts Envestra's use of customer numbers to allocate IT expenditure between its Victorian and Albury network as compliant with r. 74(2)(a) of the NGR.

The AER approves \$16.3 million (\$2011, escalated direct costs, excluding overheads) in IT capex over the 2013–17 access arrangement period. This is apportioned as \$15.7 million (\$2011, unescalated direct costs, excluding overheads) for Envestra's Victorian network and \$0.5 million (\$2011, unescalated direct costs, excluding overheads) for Envestra's Albury network.

## **SCADA**

Supervisory Control and Data Acquisition (SCADA) systems are used to control and monitor station plant remotely via Remote Telemetry Units (RTUs). The monitoring includes instrumentation, pressure, temperature, flow, environmental monitoring and other event data.

Envestra proposed to install SCADA pressure monitoring and/or control facilities at 57 field regulator sites located in regional areas. The forecast cost was based on all 57 sites being monitoring sites. Envestra later confirmed that 14 of the sites are planned as control sites, and so revised its proposal to include the additional cost differential associated with the change from monitoring to control.<sup>193</sup>

The AER assessed Envestra's proposed SCADA-related capital expenditure projects by considering the justifications for the proposed works, and whether the unit costs represent the efficient, lowest sustainable cost. In undertaking this assessment the AER examined the business cases, considered historical costs and external benchmarks, and requested further information from Envestra.

The AER considers that Envestra's proposed SCADA capex is justifiable under r. 79(2)(ii) of the NGR. The AER also considers that the proposed capex complies with r. 79(1)(a) of the NGR.

The AER approves total capex of \$1.2 million (\$2011, unescalated direct costs, excluding overheads) for its SCADA systems for the Victorian and Albury networks for the 2013–17 access arrangement period.

## **Other non-demand capex**

Other non-demand capex is capital expenditure which generally relates to replacing and upgrading individual components of the distribution network or smaller upgrade projects.

Envestra proposed 19 capex projects for Victoria in the other non-demand category. The AER considered that two of these projects fit under the IT category and assessed these in the IT

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<sup>192</sup> Envestra, *Victoria Access Arrangement Information*, March 2012, p.130

<sup>193</sup> Envestra, *Response to information request 8 of 8 June 2012*, received 26 June 2012, p. 4.

category<sup>194</sup>. Accordingly the AER considers that there are 17 projects which fit in the other category of capex, with a total proposed expenditure of \$52.1 million (\$2011, unescalated direct costs, excluding overheads).

The AER approves \$17.8 million (\$2011, direct escalated costs) of Envestra's proposed \$52.1 million (\$2011, direct escalated costs) other non-demand capex over the 2013–17 access arrangement period. The AER does not approve \$34.3 million (\$2011, unescalated direct costs, excluding overheads) of Envestra's proposed capex on the basis that it does not comply with r. 79(1)(a), r. 79(2) or r. 74 of the NGR.

**Table 3.22 Envestra other non-demand capital expenditure proposal for Victoria (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	13.1	15.4	10.6	6.6	6.5	52.1
AER approved	3.8	5.1	4.3	2.5	2.2	17.8
Difference	-9.3	-10.3	-6.3	-4.1	-4.3	-34.3

Source: AER analysis, Envestra.

Envestra proposed six capex projects for Albury in the other non-demand category. The AER considered that one of these projects fits under the IT category and assessed it in the IT category.<sup>195</sup> Accordingly, the AER considers that there are five projects which fit in the other non-demand category of capex, with a total proposed expenditure of \$0.82 million (\$2011, direct escalated costs, excluding overheads).

The AER approves \$0.01 million (\$2011, direct escalated costs, excluding overheads) of Envestra's proposed \$0.82 million (\$2011, direct escalated costs, excluding overheads) other non-demand capex over the 2013–17 access arrangement period. The AER does not approve \$0.81 million (\$2011, direct escalated costs, excluding overheads) of Envestra's proposed other non demand capex over the 2013–17 access arrangement period. The AER does not approve this expenditure on the basis that it does not comply with r. 79(1) or r. 74 of the NGR.

<sup>194</sup> 'Regional SCADA' (Envestra, *Access Arrangement Information: Attachment 6.1 Business case VA02 SCADA in regional towns*, 30 March 2012) and 'Interval Meter Data Management'; (Envestra, *Access Arrangement Information: Attachment 6.1 Business case VA49 Interval Meter Data Management*, 30 March 2012) are assessed as proposed IT capex.

<sup>195</sup> 'Regional SCADA' (Envestra, *Access Arrangement Information: Attachment 6.1 Business case VA02 SCADA in regional towns*, 30 March 2012) and 'Interval Meter Data Management'; (Envestra, *Access Arrangement Information: Attachment 6.1 Business case VA49 Interval Meter Data Management*, 30 March 2012) are assessed as proposed IT capex.

**Table 3.23 Envestra other non-demand capital expenditure proposal for Albury (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	0.32	0.30	0.12	0.05	0.05	0.82
AER approved	0.00	0.00	0.00	0.00	0.00	0.01
Difference	-0.32	-0.29	-0.11	-0.04	-0.05	-0.81

Source: AER Analysis, Envestra.

The proposed and approved capex allowances for each individual project are set out in confidential appendix A.

The largest projects related to bushfire preparedness, Vegetation Management and NECF implementation. There were also projects relating to upgrading or replacing miscellaneous items. Detailed information on the proposed other non-demand projects are in the following confidential attachments to Envestra's submission:

- Appendix V95 - Alterations Non Chargeable
- Appendix V20 - Bushfire Preparedness
- Appendix V24 - Flow Correctors
- Appendix V35 - City Gate Lightning Protection
- Appendix VA36 - City Gate Pipework Lagging
- Appendix V38 - Transmission Valve Refurbishment
- Appendix V40 - Gas Pipes in Drains
- Appendix V42 - Replacement of Anode Beds
- Appendix V04 - Refurbishment of Dandenong to Crib Point Pipeline
- Appendix V45 - Water Bath Heaters
- Appendix VA06 - Network Monitoring and Control
- Appendix V08 - TD Williamson Equipment Replacement
- Appendix V22 - Plant and Equipment
- Appendix VA23 - Technical Training Modules
- Appendix V96 - Field Assets Alterations and Replacement
- Appendix VA46 - National Energy Customer Framework
- Appendix VA33 - Easement Vegetation Management
- Appendix VA96 - Field asset replacement and refurbishment

### **Projects which comply with the NGL and NGR requirements.**

The AER considers that the following projects are justifiable under r. 79(2) of the NGR and would be incurred by a prudent and efficient distribution business acting in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services in accordance with r. 79(1)(a) of the NGR. The AER also considers these forecasts have been arrived at on a reasonable basis.

- Mains alterations
- TD Williamson replacement equipment
- Lagging of city gate pipework
- Water bath heater modifications
- Anode bed replacement

### **Projects which do not comply with the definition of capital expenditure in rule 69 of the NGR**

The AER considers that the following project does not comply with r. 69 of the NGR because the expenditure does not meet the definition of capex

- Easement vegetation management

Envestra proposed to implement a vegetation management program to initially clear mature and over grown vegetation along transmission pipeline easements and then monitor and clear these pipeline corridors on a routine basis (3 to 5 year program) to ensure they remain free of significant vegetation growth.<sup>196</sup> The AER considers that Envestra's vegetation management program represents an expense incurred in maintaining its pipelines and does not represent an asset from which Envestra may receive a future economic benefit. The AER has considered the AASB 116 Property, Plant and Equipment standard, which relates to the recognition of assets relating to property, plant and equipment. AASB 116 (paragraph 7) requires that the cost of an item of property, plant and equipment shall be recognised as an asset if, and only if it is probable that future economic benefits associated with the item will flow to the entity. Further AASB 116 (paragraph 12) requires:

"Under the recognition principle in paragraph 7, an entity does not recognise in the carrying amount of an item of property, plant and equipment the costs of the day-to-day servicing of the item. Rather, these costs are recognised in profit or loss as incurred. Costs of day-to-day servicing are primarily the costs of labour and consumables, and may include the cost of small parts. The purpose of these expenditures is often described as for the 'repairs and maintenance' of the item of property, plant and equipment."

The AER does not consider that Envestra will derive a future economic benefit from its vegetation management program. Additionally, in accordance with paragraph 12 of AASB

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<sup>196</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, received 17 July 2012.

116, the AER considers that vegetation management represents day-to-day servicing of the pipeline and should not be capitalised. Accordingly the AER does not consider this expenditure accords with r. 69 and r. 79 of the NGR, because it is not capex.

As the AER considers this to be opex, the AER has assessed whether a step change to allow for this proposed opex is required. This is discussed in Attachment 6 of the AER's draft decision.

### **Projects which do not comply with the NGL and the NGR requirements**

The AER considers that the following projects do not comply with the requirements of the NGL or NGR:

- Refurbishment of Dandenong - Crib Point pipeline
- Transmission pipeline valve and pig trap refurbishment
- Bushfire preparedness
- Plant and equipment
- Storm water drain survey
- Flow correctors
- City Gate Lightning and Electrical Surge protection
- Technical training modules
- National Energy Customer Framework

The AER's considerations and reasons are discussed below.

#### *Refurbishment of Dandenong - Crib Point pipeline*

Envestra submitted that Dandenong to Crib Point Pipeline was constructed in 1966 to carry refinery gas from the BP Crib Point refinery to Dandenong.<sup>197</sup> It was subsequently converted to carry natural gas from Dandenong to Crib Point. In order to establish its baseline condition, review its design life, and to maintain the ongoing integrity of the 39 km Dandenong to Crib Point Pipeline, Envestra proposed to carry out:<sup>198</sup>

- Pipeline alterations to enable inline inspection by intelligent pigging
- Intelligent pigging of the pipeline
- Pipeline refurbishment works

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<sup>197</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, received 17 July 2012, p. 63.

<sup>198</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, received 17 July 2012, p. 63.

- Clearing of easement vegetation
- Upgrade of Cathodic Protection (CP) system.

The AER accepts that it is prudent and efficient to refurbish the Crib Point pipeline. The AER has examined the forecast capex proposed by Envestra and generally considers the proposed expenditure is prudent and efficient.

However, the AER considers that Envestra has considerable resources and expertise available to it and that Envestra does not need to procure all resources required for this project externally. Accordingly, the AER considers that the forecast costs do not take into account Envestra's existing resources and that where Envestra could use existing resources, the AER does not consider expenditure on additional resources complies with r. 79(1) of the NGR and is not prudent or efficient. Accordingly, the AER has reduced the allowed capex to reflect the aspect of the project which it considers could be undertaken by Envestra's existing resources.

The AER's considerations are discussed further in confidential appendix A of the AER's draft decision.

#### *Transmission pipeline valve and pig trap refurbishment*

Envestra stated that the condition of a number isolation valves located in underground vaults has deteriorated to the extent that a programme of in situ grit blasting and painting is required to ensure the life of these assets is maximised.<sup>199</sup>

The AER has not been presented evidence that all valves need major refurbishment in the 2013–17 access arrangement period. The AER considers that these valves would have been installed at various times and locations and would have varied risk factors for corrosion. Without evidence to the contrary, the AER considers it unlikely that all valves will need to be refurbished in the 2013–17 access arrangement period. Accordingly, the AER does not consider the forecast complies with r. 74(2)(a) of the NGR as it has not been arrived at on a reasonable basis. Further, the AER considers that a prudent service provider would assess each valve as part of its periodic maintenance and would refurbish individual valves that require it when a need arises. However, the AER does not consider a prudent and efficient distributor would replace all transmission valves over the 2013–17 access arrangement period, without having regard to the condition of each valve.

Additionally, the AER does not consider expenditure replacing all transmission valves complies with r. 79(2)(c)(i), r. 79(2)(c)(ii) and r. 79(2)(c)(iii) of the NGR. The AER does not consider this expenditure complies with r. 79(2)(c)(i) of the NGR as Envestra has not demonstrated replacing all transmission valves is necessary to maintain the safety of Envestra's services. The AER does not consider this expenditure complies with r. 79(2)(c)(ii) of the NGR as Envestra has not demonstrated removing all transmission valves is necessary to maintain the integrity of Envestra's services. Further, the AER does not consider this expenditure complies with r. 79(2)(c)(iii) of the NGR as does not have a clear regulatory obligation to undertake this expenditure.

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<sup>199</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, 30 March 2012, p. 73.

The AER's considerations are discussed further in confidential appendix A of the AER's draft decision.

### *Bushfire preparedness*

Envestra proposed to fit each gas service upstand in the identified bushfire risk areas with a Thermal Safety Device (TSD).<sup>200</sup> A TSD is a passive thermal device for protection of combustible gas pipes and fittings in extreme heat situations such as bushfires.<sup>201</sup>

The AER notes that the Victorian Bushfire Royal Commission presented its report to the Victorian Government in July 2012. The Royal Commission presented 67 recommendations.<sup>202</sup> The AER notes that there were eight recommendations specifically related to electricity transmission and distribution businesses, however there were no specific recommendations related to gas distribution businesses or the fitting of thermal safety devices to gas services in bushfire risk areas. The AER also notes that there is no retrospective legal obligation or directive requiring Envestra to undertake this work.

Additionally, the AER sought advice from the Victorian Building Commission regarding the requirement to fit bushfire thermal safety device under AS 3959 Construction of Buildings in Bushfire Prone Areas. It advised that there was no requirement to fit a bushfire thermal safety device to new premises under AS 3959.

The AER does not consider that Envestra has adequately demonstrated the need to retrofit these devices to all gas services in bushfire prone areas. In reaching this conclusion the AER considered the absence of specific legislative requirements to either install thermal safety devices in new installations or to retro fit to existing installations and the absence of specific recommendations from the Victorian Bushfire Royal Commission. Further the AER has no evidence retrofitting these thermal safety devices reflects accepted good industry practice. The AER is currently unaware of other gas distribution businesses retro fitting these devices. Accordingly the AER does not consider this expenditure complies with r. 79(1) of the NGR.

Additionally, the AER does not consider this expenditure complies with r. 79(2)(i), r. 79(2)(ii) and r. 79(2)(iii) of the NGR as submitted by Envestra. The AER does not consider this expenditure complies with r. 79(2)(i) of the NGR as Envestra has not demonstrated it is necessary to maintain or improve the safety of Envestra's services. The AER does not consider this expenditure complies with r. 79(2)(ii) of the NGR as it is not required to maintain the integrity of Envestra's services. The AER does not consider this expenditure complies with r. 79(2)(iii) of the NGR as Envestra does not have a regulatory obligation to undertake this expenditure.

The AER's considerations are discussed further in confidential appendix A.

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<sup>200</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, received 17 July 2012, p. 71.

<sup>201</sup> Envestra, *Access Arrangement Information: Attachment 7.2 Asset Management Plan*, received 17 July 2012, p. 71.

<sup>202</sup> 2009 Victorian Bushfires Royal Commission, *Final Report Recommendations*, retrieved 31 July 2010, <http://www.royalcommission.vic.gov.au/Assets/VBRC-Final-Report-Recommendations.pdf>.



### *Plant and equipment*

Envestra proposed that capex is required annually for the expected costs of replacement of essential tools, plant, equipment and other similar non-reticulation items.<sup>203</sup> Envestra stated that the forecast expenditure is based on historical spend and specific requirements for items such as pipe locators, polyethylene pipe tapping equipment, bag tube equipment, temporary regulator sets, leak detectors, pressure data loggers, etc.<sup>204</sup>

The AER does not approve expenditure on some specific components of this proposed expenditure. The AER did not approve this expenditure on the basis that it is not prudent or efficient and so does not comply with r. 79(1) of the NGR. The AER's reasons for not approving this expenditure are set out in confidential appendix A of the AER's draft decision.

### *Flow correctors*

Envestra stated that flow correctors are used on meters for all large customers in order to provide accurate metering data.<sup>205</sup> The current units are at the end of their useful life and hence Envestra proposes to replace them with new flow corrector units that are compatible with current computer operating systems and have the ability to connect to portable computers via current technology interfaces.<sup>206</sup>

The AER does not consider that Envestra has presented sufficient evidence for it to conclude that the proposed capex for replacing these flow meters complies with r. 79(1), r. 79(2)(c)(i), r. 79(2)(c)(ii) and r. 79(2)(c)(iii) of the NGR and would be undertaken by a prudent and efficient business. The AER's reasons for not approving this expenditure are set out in confidential appendix A of the AER's draft decision.

### *City Gate Lightning and Electrical Surge protection*

Envestra proposed that there are 55 city gate sites in the network that require design and installation of electrical surge protection to be compliant with the requirements of AS 4835 Electrical Hazards on metallic pipelines and AS1768 lightning protection. The project involves each site being reviewed and the appropriate protection installed.<sup>207</sup>

The AER does not approve this expenditure on the basis that it was not prudent or efficient and so does not comply with r. 79(1) of the NGR. The AER's reasons for not approving this expenditure are set out in confidential appendix A of the AER's draft decision.

### *National Energy Customer Framework*

Envestra stated that the business will incur additional opex and capex as a result of the introduction of NECF.<sup>208</sup> Envestra stated that the NECF requires a greater interface between distributors and customers through formal contractual relationships and creates new/different obligations between distributors and retailers.<sup>209</sup> Envestra proposed that to meet its

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<sup>203</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 130.

<sup>204</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 130.

<sup>205</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 127.

<sup>206</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 127.

<sup>207</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 128.

<sup>208</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 104.

<sup>209</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 104.

obligations and ensure compliance Envestra requires additional resources to manage and co-ordinating the business changes and workflows that the NECF imposes.<sup>210</sup>

As discussed in Attachment 6 of the AER's draft decision, the Victorian Government announced on 13 June 2012 that it would delay the introduction of the NECF in Victoria. The Victorian Government also announced it would explore opportunities to align state retail and consumer protection arrangements with the national framework where it does not result in lower standards. As such, the AER does not consider that this expenditure complies with r. 79(2) of the NGR as it is not necessary to comply with a regulatory obligation or requirement.

At this stage it is uncertain when or in what form the NECF will commence in Victoria. Accordingly, the AER considers that NECF related expenditure can best be assessed as a passthrough application once the relevant legislation is passed in Victoria. The AER considers it appropriate to include a NECF specific pass through in Envestra's access arrangement. As discussed in Attachment 6 of the AER's draft decision, this NECF specific pass through is not subject to a materiality clause.

#### *Storm water drain survey*

Envestra indicated that it has experienced a number of hazardous incidents arising from damage to gas pipes from the drain clearing equipment.<sup>211</sup> To minimise the risk of further incidents, Envestra proposed to introduce a training program in conjunction with targeted internal inspections of drains and sewers using closed circuit TV technology.<sup>212</sup>

As discussed in Attachment 6 of the AER's draft decision, the AER has not approved the opex component of this project as the AER considers that if the risks associated with gas pipes installed in drains are material, a prudent service provider acting in accordance with good industry practice to achieve the lowest sustainable cost of delivering pipeline services would have taken immediate action to address this risk. For the same reason, the AER does not approve the capex component as it does not comply with r. 79(1) of the NGR.

Additionally, the AER does not consider this expenditure complies with r. 79(2)(i), r. 79(2)(ii) and r. 79(2)(iii) of the NGR as submitted by Envestra. The AER does not consider this expenditure complies with r. 79(2)(i) of the NGR as Envestra has not demonstrated it is necessary to maintain or improve the safety of Envestra's services. The AER does not consider this expenditure complies with r. 79(2)(ii) of the NGR, as Envestra has not demonstrated it is necessary to maintain the integrity of Envestra's services. The AER also consider this expenditure does not comply with r. 79(2)(iii) of the NGR as Envestra does not have a regulatory obligation to undertake this expenditure.

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<sup>210</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 104.

<sup>211</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 128.

<sup>212</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 128.

### *Network Monitoring and Control*

Envestra proposed to establish a 24 hour x 7 day (24x7) monitoring and controlling capability to provide an immediate response capability to any alarms that are raised and to arrange the necessary action to remedy the issue, particularly outside of normal business hours.<sup>213</sup>

As discussed in Attachment 6 of the AER's draft decision the AER has not approved the opex component of this project on the basis that it does not reflect the actions of a prudent service provider acting efficiently in accordance with accepted good industry practice to achieve the lowest sustainable cost of delivering pipeline services.

Likewise, the AER does not consider the capital expenditure complies with r. 79(1) of the NGR. The AER is not satisfied that the means by which the supervising officer is currently informed about any SCADA pressure alarms is inadequate. In addition, the AER does not consider that employing another contractor to notify the supervising officer of SCADA pressure alarms would materially improve the quality, safety and reliability of its response in an emergency. Accordingly, the AER does not consider that this expenditure complies with r. 79(2)(i) and (ii) of the NGR as it is not necessary to maintain the safety or integrity of services.

### *Technical training modules*

Envestra proposed the development of interactive online computer based training packages and e-courses to enhance learning and skill development.<sup>214</sup> The project will develop training solutions through interactive online computer based training, and e-courses that use 3D simulations to provide enhanced operator training.<sup>215</sup>

As discussed in Attachment 6 of the AER's draft decision, the AER does not approved the opex component of this project on the basis that Envestra would only undertake this project if it received commensurate productivity improvements.

Similarly, the AER does not consider the capex component of this project complies with r. 79(1) of the NGR as Envestra has not demonstrated that expanding its training program would be undertaken by a prudent and efficient service provider acting in accordance with accepted good industry practice. The AER considers that Envestra's current training regime must be sufficient to ensure that all staff have at least proper industry accreditation for the work they undertake and relevant safety standards are met. As such the AER considers that Envestra's current level of training is sufficient to ensure compliance with r. 79(2)(c)(i), r. 79(2)(c)(ii) and r. 79(2)(c)(iii) of the NGR.

Accordingly, additional capex is not necessary to meet r. 79(2)(c)(i), r. 79(2)(c)(ii) and r. 79(2)(c)(iii) of the NGR. The AER notes that this proposed expenditure could also be justified under r. 79(2)(b) of the NGR, however, Envestra has stated that there is no opex/capex trade off for this project<sup>216</sup> and that no substantial productivity savings are envisaged.<sup>217</sup>

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<sup>213</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 129.

<sup>214</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 130.

<sup>215</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 130.

<sup>216</sup> Envestra, *Access Arrangement Information: Attachment 6.1 Business case VA23 Technical Training Modules*, 30 March 2012, p. 9.

<sup>217</sup> Envestra, *Response to information request 18 of 8 June 2012*, received 26 June 2012

Accordingly, it does not appear to the AER that the overall economic value is positive and so this does not comply with r. 79(2)(b) of the NGR.

## Extensions

Extension capex is directed at expanding the distribution network beyond its current boundaries. This allows distributors to expand into new markets and provides an opportunity to grow the distributor's customer base.

Envestra proposed a capex allowance for a number of extensions to the gas network which Envestra may undertake with either the Victorian Government or private developers in the 2013–17 access arrangement period. Envestra considers the details of agreements or negotiations with these parties to be commercially sensitive and as such the AER's consideration of these proposed extensions is considered in detail in confidential appendix A.

The AER does not approve this expenditure on the basis that it does not comply with r. 74(2), r. 79(1) and r. 79(2) of the NGR.

**Table 3.24 Envestra's proposed and approved extension capital expenditure (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	10.2	–	7.6	1.3	0.2	19.3
AER approved	–	–	–	–	–	–
Difference	-10.2	–	-7.6	-1.3	-0.2	-19.3

Source: AER analysis, Envestra.

## Overheads

Overheads are costs which are not directly attributable to the distribution businesses output but are necessary to support the businesses operations. Examples of overhead costs include network planning, procurement and human resources.

For its Victorian network Envestra proposed using a general overhead rate of 20 per cent, based on the average of the actual overheads incurred over the past four years.<sup>218</sup> Envestra proposed a lower overhead rate of 10 per cent for the mains replacement and augmentation program, stating that the lower rate reflects the expanded capex program and the fixed versus variable nature of overheads.<sup>219</sup>

For its Albury network Envestra proposed using a general overhead rate of 20 per cent, based on the average of the actual overheads incurred over the past four years.<sup>220</sup>

The AER accepts that overheads are incurred in carrying on a distribution business and so justifiable under NGR r. 79(2)(c)(iv).

<sup>218</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 132.

<sup>219</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 132.

<sup>220</sup> Envestra, *Access Arrangement Information*, 30 March 2012, p. 118.

However, the AER considers that a significant proportion of overhead costs are fixed rather than variable. Therefore, the growth in overhead costs should be declining over time in real terms. For this reason, the AER considers that the forecast overhead costs proposed by Envestra for both the Victorian and Albury networks are too high and therefore not consistent with the NGR.

The AER considers that there are likely to be changes to fixed costs where the scale of the business changes significantly. However, the AER does not consider, on the basis of the projected capital base approved by the AER that the scale of Envestra's business is going to change such that a step up in the fixed proportion of overheads is warranted.

The AER considers that an appropriate alternative is to:

- Derive the base overhead cost by taking the 2008–11 average overhead expenditure, on the basis that actual overhead costs are revealed to be efficient
- Reflect changes in variable overhead costs by making a scaled adjustment of overheads in relation to the change in the net total capex across years. This consists of an annual adjustment derived by:
  - Calculating the change in the projected net direct capex between the year concerned and the former year
  - Deriving the proportional change in overheads relative to the change in the projected net total capex by multiplying the net direct capex by the average of the 2008–11 overheads share of total net capex divided by the average of the 2008–11 direct cost share of total net capex
  - Multiplying the derived change in overheads by the estimated proportion of variable costs.

Envestra provided a split of overhead expenditure by the type of overhead, the share of total overhead expenditure by type, and the proportion of expenditure which is fixed or variable by type. The AER has a number of concerns regarding the share of total overhead expenditure allocated to procurement and fleet, operations management and administration, planning and system design and support<sup>221</sup>. The amount allocated to procurement and fleet is high given that a rolling procurement program is undertaken and that most of the capital program is outsourced to APA to manage (who are paid a separate network management fee). The other amounts are low, given that most of the overhead expenditure is expected to be directed towards high level planning and operation management.

In forming a decision on the reasonableness of the apportionment of the overhead expenditure by type the AER considered Envestra's submission to the AER for the access arrangement proposals for the South Australian and Queensland gas networks. The overhead apportionments supplied were more in line with the AER's expectations. The AER does not consider that there should be significant differences between the overhead allocations by gas network given all the networks are overseen from the single head office in Adelaide and that the majority of capital expenditure is outsourced to APA who manage the gas networks

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<sup>221</sup> Envestra, *Response to information request 32 of 12 July 2012*, received 20 July 2012

nationally. The AER therefore considers that the application of the average of the apportionment of overheads in the Envestra SA and Qld decisions is a reasonable basis for the forecast and will result in the best estimate as required by r.74(2) of the NGR.

This approach results in a total overhead cost of \$44.9 million (\$2011) compared to the total overhead cost of \$95.4 million (\$2011) proposed by Envestra for the Victorian network, a reduction of 53 per cent.

This approach results in a total overhead cost of \$1.0 million (\$2011) compared to the total overhead cost of \$1.3 (\$2011) proposed by Envestra for the Albury network, a reduction of 21 per cent.

### **Government and customer contributions**

Envestra proposed customer contributions for residential connections of \$9.5 million (\$2011) per year for its Victorian network.

The AER has made reductions to residential customer numbers and the proposed unit rates in the assessment of new customer connections which has decreased residential customer connections expenditure by 31 per cent. The residential customer contributions are therefore scaled back accordingly to \$6.5 million (\$2011) per year. Envestra did not propose any government or customer contributions for its Albury network.

### **3.4.3 Adjustments to labour and material escalation**

The AER has revised down the labour and material escalation that was proposed by Envestra for its Victorian (see Table 3.25) and Albury networks (see Table 3.26). Internal and external labour escalation has been revised down. Materials escalation has been revised to nil real. This is discussed in Appendix D of the AER's draft decision.

**Table 3.25 Victorian network - AER approved capital expenditure<sup>(a)</sup> by driver category over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	26.7	17.2	12.8	8.5	6.1
Residential connections	19.5	18.8	18.5	17.8	17.5
Commercial/industrial connections	3.6	3.4	3.1	2.0	2.2
Residential meter replacement	2.4	4.8	3.2	7.8	2.5
Commercial/industrial meter replacement	1.0	1.2	1.7	1.5	1.4
Augmentation	4.1	7.7	2.0	11.1	1.7
IT	3.7	7.4	3.0	0.2	0.7
SCADA	0.2	0.2	0.2	0.2	0.2
Other	3.8	5.1	4.3	2.5	2.2
Gas Extensions	–	–	–	–	–
Overheads	8.3	9.8	8.2	10.0	8.2
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>73.3</b>	<b>75.7</b>	<b>57.0</b>	<b>61.6</b>	<b>42.6</b>
Customer contributions	1.3	1.3	1.3	1.3	1.3
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>72.0</b>	<b>74.4</b>	<b>55.7</b>	<b>60.3</b>	<b>41.3</b>

Source: AER analysis.

Notes: (a) Including AER material and labour escalation adjustments, excluding network management fee.

**Table 3.26 Albury network - AER approved capital expenditure<sup>(a)</sup> by driver category over the 2013–17 access arrangement period (\$million, 2011)**

Category	2013	2014	2015	2016	2017
Mains replacement	0.01	0.01	0.01	0.01	0.01
Residential connections	0.43	0.50	0.52	0.52	0.53
Commercial/industrial connections	0.02	0.02	0.02	0.02	0.02
Residential meter replacement	0.07	0.06	0.09	0.05	0.04
Commercial/industrial meter replacement	0.03	0.02	0.03	0.02	0.02
Augmentation	0.01	–	–	–	0.43
IT	0.13	0.26	0.10	0.00	0.02
SCADA	0.02	0.02	0.02	0.02	0.02
Other	0.00	0.00	0.00	0.00	0.00
Gas Extensions	–	–	–	–	–
Overheads	0.17	0.22	0.20	0.19	0.23
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>0.88</b>	<b>1.12</b>	<b>0.99</b>	<b>0.85</b>	<b>1.34</b>
Customer contributions	–	–	–	–	–
Government contributions	–	–	–	–	–
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>0.88</b>	<b>1.12</b>	<b>0.99</b>	<b>0.85</b>	<b>1.34</b>

Source: AER analysis.

Notes: (a) Including AER material and labour escalation adjustments, excluding network management fee.



### 3.4.4 Adjustments for Envestra's proposed network management fee

The AER has accepted Envestra's proposed network management fee (NMF) calculation method. This is discussed in Appendix E of the AER's draft decision. This leads to the following further revisions to Envestra's proposed capital expenditure (see Table 3.3 and Table 3.5 for year on year splits and Table 3.27 and Table 3.28 for the 2013–17 access arrangement period aggregates).

**Table 3.27 Victorian network - comparison of AER approved and Envestra capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	Envestra proposed	AER approved excluding labour and material escalation and NMF adjustments	AER approved including AER labour and material escalation adjustments	AER approved including AER labour and material escalation adjustments and NMF	Variance between Envestra and AER approved including labour and material escalation and NMF adjustments
Mains replacement	328.6	78.9	71.4	73.9	-77.5%
Residential connections	141.7	103.5	92.0	95.6	-32.5%
Commercial/industrial connections	25.6	16.1	14.3	14.9	-41.8%
Residential meter replacement	28.1	23.7	20.8	21.6	-23.2%
Commercial/industrial meter replacement	7.7	7.8	6.8	7.1	-7.9%
Augmentation	52.0	29.9	26.7	27.6	-46.8%
IT	19.3	16.2	14.9	15.5	-19.9%
SCADA	1.1	1.1	1.0	1.0	-8.7%
Other	53.2	20.4	17.8	18.5	-65.2%
Gas Extensions	19.7	–	–	–	-100.0%
Overheads	97.48	44.86	44.51	46.25	-52.6%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>774.4</b>	<b>332.3</b>	<b>310.2</b>	<b>321.9</b>	<b>-58.4%</b>
Customer contributions	9.5	6.5	6.5	6.5	-31.1%
Government contributions	–	–	–	–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>764.9</b>	<b>325.8</b>	<b>303.6</b>	<b>315.4</b>	<b>-58.8%</b>

Source: AER analysis.

Notes: (a) including labour and material escalation adjustment and NMF adjustment.

**Table 3.28 Albury network - comparison of AER approved<sup>(a)</sup> and Envestra capital expenditure over the 2013–17 access arrangement period (\$million, 2011)**

Category	Envestra proposed	AER approved excluding labour and material escalation and NMF adjustments	AER approved including labour and material escalation	AER approved including AER labour and material escalation adjustments and NMF	AER approved including AER labour and material escalation adjustment and NMF adjustments
Mains replacement	0.04	0.04	0.04	0.04	-8.1%
Residential connections	3.88	2.80	2.51	2.71	-30.1%
Commercial/industrial connections	0.19	0.13	0.12	0.13	-32.3%
Residential meter replacement	0.38	0.36	0.32	0.35	-8.7%
Commercial/industrial meter replacement	0.15	0.14	0.12	0.13	-8.7%
Augmentation	0.53	0.51	0.44	0.47	-12.4%
IT	0.70	0.55	0.52	0.56	-19.3%
SCADA	0.11	0.10	0.09	0.10	-9.0%
Other	0.87	0.01	0.01	0.01	-98.8%
Gas Extensions	–	–	–	–	0.0%
Overheads	1.37	1.03	1.01	1.10	-20.1%
<b>GROSS TOTAL CAPITAL EXPENDITURE</b>	<b>8.23</b>	<b>5.66</b>	<b>5.19</b>	<b>5.60</b>	<b>-32.0%</b>
Customer contributions	–	–	–	–	0.0%
Government contributions	–	–	–	–	0.0%
<b>NET TOTAL CAPITAL EXPENDITURE</b>	<b>8.23</b>	<b>5.66</b>	<b>5.19</b>	<b>5.60</b>	<b>-32.0%</b>

Source: AER analysis.

Notes: (a) Including labour and material escalation adjustment and NMF adjustment.

### 3.4.5 Equity raising costs

Equity raising costs are incurred when service providers are required to raise equity. Equity raising costs would be incurred by a prudent service provider acting efficiently. 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 per cent gearing level). The AER's equity raising cost benchmark

allowance allows for costs in the form of dividend reinvestment plan costs and seasoned equity offerings.

To determine benchmark equity raising costs the AER relies on a method that was initially discussed in a 2007 Allen Consulting Group (ACG) report.<sup>222</sup> This method was amended in the AER's decisions for the ACT, NSW and Tasmanian electricity service providers.<sup>223</sup> The AER has applied this method in subsequent decisions for other electricity and gas service providers.<sup>224</sup> This approach has recently been further refined, as discussed and applied in the Powerlink final decision and in this draft decision.<sup>225</sup>

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 involves identifying a hierarchy of three methods for equity raising, with differing equity raising costs and availability for each method. 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.<sup>226</sup> Specifically, the AER's application of this approach involves

- First, service providers use retained earnings as a source of equity:
  - Annual retained earnings are calculated as the residual of internal cash flows less dividends to shareholders. Retained earnings for each year are converted to real dollar terms and totalled to determine retained earnings for the entire access arrangement period.
  - Dividends are set to be just sufficient to match the distribution of imputation credits consistent with the AER's gamma assumptions. For gas service providers, the AER adopts a payout ratio of 70 per cent.
  - The assumed debt component of forecast capex is equal to 60 per cent of the annual change in the RAB.
  - The equity component of forecast capex for each year is calculated as the residual of the total forecast capex and the assumed debt component. Similar to retained earnings, the equity component of forecast capex for each year is converted to real dollar terms and totalled to determine the equity component for the entire access arrangement period.
- Second, service providers use dividends reinvestment plans:

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<sup>222</sup> ACG, Estimation of Powerlink's SEO transaction cost allowance—Memorandum, 5 February 2007

<sup>223</sup> AER, *Final decision, Australian Capital Territory distribution determination 2009–10 to 2013–14*, April 2009, appendix H; AER, *Final decision, New South Wales distribution determination 2009–10 to 2013–14*, April 2009, appendix N; AER, *Final decision, TransGrid transmission determination 2009–10 to 2013–14*, April 2009, appendix E; AER, *Final decision, Transend transmission determination 2009–10 to 2013–14*, April 2009, appendix E.

<sup>224</sup> AER, *Final decision, Victorian electricity distribution network service providers, Distribution determination 2011–2015*; AER, *Final Decision, Jemena Gas Networks, Access arrangement proposal for the NSW gas networks*, 1 July 2010 – 30 June 2015, June 2011.

<sup>225</sup> AER, *Final decision Powerlink Transmission determination 2012–13 to 2016–17*, April 2012, p. 151-2.

<sup>226</sup> ACG, Estimation of Powerlink's SEO transaction cost allowance—Memorandum, 5 February 2007

- The amount of equity raised in this manner is capped. It is assumed that a maximum of 30 per cent of dividends paid are returned to the service provider via a dividend reinvestment plan. The total of reinvested dividends required for the access arrangement period, therefore, is determined as the minimum of the sum of the real reinvested dividends for each year and the shortfall in retained earnings required to fund the equity component of forecast capex.
- Third, service providers use seasoned equity offerings encompassing both rights issues and placements

The requirement for external equity funding via seasoned equity offerings is the shortfall, if any, in retained earnings required to fund the equity component of forecast capex and the total of reinvested dividends.

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. These figures are based on the AER's empirical review in assessing the benchmark costs for raising equity finance:

- 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. This is because they have been suitably estimated by the AER<sup>227</sup> and ACG,<sup>228</sup> and subsequently reviewed.<sup>229</sup>

The total benchmark equity raising cost is then amortised over the weighted average standard asset life of Envestra's RAB to provide the equity raising cost allowance associated with forecast capex in the 2013–17 access arrangement.

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 has applied the updated ACG equity raising method to estimate the indicative costs and total allowance for Envestra, shown in Table 3.30 and Table 3.32. The AER will update this analysis again for the final decision based on the final capex allowance to be determined at that time.

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<sup>227</sup> Final decision, TransGrid transmission determination 2009–10 to 2013–14, April 2009, pp. 233–244.

<sup>228</sup> ACG, Debt and Equity Raising Transaction Costs, Final Report to the Australian Competition and Consumer Commission, December 2004, p xiii, 65.

<sup>229</sup> Handley, *A note on the cost of raising debt and equity capital*, April 2009.

Envestra proposed equity raising costs of \$2.4 million (\$nominal) over the access arrangement period for its Victorian network.<sup>230</sup>

Envestra proposed equity raising costs of \$0.01 million (\$nominal) over the access arrangement period for its Albury network.<sup>231</sup>

Envestra determined the costs using the AER's calculation method based on the ACG report. The proposal, however, did not incorporate the adjustments that the AER made to the equity raising cost method in the April 2012 Powerlink final decision (the final decision was not available at the time Envestra made its proposals).

After considering the equity raising costs proposed by Powerlink for its 2012–17 access arrangement, the AER modified its estimation method so that it accommodated the netting of future equity raising surpluses against prior deficits. The AER made this adjustment because it is reasonable to assess equity raising costs over the entire access arrangement period. This reflects management control over the timing of equity offerings (if required). To achieve this, the AER converted retained cash flows, the equity portion of the capex funding requirements and reinvested dividends from nominal dollar term estimates to real dollar term estimates. The AER then determined the subsequent requirement for equity raising costs across the entire access arrangement period.<sup>232</sup> This approach removes the need for implicit assumptions regarding the timing of equity raisings. It also ensures that the allowance for equity raising costs for the access arrangement period reflects the external equity that is forecast to be required.<sup>233</sup> The AER considers this updated method more appropriate and provides a better benchmark for equity raising costs. The AER will therefore require Envestra to incorporate this adjustment.

Envestra used a dividend payout ratio of 100 per cent to determine its equity raising costs.<sup>234</sup> This is not consistent with the imputation credit payout ratio of 70 per cent that is used to determine gamma. The cashflows should be consistent with the PTRM inputs and outputs and so the AER considers that 70 per cent for the imputation credit payout ratio is appropriate.

Additionally, Envestra made an error when converting nominal equity raising costs to real equity raising costs. Envestra did not discount the nominal costs back to the appropriate year.<sup>235</sup> The AER has corrected this for the draft decision.

Based on the AER's method, the cash flow analysis calculated in the PTRM for Envestra's benchmark equity raising cost is shown in Table 3.29 to Table 3.32. Table 3.29 and Table

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<sup>230</sup> Envestra (Vic), Victorian access arrangement information, 30 March 2012, p. 142. Although the figure \$2.6m was outlined, this was not the figure as calculated by Envestra's PTRM.

<sup>231</sup> Envestra (Albury), Victorian access arrangement information, 30 March 2012, p. 125.

<sup>232</sup> In contrast, the AER's previous cash flow analysis calculated dividend assessments, cash flows and funding requirements in nominal dollar terms only. Based on these nominal values, the cash flow analysis determined annual dividend reinvestment plan and seasoned equity offering costs. The annual costs were converted into real dollar term (2011–12) estimates, and totalled to provide the equity raising cost allowance for the entire regulatory control period. For the refinements, see rows 44 to 53 of the 'Equity raising cost-capex' tab in the AER's final decision PTRM for Envestra.

<sup>233</sup> AER, *Final decision Powerlink Transmission determination 2012–13 to 2016–17*, April 2012, p. 151-2.

<sup>234</sup> Envestra (Vic) PTRM 'input', cell G203. Envestra (Albury) PTRM 'input', cell G202.

<sup>235</sup> Envestra PTRM cell G45 to K45 discounts the equity raising costs by inflation to the power of 1, rather than inflation to the power of the appropriate number of years.

3.31 Table 3.30 set out (in nominal terms) the derivation of the required new equity for the 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 3.30 and Table 3.32. These tables demonstrate that Envestra does not require an equity raising cost allowance based on the level of forecast capex for its Victorian network. Envestra, however, has an equity requirement of \$1.56m (real 2012) resulting in an allowance of \$0.02m (real 2012) for its Albury network.

### Benchmark equity raising costs

The AER has applied its updated equity raising costs method along with the updated PTRM inputs and outputs to determine that Envestra requires no benchmark equity raising cost allowance for its Victorian network and a \$0.02m (real 2012) equity raising cost allowance for its Albury network.

**Table 3.29 AER's final decision cash flow analysis for Envestra Victoria benchmark equity raising cost (\$million, nominal)**

Cash flow analysis	Total (\$million, nominal)	Notes
Dividends	45.51	Set to distribute imputation credits assumed in the PTRM (70 per cent).
Dividends reinvested	13.65	Availability of reinvested dividends, capped at 30% dividends paid.
Capex funding requirement	342.20	Forecast capex funding requirement (including half year WACC adjustment).
Debt component	159.19	Set to equal 60% of annual change in RAB.
Equity component	183.01	Residual of capex funding requirement and debt component.
Retained cash flow available for reinvestment	214.46	Exclude dividends reinvested.
Equity required	-31.45	Equals equity component less retained cash flows.

Source: AER analysis.

**Table 3.30 AER's final decision cash flow analysis for Envestra Victoria benchmark equity raising cost (\$million, 2012–13)**

Cash flow analysis	Total (\$million, 2012–13)	Notes
Equity component	170.22	Residual of capex funding requirement and debt component.
Retained cash flow available for reinvestment	200.76	Exclude dividends reinvested.
Equity required	-30.54	Equals equity component less retained cash flows.

<b>Dividends reinvested</b>	12.47	Availability of reinvested dividends, capped at 30% dividends paid.
<b>Dividend reinvestment plan required</b>	0.00	Required reinvested dividends.
<b>Seasoned equity offerings required</b>	0.00	Required seasoned equity offerings (SEOs).
<b>Cost of dividend reinvestment plan</b>	0.00	Required reinvested dividends multiplied by benchmark cost.
<b>Cost of seasoned equity offerings</b>	0.00	Required SEOs multiplied by the benchmark cost.
<b>Total equity raising costs</b>	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

**Table 3.31 AER's final decision cash flow analysis for Envestra Albury benchmark equity raising cost (\$million, nominal)**

Cash flow analysis	Total (\$million, nominal)	Notes
<b>Dividends</b>	3.29	Set to distribute imputation credits assumed in the PTRM (70 per cent).
<b>Dividends reinvested</b>	0.99	Availability of reinvested dividends, capped at 30% dividends paid.
<b>Capex funding requirement</b>	6.15	Forecast capex funding requirement (including half year WACC adjustment).
<b>Debt component</b>	1.55	Set to equal 60% of annual change in RAB.
<b>Equity component</b>	4.60	Residual of capex funding requirement and debt component.
<b>Retained cash flow available for reinvestment</b>	2.87	Exclude dividends reinvested.
<b>Equity required</b>	1.73	Equals equity component less retained cash flows.

Source: AER analysis.

**Table 3.32 AER's final decision cash flow analysis for Envestra Albury benchmark equity raising cost (\$million, 2012–13)**

Cash flow analysis	Total (\$million, 2012–13)	Notes
<b>Equity component</b>	4.25	Residual of capex funding requirement and debt component.

<b>Retained cash flow available for reinvestment</b>	2.69	Exclude dividends reinvested.
<b>Equity required</b>	1.56	Equals equity component less retained cash flows.
<b>Dividends reinvested</b>	0.91	Availability of reinvested dividends, capped at 30% dividends paid.
<b>Dividend reinvestment plan required</b>	0.91	Required reinvested dividends.
<b>Seasoned equity offerings required</b>	0.65	Required seasoned equity offerings (SEOs).
<b>Cost of dividend reinvestment plan</b>	0.001	Required reinvested dividends multiplied by benchmark cost.
<b>Cost of seasoned equity offerings</b>	0.019	Required SEOs multiplied by the benchmark cost.
<b>Total equity raising costs</b>	0.02	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

## 3.5 Revisions

**Revision 3.1:** Make all necessary amendments to reflect the AER’s draft decision on opening capital base for the access arrangement period, as set out in table 3.1.

**Revision 3.2:** Make all necessary amendments to reflect the AER’s draft decision on opening capital base for the access arrangement period, as set out in table 3.2.

**Revision 3.3:** Make all necessary amendments to reflect the AER’s draft decision on forecast capex by asset class over the access arrangement period, as set out in table 3.3.

**Revision 3.4:** Make all necessary amendments to reflect the AER’s draft decision on forecast capex by asset class over the access arrangement period, as set out in table 3.4.



## 4 Rate of return

The rate of return is one of the inputs to the building block approach used by the AER to determine total revenue for each regulatory year of the access arrangement period. 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.<sup>236</sup>

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

The AER's detailed reasons for its decision on the rate of return are provided in this attachment, with additional reasons on some matters set out in appendix B.

### 4.1 Draft decision

The AER does not approve Envestra's proposed (indicative) rate of return of 9.06 per cent. The AER withholds its approval because, in the AER's opinion, 7.16 per cent (subject to updating) is a preferable alternative that meets the criterion of the NGR.<sup>237</sup>

Envestra's proposed rate of 9.06 per cent is based on market data from November–December 2011. The AER's draft decision rate of 7.16 per cent is based on market data from July–August 2012. Envestra's proposed rate of return method, if also applied to market data from July–August 2011, would result in a proposed rate of 8.40 per cent.

Both Envestra's proposed rate of return method, and the AER's method in this draft decision, will be updated using market data for the risk free rate and debt risk premium (DRP) updated closer to the time of the final decision. The AER's draft decision method involves updating the risk free rate used in both the cost of equity and cost of debt. Envestra's proposed method involves only updating the risk free rate used in the cost of debt.

The AER considers a 7.16 per cent rate of return (subject to updating) provides Envestra with a reasonable opportunity to recover at least the efficient costs of capital financing. Consequently, the AER expects Envestra will be able to attract funds to support the efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers.

The AER agrees with the following aspects of Envestra's proposed rate of return method:

- 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

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<sup>236</sup> NGR, r. 87.

<sup>237</sup> The AER's adoption of this rate is subject to the risk free rate and debt risk premium parameters being updated closer to the date of the final decision.

- adopting a market risk premium (MRP) of 6 per cent
- adopting an equity beta of 0.8.
- specifying the cost of debt as the debt risk premium over the risk free rate
- determining the debt risk premium by defining the benchmark bond as a 10 year Australian corporate bond with a BBB+ credit rating and measuring the benchmark bond rate using the extrapolated Bloomberg BBB rated seven year fair value curve
- extrapolating the Bloomberg BBB rated seven year fair value curve to a 10 year maturity (consistent with the definition of the benchmark bond) using paired bond analysis<sup>238</sup>
- adopting a 60 per cent gearing ratio
- adopting the inflation forecasting method based on short term Reserve Bank of Australia (RBA) forecasts and the mid-point of the RBA's inflation targeting band

But the AER does not agree with the following aspect of Envestra's proposal:

- adopting a long term historical average risk free rate in the cost of equity. Rather, the AER adopts a short term averaging period sampled as close as practicably possible to the commencement of the access arrangement period, as explained in section 4.2.3.

Table 4.1 sets out the individual WACC parameters and consequent (indicative) rate of return determined by the AER.

**Table 4.1 AER's draft decision on Envestra's rate of return (nominal)**

Parameter	Envestra proposal	AER draft decision
Nominal risk free rate (cost of equity)	5.99%	2.98% <sup>a</sup>
Nominal risk free rate (cost of debt)	3.99% <sup>a</sup>	2.98% <sup>a</sup>
Equity beta	0.8	0.8
Market risk premium	6%	6%
Debt risk premium	3.92% <sup>a</sup>	3.76% <sup>a</sup>
Gearing level	60%	60%
Inflation forecast	2.5% <sup>a</sup>	2.5% <sup>a</sup>
Gamma	0.25	0.25
Nominal post-tax cost of equity	10.80% <sup>a</sup>	7.78% <sup>a</sup>
Nominal pre-tax cost of debt	7.91% <sup>a</sup>	6.74% <sup>a</sup>

<sup>238</sup> The AER agrees with Envestra's proposed paired bonds extrapolation method, including the selection criteria to choose the paired bonds. However, Envestra appears to have incorrectly applied the selection criteria in its proposal. Accordingly, the AER has corrected this error in applying Envestra's proposed paired bonds extrapolation method.

Nominal vanilla WACC	9.06% <sup>a</sup>	7.16% <sup>a</sup>
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Source: ACCC decision; Envestra, *Access arrangement proposal*, March 2012 and AER analysis.

(a) Indicative only. The risk free rate, debt risk premium and inflation forecast will be updated closer to the date of the final decision.

The rate of return in this draft decision (7.16 per cent) is similar to the rate of return determined by the AER recently in the APTPPL final decision (7.31 per cent).<sup>239</sup> However, the rate of return in this decision for Envestra is lower than the rate of return determined by the AER in decisions before that time. The fact that the overall rate of return in this decision is lower than in previous decisions does not of itself make it unreasonable. The cost of debt in this decision makes up 60 per cent of the overall rate of return. The AER and Envestra agree on the approach to determining the cost of debt. The cost of debt has fallen by approximately one per cent compared with AER decisions from earlier this year.<sup>240</sup> Hence, the AER and Envestra agree that this reduction reflects changing conditions in the market for funds. This provides the AER with a degree of comfort that a fall in the overall rate of return, in itself, is not unreasonable.

Envestra's concerns surround the cost of equity and the extent to which the cost of equity determined by the AER in this decision is lower than that determined in previous decisions. A lower cost of equity contributes to a lower overall rate of return.

The AER acknowledges that Envestra was concerned with the impact of the lower risk free rate on its overall rate of return. The AER has carefully considered the consequences of the low CGS yields and is confident that CGS yields remain the most appropriate proxy of the risk free rate in Australia. This position is supported by advice from the Reserve Bank of Australia (RBA). The AER has also considered whether or not the MRP should be increased from that used in previous decisions. The AER remains of the view that a 6 per cent MRP is commensurate with prevailing conditions in the market for funds.

## 4.2 Assessment approach

In this section, the AER considers:

- The requirements of the national gas law and rules on the rate of return
- The approach to selecting a well accepted model and approach for determining the rate of return
- The approach to determination each parameter within that well accepted approach and model
- The approach to reasonableness checks on the overall rate of return

<sup>239</sup> AER, *Final decision: APT Petroleum Pipeline Pty Ltd, Access arrangement final decision, Roma to Brisbane Pipeline 2012–13 to 2016–17*, August 2012, p. (AER, *Final decision: APTPPL access arrangement*, August 2012).

<sup>240</sup> AER, *Final distribution determination, Aurora Energy Pty Ltd 2012–13 to 2016–17*, April 2012, p. 29, (AER, *Final decision: Aurora distribution determination*, April 2012)

## 4.2.1 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 the Tribunal's interpretation of relevant provisions of the NGR in recent decisions.

R.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 the rule operates as follows:

- R.87(1) of the NGR describes the objective in determining the WACC but not how to achieve the objective.
- R.87(2) of the NGR 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).
- R.87(1) of the NGR informs the selection of input parameters for the well accepted approach and well accepted financial model. Those input parameters must reflect prevailing conditions in the market for funds and the risk involved in providing reference services.

This interpretation is consistent with the Tribunal's position in two recent decisions: the ATCO (formerly WA Gas Networks) matter and the DBNGP matter.<sup>241</sup> It is also consistent with the AER's approach in previous decisions.<sup>242</sup> The AER thus applied this approach in making its draft decision on Envestra's rate of return.

R.87 of the NGR is a full discretion provision.<sup>243</sup> This means the AER may, but is not bound to, approve Envestra'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 if 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

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<sup>241</sup> Australian Competition Tribunal, *Application by WA Gas Network Pty Ltd (No 3) [2012] ACompT*, 8 June 2012, paragraphs 61-66; see also Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraphs 80-84, 100-103.

<sup>242</sup> AER, *Final decision: APT Petroleum Pipeline Pty Ltd, Access arrangement final decision, Roma to Brisbane Pipeline 2012-13 to 2016-17*, August 2012, p. 58-59 (AER, *Final decision: APTPPL access arrangement*, August 2012).

<sup>243</sup> NGR, r. 40.

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.<sup>244</sup>

If the AER does not approve Envestra's access arrangement, then the AER must formulate an access arrangement with regard to:

- the matters that the NGL and NGR require an access arrangement to include
- the service provider's access arrangement proposal
- the AER's reasons for refusing to approve that proposal.<sup>245</sup>

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 many 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<sup>246</sup>) and resulting Statement of Regulatory Intent (SRI)
- the service provider's proposal
- expert reports commissioned by the AER, the service provider and other stakeholders
- 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.<sup>247</sup> Both the AER's approval or withholding of its approval of Envestra's proposed rate of return—and in the case of the latter the AER's determination of a preferable rate of return—are AER economic regulatory functions or powers. The 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.<sup>248</sup>

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<sup>244</sup> NGR r. 99(3).

<sup>245</sup> NGR r. 64(2).

<sup>246</sup> AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009. (AER, *Final Decision: WACC Review*, May 2009).

<sup>247</sup> NGL s. 28(1).

<sup>248</sup> NGL, s. 23.

In addition, the AER must take into account the revenue and pricing principles when approving or making the parts of an access arrangement that relate to a reference tariff.<sup>249</sup> The rate of return is such a part, so the AER must take into account the following<sup>250</sup>:

- A service provider should have a reasonable opportunity to recover at least the efficient costs that it incurs in providing reference services
- 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 its access arrangement proposal, Envestra said that rr 87(1) and 87(2) of the NGR should be read together<sup>251</sup>:

If the intention of the NGR is that one simply applied a well-accepted financial model and accepted the results without any further checks of whether those results reflect prevailing conditions in the market for funds and the risks involved in providing the reference services, rule 87(1) would be unnecessary.<sup>252</sup>

Envestra also said that r. 87(2) is subordinate to r. 87(1) of the NGR and that the AER has applied the CAPM in a 'mechanistic' way.<sup>253</sup> In determining its proposed cost of equity, Envestra considers alternative estimates of the Sharpe-Lintner CAPM from CEG, Capital Research and NERA, as well as an alternative model to the Sharpe-Lintner CAPM in the Black CAPM.<sup>254</sup> To support the use of a variety of methods, Envestra points to an ASIC guideline on valuation reports and comments made by the Tribunal in *Application by Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT* (the Telstra matter).<sup>255</sup>

The AER does not agree with Envestra's submissions about the construction and operation of r. 87. Rr. 87(1) and 87(2) of the NGR operate together in the manner described by the AER above. That interpretation is consistent with the Tribunal's position in the ATCO matter and the DBNGP matter. The AER notes Envestra's access arrangement proposal was made before the Tribunal released those decisions.

In any case, the AER does not consider the approach taken in this decision to be 'mechanistic'. The AER has taken into account an extensive amount of information and applied careful judgment in estimating each rate of return parameter, and carefully considered the economic interdependencies between parameters.

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<sup>249</sup> NGL s. 28(2)(a)(i)

<sup>250</sup> NGL, s. 24.

<sup>251</sup> Envestra, Access arrangement information, March 2012, p. 147.

<sup>252</sup> Envestra, Access arrangement information, March 2012, p. 147.

<sup>253</sup> Envestra, Access arrangement information, March 2012, p. 147.

<sup>254</sup> Envestra, Access arrangement information, March 2012, p. 159.

<sup>255</sup> Envestra, Access arrangement information, March 2012, p. 148.

The AER has not used alternative cost of equity models to directly determine the cost of equity. However, the AER has given consideration to these models, and other relevant information, in making this decision:

- Alternative MRP estimates are considered in section 4.3.3 and appendix B.
- Alternative estimates of the risk free rate are considered in appendix B.
- The interaction between the risk free rate and the MRP is considered in section 4.3.4.
- The Black CAPM is considered in appendix B.
- Indicators of the appropriateness of the overall WACC are considered in appendix B.

Based on these considerations, the AER considers the rate of return method determined in this decision is preferable to Envestra's proposed method, and is commensurate with prevailing conditions in the market for funds and the risks involved with providing reference services.

#### 4.2.2 Selection of well accepted approach and model

In its access arrangement proposal, Envestra proposed the WACC approach, weighted 40 per cent to equity and 60 per cent to debt. Envestra also proposed to calculate:

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

The AER approves both Envestra's approach to determining the rate of return and models to determine the cost of equity and cost of debt. The weighted average cost of capital is a well accepted approach to determining the rate of return. The models proposed by Envestra to determine the cost of equity and debt are also well accepted.<sup>256</sup>

#### 4.2.3 Approach to the determination of specific parameters

##### Risk free rate

The risk free rate measures the return that an investor would expect from an asset with no default risk. As with other WACC parameters, the risk free rate should reflect prevailing conditions in the market for funds. It cannot be directly observed, but bonds issued by the Australian Government (Commonwealth Government Securities (CGS)) are its most appropriate proxy. This is because the risk of the government defaulting on these bonds is low. CGS yields are readily observable.

The AER accepts Envestra's proposed approach for calculating the risk free rate for the cost of debt but not the cost of equity. (Envestra provided the AER with an averaging period on a confidential basis.) The approach for the cost of debt involves observing the yield on 10 year CGS over a short period (10–40 days) commencing as close as possible to the beginning of

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<sup>256</sup> Australian Competition Tribunal, *Application by WA Gas Network Pty Ltd (No 3) [2012] ACompT*, 8 June 2012, paragraph 64.

the regulatory period. This approach produces a risk free rate that reflects prevailing conditions in the market for funds.<sup>257</sup> The AER applied this approach to determining the risk free rate when estimating both the cost of equity and the cost of debt. It articulated this approach in the WACC review in 2009, and the approach is consistent with other recent decisions by the AER.

## Market risk premium

The AER accepts the use of the yield on 10 year CGS as the proxy for the risk free rate. To maintain consistency within the CAPM, the AER estimated a 10 year forward looking MRP.

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

While the MRP cannot be directly observed, methods are available to infer investor expectations at any point in time. These methods include examining historical excess returns, conducting surveys of the MRP used by practitioners and academics, employing the dividend growth model (DGM) and using other financial market indicators such as an implied volatility approach. The National Gas Law and Rules (NGL and NGR) do not specify a particular method for measuring the MRP.

Academic literature and reports by regulated businesses<sup>258</sup> recognise the evidence available for estimating the MRP is imprecise and subject to interpretation. Experts do not agree on either the appropriate method or the assumption for different methods. In addition, each method has strengths and limitations, and may give conflicting outcomes.<sup>259</sup> For these reasons, judgment must be exercised in determining an MRP value for determining an appropriate rate of return. The Australian Competition Tribunal recognised this problem in the recent Envestra decision.<sup>260</sup>

The AER considers the MRP should be based on considerations relevant to the MRP. Maintaining the integrity of each parameter promotes robustness in the parameter's estimation. While that integrity is important, the AER also recognises the economic interdependencies between parameters when they exist.

The AER accepts Envestra's proposed 'long term' MRP of 6 per cent. It does not accept the proposed 'current' MRP estimate of 8.3 per cent.<sup>261</sup> Consistent with previous decisions, the AER determined an MRP of 6 per cent is appropriate by assessing a range of evidence. It

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<sup>257</sup> NGR, rule 87(1)); Section 1.3.1 below contains evidence for why this approach is consistent with the rules.

<sup>258</sup> See, for example, Officer B. and Bishop S., *Market risk premium, a review paper*, August 2008, pp. 3–4.

<sup>259</sup> See, for example, Mehra R. and Prescott E.C., "The equity premium, a puzzle", *Journal of Monetary Economics*, 15, 1985, pp. 145–61; Damodoran A., *equity risk premiums (ERP), determinants, estimation and implications*, September 2008, p. 1; Doran J.S., Ronn E.I. and Goldberg R.S., *A simple model for time-varying expected returns on the S&P 500 Index*, August 2005, pp. 2–3.

<sup>260</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 4*, 11 January 2012, paragraph 146.

<sup>261</sup> Envestra, *Albury access arrangement information*, 30 March 2012, pp. 140-141; Envestra, *Victoria access arrangement information*, 30 March 2012, pp. 156-157;



interpreted the information available, accounting for the advantages and limitations of all evidence. In the case of complex and conflicting evidence, the AER exercised regulatory judgment.

## **Equity beta**

The AER approach for this draft decision begins with conceptual analysis of equity beta, then proceeds with rigorous empirical analysis using a comparator set of listed firms that best match the benchmark. Finally, the equity beta estimate is cross checked against other estimates derived from less relevant data, such as overseas firms or other regulated sectors.

The conceptual analysis undertaken by the AER frames the later empirical analysis. In the AER approach the empirical analysis is the primary determinant of equity beta, even though it is not the first step. Further, although the cross checks use empirical evidence, this is given less weight because of the reduced relevance of these firms (overseas or in other industry sectors) to the characteristics of the benchmark firm.

In evaluating both the conceptual and empirical evidence, the AER sought advice from finance experts Professor McKenzie and Associate Professor Partington of the University of Sydney.<sup>262</sup>

In arriving at the estimate of the equity beta, the AER has regard to the level of precision in the available empirical evidence, consistent with the AER's previous regulatory practice.

## **Debt risk premium**

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

The AER's assessment approach for this draft decision is consistent with that adopted in the AER's recent final decision for the Roma to Brisbane Pipeline.<sup>263</sup> That is, the AER has estimated the DRP using:

- an appropriate benchmark
- a method used to estimate the DRP that conforms to these benchmark parameters.

## **Benchmark**

The AER adopts a 10 year Australian corporate bond with a BBB+ credit rating as the benchmark for estimating the DRP. This benchmark assumption was also adopted by Envestra.

## **Method used to estimate the DRP**

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<sup>262</sup> Michael McKenzie and Graham Partington, Report to the AER, Estimation of the equity beta (conceptual and econometric issues) for a gas regulatory process in 2012, 3 April 2012.

<sup>263</sup> AER, *Final decision: APTPL access arrangement*, August 2012. .

For this draft decision, the AER uses the following method to estimate the 10 year DRP:

- the Bloomberg BBB rated fair value curve to estimate the (base) seven year DRP
- the average annual increment observed across bonds of differing maturities issued by the same company, to extrapolate the seven year DRP estimate to 10 years.

### **AER observations on recent Tribunal decisions and bond issuances**

The AER has previously noted analysis demonstrating the extrapolated Bloomberg BBB rated fair value curve resulted in a DRP higher than that indicated from market evidence.<sup>264</sup> In particular, this evidence included observed bond data and independent market commentary.

Further, the AER has previously proposed a means of estimating the DRP which made use of market evidence on Australian bond yields.<sup>265</sup> Prior to the implementation of this approach in a final decision, however, the Tribunal released its decision for the Envestra and APT Allgas reviews.<sup>266</sup> Notably, the Tribunal stated that the Bloomberg fair value curve should be used to determine the DRP unless there are sound reasons to depart from that practice. Moreover, any alternative method should be determined in consultation with the relevant regulated entities and other interested parties.<sup>267</sup> In light of these Tribunal statements, the AER relied on the extrapolated Bloomberg fair value curve for estimating the DRP. The AER was particularly mindful of the Tribunal's recommendation that a public consultation process be completed before an alternative methodology was adopted.

Subsequently, the Tribunal has made two decisions that also dealt with the determination of the DRP.<sup>268</sup> These decisions upheld the use of the 'bond-yield approach' adopted by the ERA.<sup>269</sup> That is, an alternative bond yield approach to that used by the AER in which the DRP was estimated by averaging observed bond yields that met certain criteria.<sup>270</sup> The Tribunal

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<sup>264</sup> AER, *Draft decision: Powerlink; Transmission determination*, November 2011, pp. 225–229.

<sup>265</sup> More specifically, the AER proposed to set the DRP as the average of nine bonds with characteristics that were similar to the benchmark (7–13 years maturity, BBB/BBB+/A- credit rating, fixed/floating, not callable or subordinated, Australian issuance). AER, *Draft decision: Aurora distribution determination*, November 2011, pp. 216–219, 238–253.

<sup>266</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2)* [2012] ACompT 3, 11 January 2012; see also Australian Competition Tribunal, *Application by APT Allgas Energy Ltd* [2012] ACompT 5, 11 January 2012.

<sup>267</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2)* [2012] ACompT 3, 11 January 2012, paragraphs 95, 118, 120–121; see also Australian Competition Tribunal, *Application by APT Allgas Energy Ltd* [2012] ACompT 5, 11 January 2012.

<sup>268</sup> Specifically, for the West Australian gas distribution network owned by WA Gas Networks Pty Ltd (now known as ATCO Gas Australia), and for the Dampier to Bunbury Natural Gas Pipeline owned by DBNGP (WA) Transmission Pty Ltd. See Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012; and Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012.

<sup>269</sup> Though the AER and ERA operate under different legislative instruments, the sections relevant to the determination of the rate of return are identical. Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012, paragraphs 167, 180; and Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012, paragraphs 280–282, 287.

<sup>270</sup> Specifically, all bonds (sourced from Bloomberg) were from Australian companies, denominated in Australian dollars and issued in Australia. Further, bonds could be either fixed or floating and either bullet, callable or puttable. Different scenarios used other slightly different criteria, such as a minimum term (two or five years), and a range of credit ratings (BBB-/BBB/BBB+ or BBB/BBB+).

did, however, direct the ERA to amend the simple averaging process used to aggregate these bond yields.<sup>271</sup> The Tribunal also provided guidance on the relevance of various criteria and the use of a more complex weighted average.<sup>272</sup> Such a weighted average was implemented by the ERA on remittal.<sup>273</sup>

If the bond-yield approach (with the weighting method adopted in the ERA's revised decision) was applied to Envestra, the DRP would be 2.72 per cent.<sup>274</sup> This is below the DRP of 3.82 per cent derived using the extrapolated Bloomberg fair value curve (as per Envestra's proposed method).<sup>275</sup>

Additionally, the AER has observed recent bond issues from firms which have similar characteristics to the benchmark firm. These are shown in Table 4.2, below:

Table 4.2 Observed recent bond issuances—network service providers

Issuer	Date of issue	Amount (\$million)	Type	Term (years)	Yield at issue (per cent)	DRP (per cent)
SPI Electricity and Gas	21 JUN 2012	205	Fixed	10	5.95	2.96
Powercor Australia	19 APR 2012	200	Fixed	5	5.80	2.51
United Energy Distribution	3 APR 2012	200	Fixed	5	6.50	2.95
ETSA Utilities	1 MAR 2012	200	Fixed	5	6.27	2.60
SPI Australia	10 FEB 2012	400	Fixed	5	6.29	2.75

Source: Bloomberg.

Consistent with the AER's observations previously, the AER considers that the Bloomberg fair value curve continues to provide DRP estimates which are higher than other potential approaches (such as the ERA's approach). The Bloomberg fair value curve also provides estimates which are high in comparison to recent bond issuances from firms with similar characteristics to the benchmark firm. For these reasons, the AER has commenced an internal review into alternatives to the Bloomberg fair value curve. The AER will advise of a public consultation process on the development of an alternative in due course. The AER, however, does not expect to implement any new method in time for Envestra's forthcoming

<sup>271</sup> Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012, paragraphs 176, 180, 187; Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012, paragraphs 290, 310–313.

<sup>272</sup> More specifically, the Tribunal endorsed the use of the ERA's 'scenario 2', which encompassed a minimum credit rating of BBB and a minimum term of two years. It also suggested that it would be appropriate to apportion weight by considering both term to maturity and issuance amount for the relevant bonds.

<sup>273</sup> ERA, *Revised decision, Access arrangement revisions for the Mid-West and South-West Gas Distribution System*, 25 June 2012, pp. 5–12.

<sup>274</sup> Based on Envestra's indicative averaging period, this 'bond-yield approach' estimate incorporates 60 bonds with an average term to maturity of 5.94 years.

<sup>275</sup> This estimate reflects the paired bonds extrapolation sample proposed by Envestra.

access arrangement period. This follows the Tribunal's previous comments on the consultation approach that should be adopted in the development of any new approach.<sup>276</sup>

## Forecast inflation

The AER adopts the methodology that was used in its previous regulatory decisions. This methodology involves:

- forecasting inflation for each of the next 10 years, consistent with the use a 10 year term for the risk free rate and other WACC parameters
- taking a geometric average of these values to estimate a 10 year forecast inflation rate
- adopting the RBA's headline inflation forecasts from its latest Statement on Monetary Policy for as many future years as the RBA publishes inflation forecasts, and
- adopting the mid-point of the RBA's inflation target (2.5 per cent) for the remaining futures years out to year 10.

### 4.2.4 Reasonableness check on overall rate of return

In section 4.2.1, the AER sets out its approach to the determination of each parameter within the overall rate of return. In addition, the AER has undertaken reasonableness checks on the overall rate of return. These checks involve having regard to RAB multiples as well as the discount rates in broker reports.

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). It gives limited consideration to the overall WACC estimates, in accordance with the relevant legislation.

## 4.3 Reasons for draft decision

In forming this draft decision, the AER has considered an extensive range of material on the rate of return. This includes Envestra's access arrangement proposal, the other Victorian gas service providers' proposals, and the submissions into these reviews from users. The AER has also sought a range of expert advice to assist in making these decisions—from the RBA, Treasury, AOFM, Professor McKenzie, Associate Professor Partington and Associate Professor Lally.

In this review, Envestra proposed a 6 per cent MRP but adopted a long run historical average risk free rate (5.99 per cent) for the cost of equity because it considered the AER's approach to the cost of equity in previous decisions resulted in a cost of equity that is too low in current market conditions. The other Victorian gas distribution service providers also proposed this approach. APA GasNet held a similar concern but proposed a different approach. APA GasNet proposed a higher MRP (8.5 per cent).

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<sup>276</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2)* [2012] ACompT 3, 11 January 2012, paragraphs 95, 118, 120–121; see also Australian Competition Tribunal, *Application by APT Allgas Energy Ltd* [2012] ACompT 5, 11 January 2012.

On the other hand, BHP Billiton submitted that the MRP is between 5-6 per cent. The Energy Users Coalition of Victoria (EUCV) considered the AER should adopt a 5 year term for the risk free rate and an equity beta of 0.65. The 5 year term and 0.65 equity beta were adopted by the ERA in its access arrangement decision for the Dampier to Bunbury Natural Gas Pipeline (DBNGP). The Tribunal found no error in ERA's position on these matters. Incorporating any of the changes proposed by users to the term, equity beta or MRP would result in a lower cost of equity than applying the AER's approach from previous decisions.

In this draft decision, the AER has maintained its cost of equity approach of adopting a prevailing risk free rate (currently 2.98 per cent), an equity beta of 0.8 and a 6 per cent MRP.

In this review, Envestra proposed adopting the extrapolated Bloomberg fair value curve to estimate the DRP.<sup>277</sup> This results in a DRP of 3.82 based on current market data.<sup>278</sup> The other Victorian gas service providers also proposed this approach.<sup>279</sup> BHP Billiton considered this method was appropriate but also considered there was merit in the AER exploring alternative methods.<sup>280</sup>

On the other hand, the EUCV considered the DRP should be no more than 195 basis points above the risk free rate (based on a 5 year term).<sup>281</sup> The EUCV noted this resulted in a DRP similar to the ERA's approach.

In the ATCO and DBNGP matters, the Tribunal upheld the use of the 'bond yield' approach adopted by the ERA.<sup>282</sup> Under this approach the DRP is estimated by averaging observed bond yields that meet certain criteria.<sup>283</sup> The Tribunal did, however, direct the ERA to amend the simple averaging process used to aggregate these bond yields.<sup>284</sup> The Tribunal also provided guidance on the relevance of various criteria and the use of a more complex weighted average.<sup>285</sup> Such a weighted average was implemented by the ERA on remittal.<sup>286</sup> If

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<sup>277</sup> Envestra, *Access arrangement submission: Part A*, 30 March 2012.

<sup>278</sup> This estimate reflects the paired bonds sample proposed by Envestra.

<sup>279</sup> Envestra, *Access arrangement information*, 30 March 2012; APA GasNet, *Access arrangement submission*, 31 March 2012; Envestra, *Access arrangement information*, 30 March 2012.

<sup>280</sup> BHP Billiton, *Submission to the AER: APA GasNet access arrangement proposal*, 29 June 2012, p. 17.

<sup>281</sup> EUCV, *Submission to the AER: APA GasNet access arrangement proposal*, 18 June 2012, p. 50.

<sup>282</sup> Though the AER and ERA operate under different legislative instruments, the sections relevant to the determination of the rate of return are identical. Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012, paragraphs 167, 180; and Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012, paragraphs 280–282, 287.

<sup>283</sup> Specifically, all bonds (sourced from Bloomberg) were from Australian companies, denominated in Australian dollars and issued in Australia. Further, bonds could be either fixed or floating and either bullet, callable or puttable. Different scenarios used other slightly different criteria, such as a minimum term (two or five years), and a range of credit ratings (BBB-/BBB/BBB+ or BBB/BBB+).

<sup>284</sup> Australian Competition Tribunal, *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, 8 June 2012, paragraphs 176, 180, 187; Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, 26 July 2012, paragraphs 290, 310–313.

<sup>285</sup> More specifically, the Tribunal endorsed the use of the ERA's 'scenario 2', which encompassed a minimum credit rating of BBB and a minimum term of two years. It also suggested that it would be appropriate to apportion weight by considering both term to maturity and issuance amount for the relevant bonds.

<sup>286</sup> ERA, *Revised decision, Access arrangement revisions for the Mid-West and South-West Gas Distribution System*, 25 June 2012, pp. 5–12.

the bond-yield approach (with the weighting method adopted in the ERA's re-determination) was applied to Envestra, the DRP would be 2.72 per cent.<sup>287</sup>

In this draft decision, the AER has maintained adoption of the extrapolated Bloomberg BBB rated fair value curve. This currently provides a cost of debt of 6.74 per cent, or DRP of 3.76 per cent.<sup>288</sup>

Taking Envestra's proposal and the submissions from stakeholders together, the AER considers that the rate of return in this draft decision (subject to updating) satisfies the criterion of the NGR.

#### 4.3.1 The Capital Asset Pricing Model (CAPM)

A financial model must be a well accepted model if it is 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 and constantly 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 responded to their survey adopt the (Sharpe) CAPM in formulating their capital budgeting decisions.<sup>289</sup>

Envestra proposed to use the Sharpe Lintner CAPM to determine the cost of equity.<sup>290</sup> Envestra, however, also submitted a report from NERA on the Black CAPM. It used the NERA report to cross check the cost of equity estimates derived from the Sharpe Lintner CAPM.<sup>291</sup>

The AER accepts Envestra's proposal to use the Sharpe Lintner CAPM to determine the cost of equity for use in the WACC because it is a well accepted financial model and will produce results commensurate with prevailing market conditions. The AER's considerations of the use of the Black CAPM to cross check cost of equity estimates are detailed in appendix B.

#### 4.3.2 Risk free rate

The AER agrees with Envestra's proposed method for estimating the risk free rate for the cost of debt.<sup>292</sup> The AER does not agree with Envestra's proposed method for estimating the risk free rate for the cost of equity.<sup>293</sup> The method used in this decision is consistent for both the cost of debt and the cost of equity and reflects prevailing conditions in the market for funds. The AER considers the method reflects prevailing conditions in the market for funds because CGS yields represent the most appropriate proxy for the risk free rate because:

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<sup>287</sup> Based on Envestra's indicative averaging period, this 'bond-yield approach' estimate incorporates 60 bonds with an average term to maturity of 5.94 years.

<sup>288</sup> This estimate reflects an adjustment to Envestra's proposed extrapolation approach. This adjustment is discussed in detail in attachment 4 of this draft decision.

<sup>289</sup> AER, WACC review final decision, May 2009, p. 335.

<sup>290</sup> Envestra, Victoria access arrangement information, 30 March 2012, p. 158. Envestra, Albury access arrangement information, 30 March 2012, p. 141-2,

<sup>291</sup> Envestra, Victorian access arrangement information, 30 March 2012, 158-9. Envestra, Albury access arrangement information, 30 March 2012, p. 142-4.

<sup>292</sup> Envestra, *Access arrangement information*, March 2012, p.162

<sup>293</sup> Envestra, *Access arrangement information*, March 2012, pp. 155-156.

- CGS are low risk
- the CGS market is liquid and functioning well, as confirmed by advice from the Reserve Bank of Australia (RBA), the Australian Treasury and the Australian Office of Financial Management (AOFM)<sup>294</sup>
- the RBA advised 'CGS yields are the most appropriate measure of a risk free rate in Australia'.<sup>295</sup>

Further, the AER considers the most appropriate averaging period for determining the risk free rate is a short period (as close as possible to the start of the regulatory period) because:

- at any point in time, the prevailing risk free rate is the benchmark that the expected return on a risky investment must exceed
- prevailing 10 year CGS yields reflect the risk free rate over the appropriate forward looking investment horizon (which is 10 years)
- CGS yields are market determined—that is, prevailing CGS yields reflect the return that investors are willing to receive on an investment that is almost default risk free in current market conditions
- this approach promotes the regulatory objective that the present value of a service provider's expected revenue should match the present value of a service provider's expected expenditure (plus or minus any efficiency rewards or penalties)
- the use of prevailing CGS yields is consistent with the use of the building block model because this model is designed to uphold the present value principle
- the use of prevailing CGS yields is consistent with the use of the CAPM. In the ActewAGL matter, both the expert for the AER (Associate Professor Lally) and the expert for the service provider (Greg Houston) agreed on this matter.<sup>296</sup>
- this approach provides an unbiased method for determining the risk free rate
- advice from Professor McKenzie and Associate Professor Partington, and from Associate Professor Lally supported the use of a prevailing risk free rate.<sup>297</sup>

The AER recognises that CGS yields are near historical lows, but that fact does not invalidate any of the above reasons. The current historically low CGS yields are not surprising, and reflect what would be expected of a well functioning risk free rate proxy in current demand and supply conditions. In the Telstra matter, the Australian Competition Tribunal stated 'it is

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<sup>294</sup> 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).

<sup>295</sup> Reserve Bank of Australia, *Letter to the ACCC: The Commonwealth Government Securities Market*, 16 July 2012, (RBA, *Letter regarding the CGS market*, July 2012).

<sup>296</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 148.

<sup>297</sup> M. McKenzie, and G. Partington, *Report to the AER: Supplementary report on the equity market risk premium*, 22 February 2012, pp. 11–12, (McKenzie and Partington, *Supplementary report on the MRP*, February 2012); M. Lally, *The risk free rate and the present value principle*, 22 August 2012, p. 3 (Lally, *Risk free rate and present value*, August 2012).

not unusual for yields to move from time to time in order to reflect prevailing market conditions and the expectations about the prospect for prices into the future'.<sup>298</sup>

### **CGS yields—the most appropriate proxy for the risk free rate**

CGS are low default risk securities issued by the Australian Government. The risk free rate measures the return an investor would expect from an asset with no default risk. Each of the three major credit rating agencies issued its highest possible rating to the Australian Government.<sup>299</sup>

The spreads between CGS yields and the yields on other Australian dollar denominated securities have widened in recent years.<sup>300</sup> On this increase, the RBA advised:

This widening indeed confirms the market's assessment of the risk free nature of CGS and reflects a general increase in the risk premia on other assets.<sup>301</sup>

In the recent DBNGP matter, the Australian Competition Tribunal stated:

The Tribunal notes here that the risk free rate of return is a clearly defined, if abstract, concept. It measures the return on a bond that carries no risk for the investor. It is widely accepted that the closest approximation to such a bond will be government debt.<sup>302</sup>

Further, the RBA and Australian Treasury advised the ACCC on two occasions that the CGS market is liquid and functioning well.<sup>303</sup> The ACCC sought the first set of advice (received August 2007)<sup>304</sup> in response to a NERA report submitted by SP AusNet. Both the RBA and Australian Treasury at that time suggested nominal CGS yields were an appropriate proxy for the risk free rate.<sup>305</sup> On the other hand, both suggested indexed CGS yields were unlikely to provide an appropriate proxy for the real risk free rate.<sup>306</sup> The AER subsequently ceased using indexed CGS to determine inflation expectations.<sup>307</sup>

In July 2012, the Treasury and AOFM stated:

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

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<sup>298</sup> Australian Competition Tribunal, *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010, paragraph 417.

<sup>299</sup> Standard and Poor's, viewed 17 August 2012, [www.standardandpoors.com/prot/ratings/entity-ratings/en/au/?entityID=268976&sectorCode=SOV](http://www.standardandpoors.com/prot/ratings/entity-ratings/en/au/?entityID=268976&sectorCode=SOV); Moody's, viewed 5 September 2012, <http://www.moodys.com/credit-ratings/Australia-Government-of-credit-rating-75300>; Fitch Ratings, viewed 5 September 2012, <http://www.fitchratings.com/gws/en/esp/issr/80442187>

<sup>300</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>301</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>302</sup> Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraph 116.

<sup>303</sup> 'Liquidity means that you do not have to accept a discount from true value if you want to sell the asset quickly.' R. Brealey, S. Myers, G. Partington, and D. Robinson, *Principles of Corporate Finance*, McGraw-Hill Australia: First Australian Edition, 2007, p. 1082.

<sup>304</sup> Reserve Bank of Australia, *Letter to the AER*, August 2007; Australian Treasury, *The Treasury Bond yield as a proxy for the CAPM risk-free rate*, August 2007.

<sup>305</sup> Reserve Bank of Australia, *Letter to the AER*, August 2007, p. 1; Australian Treasury, *The Treasury Bond yield as a proxy for the CAPM risk-free rate*, August 2007, p. 1.

<sup>306</sup> Reserve Bank of Australia, *Letter to the AER*, August 2007, p. 1; Australian Treasury, *The Treasury Bond yield as a proxy for the CAPM risk-free rate*, August 2007, p. 1.

<sup>307</sup> AER, *Final decision: SP AusNet Transmission determination - 2008-09 to 2013-14*, January 2008, p. 12.



In support of this position, they listed several indicators of liquidity:

- the turnover of Treasury bonds, which steadily increased from around \$60 billion per month in early 2009 to almost \$300 billion per month in June 2012 (inclusive of repurchase transactions)
- bid-offer spreads, which fell between 2008 and June 2012<sup>308</sup>
- repurchase ('repo') margins. The 'repurchase agreement rates on CGS do not indicate any degree of 'tightness'".<sup>309</sup>

A recent speech by Rob Nicholl, chief executive officer of the AOFM, also supported the conclusion that the CGS market is liquid.<sup>310</sup> His comments suggested the AOFM has confidence that the CGS market is "resilient and highly functional".<sup>311</sup>

Further, the Australian Government has a policy of issuing sufficient CGS to ensure liquidity in the market.<sup>312</sup> The Australian Treasury and AOFM stated:

In the context of the 2011-12 Budget, the Government consulted a panel of financial market participants and financial regulators as part of its deliberations on the future of the CGS market. The panel concluded that to maintain a liquid and efficient bond market that supports the futures market and the requirements of the new global bank and liquidity standards, the CGS market should be maintained at around 12 to 14 per cent of GDP over time. The projected amount of CGS on issue over the forward estimates should remain marginally higher than these levels.<sup>313</sup>

The liquidity of the CGS market provides the AER with confidence that market prices accurately reflect investor expectations and market conditions.

### **Appropriate averaging period and method**

The AER considers the best method for determining an appropriate risk free rate is to use an averaging period as close as possible to the beginning of the regulatory period. The following sections outline why the AER holds this view.

### **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 on the term structure of interest rates is explained in section 2.2.1. This theory is

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<sup>308</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

<sup>309</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>310</sup> Rob Nicholl, *After the Storm - Does it Get Easier?*, Australian Business Economists Speech, Sydney, 22 May 2012.

<sup>311</sup> Rob Nicholl, *After the Storm - Does it Get Easier?*, Australian Business Economists Speech, Sydney, 22 May 2012, p. 7.

<sup>312</sup> Initially stated in 02-03 Budget, [www.budget.gov.au/2003-04/bp1/html/bst7.htm](http://www.budget.gov.au/2003-04/bp1/html/bst7.htm); reaffirmed in 11-12 Budget, [www.budget.gov.au/2011-12/content/bp1/html/bp1\\_bst7-03.htm](http://www.budget.gov.au/2011-12/content/bp1/html/bp1_bst7-03.htm)

<sup>313</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 3.

generally regarded as an important part of the expectation of the term structure of interest rates.<sup>314</sup>

### **CGS yields are market determined**

CGS yields are set in a market. 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 price that is low relative to historical averages is not a sign that CGS are 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 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. The AER believed that applying an averaging period that is closely aligned to the date of the final determination provides an unbiased rate of return that is consistent with the market conditions at the time of the final determination.<sup>315</sup>

An alternative conclusion might be that CGS are currently overpriced. If the price of CGS exceeds their fair value, then the corresponding yield will be 'too low'. But, to draw such a conclusion, the AER would need information superior to that of market participants, or it must 'know better' than the many traders whose interactions set the price of CGS. The AER does not possess a greater ability, expertise or knowledge than market participants and traders to counter any market determination.

In the Telstra matter, the Australian Competition Tribunal acknowledged CGS yields vary over time:

It is not unusual for yields to move from time to time in order to reflect prevailing market conditions and the expectations about the prospect for prices into the future. A downward movement in yields over this period is therefore hardly anomalous, given market conditions.<sup>316</sup>

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.<sup>317318</sup>

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<sup>314</sup> 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.

<sup>315</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 1.

<sup>316</sup> Australian Competition Tribunal, *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010, paragraph 417.

<sup>317</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 11--12..

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.<sup>319</sup>

Since the AER received this advice in February 2012, the 10 year CGS yield has further decreased. For the 20 business day period ending on 10 August,<sup>320</sup> it was 2.98 per cent. The logic in Professor McKenzie and Associate Professor Partington's advice continues to apply. In prevailing market conditions, 2.98 per cent is the benchmark that a risky project must exceed. So, what is the appropriate risk premium above this rate that reflects market conditions and the risk in providing reference services? In the Sharpe-Linter CAPM, the risk premium is the product of the equity beta and the MRP. The AER considers the appropriate equity beta and MRP in sections 4.3.5 and 4.3.3.

### **Prevailing CGS yields are consistent with the CAPM**

For the following reasons, using a CGS yield estimated as close as practical to the beginning of the access arrangement period is consistent with the CAPM. The AER and Envestra agree the CAPM is an appropriate model for estimating the cost of equity. Inputs to a model must be appropriate for using in that model,<sup>321</sup> 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 beginning of the regulatory period), as recognised by the Federal Court in *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639 (the ActewAGL matter).<sup>322</sup>

During the ActewAGL matter, Associate Professor Lally for the AER and Greg Houston for APTPPL agreed on the best approach to estimating the risk free rate that is consistent with the CAPM. 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.<sup>323</sup>

Associate Professor Lally also 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

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<sup>318</sup> 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.

<sup>319</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 12.

<sup>320</sup> The AER used an indicative 20 business day averaging period ending on 10 August 2012. The AER will update this in the final decision with Multinet's proposed averaging period.

<sup>321</sup> Discussed further in section 4.2.1.

<sup>322</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June, 2011, paragraph 119.

<sup>323</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 119.

and application of the model to a regulatory situation would require the risk free rate prevailing at the beginning of a regulatory period.<sup>324</sup>

### **The risk free rate needs to be consistent with the building block approach and present value principle**

For the risk free rate, an averaging period that is as close as practical to the start of the regulatory period promotes consistency with the building block model and the present value principle. The NGR prescribe the use of the building block model when the AER is calculating the total revenue allowance. The model has a long history in regulation in Australia.<sup>325</sup>

An important principle of the building block model is the present value principle. In a 2011 paper on public utility regulation in Australia, Dr Darryl Biggar explained the origins of the building block model and what it seeks to achieve.<sup>326</sup> The present value principle in a regulatory context requires:

The present value of the regulated firm's revenue stream should match the present value of its expenditure stream, plus or minus any efficiency incentive rewards or penalties (the present value principle).<sup>327</sup>

In his report for the AER, Lally advised this present value principle is met when the risk free rate is estimated at the beginning of the regulatory control period.<sup>328</sup> Lally also considered the proposition of using a long term historical average risk free rate. (Appendix B discusses long term averaging periods.) He advised this approach would not meet the present value principle.<sup>329</sup>

### **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 ensures the present value principle holds. 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. Lally stated all three require a risk free rate estimated at the beginning of the regulatory period<sup>330</sup>—literally, the first market price on the first day of the regulatory period.<sup>331</sup> He noted:

... 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

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<sup>324</sup> Lally, *Risk free rate and present value*, August 2012, p. 3.

<sup>325</sup> 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.

<sup>326</sup> 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](http://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=ACE2004&paper_id=133)>.

<sup>327</sup> Lally, *Risk free rate and present value*, August 2012, pp. 5-6

<sup>328</sup> Lally, *Risk free rate and present value*, August 2012, p. 3

<sup>329</sup> Lally, *Risk free rate and present value*, August 2012, p. 3

<sup>330</sup> Lally, *Risk free rate and present value*, August 2012, p. 3

<sup>331</sup> Lally, *Risk free rate and present value*, August 2012, p. 7

transaction undertaken by a regulated firm for the purpose of influencing the regulatory decision.<sup>332</sup>

A short term averaging period as close as practically possible to the regulatory period provides a pragmatic alternative. While the present value principle requires the use of the prevailing rate on the first day of the regulatory period, that approach would be unreasonable and impractical. It would be unreasonable because it would expose the service provider to potential distortions, as Lally described. And it would be impractical because the AER and the service provider could not enact the decision until after the beginning of the regulatory period, which may be after the final decision date. An averaging period between 10 and 40 business days in length provides a practical and reasonable solution.<sup>333</sup>

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.<sup>334</sup>

The AER does not consider a long term averaging period is an appropriate and reasonable departure from the present value principle.

### **The method is unbiased**

Determining the averaging period in advance helps achieve an unbiased risk free rate. For this reason, the AER's approach to determining the risk free rate in this decision is unbiased.

Service providers have an incentive to seek a WACC that is as high as possible, because it will increase their profits. If a service provider can select an averaging period by looking at historical yields, they may introduce an upward bias<sup>335</sup> because 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. Determining the averaging period for a long term average introduces arbitrariness, and no long term averaging period is clearly superior for use. The AER does not consider historical estimates are needed in this case, because a proxy for the risk free rate is readily available. It thus considers a short averaging period, determined in advance, minimises the likelihood of bias.

### **4.3.3 Market risk premium**

The AER accepts Envestra's proposal for an MRP of 6 per cent. The AER notes the 6 per cent MRP was proposed in line with the long term average risk free rate of 5.99 per cent (nominal). Envestra also suggested an alternative approach of using a prevailing risk free rate

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<sup>332</sup> Lally, *Risk free rate and present value*, August 2012, p. 7

<sup>333</sup> AER, *Final decision—WACC Review*, May 2009, pp. 173-174

<sup>334</sup> Lally, *Risk free rate and present value*, August 2012, p. 7.

<sup>335</sup> 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.

with a 'current' measure of the MRP<sup>336</sup>. In this section, by applying the approach set out in section 4.2.3, the AER still considers an MRP of 6 per cent is the best estimate in the circumstances and commensurate with prevailing conditions in the market for funds.

Given evidence on the MRP is imprecise, the AER considers it is reasonable to assess a range of evidence to estimate the MRP. It considers an MRP of 6.0 per cent is the best estimate in the circumstances and given prevailing conditions in the market for funds, for the following reasons:

- Historical excess returns provided a range of 4.9–6.1 per cent if calculated on an arithmetic mean basis and a range of 3.0–4.7 per cent if calculated on a geometric mean basis.
- Professor McKenzie and Associate Professor Partington advised the AER that a 6 per cent MRP estimate was appropriate. Associate Professor Lally broadly supported the AER's method for estimating the MRP.
- MRP is an economy wide measure, and other regulators in Australia have consistently adopted an MRP estimate of 6 per cent under the same CAPM framework.
- In Envestra, ATCO and DBNGP matters, the AER and the ERA determined 6 per cent as the best estimate of the MRP based on the available evidence. The Australian Competition Tribunal was open for the regulators to adopt 6 per cent for the MRP in these decisions.
- Surveys of market practitioners consistently supported 6 per cent as the most commonly adopted value for the MRP. They also indicated that the average MRP adopted by market practitioners was approximately 6 per cent.

The AER discusses these considerations in the sections below.

In reaching this view, the AER also considered:

- DGM estimates
- other approaches suggested by consultants
  - CEG approaches
  - Capital Research DGM estimates
  - the NERA regime switching model
  - the SFG method (implied volatility, credit spread and dividend yield)
  - the VAA implied volatility glide path approach
- market commentary
- reasons for the AER's departure from the WACC review.

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<sup>336</sup> Envestra, *Albury access arrangement information*, 30 March 2012, pp. 140-144; Envestra, *Victoria access arrangement information*, 30 March 2012, pp. 156-160;

The AER discusses these considerations in appendix B.

## Historical excess returns

Historical excess returns estimate the realised return that stocks have earned in excess of the 10 year government bond rate. So, they are likely to inform investors' expectations of future returns. The AER observed the latest historical excess returns (which can be directly measured) are 4.9–6.1 per cent based on arithmetic averages and 3.0–4.7 per cent based on geometric averages. It considers these estimates support a forward looking long term MRP of 6 per cent. Given 6 per cent is towards the top of the quoted range, it is more likely to overstate the MRP based on historical excess returns.

Although not strictly forward looking, historical excess returns have predominantly been used to estimate the MRP on the assumption that investors base their forward looking expectations on experience. The Tribunal recognised this view in the DBNGP matter.<sup>337</sup> In a regulatory context, the use of historical excess returns has advantages, as supported by McKenzie and Partington in their December 2011 MRP report:

- The estimation methods and the results are transparent.
- The estimation methods have been extensively studied and the results are well understood.
- Historical estimates are widely used and have support as the benchmark method for estimating the MRP in Australia.<sup>338</sup>

A few studies indicated there is no better forecast of excess returns than the historical average.<sup>339</sup> Goyal and Welch examined 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 found:

As of the end of 2005, most models have lost statistical significance, both IS [in-sample] and OOS [out-of-sample]. OOS, most models not only fail to beat the unconditional benchmark (the prevailing mean) in a statistically or economically significant manner, but underperform it outright.<sup>340</sup>

The long term averages of historical excess returns, adjusted to incorporate an imputation credit utilisation rate (theta) of 0.35<sup>341</sup>, 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 4.3). The starting point for each of the five estimation periods was chosen because the quality of the underlying

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<sup>337</sup> Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraph 153.

<sup>338</sup> McKenzie, M. and Partington, G., *Equity market risk premium*, 21 December 2011, pp. 5–6.

<sup>339</sup> 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.

<sup>340</sup> 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. 1504.

<sup>341</sup> 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.

data sources changed (in 1883, 1937, 1958 and 1980) and the imputation tax system was introduced (in 1988).<sup>342</sup>

**Table 4.3 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 <sup>a</sup>	4.7
1937–2011	5.7 <sup>a</sup>	3.7
1958–2011	6.1 <sup>a</sup>	3.5
1980–2011	5.7	3.1
1988–2011	4.9	3.0

<sup>a</sup> Indicates estimates are statistically significant at the 5 per cent level using a two tailed test.  
Source: Handley.<sup>343</sup>

After considering strengths and weaknesses of each estimation period, the AER considers all five periods are relevant for the following reasons:

- 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).<sup>344</sup>
- Shorter time series are more vulnerable to influence by the current stage of the business cycle or other (one-off) events.<sup>345</sup>

<sup>342</sup> Brailsford, Handley and Maheswaran, *Re-examination of the historical equity risk premium in Australia*, Accounting and Finance, vol. 48, 2008, pp. 85-86.

<sup>343</sup> Handley, *An estimate of the historical equity risk premium for the period 1883 to 2011*, April 2012, p. 6. Handley's estimates of the arithmetic averages starting in 1883 and 1958, updated to 2011, are confirmed by the NERA report submitted by the Victorian distribution network service providers in Aurora's revised proposal submission. Handley's and NERA's updates of the geometric average over the periods 1883–2011 and 1958–2011 differ by one basis point. The reason for this difference is unclear to the AER, but the difference appears immaterial. See NERA, *The market risk premium*, 20 February 2012, pp. 8–9.

<sup>344</sup> In its submission to 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, *APTPL 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.



## 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, 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.<sup>346</sup>

The AER considers both the arithmetic and geometric averages are important to consider when estimating a 10 year forward looking MRP using historical annual excess returns. The Tribunal has found no error with this approach.<sup>347</sup> The best estimate of historical excess returns over a 10 year period is thus likely to be somewhere between the geometric average and the arithmetic average of annual excess returns. The AER considered SFG's, NERA's and Lally's views on arithmetic and geometric averages of historical excess returns in appendix B.

## Bias in historical excess returns

In their December 2011 MRP report, McKenzie and Partington suggested MRP estimates based on historical data may be overstated relative to true expectations, as a result of survivorship bias.<sup>348</sup> According to Damodoran (2011), survivorship bias is created by estimating historical returns on only stocks that have survived.<sup>349</sup> Historical data excludes negative return stocks that no longer exist, which naturally results in higher return estimates. McKenzie and Partington<sup>350</sup> and Joye<sup>351</sup> supported this view. The AER notes this upward bias is a relevant consideration because the various Australian stock indexes exclude the failed stocks.<sup>352</sup> Other arguments also suggest the historical excess returns are upwardly biased. Siegel (1999) argued unanticipated inflation means historical returns underestimate real returns on risk free assets.<sup>353</sup> He also argued historical returns on equity overstate returns actually realised, given historically high transaction costs and the historical lack of low cost opportunities for diversification.<sup>354</sup>

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<sup>345</sup> 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.

<sup>346</sup> Appendix B discusses the details.

<sup>347</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT4*, 11 January 2012, paragraph 157.

<sup>348</sup> McKenzie, M. and G. Partington, *Equity market risk premium*, 21 December 2011, pp. 6–7.

<sup>349</sup> Damodoran, A. *Equity risk premiums: determinants, estimation and implications—the 2012 edition*, March 2012, p. 24.

<sup>350</sup> McKenzie, M. and Partington, G., *Review of regime switching framework and critique of survey evidence*, August 2012, p. 19.

<sup>351</sup> Joye, C., *Super funds miss mark in bias to equities*, Australian Financial Review, 14 August 2012.

<sup>352</sup> 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](http://www.asx.com.au/products/capitalisation-indices.htm#all_ordinaries_index).

<sup>353</sup> Lally, *Cost of equity and the market risk premium*, 25 July 2011, p. 8

<sup>354</sup> McKenzie, M. and Partington, G., *Equity market risk premium*, 21 December 2011, p. 7

Lally 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.<sup>355</sup> 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.<sup>356</sup>

The AER considers the bias is a relevant consideration when estimating the MRP using historical excess returns. Given that 6 per cent is towards the top of the historical excess returns range, the AER considers historical excess returns provide a conservative estimate of the MRP.

### Recent practice among Australian regulators

The AER notes 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 for a long term (for example, 10 years), which means short term (for example, one year) market fluctuations have little relevance.
- The MRP is for a domestic CAPM, which means overseas evidence has limited relevance.

Table 4.4 shows decisions from Australian state and territory regulators dealing with electricity, gas, water, rail and postal services. It also includes decisions by the ACCC for various regulated sectors.

**Table 4.4 Recent regulatory decisions**

Regulator	Decision date	Sector	MRP (%)
ACCC	May 2010	Postal services	6.0
QCA	June 2010	Water	6.0
QCA	September 2010	Rail	6.0
ACCC	December 2010	Rail	6.0
ERA	February 2011	Gas	6.0
ACCC	July 2011	Telecommunications	6.0

<sup>355</sup> Lally, *Cost of equity and the market risk premium*, 25 July 2011, p. 24.

<sup>356</sup> Lally, *Cost of equity and the market risk premium*, 25 July 2011, p. 27.

ACCC	July 2011	Water	6.0
ESCV	August 2011	Rail	6.0
ACCC	September 2011	Airports	6.0
ERA	October 2011	Gas	6.0
QCA	November 2011	Water	6.0
IPART	December 2011	Water	5.5–6.5
ESCOSA	February 2012	Water	6.0
IPART	June 2012	Water	5.5–6.5
IPART	June 2012	Water	5.5–6.5
IPART	July 2012	Electricity	5.5–6.5
ERA	September 2012	Electricity	6.0

Source: ACCC,<sup>357</sup> ERA,<sup>358</sup> ESC,<sup>359</sup> QCA,<sup>360</sup> IPART<sup>361</sup>, ESCOSA<sup>362</sup>.

The AER considers the decisions by other Australian regulators are relevant because the MRP is an economy wide measure. Recent decisions by other Australian regulators support the view that a forward looking MRP of 6 per cent is the best estimate in the current circumstances.

### Recent Australian Competition Tribunal decisions

In 2011, Envestra challenged the AER's decisions to approve an MRP of 6 per cent for Envestra's South Australian and Queensland gas distribution businesses. Envestra claimed the AER should have accepted Envestra's proposed 6.5 per cent MRP. The Tribunal

<sup>357</sup> ACCC, *Australian Postal Corporation, 2010 Price Notification*, May 2010 p. 80–81; ACCC, *Position Paper in relation to the Australian Rail Track Corporation's proposed Hunter Valley Rail network Access Undertaking*, 21 December 2010, p. 104; ACCC, *Inquiry to make final access determinations for the declared fixed line services, Final Report*, July 2011, p. 63; ACCC, *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*, July 2011, pp. 32–33; and ACCC, *Airservices Australia price notification, Final decision*, September 2011, p. 26, 29.

<sup>358</sup> ERA, *Final decision on WA Gas Networks Pty Ltd proposed revised access arrangement for the Mid–West and South–West Gas Distribution systems*, 28 February 2011, p. 103; ERAWA, *Final Decision, Access Arrangement Information for the Dampier to Bunbury Natural Gas Pipeline*, December 2011, p. 159; ERAWA, *Final decision, Final decision on Proposed Revisions to the Access Arrangement for the Western Power Network*, 5 September 2012, p. 381.

<sup>359</sup> ESCV, *Metro proposed access arrangement, Final decision, August 2011*, p. 85.

<sup>360</sup> QCA, *Final Report, Gladstone Area Water Board: Investigation of Pricing Practices*, June 2010, p. 124; QCA, *Final decision, Dalrymple Bay Coal Terminal 2010 Draft Access Undertaking*, September 2010, p. 8; QCA, *Draft Report - SunWater Irrigation Price Review: 2012-17 - Volume 1*, November 2011, p. 392.

<sup>361</sup> IPART, *Final report, Review of water prices for Sydney Desalination Plant Pty Limited*, December 2011, p. 80; IPART, *Final report, Review of prices for Sydney Water Corporation's water, sewerage, drainage and other services*, June 2012, p. 87; IPART, *Final report, Review of prices for the Sydney Catchment Authority*, June 2012, p. 90; IPART, *Final report - Changes in regulated electricity retail prices from 1 July 2012*, July 2012, p. 102.

<sup>362</sup> ESCOSA, *Final Advice, Advice on a Regulatory Rate of Return for SA Water – Final Advice*, February 2012, p. 50

concluded the AER has scope to determine an MRP that 'is reasonably open to it on the evidence':

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%.<sup>363</sup>

The Tribunal handed down a similar decision in its review of ATCO's (formerly WA Gas Network's) and DBNGP's access arrangements.<sup>364</sup> In both decisions, the ERA considered the available information and exercised its discretion to determine the appropriate MRP. The Tribunal subsequently found no error in the ERA's determination of a 6.0 per cent MRP.

## Survey evidence

In estimating the MRP, the AER is estimating investors' expectations of the MRP in the future, and not simply estimating the excess stock market returns achieved in the past. It considers surveys of market practitioners and academics are relevant because they reflect the forward looking MRP as applied. The AER is aware of Tribunal's comments on the survey evidence. Applying the criteria noted by the Tribunal to the survey evidence considered in this decision,<sup>365</sup> the AER concluded the survey results are relevant to inform the forward looking 10 year MRP.

Survey based evidence needs to be treated with caution because the results may be subject to limitations. The relevance of some survey results depends on how clearly the survey sets out the framework for MRP estimation. This framework 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 different time horizons and have differing views on the market risk. However, this concern may be mitigated as the sample size increases. The AER also acknowledges the Tribunal's concern about survey evidence.<sup>366</sup>

The AER considered survey evidence before and after the WACC review. Survey evidence before the WACC decision includes the following:

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<sup>363</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 4*, 11 January 2012, paragraphs 145 and 148.

<sup>364</sup> 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.

<sup>365</sup> Appendix B discusses this application in detail.

<sup>366</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraphs 159–63.

- 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.<sup>367</sup>
- Capital Research (2006) found the average MRP adopted across a number of brokers was 5.09 per cent.<sup>368</sup>
- 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.<sup>369</sup>

Survey evidence after the WACC decision includes the following:

- 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.<sup>370</sup>
- 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.<sup>371</sup>
- 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.<sup>372</sup>
- 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.<sup>373</sup>
- 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.<sup>374</sup>

Table 4.5 summarises the key findings of the surveys.

<sup>367</sup> KPMG, *Cost of capital—market practice in relation to imputation credits*, August 2005, p. 15.

<sup>368</sup> Capital Research, *Telstra’s WACC for network ULLS and the ULLS and SSS businesses—review of reports by Prof. Bowman*, March 2006, p. 17.

<sup>369</sup> 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.

<sup>370</sup> Bishop, S., *A conservative and consistent approach to WACC estimation by valuers*, Value Advisor Associates, 2009.

<sup>371</sup> 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.

<sup>372</sup> 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.

<sup>373</sup> 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.

<sup>374</sup> Asher, *Equity Risk Premium Survey—results and comments*, *Actuary Australia*, July 2011, no. 161, pp. 13–14.

**Table 4.5 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)	49	4.7%	5.0%	5.0%

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).

The AER considers 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 reported MRP was 6 per cent.

McKenzie and Partington placed significant weight on the survey evidence due to the triangulation of that evidence.<sup>375</sup> 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), but that the type of bias would likely be much less consistent across surveys using different methods and different target populations.

The AER applied the available survey evidence against the criteria noted by Tribunal in appendix B. After consideration of this analysis and McKenzie and Partington's view, the AER considers survey based estimates of the MRP are relevant to inform the forward looking MRP. Survey evidence supports a forward looking MRP of 6 per cent as the best estimate in the current circumstances. Appendix B details the AER's analysis and reasons for its decision on survey evidence.

#### 4.3.4 Relationship between the risk free rate and the market risk premium

The AER is determining the rate of return for Envestra in the context of CGS yields being at an historical low. The AER and Envestra both adopted the Sharpe-Lintner CAPM as the accepted model for determining the cost of equity<sup>376</sup>. The effect of using this lower risk free rate within the Sharpe-Lintner CAPM, all things being equal, is to lower the cost of equity from that determined by the AER in previous decisions. In this context, Envestra proposed a long term historical average risk free rate.

<sup>375</sup> McKenzie, M. and Partington, G., *Supplementary report on equity market risk premium*, 22 February 2012, p. 19

McKenzie, M. and Partington, G. *Review of regime switching framework and critique of survey evidence*, August 2012, p. 28.

<sup>376</sup> Envestra, *Albury access arrangement information*, 30 March 2012, pp. 144-146; Envestra, *Victoria access arrangement information*, 30 March 2012, pp. 160-162;

The AER considered this interrelationship between the risk free rate and the market risk premium under the following four broad categories:

- the regulatory requirements under the NGR and NGL—specifically, whether it is appropriate in this framework for adjusting the MRP estimate to address or 'rectify' a perceived problem or difficulty in the calculation of the risk free rate
- the need for consistency in how the MRP and risk free rate are estimated
- the economic interdependencies between these two parameters—specifically, whether the MRP is high when the risk free rate is low
- other regulatory systems.

### **Regulatory requirements**

The AER has consistently maintained that each parameter should be estimated based on considerations that meet the criteria and objective set out in Rule 87 of the NGR. A parameter should not be adjusted to address or rectify a perceived problem or difficulty with the calculation of another parameter. The AER understands Rule 87 operates as follows:

- Rule 87(1) describes the objective in determining the WACC but does not guide how the objective is to be achieved.
- Rule 87(2) describes how the objective is to be achieved, including through a well accepted approach (such as the WACC) and a well accepted financial model (such as the CAPM).
- Rule 87(1) informs the selection of appropriate input parameters to use in the well accepted approach and well accepted financial model. That is, input parameters must reflect prevailing conditions in the market for funds, and the risk from providing reference services.

This interpretation is consistent with the Australian Competition Tribunal's position in two recent decisions, for ATCO (previously known as WA Gas Networks) and DBNGP.<sup>377</sup>

The AER uses the CAPM to estimate the cost of equity to determine the WACC under rule 87(2) of the NGR. The MRP, like the risk free rate, is an input to the calculation of the cost of equity for that WACC. Maintaining the integrity of each parameter promotes rigour and robustness in the estimation of each parameter. But addressing a problem with one parameter by adjusting another parameter introduces subjectivity. The AER is unaware of any well accepted method for making such adjustments without introducing subjectivity or greater regulatory risk<sup>378</sup>. Rather, the AER considered a range of evidence and determined the appropriate WACC input parameters when assessing the proposed rate of return. This approach is consistent with the objectives of the NGR.

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<sup>377</sup> Australian Competition Tribunal, *Application by WA Gas Network Pty Ltd (No 3) [2012] ACompT*, 8 June 2012, paragraphs 61–66; see also Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraphs 80–84, 100–103.

<sup>378</sup> S. 24 (5) of the NGL

Importantly, the AER considers the input parameters will not reflect prevailing conditions in the market for funds if an otherwise appropriate parameter is altered to resolve an issue elsewhere. Lally supported this view:

... CEG's proposed methodology sacrifices a relevant, critical and observable parameter within the cost of equity (the current risk free rate) in order to offset alleged errors in another parameter (the market risk premium).<sup>379</sup>

Envestra proposed a risk free rate above the prevailing rate, according to CEG's recommendation. Specifically, CEG recommended adopting a long term historical average risk free rate (5.99 per cent) with what it argued as a long term historical MRP of 6 per cent.

For reasons set out in this decision, the AER considers a 6 per cent MRP reflects prevailing conditions in the market for funds and also the risks from providing reference services. However, even if this was not the case, the AER considers (for the reasons outline above) adjusting the risk free rate to address a perceived problem with the MRP would not be appropriate. It does not accept this approach would be preferable to its current approach to setting parameters. Further, it considers the approach would not be consistent with r. 87 of the NGR, particularly in light of the Tribunal's construction of this rule in the ATCO and DBNGP matters.

### **Consistency of the MRP and risk free rate estimates**

Envestra suggested the WACC determined by the AER does not provide the best estimate of the cost of equity because the AER adopts an MRP that reflects the long term average and uses a risk free rate that reflects current market conditions.<sup>380</sup> This suggested bias is a mischaracterisation. The AER estimates a WACC that is consistent with the CAPM and requirements of the rules.

The CAPM should be estimated at the beginning of the investment period and should reflect expectations for the investment horizon.<sup>381</sup> Accordingly, both the risk free rate and the MRP are estimated at the beginning of the period (or rather, as close as is practically possible) and reflect expectations for the investment horizon.

Rule 87(1) of the NGR requires the AER to estimate a rate of return that reflects prevailing conditions in the market for funds. These prevailing conditions can be considered 'prevailing expectations' over the relevant forward looking investment horizon, which is 10 years.<sup>382</sup> Accordingly, both the risk free rate and the MRP are forward looking estimates, although estimated using different types of data.

To satisfy these requirements in practice involves the use of differing methodologies and data sources. The risk free rate is not directly observable, but a proxy for the risk free rate is directly observable. A 10 year forward looking risk free rate can be estimated based on current market data (using 10 year CGS yields as the proxy).<sup>383</sup> On the other hand, the MRP

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<sup>379</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 22.

<sup>380</sup> Envestra, *Albury access arrangement information*, 30 March 2012, p. 144; Envestra, *Victoria access arrangement information*, 30 March 2012, p. 160;

<sup>381</sup> See section 1.3.1 for further discussion.

<sup>382</sup> AER, Final decision: WACC review, May 2009, pp. 72–7.

<sup>383</sup> CGS prices are observable in a market; as CGS have promised future cash flows, the prevailing yield reflects market expectations for the future. Discussed further in section 1.3.1 and Appendix B.



is unobservable and there are no reliable proxies for it that can be directly observed. Prevailing MRP estimates using current market data will not necessarily reflect forward looking expectations and are influenced by the assumptions used.<sup>384</sup> Accordingly, a broader set of evidence is needed to judge the MRP.

Long term historical average excess returns are one such source of evidence, and they are used on the basis that historical realised returns are likely to influence investors' expectations. The AER also considered forward looking evidence (such as survey evidence) in determining the appropriate estimate for the MRP. The use of judgement does not detract from the fact that the MRP is estimated as close as practical to the beginning of the period, and reflects expectations over the 10 year investment horizon.

Therefore, the AER does not use a short term estimate with a long term estimate. The AER uses estimates that reflect prevailing conditions and expectations over a 10 year investment horizon.

### **Economic interdependencies**

Envestra proposed a long term historical average risk free rate. Its contention was based on the CEG report that the MRP and the risk free rate have a negative relationship. In turn, the AER considered three aspects of this issue: the theoretical argument, the empirical evidence and the CEG chart based on the AMP method.

#### **Theoretical argument**

The AER acknowledges a possible theoretical case for a negative relationship between the risk free rate and MRP in certain circumstances. But there is no sound basis for establishing any such theoretical relationship for the duration of the relevant investment horizon. That investment horizon is a 10 year forward looking period for both the risk free rate and MRP. Additionally, as discussed below, the empirical evidence in support of such a relationship over the relevant period is not conclusive.

Lally considered:

Although there is nothing in finance theory that supports (or rejects) a negative relationship between the CGS rate and the market risk premium, a negative relationship is plausible because the market risk premium is compensation for bearing equity risk, equity risk (volatility) seems to be greatest in depressed economic conditions, and the risk free rate also tends to be lowest in depressed economic conditions.<sup>385</sup>

However, Lally continued:

... whilst CGS yields are very low because of generally depressed world economic conditions, Australia is not experiencing depressed economic conditions. Furthermore, even if the correlation between the CGS yield

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<sup>384</sup> Equity prices are observable in a market; but as equities do not have promised future cash flows, it is not possible to observe a yield that accurately reflects market expectations and takes into account future cash flows. See section 1.3.2 for further discussion.

<sup>385</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 7.

and the MRP were negative, the significant issue for regulatory purposes is the strength of this relationship and especially its strength in respect of the ten year risk free rate and the ten year MRP. Market volatility (and therefore the market risk premium) might be high today but volatility (and hence the MRP) tends to rapidly subside to normal levels (French et al. 1987, Figure 1a) and the MRP for the next ten years might not then be greatly increased by a temporary upsurge in volatility.<sup>386</sup>

This consideration is pertinent to the AER's task because the AER is estimating a 10 year forward looking MRP. Accordingly, despite a possible tendency for the negative relationship over the short term, neither the theory nor the empirical evidence (see below) before the AER (including the material submitted by CEG) supports this relationship over longer periods.

### **Empirical evidence**

In response to a similar proposal submitted by Aurora, the AER's consultants, McKenzie and Partington, considered the available material. McKenzie and Partington noted some empirical evidence of a negative correlation between the short term nominal government bill yield (short term) and future nominal excess returns on the market. However, this negative correlation becomes weaker as the time horizon becomes longer. Further, the explanatory power of these regressions is low. Consequently, these regressions are unlikely to provide a reliable forecast of excess returns. McKenzie and Partington stated:

Low explanatory power is usual for equations that predict returns, but in the current case it does mean that the effect of the yield is readily offset by random variation in other factors. In other words, random variation represents most of the excess returns. It also seems that the relation is not particularly stable. A consequence of low explanatory power and instability is that the regression between yields and excess returns is unlikely to provide a reliable forecast of excess returns.<sup>387</sup>

Lally noted CEG did not present any persuasive evidence of a strong negative relationship between the 10 year forward looking risk free rate and the 10 year forward looking MRP:

- The Lettau and Ludvigson (2001) paper examined the US 30 day Treasury Bill rate rather than the 10 year rate. Further, this short term negative relationship reversed after two years.
- The Smithers and Co's advice was based on 'Siegel's constant'. Siegel's arguments are concerned with real rather than nominal returns. Even in real terms, Siegel did not suggest the MRP moves inversely with the risk free rate to the point that the cost of equity is largely unchanged.
- The rise in the expected rate of return on state government debt might have been due entirely to increases in expected default losses and liquid premium relative to CGS yield. In this case, the MRP would not increase with the debt risk premium.<sup>388</sup>

The AER considers the concerns raised by Lally are relevant because the AER is estimating a 10 year forward looking MRP, not a forward looking MRP over a short time horizon. Based

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<sup>386</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 7.

<sup>387</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p.10

<sup>388</sup> Lally, *Cost of equity and the MRP*, July 2012, pp. 8-9.

on the advice from McKenzie and Partington, and Lally, the AER concludes the empirical evidence is not strong in support of a negative correlation between the risk free rate and the MRP. It also considers any such negative relationship would not warrant adjusting the MRP to compensate for the risk free rate. Further, recent literature suggests the relationship could be positive.<sup>389</sup>

### **CEG chart based on the AMP method**

The AER examined the CEG chart (reproduced below), which is based on the AMP method. CEG derived this time series by first estimating the prevailing cost of equity (the red line) and then calculating the MRP (the green line) by subtracting the prevailing 10 year CGS yield at any point in time (the blue line).<sup>390</sup> The red line is relatively stable over time. Subtracting the blue line from the red line thus creates the appearance of a strong negative correlation between the risk free rate (green line) and MRP (blue line). Lally identified this problem. He found the CEG AMP method uses a perfect offset assumption<sup>391</sup> and thus generates results showing a stable cost of equity over time.<sup>392</sup> Lally described CEG's chart as being 'predisposed' to the result that it displays.<sup>393</sup> For these reasons, the AER considers this chart is not valid empirical evidence of a negative relationship between the prevailing market risk premium and the prevailing risk free rate. Additionally, because CEG's AMP method is based on the DGM model, that model's general limitations (outlined in section 4.3.3) also apply to this analysis.

Lally also pointed out this method produces an MRP estimate of zero in 1994—an 'implausible' result. Combining these points, Lally concluded:

Thus, if the perfect-offset hypothesis should be rejected in 1994 when the risk free rate was unusually high, it should also be rejected in 2012 when the risk free rate was unusually low.<sup>394</sup>

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<sup>389</sup> See Damodaran, *Equity risk premiums: determinants, estimation and implications—the 2012 edition*, March 2012, pp. 77–9.

<sup>390</sup> CEG, *Internal consistency of risk free rate and MRP in the CAPM*, March 2012, p. 17.

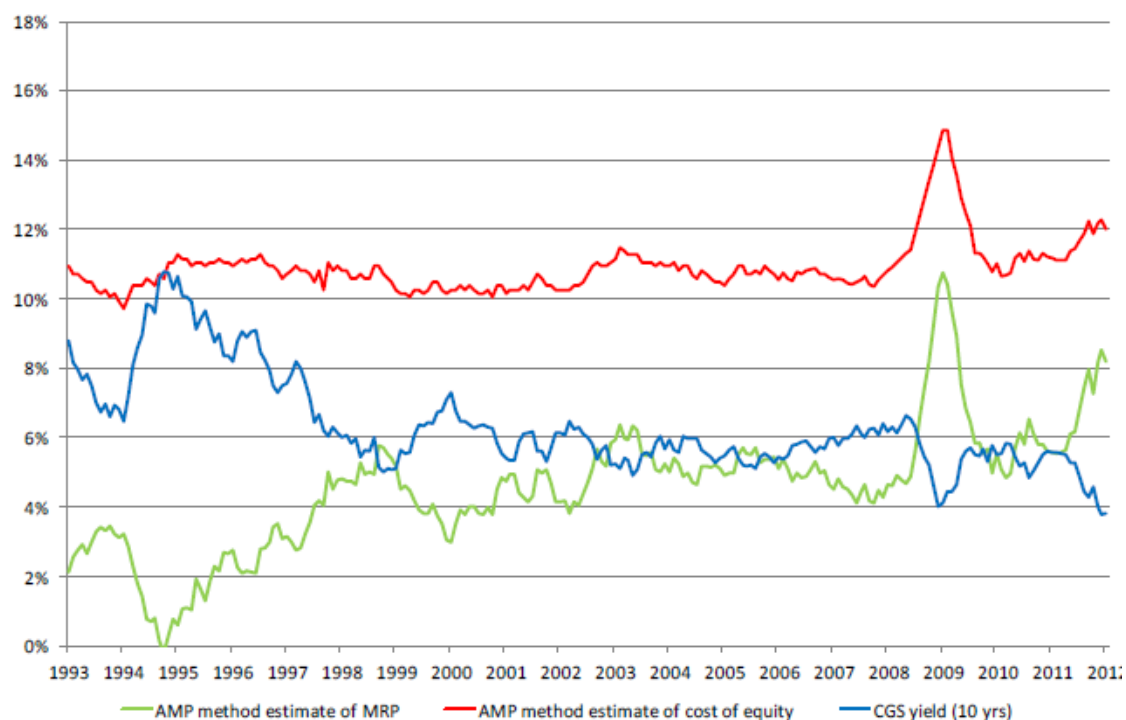
<sup>391</sup> By applying the AMP method, CEG assumed the market cost of equity at any point in time is the same for all future years. If, for example, the current risk free rate were unusually low, then the MRP would assume to be unusually high by an exactly offsetting amount.

<sup>392</sup> Lally, *Cost of equity and the MRP*, July 2012, pp. 9–12, 15.

<sup>393</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 11.

<sup>394</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 15.

**Figure 4.1 CEG AMP method estimate of Return on Equity and MRP relative to 10 year CGS yields**



Source: CEG, *Internal consistency of risk free rate and MRP in the CAPM*, March 2012, figure 8.

### Other regulatory systems

CEG suggested the AER should consider regulatory precedent outside Australia when it makes its decision under Rule 87 of the NGR. CEG stated that UK and the US regulators generally support adjusting the cost of equity when risk free rates are unusually low.<sup>395</sup>

The AER acknowledges the UK regulators make an upward adjustment in the risk free rate when the prevailing risk free rate is low, while the US regulators tend to use the DGM to estimate the cost of equity. It considers these decisions are not comparable to those of the AER because they are made under a different legal framework. Under Rule 40 of the NGR, the AER can withhold its approval if it considers a preferable alternative exists that complies with the NGR and NGL requirements and criteria.<sup>396</sup>

The AER notes the risk free rate is low at the moment. However, it does not consider making an upward adjustment to the risk free rate is appropriate for the reasons set out in section 4.3.2. The AER notes DGM analysis is subject to a number of limitations when estimating a forward looking MRP. This is discussed in appendix B. In addition, Lally noted using DGM to directly estimate the cost of equity is subject to two further problems:

<sup>395</sup> CEG, *Internal consistency of risk free rate and MRP in the CAPM*, March 2012, pp. 33–40.

<sup>396</sup> Rule 40 of the NGR sets out the AER's discretion in deciding on an access arrangement proposal. When the NGL and NGR do not state the AER has 'limited' discretion in relation to a decision, the AER can withhold its approval of an element of an access arrangement proposal under rule 40(3) of the NGR.

- The regulated business would have a very strong incentive to manipulate its dividend policy in order to maximise its regulatory return.
- This estimate does not accurately reflect the cost of equity of the regulated activity if the business also undertakes unregulated activity.<sup>397</sup>

The AER considers it is inappropriate to rely on DGM estimates or use long term historical risk free rate when the risk free rate is low. This is in accordance with our interpretation of the NGR. That is the AER is to determine the best estimate possible in the circumstances commensurate with prevailing conditions in the market for funds.

#### 4.3.5 Equity beta

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

Envestra proposed an equity beta of 0.8, noting that although consistent with the Access Arrangements for Envestra in South Australia and Queensland, an equity beta of 0.8-0.9 was used by Grant Samuel in its expert report on the proposed acquisition of the Alinta assets.<sup>398</sup>

The AER considers that the empirical evidence presented in the WACC review contains the best available estimate of the equity beta that would apply to a benchmark gas distribution network service provider, taking into account the need to reflect prevailing market conditions and the risks involved in providing reference services. This empirical evidence indicated a point estimate of between 0.4 and 0.7 for the equity beta of electricity and gas service providers.<sup>399</sup> The adopting of an equity beta just above this range was in recognition of the level of imprecision around these estimates and the desirability of stability in regulatory decision making over time.<sup>400</sup> Since the WACC review, the AER has adopted 0.8 in each of its regulatory decisions for other gas distribution and transmission service providers. Cross checks against Australian water utilities or overseas electricity and gas networks also indicate that the equity beta set by the AER is reasonable.

The AER therefore accepts Envestra's proposal for an equity beta of 0.8. This is also consistent with the range used by Grant Samuel as submitted by Envestra.<sup>401</sup>

The Energy Users Coalition of Victoria (EUCV) noted there is a substantial body of evidence that beta is less than 1 (and even less than 0.8). EUCV submitted the equity beta for Envestra should be 0.65. The EUCV noted that:

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<sup>397</sup> Lally, Cost of equity and the MRP, July 2012, p. 14.

<sup>398</sup> Envestra, Victorian access arrangement information, 30 March 2012, p. 157-8, Envestra, Albury access arrangement information, 30 March 2012, p. 141-2.

<sup>399</sup> 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, May 2009.

<sup>400</sup> Most Australian regulators had previously provided electricity and gas service providers with an equity beta of either 0.9 or 1.0. In its last decision on the RBP, the ACCC adopted an equity beta of 1.0.

<sup>401</sup> During the WACC review the AER considered a submission which noted that, 'in 2006, in valuing AGL's then energy network assets Grant Samuel adopted a range of 0.8 to 0.9... In 2007, [Grant Samuel] also adopted a similar range for SP AusNet.' The Grant Samuel estimate has been considered in deriving the value adopted by the AER of 0.8.

- The empirical evidence undertaken during the WACC review implies a beta of 0.55.<sup>402</sup>
- The ESCV set the equity beta at 0.7 in March 2008 for gas distribution service providers, commenting after considerable investigation that the beta estimates using the longest period of data, range between 0.5 and 0.7.<sup>403</sup>
- Work undertaken by ERA that uses more recent data than that considered in the WACC review provides evidence for an equity beta of 0.65. The ERA suggests beta should be 0.65 in the draft decision for Western Power.

The EUCV considers that this evidence demonstrates that beta at 0.8 is too high.<sup>404</sup>

The AER acknowledges that there is empirical evidence indicating that an equity beta less than 0.8 may be reasonable. However, during the WACC review the AER also took account of other considerations including regulatory stability and the level of imprecision in the empirical estimates. Having regard to this, the AER considers 0.8 to still be reasonable at this time. However, the estimates presented by the EUCV may, together with other information, provide additional evidence to change the equity beta in the future.

The AER has given consideration to other factors, such as the need to achieve an outcome that is consistent with the NGO—in particular, the need for efficient investment in natural gas services for the long-term interests of consumers of natural gas. The AER has also taken into account the revenue and pricing principles, the importance of regulatory stability and is also mindful it has recently considered an equity beta of 0.8 to be appropriate, if not overstated, for other gas businesses. On the basis of the information presented, the AER concludes that an equity beta of 0.8 provides Envestra with an opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.<sup>405</sup>

#### 4.3.6 Debt risk premium

The AER accepts, in principle, Envestra's proposed benchmark and method for determining the DRP. The AER, however, has updated Envestra's proposed DRP to reflect the indicative averaging period used throughout this draft decision. This results in a DRP of 3.76 per cent.<sup>406</sup> The AER will again update this value for its final decisions based on Envestra's final averaging period.

Specifically, the AER accepts Envestra's proposed DRP benchmark based on an Australian corporate fixed rate bond issuance with a term to maturity of 10 years and a BBB+ credit rating.<sup>407</sup> This benchmark assumption has been adopted by the AER in previous gas

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<sup>402</sup> It is unclear how the EUCV has derived the 0.55 point estimate. The AER considers the empirical evidence from the WACC review suggested a range of 0.4-0.7.

<sup>403</sup> The AER notes that ESCV effectively provided an equity beta of 0.8 by making an allowance in Total Revenue to reflect the difference in revenue from using an equity beta of 0.8 compared to an equity beta of 0.7. ESCV, Gas access arrangement review 2008-2012 final decision – public version, 7 March 2008, p. 13.

<sup>404</sup> EUCV, Applications from Envestra, MultiNet and SP Ausnet, A response by EUCV, June 2012, p. 57, 58.

<sup>405</sup> S. 24(2) of the NGL.

<sup>406</sup> This estimate also reflects the AER's amendment to the bond sample used to extrapolate Bloomberg's seven year, BBB rated fair value curve. This amendment is discussed in detail further in this document.

<sup>407</sup> Envestra, *Access arrangement information*, 30 March 2012, pp. 144–146.

decisions.<sup>408</sup> Moreover, the AER considers that the term to maturity and credit rating are two primary factors which are reflective of the risks involved in providing reference services.<sup>409</sup> The 10 year term for the cost of debt also provides internal consistency with the use of a 10 year risk free rate.

Further, the AER accepts Envestra's proposed approach to establishing the DRP. In particular, the AER accepts Envestra's proposal to estimate the benchmark DRP solely on the Bloomberg BBB fair value curve. Notwithstanding that the AER has previously expressed concern with the Bloomberg fair value curve, the AER is mindful of the Tribunal's recommendation that a public consultation process be completed before any alternative methodologies are considered.<sup>410</sup>

The AER also accepts Envestra's proposed method to extrapolate the Bloomberg BBB fair value curve from seven to 10 years based on the analysis of paired bonds undertaken by PwC.<sup>411</sup> The AER, however, does not consider that this extrapolation approach has been correctly applied by PwC.

PwC's method extrapolates the Bloomberg seven year BBB fair value curve using the average annual increment observed across pairs of bonds of differing maturities issued by the same company. PwC's criteria for selecting the sample of paired bonds included that:

- the paired bonds were part of the wider sample used by PwC when conducting their broader econometric analysis
- the shorter dated bond (of the pair) has a remaining term to maturity closest to seven years.<sup>412</sup>

Based on PwC's selection criteria, the AER cannot reconcile the inclusion of the paired Telstra bonds in PwC's extrapolation sample. Specifically, Telstra bonds have a credit rating of 'A' by Standard and Poors. Amongst other characteristics, the broader econometric sample used by PwC (of which the paired bonds must be a subset) only included bonds with a credit rating of 'BBB', 'BBB+' or 'A-' by Standard and Poors.<sup>413</sup>

Additionally, PwC's extrapolation sample included a pair of fixed rate Stockland bonds maturing in 2015 and 2020. However, a fixed rate Stockland bond matching all of PwC's selection criteria exists which matures in 2016. The AER considers that the correct application of PwC's selection criteria requires the 2016 bond to be used (instead of that maturing in 2015).

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<sup>408</sup> For example, see AER, *Final Decision: APT Petroleum Pipeline Pty Ltd access arrangement final decision Roma to Brisbane Pipeline 2012-13 to 2016-17*, August 2012.

<sup>409</sup> Other factors—for example, industry type—may also be relevant in determining the level of risk involved in providing reference services.

<sup>410</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2)* [2012] ACompT 3, 11 January 2012, paragraphs 95, 118, 120–121; see also Australian Competition Tribunal, *Application by APT Allgas Energy Ltd* [2012] ACompT 5, 11 January 2012.

<sup>411</sup> This is because seven years is the maximum term currently published for the Bloomberg BBB fair value curve.

<sup>412</sup> PwC, *SP AusNet, MultiNet Gas, Envestra, and APA Group: Estimating the benchmark debt risk premium*, March 2012, p. 22.

<sup>413</sup> PwC, *SP AusNet, MultiNet Gas, Envestra, and APA Group: Estimating the benchmark debt risk premium*, March 2012, p. 13.

For the purposes of this draft decision, therefore, the AER has excluded the Telstra bonds from the extrapolation sample. The AER has also updated PwC's analysis to reflect the spread between the pair of Stockland bonds maturing in 2016 and 2020. The AER, however, will consider including these bonds for the final decision should Envestra substantiate their inclusion. The AER considers that excluding the Telstra bonds and amending the Stockland pair is consistent with a benchmark DRP that reflects the risks involved in providing reference services.

In assessing Envestra's proposal, the AER has also taken into account the EUCV's submission.<sup>414</sup> The EUCV stated that the approach to determining the DRP used by the AER cannot be demonstrated to produce an efficient outcome. Further, the EUCV presented average debt premiums for each of the Victorian gas networks from the corresponding annual reports.

The AER, however, considers that the EUCV's analysis of annual report data is flawed. Most notably, it is unclear whether the average term of the debt referenced by the EUCV corresponds to the benchmark term adopted by the AER. In this context, it is inappropriate to calculate the DRP for an entire portfolio with reference only to the 10 year risk free rate.<sup>415</sup> This notwithstanding, the issues raised by the EUCV—for example, that the current DRP method does not reflect the full spectrum of debt options utilised by NSPs—warrant broader consideration. This is consistent with the Tribunal's recommendation to undertake a public consultation process before selecting an alternative DRP methodology.<sup>416</sup> For these reasons, the AER has commenced an internal review into alternatives to the Bloomberg fair value curve. The AER will advise of a public consultation process on the development of an alternative in due course.

### 4.3.7 Forecast inflation

The AER approves Envestra's proposed methodology<sup>417</sup> for estimating forecast inflation. The proposed methodology is consistent with that adopted by the AER in previous regulatory decisions.

Envestra used this methodology and derived an inflation forecast of 2.5 per cent using the February 2012 RBA forecasts. In this draft decision, the AER updates the RBA short term inflation forecasts resulting in an indicative inflation forecast of 2.50 per cent. This is shown in Table 4.6.

**Table 4.6 AER inflation forecast (per cent)**

	2013	2014	2015–2022	Geometric average
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<sup>414</sup> EUCV, *Victorian gas distribution revenue reset, Application from Envestra, Multinet and SP AusNet, A response by EUCV*, June 2012.

<sup>415</sup> For example, the DRP for seven year debt should be determined with reference to the seven year risk free rate.

<sup>416</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2)* [2012] ACompT 3, 11 January 2012, paragraphs 95, 118, 120–121; see also Australian Competition Tribunal, *Application by APT Allgas Energy Ltd* [2012] ACompT 5, 11 January 2012.

<sup>417</sup> Envestra, *Albury access arrangement information*, 30 March 2012, pp. 146-147; Envestra, *Victoria access arrangement information*, 30 March 2012, pp. 162-163;



Forecast inflation	2.50 <sup>a</sup>	2.50 <sup>a</sup>	2.50	2.50
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Source: RBA, Statement on Monetary Policy, August 2012, p. 67.

Notes: (a) The RBA published a range of 2-3 per cent for its 2013 and 2014 forecast inflation. The AER has selected the mid-point of 2.5 per cent for the purposes of this draft decision.

For the final decision, the AER will again update the RBA's short term inflation forecasts based on the most recent RBA Statement on Monetary Policy at the time of the final decision.

### 4.3.8 Gearing ratio

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 costs of debt and equity when formulating the overall rate of return. Under rule 87 of the NGR, the AER needs to determine the gearing ratio based on the assumption that the service provider meets the benchmark level of efficiency.

Envestra proposed a gearing ratio of 60:40 (that is, 60 per cent debt).<sup>418</sup> The AER accepts this gearing ratio because it is supported by relevant available empirical evidence.<sup>419</sup> Additionally, as the AER noted in its decision for ETSA SA, when determining this gearing ratio the AER included gas businesses as close comparators to the benchmark electricity business. The AER considers that this reasoning also holds in reverse—that is, electricity businesses are close comparators for the benchmark efficient gas business.<sup>420</sup> For the reasons outlined in the AER's WACC review, the AER still considers that a gearing ratio of 60:40 will to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers.<sup>421</sup>

### 4.3.9 Reasonableness checks on overall rate of return

The AER considers the approach in this decision provides a reasonable estimate of the benchmark WACC. At the same time, the AER recognises that the overall rate of return in this decision is lower than previous decisions. There is no single robust methodology 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.

The overall rate of return is unobservable, the AER assesses overall rate of return using market data and finance theory. 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

<sup>418</sup> Envestra, Victorian access arrangement information, 30 March 2012, p. 162. Envestra, Albury access arrangement information, 30 March 2012, p. 145.

<sup>419</sup> 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.

<sup>420</sup> AER, draft decision, Envestra Ltd Access arrangement proposal for the SA gas network 1 July 2011 – 30 June 2016, February 2011, p. 93.

<sup>421</sup> NGL, s23. AER, Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters, 1 May 2009, p. 116-126.

- trading multiples
- broker WACC estimates
- recent decisions by other regulators
- the relationship between the cost of equity and the cost of debt.

For this draft decision, the AER determines an overall rate of return using a nominal vanilla WACC of 7.16 per cent. This is based on a cost of equity of 7.78 per cent, a cost of debt of 6.74 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, Grant Samuel and brokers' reports identified recent RAB trading multiples 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 (7.76-10.02 per cent). However, the AER notes broker WACC technique is subject to known limitations and inherent imprecision. Further, broker WACC estimates 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 recent AER decisions, it is in line with recent regulatory decisions made by other Australian regulators (6.45-9.08 per cent).
- Consistent with previous decisions, the AER determined cost of equity is greater than the cost of debt for this draft decision.

Appendix B explores each overall rate of return reasonableness check technique in detail.

## 4.4 Revisions

The AER proposes the following revisions to make SP AusNet's access arrangement proposal acceptable:

**Revision 4.1:** Make all necessary amendments to reflect the AER's draft decision on the rate of return, as reflected in Table 4.1

## 5 Depreciation

When determining the total revenue for Envestra's Victorian and Albury distribution businesses (Envestra), the AER must decide on the depreciation for the projected capital base (or return of capital).<sup>422</sup> Regulatory depreciation is used to model the nominal asset values over the access arrangement period and the depreciation allowance in the total revenue requirement. The AER's draft decision on Envestra's annual regulatory depreciation allowances is outlined in this attachment.<sup>423</sup> The AER's consideration of specific matters that affect the estimate of regulatory depreciation over the 2013–17 access arrangement period is also outlined in this attachment. 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.

### 5.1 Draft decision

The AER approves Envestra's proposal to use the straight-line method to calculate the regulatory depreciation allowances as set out in the post-tax revenue model (PTRM). However, the AER does not approve Envestra's proposed regulatory depreciation allowances of \$101.8 million (\$nominal) and \$3.6 million (\$nominal), for its Victorian and Albury distribution businesses respectively, over the 2013–17 access arrangement period. This is because of the AER's recalculation of Envestra's remaining economic lives and its draft decisions on other components of Envestra's proposal that impact on the proposed regulatory depreciation allowances. These other components are discussed in other attachments and include:

- the projected opening capital base (attachment 2)
- forecast net capex (attachment 3).

With the exception of the 'Land & buildings' and 'SCADA' asset classes, the AER approves Envestra's proposed standard economic lives assigned to each of its asset classes for the 2013–17 access arrangement period. This is because they are consistent with the Essential Services Commission's (ESC's) approved standard economic lives in the 2008–12 access arrangement period.

The AER accepts Envestra's proposed weighted average method to calculate the remaining economic lives as at 1 January 2013. However, the AER has updated Envestra's remaining economic lives as at 1 January 2013 to reflect the AER's adjustments to Envestra's opening capital base roll forward (discussed in attachment 2).

The AER's draft decisions on Envestra's total regulatory depreciation allowances over the 2013–17 access arrangement period are:

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<sup>422</sup> NGR, r. 76(b).

<sup>423</sup> Regulatory depreciation allowance is the net total of the straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base.

- Envestra Victoria—\$88.9 million (\$nominal) as shown in Table 8.1. This represents a reduction of \$12.9 million (\$nominal) or 12.7 per cent of Envestra's proposal.
- Envestra Albury—\$3.8 million (\$nominal) as shown in Table 5.2. This represents an increase of \$0.2 million (\$nominal) or 5.5 per cent of Envestra's proposal.

**Table 5.1 AER's draft decision on Envestra Victoria's depreciation allowance (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	39.8	43.8	49.4	53.3	57.0	243.3
Less: indexation on opening capital base	27.7	29.4	31.2	32.4	33.7	154.4
Regulatory depreciation	12.1	14.4	18.2	20.9	23.3	88.9

Source: AER analysis.

**Table 5.2 AER's draft decision on Envestra Albury's depreciation allowance (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	1.4	1.5	1.7	1.8	1.9	8.2
Less: indexation on opening capital base	0.9	0.9	0.9	0.9	0.9	4.4
Regulatory depreciation	0.5	0.6	0.8	0.9	0.9	3.8

Source: AER analysis.

## 5.2 Envestra's proposal

For the 2013–17 access arrangement period, Envestra proposed total forecast regulatory depreciation allowances of.<sup>424</sup>

- Envestra Victoria—\$101.8 million (\$nominal) as set out in Table 5.3.
- Envestra Albury—\$3.6 million (\$nominal) as set out in Table 5.4.

To calculate the depreciation allowances, Envestra proposed:<sup>425</sup>

- standard economic lives for depreciating new assets associated with forecast net capex. Envestra did not propose any new asset classes for the 2013–17 access arrangement period

<sup>424</sup> Envestra Victoria, *Access arrangement information*, March 2012, p. 143; Envestra Albury, *Access arrangement information*, March 2012, p. 127.

<sup>425</sup> Envestra Victoria, *Access arrangement information*, March 2012, p. 143; Envestra Albury, *Access arrangement information*, March 2012, p. 127.

- remaining economic lives as at 1 January 2013 for depreciating existing assets in the opening capital base as at 1 January 2013.

**Table 5.3 Envestra Victoria's proposed depreciation allowance (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	41.5	48.8	57.5	64.0	70.4	282.3
Less: indexation on opening capital base	27.9	31.9	36.6	40.2	43.9	180.5
Regulatory depreciation	13.6	17.0	20.9	23.8	26.5	101.8

Source: Envestra Victoria, *PTRM*, March 2012.

**Table 5.4 Envestra Albury's proposed depreciation allowance (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Straight-line depreciation	1.4	1.5	1.7	1.8	1.9	8.3
Less: indexation on opening capital base	0.9	0.9	0.9	1.0	1.0	4.7
Regulatory depreciation	0.5	0.6	0.7	0.8	0.9	3.6

Source: Envestra Albury, *PTRM*, March 2012.

### 5.3 Assessment approach

In its access arrangement proposal, Envestra must provide a forecast of depreciation for the 2013–17 access arrangement period, including a demonstration of how the forecast is derived on the basis of the proposed depreciation method.<sup>426</sup> The depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff. The depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or class of asset.<sup>427</sup> In making a decision on the proposed depreciation schedule, the AER is to assess the compliance of the proposed depreciation schedule with the depreciation criteria set out in the NGR.<sup>428</sup> The AER must also take into account the depreciation schedule approved in the 2008–12 access arrangement period,<sup>429</sup> the NGO and the revenue and pricing principles.<sup>430</sup>

The AER's discretion under the depreciation criteria is limited.<sup>431</sup> The depreciation criteria state that the depreciation schedule should be designed:

<sup>426</sup> NGR, r. 72(1)(c)(ii).

<sup>427</sup> NGR, rr. 88(1) and 88(2).

<sup>428</sup> NGR, r. 89.

<sup>429</sup> NGR, schedule 1, r. 5(1)(d).

<sup>430</sup> NGL, s 28; NGR r. 100(1). The NGO is set out in NGL, s. 23. The revenue and pricing principles are set out in NGL, s. 24.

<sup>431</sup> NGR, rr. 89(3) and 40(2). The example provided in r. 40(2) states: The AER has limited discretion under r. 89. Rule 89 governs the design of a depreciation schedule. In dealing with a full access arrangement submitted for its approval, the AER cannot, in its draft decision, insist on change to an aspect of a depreciation schedule

- so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services<sup>432</sup>
- so that each asset or group of assets is depreciated over the economic life of that asset or group of assets<sup>433</sup>
- so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets<sup>434</sup>
- so that (subject to the rules about capital redundancy), an asset is depreciated only once<sup>435</sup>
- so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.<sup>436</sup>

The depreciation criteria also state that to comply with the rule regarding efficient growth in the market for reference services, a substantial amount of depreciation may be deferred.<sup>437</sup>

Regulatory depreciation allowance is the net total of the straight-line depreciation (negative) and the annual inflation indexation (positive) on the projected capital base. The AER's PTRM employs the straight-line method for calculating depreciation and the regulatory depreciation allowance is an output of the PTRM.<sup>438</sup> The AER considers that the straight-line method satisfies the depreciation criteria.<sup>439</sup> This is because the straight-line method smooths changes in the reference tariffs, promotes efficient growth of the market, allows assets to be depreciated only once and over its economic life, and allows for a service provider's reasonable needs for cash flow. Envestra has adopted the straight-line method set out in the AER's PTRM for calculating its forecast depreciation. The AER therefore has assessed Envestra's regulatory depreciation allowances by analysing Envestra's proposed inputs to the PTRM for calculating depreciation. These inputs include:

- the opening capital base as at 1 January 2013
- the forecast net capex in the 2013–17 access arrangement period
- the forecast inflation rate for the 2013–17 access arrangement period

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governed by r. 89 unless the AER considers the change is necessary to correct non-compliance with a provision of the Law or an inconsistency between the depreciation schedule and the applicable criteria. Even though the AER might consider change desirable to achieve more complete conformity between the depreciation schedule and the principles and objectives of the Law, it would not be entitled to give effect to that view in the decision making process.

<sup>432</sup> NGR, r. 89(1)(a).

<sup>433</sup> NGR, r. 89(1)(b).

<sup>434</sup> NGR, r. 89(1)(c).

<sup>435</sup> NGR, r. 89(1)(d).

<sup>436</sup> NGR, r. 89(1)(e).

<sup>437</sup> NGR, r. 89(2).

<sup>438</sup> The AER's PTRM was developed based on the post-tax building block approach set out in the National Electricity Rules. Given that Envestra has proposed the post-tax building block approach for its access arrangement, the PTRM can be used to calculate the revenue requirement.

<sup>439</sup> NGR, r. 89.

- the standard economic life for each asset class—used for calculating the depreciation of new assets associated with forecast net capex in the 2013–17 access arrangement period
- the remaining economic life for each asset class—used for calculating the depreciation of existing assets associated with the opening capital base as at 1 January 2013.

The AER's determinations affecting the first three inputs in the above list are discussed elsewhere in this draft decision: opening capital base (attachment 2), forecast net capex (attachment 3) and forecast inflation (attachment 4). The AER's decision on the required amendments to Envestra's proposed regulatory depreciation allowances reflects the AER's determinations on these building block components. The AER's assessment approach on the remaining two inputs in the above list is set out below.

In general, the AER considers that consistency in the standard economic life for each asset class across access arrangement periods will allow reference tariffs to vary smoothly over time. This will promote efficient growth in the market for reference services.<sup>440</sup> The AER's standard method for determining the remaining economic lives is the weighted average method.<sup>441</sup> The weighted average method rolls forward the remaining economic life for an asset class from the beginning of the earlier access arrangement period. This approach reflects the mix of assets within that asset class, when they were acquired over that period (or if they were existing assets at the beginning), and the remaining value of those assets (used as a weight) at the end of the period. The AER will assess the outcomes of other approaches against the outcomes of this standard approach.

## 5.4 Reasons for draft decision

The AER's draft decision on Envestra's regulatory depreciation allowances for the 2013–17 access arrangement period is:

- Envestra Victoria—\$88.9 million (\$nominal)
- Envestra Albury—\$3.8 million (\$nominal).

These allowances reflect changes to the remaining economic lives, as discussed below, and the AER's draft decisions on other components of Envestra's proposal that impact on the proposed regulatory depreciation allowances (discussed in the relevant attachments). The AER also requires the splitting of the 'Land & buildings' asset class for any future capex, as discussed below.

### 5.4.1 Standard economic lives

With the exception of the 'Land & buildings' and the 'SCADA' asset classes, the AER approves Envestra's proposed standard economic lives assigned to its asset classes for the

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<sup>440</sup> NGR, r. 89(1)(a).

<sup>441</sup> The AER considers this depreciation method to be a generally superior approach. Its reasons were outlined in its decision on the RFM for electricity transmission network service providers. See AER, *Explanatory statement, Proposed amendment, Electricity transmission network service providers, Roll forward model*, August 2010, pp. 5–6.

2013–17 access arrangement period. The AER considers that these proposed standard economic lives are consistent with the ESC's approved standard economic lives in the 2008–12 access arrangement period.<sup>442</sup> Envestra did not propose any new asset classes for the 2013–17 access arrangement period.

### **'Meters' asset class**

The AER approves Envestra's proposal to reduce the standard economic life for the 'Meters' asset class from 20 years to 15 years to apply from 2013. In its proposal, Envestra stated that its proposed standard economic life for the 'Meters' asset class is consistent with:

- the range of service life for meters specified by the Australian Standard (AS 4944) called 'Gas Meters – In Service Compliance Testing'<sup>443</sup>
- the AER's decision on the standard economic life associated with the 'Meters' asset class for Envestra's gas distribution networks in Queensland and South Australia.<sup>444</sup>

Based on these reasons, the AER considers that the proposed standard economic life for the 'Meters' asset class is appropriate. The AER notes that Envestra's proposal is consistent with the NGR which states that the depreciation schedule should allow for adjustment reflecting changes in the economic life of the assets.<sup>445</sup>

Further, the AER has modelled the impact associated with reducing the standard economic life of the 'Meters' asset class from 20 years to 15 year in the 2013–17 access arrangement period. The AER considers the impact from this change to be immaterial (at less than 0.1 per cent increase in revenue over the 2013–17 access arrangement period for either the Victorian or the Albury distribution businesses).

### **'Land & buildings' asset class**

The AER considers that the 'Land & buildings' asset class should not be maintained as a single asset class in the opening capital base as at 1 January 2013 for depreciation purposes in the 2013–17 access arrangement period. However, consistent with the ESC's decision for rolling forward the capital base to 2012, the AER does approve Envestra's proposal to maintain the single 'Land & buildings' asset class up to the closing capital base for 2012. From 2013, due to land being a non-depreciable asset, the AER considers that the 'Land & buildings' asset class should then be split into two separate 'Land' and 'Buildings' asset classes.

In recent decisions, the AER has consistently separated land from other asset classes, and not assigned a standard economic life to land (assigned a term of 'n/a' for modelling

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<sup>442</sup> ESC, *Envestra GAAR 2008 Revenue Model Further Final Decision*, 2008. These standard economic lives are also comparable with the range of standard economic lives approved in the AER's recent access arrangement decisions.

<sup>443</sup> Envestra Victoria, *Access arrangement information*, March 2012, p. 143; Envestra Albury, *Access arrangement information*, March 2012, p. 126.

<sup>444</sup> Envestra Victoria, *Access arrangement information*, March 2012, p. 143; Envestra Albury, *Access arrangement information*, March 2012, p. 126.

<sup>445</sup> NGR, r. 89(1)(c).



purposes) in the capital base roll forward model (RFM) and the PTRM.<sup>446</sup> This is because land is a non-depreciable asset under the Australian taxation law, and does not diminish in its useful life.<sup>447</sup> The *Income Tax Assessment Act* (ITAA) 1997 excludes land from the definition of a 'depreciating asset'.<sup>448</sup>

For its Victorian distribution business, Envestra's proposed opening capital base as at 1 January 2013 contains an opening asset value of \$8.8 million (\$nominal) for the 'Land & buildings' asset class. However, for Envestra's Albury distribution business, there was no proposed opening asset value for the 'Land & buildings' asset class in the opening capital base as a result of it being fully depreciated. The AER sent an information request to Envestra to inquire about a possible split between land and buildings in the opening asset value as at 1 January 2013 for its Victorian distribution business.<sup>449</sup> In response, Envestra stated that it did not have enough information that would allow a separation of land from the opening asset value of the 'Land & buildings' asset class.<sup>450</sup> It submitted:

"The initial capital base (ICB) was established in 1997 by the Energy Projects Division (EPD) of the Department of Treasury and Finance and occurred while the network was still owned by the Victorian Government. A depreciation schedule (including depreciation on the "Land and Building" asset category) was also developed by EPD at this time. The valuation and depreciation information formed part of the 1998 to 2002 Access Arrangement submitted by the Victorian Government to the Office of the Regulator-General (ORG).

Envestra has reviewed all relevant documents in our possession. No information has been located to provide further detail on the proportion of the land (if any) included in the ICB. Moreover, it is noted that the ORG and the Essential Services Commission (ESC) continued to apply the depreciation schedule developed by the EPD in 1997 through the subsequent 2003 to 2007 and 2008 to 2012 Access Arrangement periods.

For the 2013 to 2017 Access Arrangement period, Envestra has continued the same approach to depreciating "Land and Buildings" as was earlier applied by the Victorian Government, the ORG and the ESC."

Based on Envestra's response, the AER considers that it is reasonable for Envestra to maintain 'Land & buildings' as a single asset class to roll forward the opening capital base to the end of 2012. However, the AER considers that separate asset classes should apply for the opening capital base at 1 January 2013 and for any future capex due to the different depreciation treatment applicable to land and buildings.

Neither Envestra nor the AER has sufficient information to accurately allocate the opening asset value for the 'Land & buildings' asset class from 2013 for the Victorian distribution business. For the purposes of maintaining consistency with the depreciation treatment of this expenditure by the ESC, the AER has allocated all of the opening asset value into the 'Buildings' asset class so it can continue to depreciate.

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<sup>446</sup> AER, *Roma to Brisbane Pipeline draft decision*, April 2012, p. 19; AER, *Aurora Energy draft distribution determination*, November 2011, p. 205.

<sup>447</sup> Australian Accounting Standard Board, *Accounting standard AASB1021: Depreciation*, August 1997, pp. 10–11.

<sup>448</sup> ITAA 1997, s. 40-30.

<sup>449</sup> AER, *Information request for Envestra relating to PTRM inputs ('Land & buildings')*, 21 June 2012.

<sup>450</sup> Envestra, *Response to AER information request for Envestra relating to PTRM inputs ('Land & buildings')*, 25 June 2012.

Although Envestra did not forecast any capex for the 'Land & buildings' asset class for either of its Victorian or Albury distribution businesses over the 2013–17 access arrangement period, the AER has split this asset class into two separate asset classes of 'Land' and 'Buildings'. The AER considers that:

- the 'Buildings' asset class should be assigned a standard economic life of 50 years (consistent with the standard economic life approved by the ESC for the 2008–12 access arrangement decision)
- the 'Land' asset class should not be assigned a standard economic life reflecting the non-depreciating nature of the asset ('n/a' is assigned for modelling purposes in Envestra's PTRM).

### **'SCADA' asset class**

The AER does not approve Envestra's proposed standard economic life of 10 years for the 'SCADA' asset class because it does not satisfy the NGR that require assets be depreciated over their economic lives.<sup>451</sup> To satisfy the NGR, the AER considers that a standard economic life of 15 years is more appropriate.

The AER considers that the proposed standard economic life is too short, when compared to the standard economic lives for the 'SCADA' asset class approved in previous AER decisions.<sup>452</sup> In those decisions, the AER considered that a standard economic life of 15 years to 20 years for 'SCADA' assets to be reasonable and consistent with the NGR.<sup>453</sup>

The AER sent a request to Envestra seeking further information on its proposed standard economic life for the 'SCADA' asset class.<sup>454</sup> In response, Envestra stated that it considered SCADA equipment is becoming more akin to the IT assets which have a standard economic life of 5 years. Envestra stated that as SCADA also consists of some engineering components, it considered its proposed standard economic life of 10 years for SCADA is appropriate.<sup>455</sup>

Generally, the AER considers that SCADA assets can include IT assets which have shorter standard economic lives. However, the AER notes that the proposed capex for the 'SCADA' asset class is comprised of hardware-related components (such as the Remote Telemetry Units) which have longer standard economic lives.<sup>456</sup> Therefore, the AER considers that the 'SCADA' asset class should have a standard economic life of 15 years, consistent with the requirements of the NGR.<sup>457</sup>

The AER's draft decision on Envestra's standard economic lives for each of its asset classes for the 2013–17 access arrangement period are set out in Table 5.5 and Table 5.6.

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<sup>451</sup> NGR, r. 89(1)(b).

<sup>452</sup> AER, *APT Allgas draft decision*, February 2011, p. 37. AER, *Envestra draft decision (Qld gas network)*, February 2011, p. 46. AER, *Envestra draft decision (SA gas network)*, February 2011, p. 52. AER, *NT Gas, draft decision*, April 2011, p. 56. AER, *Country Energy (Envestra) draft decision*, November 2009, p. 37.

<sup>453</sup> NGR, r. 89(1)(b).

<sup>454</sup> AER, *AER Information request 39*, 3 August 2011.

<sup>455</sup> Envestra, *Response to AER information request 39*, 6 August 2012.

<sup>456</sup> Envestra Victoria, *Access arrangement information*, March 2012, p. 99; Envestra Albury, *Access arrangement information*, March 2012, p. 95.

<sup>457</sup> NGR, r. 89(1)(b).

## 5.4.2 Remaining economic lives

The AER accepts Envestra's proposed weighted average method to calculate the remaining economic lives as at 1 January 2013. However, the AER has updated Envestra's remaining economic lives as at 1 January 2013 to reflect the AER's adjustments to Envestra's opening capital base roll forward (discussed in attachment 2).

The AER's draft decision on Envestra's remaining economic lives for each of its asset classes for the 2013–17 access arrangement period are set out in Table 5.5 and Table 5.6.

**Table 5.5 AER's draft decision on Envestra Victoria's standard and remaining economic lives as at 1 January 2013 (years)**

Asset classes	Standard economic life	Remaining economic life
Mains & services	60	41.0
Meters	15	8.0
Land	n/a	n/a
Buildings	50	21.0
SCADA	15	7.9
Computer equipment	5	3.5
Other assets	15	11.0

Source: AER analysis.  
n/a: Not applicable.

**Table 5.6 AER's draft decision on Envestra Albury's standard and remaining economic lives as at 1 January 2013 (years)**

Asset classes	Standard economic life	Remaining economic life
Mains & services	60.0	37.4
Meters	15.0	8.0
Land	n/a	n/a
Buildings	50.0	0
SCADA	15.0	0
Computer equipment	5.0	0
Other assets	15.0	0
Equity raising costs	53.9 <sup>a</sup>	n/a

Source: AER analysis.  
n/a: Not applicable.  
(a) The AER's analysis in the PTRMs shows that only Envestra Albury will incur benchmark equity raising cost (see attachment 3). The AER has accepted Envestra's proposal to calculate the standard economic life for the 'Equity raising costs' asset class using a weighted average method. Under this method, the standard economic life is calculated by weighting the opening asset values of all the other asset classes in the opening capital base by their respective standard lives, and dividing by the sum of the total opening asset values as at 1 January 2013.

## 5.5 Revisions

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

**Revision 5.1:** Make all necessary amendments to reflect the AER's draft decision on the proposed forecast regulatory depreciation allowances for the 2013–17 access arrangement period, as set out in Table 5.1 and Table 5.2.

**Revision 5.2:** Make all necessary amendments to reflect the AER's draft decision on the standard economic lives and remaining economic lives as at 1 January 2013, as set out in Table 5.5 and Table 5.6.

## 6 Operating expenditure

### 6.1 Draft decision

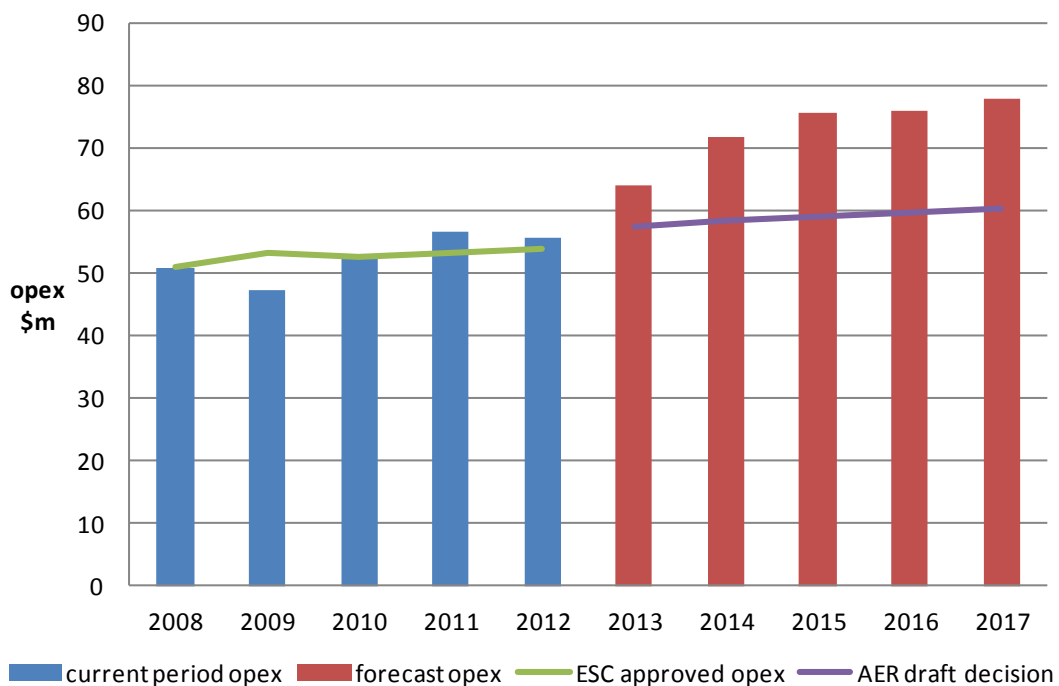
#### 6.1.1 Envestra Victoria

The AER's draft decision is to not approve a forecast of opex of \$364.8 million (\$2011) for the 2013–17 access arrangement period for Envestra Victoria. The AER is not satisfied that Envestra's forecast of opex for the 2013–17 access arrangement period reflects opex that complies with the opex criteria and the criteria for forecasts and estimates.<sup>458</sup>

The AER instead considers forecast opex of \$294.5 million (\$2011) reflects a forecast of opex that complies with the criteria governing opex and the criteria for forecasts and estimates.<sup>459</sup>

Figure 6.1 illustrates how the AER's draft decision for opex compares to Envestra's proposal for Envestra Victoria, its opex in the 2008–12 access arrangement period, and the opex approved by the Essential Services Commission (ESC) for this period.

**Figure 6.1 Comparison of Envestra Victoria's historical and forecast opex, and AER draft decision (\$million, 2011)**



Source: Envestra Victoria regulatory accounts.

Note: Current period opex includes liabilities paid from provisions but excludes movements in provisions. figures from 2012 onwards are forecasts.

<sup>458</sup> NGR, rr. 91 and 74.

<sup>459</sup> NGR, rr. 91 and 74.

Table 6.1 compares the AER's draft decision to Envestra's proposal for Envestra Victoria for each year of the 2013–17 access arrangement period.

**Table 6.1 Comparison of Envestra Victoria' proposal, and AER draft decision (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	63.8	71.8	75.4	76.0	77.8	364.8
AER's draft decision	57.5	58.2	58.9	59.6	60.3	294.5
Difference	-6.3	-13.6	-16.5	-16.4	-17.5	-70.3

Source: AER analysis.

### 6.1.2 Envestra Albury

The AER's draft decision is to not approve a forecast of opex of \$12.3 million (\$2011) for the 2013–17 access arrangement period for Envestra Albury. The AER is not satisfied that Envestra's forecast opex for the 2013–17 access arrangement period reflects opex that complies with the opex criteria and the criteria for forecasts and estimates.<sup>460</sup>

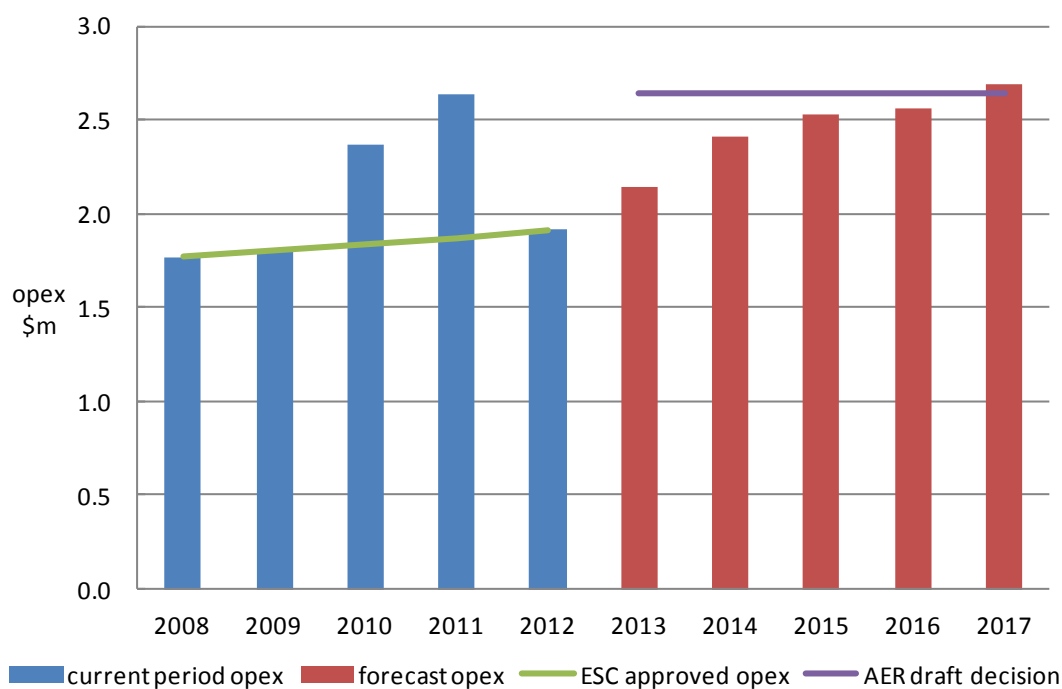
The AER instead considers forecast opex of \$13.5 million reflects a forecast of opex that complies with the criteria governing opex and the criteria for forecasts and estimates.<sup>461</sup> Envestra Albury accrued a negative carryover under the efficiency carryover mechanism largely due to liabilities paid from provisions in 2010 and 2011. The increased opex ensures Envestra Albury is not penalised twice.

Figure 6.2 illustrates how the AER's draft decision for opex compares to Envestra's Albury's proposal for the 2013–17 access arrangement period, its opex in the 2008–12 access arrangement period, and the opex approved by the ESC for this period.

<sup>460</sup> NGR, rr. 91 and 71.

<sup>461</sup> NGR, rr. 91 and 71.

**Figure 6.2 Comparison of Envestra Albury's historical and forecast opex, and AER draft decision (\$million, 2011)**



Source: Envestra Albury regulatory accounts.

Note: Current period opex includes liabilities paid from provisions but excludes movements in provisions. Figures from 2012 onwards are forecasts.

Table 6.2 compares the AER's draft decision to Envestra's proposal for Envestra Albury for each year of the 2013–17 access arrangement period.

**Table 6.2 Comparison of Envestra Albury's proposal, and AER draft decision (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	2.14	2.41	2.53	2.56	2.69	12.33
AER's draft decision	2.65	2.67	2.70	2.71	2.73	13.46
Difference	0.50	0.27	0.16	0.15	0.04	1.13

Source: AER analysis.

## 6.2 Envestra's proposals<sup>462</sup>

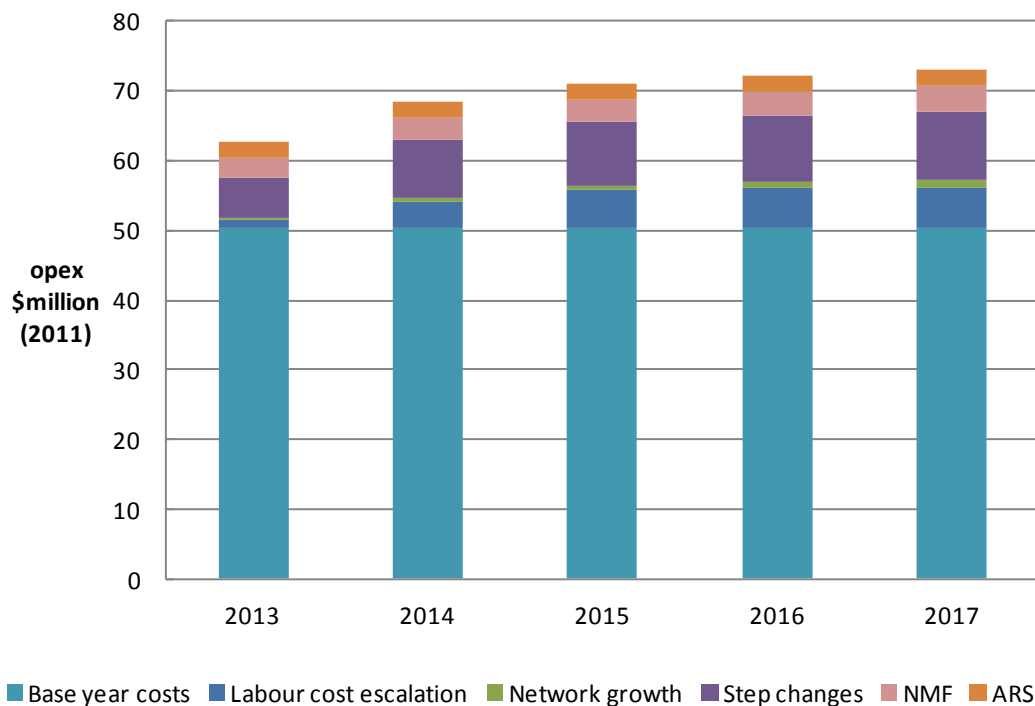
### 6.2.1 Summary

Envestra proposed total opex of \$364.8 million (\$2011) for the 2013–17 access arrangement period for Envestra Victoria, a 39.8 per cent real increase on actual expenditure in the 2008–12 access arrangement period.<sup>463</sup>

Figure 1.3 disaggregates Envestra Victoria's proposals into six different cost categories:

- base year costs
- labour cost escalation
- network growth
- step changes
- Network Management Fee (NMF); and
- ancillary reference services (ARS)

**Figure 6.3 Disaggregation of Envestra Victoria's proposal**



<sup>462</sup> All forecasts in this section are from Envestra's access arrangement proposal. Note, in some instances, the forecast in the access arrangement proposal differed from information provided in Envestra's confidential opex model.

<sup>463</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, tables 3.1 and 6.6.

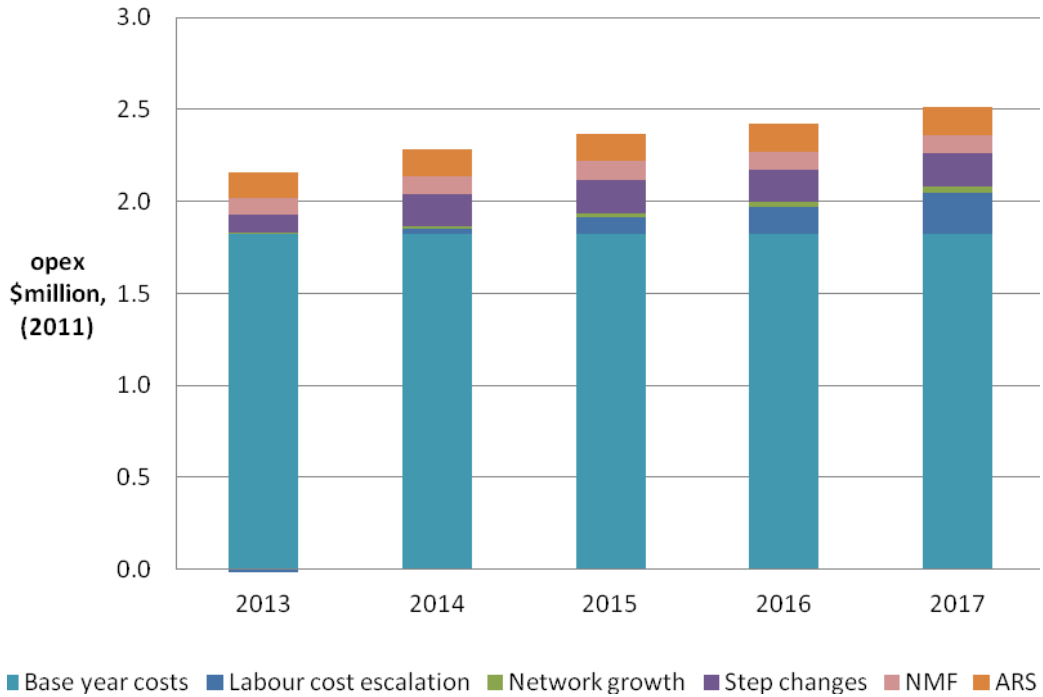


Source: AER analysis

Envestra proposed opex of \$12.3 million (\$2011) for the 2013–17 access arrangement period for Envestra Albury, a 43 per cent real increase on actual expenditure in the 2008–12 access arrangement period.<sup>464</sup>

Figure 6.4 disaggregates Envestra Albury's proposals identically to Figure 6.3.

**Figure 6.4 Disaggregation of Envestra Albury's proposal**



Source: AER analysis.

A summary of Envestra's proposal is discussed further below.

## 6.2.2 Forecasting methodology

Envestra forecast opex for haulage reference services for both Envestra Victoria and Envestra Albury using a base year roll forward method.<sup>465</sup> This method uses actual expenditure in a base year as an indication of future expenditure because operating and maintenance costs are largely recurrent. Base year opex is then adjusted to account for changes in the service provider's circumstances that are forecast to affect opex over the 2013–17 access arrangement period. These adjustments include:

- removing non-recurrent costs from actual expenditure in the base year;
- escalating forecast increases in the size of the network ('network growth');

<sup>464</sup> Envestra, *Albury access arrangement information*, 30 March 2012, tables 3.1 and 6.6.

<sup>465</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 94.  
Envestra, *Albury access arrangement information*, 30 March 2012, p. 90.

- adding changes for forecast costs not reflected in the base opex, such as costs due to changes in regulatory obligations and the external operating environment ('step changes'); and
- escalating for forecast real cost changes for labour and materials ('real cost escalation').

### 6.2.3 Base year

Envestra chose 2011 as the opex base year, being the most recent full financial year for which actual data is available.<sup>466</sup>

To estimate base year opex Envestra estimated expenditure of \$52.4 million for Envestra Victoria<sup>467</sup> and \$1.9 million for Envestra Albury for 2011 and subtracted opex incurred in 2011 that it considered is not representative of forecast opex in the 2013–17 access arrangement period.

**Table 6.3 Base year adjustments proposed by Envestra Victoria (\$million, 2011)**

Opex item	opex
Unadjusted 2011 opex	52.4
Network Management Fee and incentive payments	-3.4
Network development costs	-2.4
Base year opex	46.6

Sources: Envestra Victoria's access arrangement proposal.<sup>468</sup>

**Table 6.4 Base year adjustments proposed by Envestra Albury (\$million, 2011)**

Opex item	opex
Unadjusted 2011 opex	1.9
Network Management Fee	-0.1
Network development costs	-0.1
Base year opex	1.7

Sources: Envestra Albury's access arrangement proposal.<sup>469</sup>

### 6.2.4 Network growth

Envestra forecast additional opex of \$3.6 million (\$2011) for Envestra Victoria and \$0.1 million (\$2011) for Envestra Albury to connect new customers to its existing networks. Envestra forecast it would connect, on average, 12 000 net new volume customers to Envestra Victoria

<sup>466</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 95.

<sup>467</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 96.

<sup>468</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, pp. 96–98.

<sup>469</sup> Envestra, *Albury access arrangement information*, 30 March 2012, pp. 91-93.

and 400 to Envestra Albury in each year of the 2013–17 access arrangement period. The proposed incremental cost primarily includes meter reading, data processing and billing.<sup>470</sup>

## 6.2.5 Step changes

Envestra proposed nineteen step changes equal to \$35.1 million of opex (\$2011)<sup>471</sup> for Envestra Victoria and eleven step changes equal to \$0.8 million (\$2011) for Envestra Albury. Envestra classified the step changes according to whether it considered the opex is associated with the delivery of a capital project, a cost that arises from a one-off project or a cost that represents a permanent change in opex.

As discussed in attachment 3 the AER considers that Envestra's proposed expenditure on Easement Vegetation Management is not capital in nature and should be treated and assessed as opex.<sup>472</sup> Accordingly the AER has considered whether this vegetation management program amounts to a step change in Envestra's operating expenditure.

**Table 6.5 Proposed step changes by Envestra Victoria (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Opex related to capex	–	0.7	0.7	1.4	1.5	4.3
One-off opex projects	0.8	1	0.9	0.4	0.4	3.6
Permanent step changes <sup>473</sup>	4.1	5.6	5.7	5.8	5.8	27.1
<b>Total</b>	<b>4.9</b>	<b>7.4</b>	<b>7.4</b>	<b>7.6</b>	<b>7.8</b>	<b>35.1</b>

Sources: Envestra Victoria's access arrangement proposal.<sup>474</sup>

**Table 6.6 Proposed step changes by Envestra Albury (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Opex related to capex	–	0.0	0.0	0.0	0.0	0.1
One-off opex projects	0.0	0.0	0.0	0.0	0.0	0.1
Permanent step changes	0.1	0.1	0.1	0.1	0.1	0.6
<b>Total</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.8</b>

Sources: Envestra Albury's access arrangement proposal.<sup>475</sup>

<sup>470</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 105, 109.

Envestra, *Albury access arrangement information*, 30 March 2012, p. 99, 103.

<sup>471</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 102.

<sup>472</sup> Envestra attachment VA33.

<sup>473</sup> Envestra also forecast a step change related to the increase in insurance premiums which was discussed in its proposal as a permanent step change but did not include in its forecast costs of permanent step changes.

<sup>474</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 105.

<sup>475</sup> Envestra, *Albury access arrangement information*, 30 March 2012, p. 98.

## 6.2.6 Real cost escalation

After adding forecast non base-year opex Envestra escalated its forecast opex for expected real increases in labour and materials costs forecast by BIS Shrapnel.<sup>476</sup> Envestra applied BIS Shrapnel's electricity, gas, and water, general labour, network materials, and general materials escalators.<sup>477</sup> Envestra forecast real labour cost increases of \$24.6 million (\$2011), and materials cost escalation of \$11.2 million for Envestra Victoria.<sup>478</sup> It forecast real labour cost increases of \$0.6 million (\$2011) and materials cost escalation of \$0.5 million for Envestra Albury.<sup>479</sup>

## 6.2.7 Other adjustments to forecast opex

Other adjustments to forecast opex include the costs which Envestra incurred in the 2008–12 access arrangement period but were not included in its base year estimate (Network Management Fee (NMF), incentive payments and network development costs) the costs which are not forecast using a base year roll forward method (ancillary reference services).

**Table 6.7 Other forecast opex by Envestra Victoria (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Network Management Fee	2.8	3.1	3.2	3.4	3.7	16.1
Incentive payments	0.6	0.6	0.6	0.6	0.6	3.0
Network development costs	3.2	3.2	3.6	3.5	3.7	17.2
Ancillary reference services	2.3	2.3	2.3	2.4	2.4	11.7
<b>Total</b>	<b>8.8</b>	<b>9.2</b>	<b>9.8</b>	<b>9.9</b>	<b>10.4</b>	<b>48.1</b>

Sources: Envestra Victoria access arrangement proposal.<sup>480</sup>

**Table 6.8 Other forecast opex by Envestra Albury (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Network Management Fee	0.1	0.1	0.1	0.1	0.1	0.5
Network development costs	0.1	0.1	0.1	0.1	0.1	0.6
Ancillary reference services	0.1	0.2	0.2	0.2	0.2	0.7
<b>Total</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>1.8</b>

Sources: Envestra Albury access arrangement proposal.<sup>481</sup>

<sup>476</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 105.

Envestra, *Albury access arrangement information*, 30 March 2012, p. 99.

<sup>477</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, pp. 105–106.

Envestra, *Albury access arrangement information*, 30 March 2012, p. 102.

<sup>478</sup> AER analysis of Envestra Victoria's opex forecasting model.

<sup>479</sup> AER analysis of Envestra Albury's opex forecasting model.

<sup>480</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 105.

<sup>481</sup> Envestra, *Albury access arrangement information*, 30 March 2012, pp. 93–99.

## 6.3 Submissions

The Energy Users Coalition of Victoria (EUCV) provided a submission setting out its concerns regarding the Victorian Distribution businesses' proposals.

The EUCV does not consider that Envestra's opex claim is sustainable but notes that because much of the information is confidential, its assessment is limited to an assessment of the information Envestra made public.<sup>482</sup> It also notes that a number of step changes are related to safety but are not the result of changes in legislation. It considers the costs of meeting these requirements are already embedded in base year opex.<sup>483</sup>

The EUCV also provided some specific comments on elements of Envestra's opex proposal<sup>484</sup> The AER's consideration of specific comments made by the EUCV are discussed in the relevant section of this chapter.

## 6.4 Assessment approach

The AER has limited discretion in assessing opex.<sup>485</sup> The AER is required to assess Envestra's forecast opex to decide whether it is satisfied the forecast opex complies with applicable criteria prescribed by the NGL and NGR.<sup>486</sup> The AER must approve each element of Envestra's proposed opex if satisfied it complies with, and is consistent with, the criteria prescribed in the NGL and NGR.

The AER assessed Envestra's proposed opex against the criteria governing opex established by r. 91 of the NGR, taking into account the forecasts and estimates criteria established by r. 74 of the NGR:<sup>487</sup>

### **91 Criteria governing operating expenditure**

- (1) Operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.
- (2) The AER's discretion under this rule is limited.

### **74 Forecasts and estimates**

- (1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.
- (2) A forecast or estimate:
  - (a) must be arrived at on a reasonable basis; and

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<sup>482</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012, p. 31.

<sup>483</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012, p. 31.

<sup>484</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012, pp. 29–32.

<sup>485</sup> NGR, rr. 91(2) and 40(2).

<sup>486</sup> NGR, rr. 91 and 40(2).

<sup>487</sup> NGR, rr. 74(2) and 91(2).

(b) must represent the best forecast or estimate possible in the circumstances.

The AER has amended Envestra's proposal to conform with rr. 74 and 91 of the NGR.

More generally, the AER has also compared historical expenditure to forecast expenditure to better understand the key drivers behind Envestra's proposed forecast.

The AER has also taken into consideration any benchmarking studies provided. Envestra has submitted benchmarking reports, from NERA and Economic insights, to support its forecast operating costs. Benchmarking studies of this nature are valuable inputs to the forecasting process. However the assumptions that underlie such studies are subjective and therefore have only been used as a supplement to other analyses.

In forming its views the AER has also considered advice from its commissioned consultants, namely, Deloitte Access Economics (DAE) on labour cost escalators.

## 6.5 Reasons for decision

The AER's draft decision is not to accept Envestra's forecast opex for Envestra Victoria and Envestra Albury.

The AER considers that several elements of Envestra's proposals do not comply with opex criteria or the criteria for forecasts and estimates.<sup>488</sup>

Discussion of the AER's reasoning is presented under the following headings:

- forecasting base year opex
- network growth
- step changes
- escalation of base year opex
- other adjustments
- debt raising costs and liquidity costs<sup>489</sup>

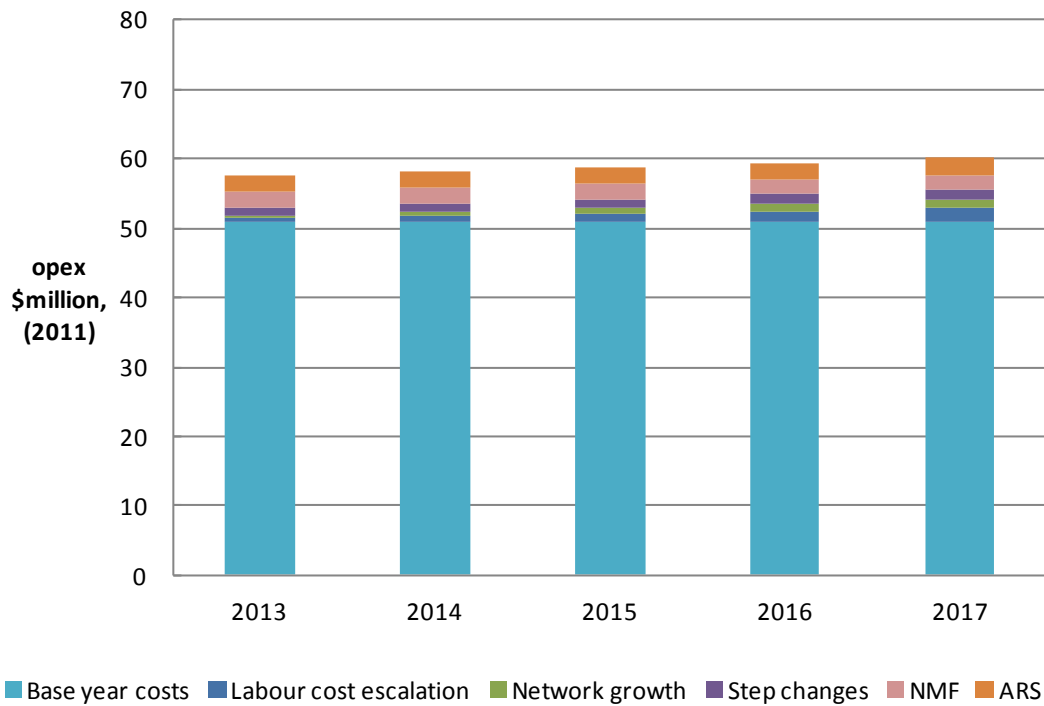
Figure 6.5 and Figure 6.6 disaggregate the AER's draft decision on opex for Envestra Victoria and Envestra Albury into different cost categories.

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<sup>488</sup> NGR, rr. 91(1) and 74(2).

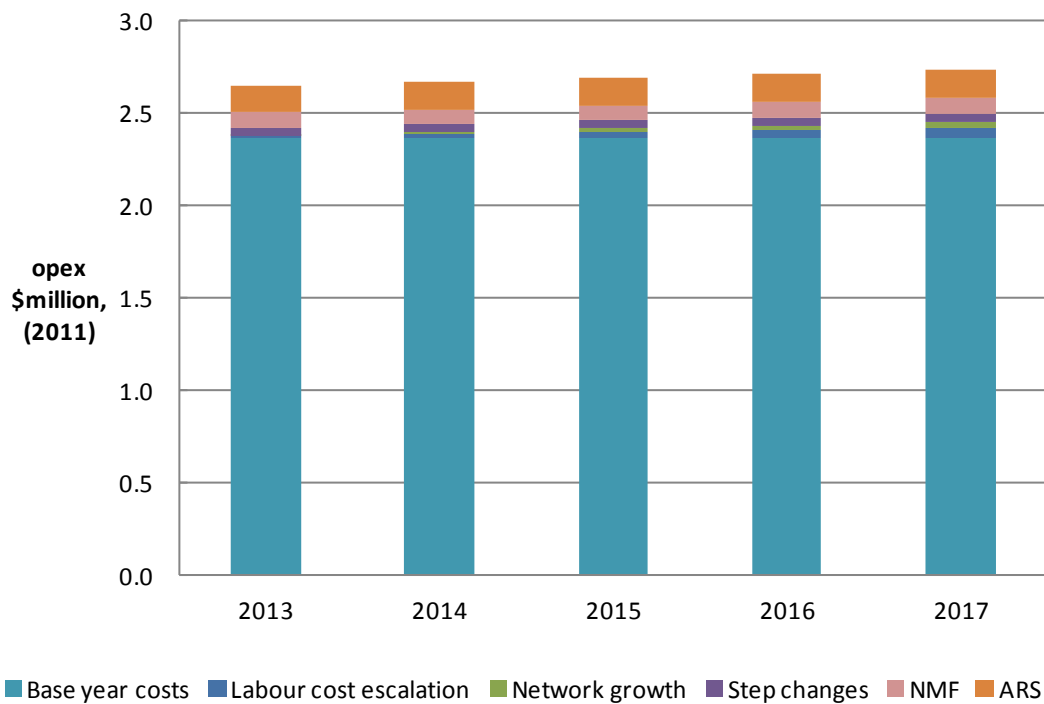
<sup>489</sup> These costs were not included in Envestra's forecast of opex in its access arrangement proposal but were included as forecast in Envestra's PTRM so the AER's assessment of these elements of Envestra's proposal is assessed in the opex chapter.

**Figure 6.5 Disaggregation of AER draft decision on Envestra Victoria's opex**



Source: AER analysis.

**Figure 6.6 Disaggregation of AER draft decision on Envestra Albury's opex**



Source: AER analysis.

## 6.5.2 Forecasting base year

Envestra has proposed a base year of 2011 for Envestra Victoria and Envestra Albury. The AER agrees that a forecast of opex based on actual expenditure in 2011 would lead to the best estimate of opex possible in the circumstances.

The AER's considers a forecast using a base year of 2011 to be appropriate for the following reasons:

- As many opex items are of a recurrent nature, actual costs incurred in 2011 are likely be a good indicator for the efficient costs to be incurred in the 2013–17 access arrangement period.
- In the 2008–12 access arrangement period, Envestra Victoria and Envestra Albury were both subject to an opex efficiency carryover mechanism (ECM). Under the ECM any rewards (or penalties) for opex 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. The AER considers that the opex ECM that applies to both Envestra Victoria and Envestra Albury would have provided incentives for Envestra to perform efficiently in the 2008–12 access arrangement period.

### Adjustments to base year costs

The AER has set its base year estimate on the basis of actual 2011 costs incurred by Envestra. There are some minor differences from Envestra's base year estimate which reflect differences between the actual opex reported in Envestra's regulatory accounts and the opex forecast in Envestra's access arrangement proposal.

In forming its base year estimate the AER has also made adjustments to the costs incurred by Envestra in 2011 to remove movement in provisions and licence fees to ensure forecast opex complies with r. 74 of the NGR.

The AER has not removed network development expenditure from its base year estimate.

The consideration of these issues is set out below.

### Licence fees

Envestra Victoria did not remove licence fees from its base year estimate for Envestra Victoria. As forecast licence fees are recovered through the price control mechanism it would be double counting if these costs are included in a base year estimate. The AER's base year estimate is \$0.1 million lower than Envestra's by correcting this error.

### Movement in provisions

A provision is a liability of uncertain timing or amount.<sup>490</sup> Provision accounts are used to set aside amounts for the payments of these liabilities for when they arise for settlement. A

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<sup>490</sup> AASB, 137: *Provisions, contingent liabilities and contingent assets*, section 10.



movement in provisions occurs when the amount set aside differs to the amount paid out. 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. The AER considers this necessary in setting forecast opex for Envestra, on the basis that movements in provisions:

- may be used to represent the reported accounts for Envestra differently from its underlying economic circumstances
- may prevent and distort the comparison of Envestra's expenditure on a consistent basis from year to year
- can be affected by a change in accounting standards despite expenditure remaining unchanged.

Based on the above, the AER considers removing the movement in provisions is a reasonable basis for forecasting opex and will produce the best opex forecast possible in the circumstances.<sup>491</sup>

Envestra's opex forecast for Envestra Victoria included movements in provisions. That is, its opex forecast was based on actual expenditure in 2011 as reported in its regulatory accounts. It was not adjusted to account for the small movement in provisions that occurred in 2011. For Envestra Albury it removed the increase in provisions charged to profit from the opex reported in its regulatory accounts for 2011. Thus it effectively forecast no expenses in the 2013–17 access arrangement period for liabilities paid from provision accounts.

The AER notes in calculating the carryover of efficiency gains and losses accrued under the opex incentive mechanism it removed the movement in provisions from Envestra's actual opex in accordance with attachment 7. To ensure Envestra Albury is not penalised twice for the increase in liabilities paid from provisions in 2011 the AER considers base opex should be treated the same. That is, base opex should reflect the liabilities paid from provisions in the base year. Doing so increased Envestra Albury's opex forecast by \$2.7 million (\$2011). Had the AER determined the negative carryover accrued by Envestra Albury in the 2008–12 access arrangement period should not be applied, it would not have adjusted its base year expenditure to include liabilities paid from provisions since these liabilities do not represent recurrent expenditure.

### **Network development expenditure**

Envestra proposed to remove network development costs from the 2011 base year.<sup>492</sup> Envestra considers that a base year roll forward model is not appropriate for forecasting network development expenditure. Instead Envestra developed a separate forecast of its network development costs.

The AER considers the correct operation of the efficiency carry over mechanism requires the base year for determining opex for the 2013–17 access arrangement period to be consistent with the actual opex used to calculate any carryovers arising from the efficiency sharing mechanism. If this is not the case, Envestra may not retain the gains from efficiency saving initiatives for five years. Because network development expenditure was included in both the

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<sup>491</sup> NGR, r. 74(2).

<sup>492</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 96.

actual and forecast opex, for the purposes of calculating the ECM, the AER does not consider it appropriate to remove this expenditure from the 2011 base year for the purpose of forecasting Envestra's 2013–17 opex allowance.

### **Unaccounted for Gas (UAFG)**

Unaccounted for gas (UAFG) refers to the difference between the measured quantity of gas entering the gas distribution system and the gas billed to customers. UAFG can arise because of metering errors; theft; inaccuracy in the conversion from quantity of gas measured to energy (reflecting discrepancies in temperature, pressure, heating value, altitude or the gas compressibility factor); and leakage.

Envestra's 2008–12 access arrangement includes an incentive mechanism in relation to UAFG, which encourages Multinet to reduce UAFG below a pre-determined benchmark set by the ESC in accordance with r. 317 of the NGR. Rule 317 is a provision in Part 19 of the NGR. Part 19 contains rules applicable to the operation of a declared distribution system. The Victorian gas distribution system is a declared distribution system. Accordingly, r. 317 regulates unaccounted for gas in that system.

Envestra submitted that Envestra assumes the current arrangement will continue and so no amounts are included in the forecast opex for UAFG in the 2013–17 access arrangement period.<sup>493</sup> Further Envestra proposed benchmark levels for UAFG, based on the actual level of UAFG in 2012, for the 2013–17 access arrangement period.<sup>494</sup>

Under r. 317 of the NGR AEMO must make procedures that require AEMO to calculate gas unaccounted for in a declared distribution system and to determine payments to be made between a Retailer and a Distributor for that gas. Under AEMO's Procedures,<sup>495</sup> AEMO calculates unaccounted for gas and such payments by reference to benchmarks set by the ESC. The UAFG benchmarks set by the ESC are contained in schedule 1 of the Victorian Gas Distribution System Code.

The Victorian Gas Distribution System Code only provides for the setting of UAFG benchmarks by the ESC up to 2012.<sup>496</sup> There is no provision for benchmarks to be set beyond this date by the ESC. There is no statutory power permitting the AER to set benchmarks.

In summary, UAFG is regulated under Part 19 of the NGR by AEMO and the current AEMO Procedures refer only to benchmarks set under the Gas Distribution System Code. The AER cannot set the benchmarks. As a result, the AER does not accept Envestra's proposal.

The AER notes Envestra did not propose a forecast opex amount for UAFG in the 2013–17 access arrangement period. The AER considers the Procedures under r. 317 of the NGR regulate unaccounted for gas and unaccounted for gas payments. As such any payments made under that mechanism should not be included in Envestra's opex forecast.

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<sup>493</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 94.

<sup>494</sup> Envestra, *Forecast UAFG 2013-17 Access Arrangement Period, March 2012*. p.6.

<sup>495</sup> AEMO Wholesale Market Distribution UAFG Procedures (Victoria), Version No. 2.

<sup>496</sup> Victorian Gas Distribution System Code, Schedule 1, Part C.

### 6.5.3 Network growth

Envestra stated that it will incur additional opex as the number of customers on the network increases. It forecast it would connect, on average, 12 000 net new volume customers to the network in each year of the 2013–17 access arrangement period. Envestra stated new customer connections would increase costs including for meter reading, data processing and billing.<sup>497</sup>

The Victorian Gas Distribution Code sets a benchmark incremental cost per new customer connection to be used in the economic feasibility test to determine whether a customer contribution is required.<sup>498</sup> Envestra used this benchmark rate of \$19.90 (\$2011) to forecast the incremental cost associated with new customer connections.<sup>499</sup>

The AER considers a prudent service provider acting efficiently, in accordance with accepted good industry practice, would require an increase in expenditure to account for network growth. It considers Envestra's forecast expenditure for incremental growth was arrived at on a reasonable basis and represents the best forecast possible in the circumstances and delivers a total opex forecast consistent with achieving the lowest sustainable cost of delivering pipeline services.<sup>500</sup>

However, the AER considers Envestra's proposed customer number forecasts were not arrived at on a reasonable basis and do not represent the best forecasts possible in the circumstances (see attachment 9). Consequently the AER considers Envestra's proposed opex for network growth should be adjusted to reflect the AER's draft decision on customer numbers.

### 6.5.4 Step changes

As discussed in section 6.2.5 Envestra proposed an increase in expenditure for Envestra Victoria and Envestra Albury in relation to expenditure it considers is not reflected in the base year.

The AER has reviewed Envestra's proposed step changes against r. 91 of the NGR. The AER's review has considered whether the proposed program of expenditure is consistent with r. 91 of the NGR; and whether an incremental increase above APA GasNet's base year opex is consistent with rr. 91 and 74 of the NGR.

Where the AER considers these step changes are consistent with r. 91 of the NGR, an incremental increase in base year opex that the AER considers is consistent with rr. 91 and 74 of the NGR is included in the total forecast opex.

In general the AER considers an increase in opex is not consistent with r. 91 of the NGR where the additional expenditure is intended to address a regulatory requirement or industry

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<sup>497</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 105.

<sup>498</sup> Essential Services Commission, *Gas distribution system code*, Version 9.0, 12 December 2008, p. 45.

<sup>499</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 105.

<sup>500</sup> NGR, rr. 74(2) and 91(1).

standard that has not changed since the 2008–12 access arrangement period. The AER considers that an increase in opex to implement an existing regulatory requirement may provide an incentive for service providers to spend less than required in meeting such requirements or standards. The AER considers this practice is not consistent with a prudent service provider acting efficiently in accordance with accepted good industry practice to achieve the lowest sustainable cost of delivering pipeline services.

In some cases, the AER considers that expenditure may be consistent with the requirements governing opex under r. 91 of the NGR but it considers that an incremental increase in the total opex allowance would not be consistent with rr. 74 or 91 of the NGR. For instance, if expenditure is intended to improve productivity, the AER would generally consider, unless circumstances indicate otherwise, that there is sufficient expenditure in base year opex in order to fund the program.

The AER's assessment of proposed step changes also recognises that the opex carried out by a service provider will not be exactly the same from year to year. For instance actual opex in the base year reflects both recurrent expenditure and non-recurrent expenditure. However, when forecasting opex for the 2013–17 access arrangement period the AER has not sought to estimate all non-recurrent expenditure incurred in the base year. Therefore to ensure a forecast of total opex that is consistent with r. 74 of the NGR, the AER also does not automatically consider there should be an incremental opex because the expenditure was not incurred in the base year but needs to be incurred in the 2013–17 access arrangement period. Instead the AER considers on case by case basis whether base year opex would be likely to be sufficient in order to fund the proposed program of opex or whether an incremental increase in opex is required.

A comparison between the step changes proposed by Envestra and the AER's draft decision is below in Table 6.9 and Table 6.10.

**Table 6.9 Envestra Victoria - proposal and AER draft decision (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	5.9	8.6	9.1	9.4	9.7	42.7
AER's draft decision	1.2	1.3	1.3	1.5	1.5	6.7
Difference	-4.7	-7.3	-7.8	-7.9	-8.2	-35.9

Source: AER analysis.

Note: Envestra proposal includes network development expenditure above base year expenditure, insurances and is corrected for errors. Consequently it does not reconcile with table 6.3 of Envestra's access arrangement information.

**Table 6.10 Envestra Albury - proposal and AER draft decision (\$million, 2011)**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	0.10	0.17	0.18	0.17	0.18	0.81
AER's draft decision	0.04	0.05	0.05	0.05	0.05	0.23
Difference	-0.05	-0.12	-0.14	-0.13	-0.13	-0.57

Source: AER analysis.

The following sections discuss the AER's draft decision in relation to each proposed step change.

### **Opex related to capex**

Envestra proposed five step changes for Envestra Victoria where the proposed opex was related to proposed capex. Projects classified as opex related to capex include:

- Regional SCADA
- Extensions to new towns
- Knowledge management
- IT–Road Map Initiative

Envestra forecast increased opex for Envestra Albury for all of the above projects except for extensions to new towns.

As discussed in attachment 3, the AER has approved the installation of SCADA capability in regional locations. The AER is satisfied that this improved capability would reduce the risks in responding to an emergency and an increase in opex would be required to give effect to an increased capability. The AER is satisfied that the incremental increase in opex proposed by Envestra to fund this proposal is consistent with rr. 91 and 74 of the NGR.

However, the AER's draft decision is not to increase opex for the extensions to new towns, knowledge management and the IT–Road Map Initiative proposals.

The AER's draft decision is not to approve the capex component for the extensions to new towns and the knowledge management proposals (see attachment 3). Therefore the AER is not satisfied an increase in opex would meet r. 91 of the NGR requirements.

While the AER has approved the capex component of the IT–Road Map Initiative, the AER is not satisfied that Envestra would incur an incremental increase in total opex from implementation of this project. Therefore the AER is not satisfied that an increase in opex related to the IT–Road Map initiative 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. As such, the AER does not consider a forecast of opex that includes a step change in opex for the IT–Road Map initiative would be a forecast of opex 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 delivering pipeline services.<sup>501</sup>

The AER accepts that at the project level Envestra will incur opex in implementing the IT–Road Map Initiative. However, by replacing or upgrading existing systems, the IT Road Map Initiative intends to improve Envestra's productivity. The AER expects that there will be both productivity gains and cost savings across Envestra from implementation of new IT systems. For this reason the AER does not consider an incremental increase in total opex above base year opex is consistent with rr. 74 or 91 of the NGR.

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<sup>501</sup> NGR, r. 74.

## One-off opex projects

Envestra has proposed five step changes for Envestra Victoria to opex for one-off opex projects. Projects classified as one-off opex projects include:

- holes in meter boxes
- pipeline integrity remediation works
- pipe saddle support repairs
- gas pipes in drains
- pipeline signage replacement

Of these projects, Envestra proposed increased opex for Envestra Albury for proposed pipeline integrity remediation works and pipeline signage replacement.

A discussion of each project and the AER's draft decision is discussed below.

### Holes in meter boxes

This project seeks to address a safety concern in relation to gas meter wall boxes installed in Envestra Victoria. Envestra consider there is a risk that with certain gas meter wall boxes gas could flow into the wall cavity and roof space of a building, creating a risk of fire or explosion. Envestra has proposed systematic inspection and rectification of certain installations to address this issue. It estimates that only 1 per cent of the total meter installations in Victoria are affected.<sup>502</sup>

The AER's draft decision is not to increase opex to fund this program. It is not satisfied that an increase in opex to rectify holes in meter boxes would be opex 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 delivering pipeline services.<sup>503</sup>

Envestra is required to ensure meter boxes comply with the Australian gas installation Standard AS 5601. Therefore if Envestra needs to undertake a program to rectify holes in meter boxes it would imply that Envestra is not currently compliant with the Australian standard. The AER considers that if Envestra was acting in accordance with good industry practice, it would have already taken measures to address this issue. The AER does not consider it would promote accepted good industry practice to provide additional funding for Envestra to comply with an industry standard with which Envestra should already be compliant.

### Pipeline integrity remediation works

Envestra owns 22 transmission pipelines across Victoria and southern NSW. Envestra plans to gather additional data on the integrity of the pipelines to confirm the design life and whether further information is required about the structural integrity of the pipelines (e.g inline

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<sup>502</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 99.

<sup>503</sup> NGR, r. 91(1).

inspections). Envestra has proposed expenditure for Envestra Victoria and Envestra Albury to implement this program.<sup>504</sup>

The AER is satisfied that an increase in opex to fund this proposal is consistent with r. 91 of the NGR and the forecast incremental opex in delivering this project is consistent with r. 74 of the NGR.

Under the Australian pipeline standard AS 2885.3 where it intends to operate a pipeline beyond its nominated design life then, prior to the expiry of the design life, Envestra must review the operating conditions and history of the pipeline, to determine its condition and any limits for continued operation. The AER agrees that due to the estimated age of Envestra's transmission pipelines, it is a prudent business decision for Envestra to begin reviewing the design and operating conditions of its pipelines. It agrees with Envestra that additional opex of the amount proposed by Envestra is required.

### **Pipe saddle support repairs**

Pipework saddle supports are used as supporting structures for various gas pipework and valves. Envestra plans to carry out a repair/rectification program for approximately 430 pipework saddle supports installed in Envestra Victoria to eliminate contact areas susceptible to corrosion.<sup>505</sup>

The AER's draft decision is not to increase opex to fund this program. It is not satisfied that an increase in opex for pipe saddle support repairs would be opex 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 delivering pipeline services.<sup>506</sup>

The AER accepts that in many cases, it may be a prudent business decision to treat corrosion in pipelines. However, pipelines must be inspected regularly in accordance with AS 2885.3. This standard also requires a licensee to take appropriate remedial action after an inspection identifies pipeline coating integrity which has been affected. Corrective action may include repair and renewal. The AER considers that corrosion in pipelines would be identified at the time of these regular inspections. The AER expects that if issues with pipe saddle supports were significant, a prudent service provider acting efficiently in accordance with good industry practice to achieve the lowest sustainable cost of delivering pipeline services would address corrosion in pipelines accordingly after such an inspection.

The AER also notes that some maintenance activities undertaken by a service provider are non-recurrent. Therefore the AER considers that Envestra's actual opex in 2011 is likely to include expenditure on some activities that may have been efficient in 2011 but do not need to be undertaken in the 2013–17 access arrangement period. Even if the AER agreed that an increase in pipe saddle support repairs was warranted in the 2013–17 access arrangement period, as there is likely to be some maintenance expenditure incurred in 2011 that was not recurrent expenditure, the AER is not satisfied that Envestra's base year opex does not already provide sufficient funding for this incremental increase in non-recurrent opex. Therefore the AER is also not satisfied that a forecast of opex that has been increased to

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<sup>504</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 100; Envestra, *Albury access arrangement information*, 30 March 2012, p. 95.

<sup>505</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 100.

<sup>506</sup> NGR, r. 91(1).

reflect increased expenditure for pipe saddle support repairs is a forecast of total opex that has been arrived at on a reasonable basis or is the best forecast possible in the circumstances.<sup>507</sup>

### **Gas pipes in drains**

The aim of this project is to minimise the risks from gas pipes installed in Envestra Victoria that have been laid through stormwater drains and sewers. Envestra state that there is a risk of explosion or fire where pipes have been laid through stormwater drains and sewers. It proposes to address this risk by training operators in the use of specialised equipment for internal pipe inspections and the targeted inspections of pipes, stormwater drains and sewers identified as a safety risk.<sup>508</sup>

The AER's draft decision is not to increase opex to fund this program. It is not satisfied that an increase in opex to address the risks associated with gas pipes in drains would be opex 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 delivering pipeline services.<sup>509</sup>

Envestra's opex for this proposal seeks to improve training of its staff to undertake investigations, inspect gas pipes to identify gas pipes inadvertently installed in drains, and undertake works to address any issues. While the AER recognises that a prudent service provider would need to undertake opex to reduce safety risks to an acceptable level, the AER is not satisfied that the opex for this program satisfies r. 91 of the NGR. The AER considers that if the risks associated with gas pipes installed in drains are material, a prudent service provider acting in accordance with good industry practice to achieve the lowest sustainable cost of delivering pipeline services would have taken immediate action to address this risk. It does not consider an increase in opex to fund a program to address a risk that should have already been addressed prior to the 2013–17 access arrangement period would be in accordance with good industry practice.

### **Pipeline signage replacement**

Pipeline markers are intended to alert people who are planning to work near a pipeline. Envestra has proposed expenditure to replace existing pipeline markers installed in Envestra Victoria and Envestra Albury to comply with the relevant Australian pipeline standard AS 2885.1.<sup>510</sup>

The AER's draft decision is not to increase opex to fund this program. The AER is not satisfied that the replacement of all existing pipeline markers in the 2013–17 access arrangement period would be opex 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 delivering pipeline services.<sup>511</sup>

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<sup>507</sup> NGR, r. 74(2).

<sup>508</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, p. 100.

<sup>509</sup> NGR, r. 91(1).

<sup>510</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 100; Envestra, *Albury Access arrangement information*, 30 March 2012, p. 95.

<sup>511</sup> NGR, r. 91(1).



Envestra's proposal is to replace all existing transmission pipeline markers. However, the Australian standard AS 2885.1 does not require these markers to be replaced. It only requires new transmission pipeline markers to conform to a new standard.

The AER considers that Envestra would only require an incremental increase in its total opex to undertake this project if there is persuasive evidence suggesting that Envestra's existing transmission markers need to be replaced—for instance if there is a new regulatory requirement that requires Envestra to replace its transmission markers. As the regulatory requirements in relation to existing transmission pipeline markers have not changed, and the AER is not aware of any persuasive evidence that demonstrates that Envestra's existing transmission pipeline markers fail to provide a sufficient warning to prevent such interference, the AER is not satisfied that an incremental increase in opex to fund this program is required. The AER therefore is not satisfied that an increase in opex to replace existing transmission markers in the 2013–17 access arrangement period would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice based on the applicable standard to achieve the lowest sustainable cost of delivering pipeline services.

### **Permanent changes in opex**

Envestra has proposed ten step changes for Envestra Victoria for permanent changes in opex. Projects classified as permanent changes in opex include:

- Cost of carbon
- Network monitoring and control
- Technical training
- Meter station charges
- Interval meter data management
- Graphical information system analyst
- Increased maintenance rates
- Increase in insurance costs
- Change in regulatory policy - reactive mains replacement
- National Energy Customer Framework

Envestra has also proposed increases in opex for Envestra Albury for six of the above projects. Forecast opex for Envestra Albury's is not affected by cost of carbon, meter station charges, increase in insurance costs or the proposed change in regulatory policy.

A discussion of each project and the AER's draft decision is discussed below.

### **Cost of carbon**

Envestra is now liable to purchase carbon credits to cover the fugitive emissions, calculated under the National Greenhouse Emissions Reporting Scheme framework. Envestra submitted

that the costs of administering this program should be included in Envestra Victoria's opex allowance.<sup>512</sup>

The AER accepts that administering the carbon scheme represents a step change in Envestra Victoria's opex as this expenditure was not incurred in the 2011 base year. The AER accepts that the level of expenditure proposed by Envestra is consistent with the level of opex which would 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.<sup>513</sup>

In reaching this decision the AER has compared Envestra's proposed costs against the administration costs approved in Envestra's pass through application (see below) of \$95,000 for the six month period of 1 July 2012 to 31 December 2012.<sup>514</sup> Envestra's proposed annual costs for the 2013–17 access arrangement period range from \$50,000 up to \$100,000 (after the introduction of carbon trading). The AER considers that Envestra's proposal is consistent with its pass through application and the additional cost Envestra forecasts to incur for the 2013–17 access arrangement period.

#### *Interaction with Envestra's pass through application*

The AER previously approved a pass through application in respect to carbon costs for Envestra. This pass through application covered the period 1 July 2012 to 31 December 2012. In this pass through application the AER approved total additional operating costs of \$95,000.<sup>515</sup> In accepting this forecast the AER noted that:

To mitigate any risk that the administrative costs proposed by Envestra are not incurred within the pass through period, but deferred to the next access arrangement period, the AER will have regard to the pass through amount when considering carbon pricing related administrative costs proposed by Envestra for the 2013–2017 access arrangement period. This will avoid any double counting of allowed costs to be recovered from customers.

The AER notes that Envestra did not specifically state whether it is seeking to recover one-off start-up costs in its pass through application. However the amount proposed in its access arrangement proposal is lower than in the pass through application indicating that Envestra has not included costs of this nature in its access arrangement proposal. As such, the AER considers that Envestra has proposed an increase costs in the 2013–17 access arrangement period for which it has not previously been funded.

#### **Network monitoring and control**

Envestra proposes to engage a contractor to provide a network pressure surveillance capability to facilitate immediate responses and appropriate actions to any SCADA pressure alarms. Envestra considers this would increase the quality, safety and reliability of services

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<sup>512</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 100.

<sup>513</sup> NGR, r. 91(1).

<sup>514</sup> AER, *Envestra (Vic) change in taxes event pass through application*, May 2012, p. 12.

<sup>515</sup> AER, *Envestra (Vic) change in taxes event pass through application*, May 2012, p. 15.

provided in response to an alarm, or in an emergency situation. Envestra propose an increase in opex for both Envestra Victoria and Envestra Albury to implement this project.<sup>516</sup>

The AER's draft decision is not to increase opex to fund this program. It is not satisfied that an increase in opex to implement this project would be opex 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 delivering pipeline services.<sup>517</sup>

Currently, the AER understands that Envestra's contractor, APA Group, is responsible for responding to SCADA initiated alarms. Outside of business hours the supervising officer responds to a paging system and logs on to a computer to investigate any alarms and determine the appropriate response.<sup>518</sup> Envestra's proposal, if implemented, would change the means by which the supervising officer is informed about SCADA pressure alarms outside of business hours. The AER is not satisfied that the means by which the supervising officer is currently informed about any SCADA pressure alarms is inadequate or that employing another contractor to notify the supervising officer of SCADA pressure alarms would materially improve the quality, safety and reliability of its response in an emergency. As such, the AER considers that an increase in opex to fund this program is not consistent with r. 91 of the NGR.

### **Technical training**

Envestra proposed a step change 'for the development of interactive online computer based training packages and e-courses to enhance learning and development of skills' for both Envestra Victoria and Envestra Albury.<sup>519</sup>

In its submission the EUCV argued that training is not a step change as it should result in reduced opex because staff are better equipped to carry out their tasks.<sup>520</sup>

The AER is not satisfied that a step change for technical training 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.<sup>521</sup> As such, the AER considers a forecast of opex that includes a step change in opex for technical training would not be a forecast of opex 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 delivering pipeline services.<sup>522</sup>

The AER accepts at a project level, it may be prudent for Envestra to incur additional opex for technical training. However, similar to views expressed by the EUCV, the AER considers the purpose of technical training is to improve the skills of its staff. The AER considers that improving the skills of Envestra's staff would be likely to deliver productivity improvements.

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<sup>516</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, pp. 101–102; Envestra, *Albury Access arrangement information*, 30 March 2012, p. 96.

<sup>517</sup> NGR, r. 91(1).

<sup>518</sup> Envestra, *Victorian Access arrangement information - Business Case VA06*, 30 March 2012, p. 2.

<sup>519</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 102.

<sup>520</sup> Envestra, *Albury Access arrangement information*, 30 March 2012, p. 96.

<sup>521</sup> Energy Users Coalition of Victoria, *Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals*, June 2012, p. 31.

<sup>522</sup> NGR, r. 74(2).

NGR, r. 91(1).

Therefore the AER considers that an incremental increase in opex to fund technical training is not consistent with rr.74 or 91 of the NGR.

### **Meter station charges**

Envestra pays APA GasNet for the operation of custody transfer meters (CTMs) at injection points to its network. Envestra are forecasting an increase in opex for Envestra Victoria due to charges for four new meter stations and increased charges relating to upgrades of four existing stations.

The AER is satisfied that Envestra will incur an increase in opex in relation to new meter stations and upgrades of existing stations.

However the AER does not consider that the entire proposed increase in expenditure by Envestra satisfies the opex criteria. The AER's draft decision is a 41 per cent reduction in the opex for meter station charges proposed by Envestra.

The AER's draft decision reflects the following findings:

- The AER has not approved the capex for the augmentation of the Dandenong to Crib Point network. As a result the AER does not consider charges for a new CTM at Dandenong would be consistent with r. 91 of the NGR.
- APA GasNet's current expectations of the planned upgrades are outlined in its metering strategy plan.<sup>523</sup> Based on information in this document, the AER is not satisfied that an upgrade of one meter station is consistent with APA GasNet's plans.<sup>524</sup> Therefore the AER is not satisfied that an increase in CTM charges related to this upgrade is consistent with r. 91 of the NGR.
- Based on information provided by APA GasNet about the forecast capital cost of meter station upgrades, the AER is not satisfied that the forecast increase in CTM charges associated with three meter station upgrades is, in accordance with r. 74(2)(b) of the NGR, the best estimate possible in the circumstances. The AER has forecast the annual CTM charges to be paid by Envestra for these upgrades at fifteen per cent of APA GasNet's forecast capital cost of these upgrades.

### **Interval meter data management**

Envestra has proposed an increase in opex for Envestra Albury and Envestra Victoria for monthly meter reading of large customer sites and for management of that data. Envestra state that the work was previously undertaken by AEMO and will now be undertaken by Envestra due to a change in AEMO's practices. This proposed step change has two components:

1. an increase in opex associated with monthly meter reading of large customer sites
2. an increase in opex related to a new system for managing metering data from large customer sites

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<sup>523</sup> APA GasNet, *Response to information request 15*, 27 June 2012, p. 4.

<sup>524</sup> APA GasNet, *Metering Strategy Plan 2011*, p. 24.

The AER is satisfied that Envestra will incur an increase in opex in relation to increased costs related to monthly meter reading at large customer sites.

However the AER does not consider that the entire proposed increase in manual meter reading by Envestra to be the best forecast of opex in the circumstances.<sup>525</sup> The AER's draft decision is a 25 per cent reduction in the opex for monthly meter reading proposed by Envestra.

The AER also does approve an increase in opex to fund increased opex for managing metered data. The AER is not satisfied that an increase in opex to fund this program is opex that would be incurred by a prudent service provide acting efficiently in accordance with accepted good industry practice to achieve the lowest sustainable cost of delivering pipeline services.<sup>526</sup>

Under Subdivision 4 of the NGR, Envestra is required to meet a number of requirements in regards to the performance of meters. Prior to the withdrawal of manual meter reading services by AEMO on 1 October 2011, Envestra detected errors in meters installed at large customer sites by relying on manual metered data provided by AEMO as well as telemetered data.<sup>527</sup>

There is no evidence that this approach was inadequate in detecting errors.

On this basis, the AER is satisfied that the withdrawal of manual meter reading services that were previously undertaken by AEMO will need to be reinstated by Envestra to satisfy its requirements in regards to maintain the accuracy of meter installations.

However, Envestra's forecast increase in opex reflected approximately twelve months of manual meter reading costs. Given that AEMO ceased to provide these services from 1 October 2011, the AER expects that Envestra acting efficiently in accordance with accepted good industry practice to achieve the lowest sustainable cost of delivering pipeline services would have provided these services from this date and would have incurred manual meter reading costs from October 2011 to December 2011. Therefore the AER would expect that Envestra would only require an increase in opex for manual meter reading for nine months. Therefore the AER considers that only a forecast increase in opex for nine months of manual meter reading costs would represent the best estimate possible in the circumstances.<sup>528</sup>

As the AER is satisfied from the evidence available to it that manual meter reading combined with telemetered data is satisfactory for identifying errors with metered data, other than restoring manual meter reading, the AER is not satisfied any additional increase in opex is required.

The increase in opex related to a new system for managing metered data does not appear to be related to the withdrawal of AEMO's manual meter reading services. Therefore if manual meter reading combined with telemetered data is inadequate for identifying errors with metered data, the AER would expect evidence to suggest that Envestra did not meet its

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<sup>525</sup> NGR, r. 74(2).

<sup>526</sup> NGR, r. 91(1).

<sup>527</sup> Envestra, *Response to AER information request 40*, 7 August, 2012.

<sup>528</sup> NGR, r. 74(2)(b).

regulatory obligations in the 2008–12 access arrangement period, or some other evidence that suggests Envestra's current approach for addressing these errors is of an inferior quality to accepted good industry practice, and a reasonable explanation as to why Envestra has not already taken measure to address this deficiency. No evidence presented by Envestra suggests otherwise.

### **Graphical information systems analyst**

Envestra considers its graphical information system (GIS) resources to be limited. Envestra has proposed an additional opex allowance to fund a full time GIS Analyst. The additional resource would be allocated to both Envestra Victoria and Envestra Albury.<sup>529</sup>

The AER is not satisfied that a step change in opex to fund a GIS analyst 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.<sup>530</sup> As such, the AER considers a forecast of opex that includes a step change in opex for a GIS analyst would not be a forecast of opex 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 delivering pipeline services.<sup>531</sup>

The AER considers there will be both productivity gains and cost savings to Envestra from employment of a full-time GIS analyst. Productivity gains would be expected as a GIS expert would be able to undertake GIS-related work in a timelier manner than the resources currently devoted to these tasks. Further productivity gains would be expected from training provided to other staff. Cost savings would be expected as a result of a reallocation of resources currently devoted to collecting GIS data. Given these likely impacts the AER considers that an increase in opex would not be consistent with rr. 74 or 91 of the NGR.

### **Increased maintenance rates**

Maintenance works for both Envestra Victoria and Envestra Albury are undertaken by an external service provider under contract. The contract expires in April 2013. The contract covers:

- leak repairs (first response and mains and services repairs)
- preventative maintenance (such as corrosion protection, leakage survey, pipeline patrol and inspections )
- third party/retailer/customer requests (such as asset locations, poor supply investigations, relighting appliances, high account investigations).<sup>532</sup>

Envestra proposed a step change for both Envestra Victoria and Envestra Albury for forecast cost increases when this contract is retendered.<sup>533</sup>

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<sup>529</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 103; Envestra, *Albury Access arrangement information*, 30 March 2012, p. 97.

<sup>530</sup> NGR, r. 74(2).

<sup>531</sup> NGR, r. 91(1).

<sup>532</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 103.

Envestra, *Albury Access arrangement information*, 30 March 2012, p. 97.

<sup>533</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 103.

The AER is not satisfied the forecast cost increase was arrived at on a reasonable basis.<sup>534</sup>

Maintenance costs are comprised mostly of labour. The labour portion of Envestra's opex forecast is escalated for forecast real labour cost increases. Consequently, the proposed step change double counts expected real labour cost increases. The AER considers the best forecast available in the circumstance is Envestra's base year maintenance expenditure, escalated for forecast real labour cost increases. The AER is satisfied that this is a forecast arrived at on a reasonable basis.

### **Increase in insurance costs**

Envestra proposed an increase in expenditure for Envestra Victoria for forecast real insurance cost increases based on estimates provided by its insurance broker.

The AER is not satisfied the proposed expenditure increase would 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.<sup>535</sup>

Envestra's insurance broker forecast Envestra's insurance costs based on insured values and revenues provided to it by Envestra. The AER notes these values were not consistent with the capex program and revenues proposed by Envestra.

Regardless of this, forecast real cost increases are not required because Envestra will be compensated for the actual insurance cost increases included in CPI. Under the tariff variation mechanism, Envestra's Weighted Average Price Cap will increase by CPI minus X each year. Insurance costs are included in the CPI basket and the contribution of insurance costs to Envestra's total opex is consistent with the weighting in the CPI basket.<sup>536</sup> Therefore Envestra will be compensated for any increase in insurance costs when its base year costs are escalated by CPI. Including a step change for increased insurance costs would double count the effect of price increases. Consequently Envestra's forecasts insurance costs have not been arrived at on a reasonable basis and do not represent the best estimate possible in the circumstances.<sup>537</sup>

### **Changes in regulatory accounting policy – reactive mains replacement**

Reactive replacement of mains occurs when there are urgent safety or supply issues. Envestra's regulatory accounting policy has been to capitalise all mains replacement works. Envestra proposed to align this policy with that of its other networks, where reactive replacement is recognised as repair work and expensed.<sup>538</sup> Consequently Envestra proposed a step change for Envestra Victoria for reactive replacement expenditure, which is not included in its base year opex.

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<sup>534</sup> Envestra, *Albury Access arrangement information*, 30 March 2012, p. 97.

<sup>535</sup> NGR, r. 74(2).

<sup>536</sup> NGR, r. 74.

<sup>537</sup> Australian Bureau of Statistics, *Consumer price index, 16th series weighting pattern*, catalogue number 6471.0, 2011.

<sup>538</sup> NGR, r. 74(2).

<sup>539</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 103.

For the reasons set out in attachment 3 and appendix A, the AER considers reactive mains replacement should remain as capex. As such, the AER has assessed Envestra's proposed reactive mains replacement expenditure against the new capex criteria rather than the criteria governing opex, and has not included Envestra's proposed opex for reactive mains replacement in its forecast opex for the 2013–17 access arrangement period.

### **National Energy Customer Framework (NECF)**

The NECF is a new regulatory framework that seeks to harmonise the ways customers interact with retailers and distributors across the gas and electricity sectors. The new framework will alter some of the obligations of Envestra and Envestra submitted that this will result in an increase in its opex over the 2013–17 access arrangement period for Envestra Victoria and Envestra Albury.<sup>539</sup>

The AER considers that Envestra's proposed step change in relation to the introduction of the NECF does not reflect expenditure which would be incurred by a prudent and efficient service provider. The AER has reached this conclusion on the basis of a decision by the Victorian Government, announced on 13 June 2012, to delay the introduction of the NECF in Victoria.<sup>540</sup> The Victorian Government also announced it would explore opportunities to align state retail and consumer protection arrangements with the national framework where it does not result in lower standards.<sup>541</sup>

At the time Envestra submitted its access arrangement proposal the NECF was due to commence in Victoria on 1 July 2012. The calculation of the additional costs put forward in Envestra's access arrangement proposal was predicated on the NECF commencing on this date. However, at this stage it is uncertain when or in what form the NECF will commence in Victoria and so the AER is unable to conclude that the costs proposed by Envestra will reflect the prudent and efficient cost that it will incur in the 2013–17 access arrangement period.

Accordingly the AER considers that NECF related expenditure can best be assessed as a pass through application once the relevant legislation is passed in Victoria. The AER considers it appropriate to include a NECF specific pass through in Envestra's access arrangement. As discussed in attachment 11 this NECF specific pass through is not subject to a materiality clause.

### **Network development expenditure**

Envestra has proposed expenditure of \$17.2 million (\$2011) for network development costs for Envestra Victoria and \$0.6 million (\$2011) for Envestra Albury. These costs include the costs of processing gas connection orders and mains extension requests (including the costs of coordinating those capital works) and the marketing of gas aimed at increasing network connections and usage.<sup>542</sup>

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<sup>539</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 151.

<sup>540</sup> <http://www.premier.vic.gov.au/media-centre/media-releases/4155-victorian-government-defers-national-energy-retail-law-to-safeguard-consumer-protections.html>.

<sup>541</sup> <http://www.premier.vic.gov.au/media-centre/media-releases/4155-victorian-government-defers-national-energy-retail-law-to-safeguard-consumer-protections.html>.

<sup>542</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 95.



Envestra submitted that this activity was curtailed in the 2008–12 access arrangement period due to the global financial crisis and accordingly the amount of expenditure incurred by Envestra in the 2011 base year is not reflective of prudent and efficient expenditure.<sup>543</sup> Envestra submitted that for this reason it is not appropriate to apply a base year roll-forward approach to forecast network development expenditure. Envestra submitted that it has developed forecasts of the costs of its network development plan over the 2013–17 access arrangement period from a zero base.<sup>544</sup> Envestra proposed to expand its network development expenditure over the 2013–17 access arrangement period.

In its submission the EUCV argued network development expenditure should not be allowed at all as it would seek to increase energy consumption which is acting in the opposite direction to government programs aimed at encouraging consumers to use less energy.<sup>545</sup>

The AER's draft decision is not to approve Envestra's proposal to forecast its network development expenditure using a zero base approach. As discussed in section 6.5.2 the AER considers that the operation of the ECM requires the base year opex to be consistent with the opex used to determine any carryover amounts under the ECM. Accordingly the AER has included actual 2011 network development expenditure in its base year estimate.

The AER then examined whether a step change above this base year expenditure complies with rr. 74 and 91 of the NGR. The AER does not consider that Envestra's opex was forecast on a reasonable basis or that this would be opex 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 delivering pipeline services.<sup>546</sup>

The AER notes that Envestra's forecast costs are highly dependent on assumptions in the take-up of its incentive payments.<sup>547</sup> Envestra forecasted an increase in the take up rate of the incentive payments of 35 per cent in 2012 and 10 per cent per annum thereafter.<sup>548</sup> Envestra indicated that this assumption was developed taking into account the experience of a similar program in South Australia.<sup>549</sup> However, Envestra noted that it does not yet have data to support the forecast take up rate in Victoria.<sup>550</sup>

The AER also notes that Envestra's proposed step change in network development expenditure is discretionary in nature.<sup>551</sup> As such, Envestra had the opportunity to undertake a prudent and efficient level of network development expenditure in the 2008–12 access arrangement period. The AER also notes that the efficiency sharing mechanism provides a continuous incentive to reduce opex to a prudent and efficient level. The AER considers that

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<sup>543</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 97.

<sup>544</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 97.

<sup>545</sup> Energy Users Coalition of Victoria, *Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals*, June 2012, p. 31.

<sup>546</sup> NGR, rr. 74(2) and 91(1).

<sup>547</sup> Envestra makes incentive payments to end-use consumers, or key market influencers including appliance retailers and/or installers. These payments are made for each additional gas appliance or new service installed.

<sup>548</sup> Envestra, *response to information request 7*, 22 June.

<sup>549</sup> Envestra, *response to information request 7*, 22 June.

<sup>550</sup> Envestra, *response to information request 7*, 22 June.

<sup>551</sup> This is demonstrated by the manner in which Envestra curtailed this expenditure in the 2008–12 access arrangement period.

due to the discretionary nature of this expenditure and the operation of the ECM, that Envestra's actual level of network development expenditure was prudent and efficient, given the circumstances it faced at the time. The AER considers that due to the discretionary nature of the spending and the uncertainty regarding the take-up, that Envestra's forecast does not comply with rule 74 of the NGR. Accordingly, a step change for this expenditure would not comply with r. 91 of the NGR and the step change amount would not reflect prudent and efficient expenditure.

However, the AER notes that Envestra has stated that its network development expenditure was curtailed due to the global financial crisis, Envestra stated:

For this reason, it was difficult to rapidly cut these [safety related] expenditures at the onset of the Global Financial Crisis. Network Development Expenditure was cut as it was one of the few areas where cuts could be rapidly implemented without triggering compliance issues.<sup>552</sup>

As such the AER has considered whether Envestra's network development expenditure, while prudent and efficient in the 2008–12 access arrangement period is lower than may be prudent and efficient in the 2013–17 access arrangement period.

The AER considers that the global financial crisis is likely to have placed an even greater incentive on Envestra to reduce its opex to a prudent and efficient level. This strong incentive is a further reason to conclude that Envestra's historical expenditure on this program was a prudent and efficient amount given the circumstances Envestra was facing at that time. The AER notes that Envestra's expenditure was substantially lower than forecast during the 2008 to 2010 period.

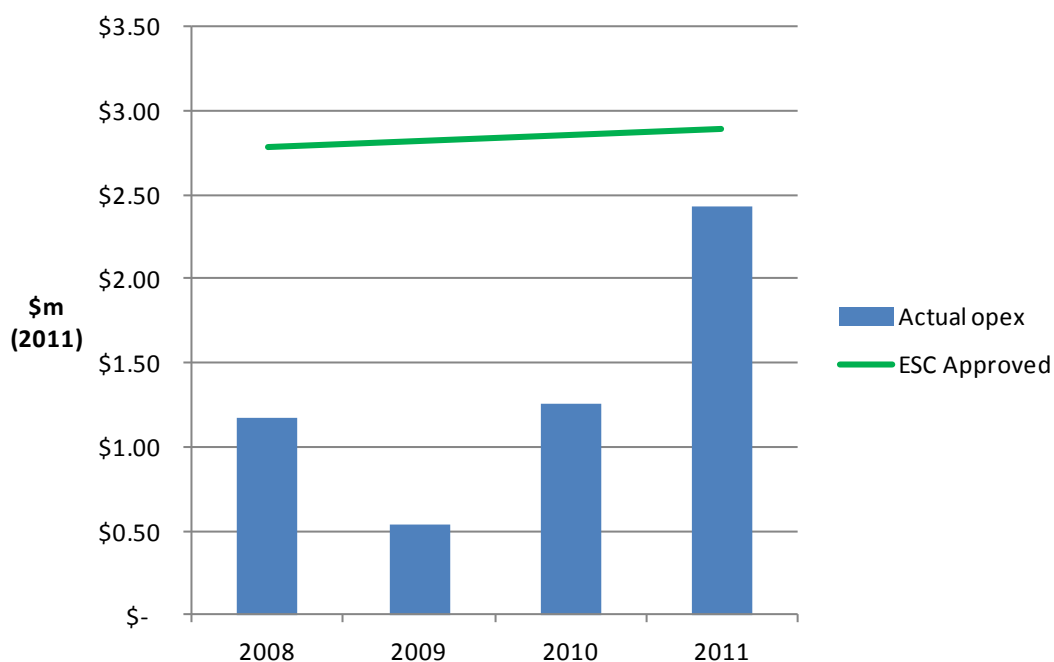
However, as illustrated by Figure 6.7 by 2011 Envestra's network development expenditure had significantly rebounded and the gap between Envestra's expenditure on network development and the amount approved by the ESC had reduced. The AER considers this evidence that the adverse business conditions which caused the need to curtail this expenditure had materially improved. As such, the AER considers that Envestra's expenditure in 2011 reflects a prudent and efficient level of expenditure in the 2013–17 access arrangement period. The AER considers that a step change increased in network development expenditure does not comply with r. 91 of the NGR.

Finally, the AER notes that Envestra has received a benefit from reduced expenditure in the 2008–12 access arrangement period. The AER considers that Envestra may use this underspend to fund an expansion of its network development plan if it considers this appropriate.

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<sup>552</sup> Envestra, Network Development Plan 2013–17, p. 8.

**Figure 6.7 Envestra approved and actual network development expenditure**



Source: AER analysis.

### Easement Vegetation Management

Envestra has proposed expenditure of \$10.2 million (\$2011) for easement vegetation management costs for Envestra Victoria and \$0.4 million (\$2011) for Envestra Albury. These costs include:

- engagement of vegetation contractors to clear the highly vegetated areas and maintain the cleared pipeline corridors on a three to five year program
- Net Gain and Offset Management Plan costs associated with the acquisition of offset sites and maintenance program for each site for a ten year period.
- internal resources for managing and facilitating the environmental assessment and vegetation clearance program.<sup>553</sup>

Envestra stated that this project is required by AS/NZS 2885.3-2001 and there is no other option but to proceed with the vegetation management program as proposed to ensure compliance with statutory obligations.<sup>554</sup> The AER notes that AS/NZS 2885.3-2001 has been in place since 2001 and so does not represent a new statutory obligation. Accordingly, the AER queried the extent of vegetation management currently undertaken by Envestra and whether Envestra is currently compliant with AS/NZS 2885.3-2001.<sup>555</sup> Envestra stated that:

While it could be argued that Envestra is currently not compliant with AS2885.3, the impact of any such non-compliance on the safety of consumers and the public has so far

<sup>553</sup> Envestra, *Victorian Access arrangement information - Business Case VA33*, 30 March 2012, p. 1.

<sup>554</sup> Envestra, *Victorian Access arrangement information - Business Case VA33*, 30 March 2012, p. 1

<sup>555</sup> Envestra, *Response to AER information request 35*, 3 August 2012.

remained within tolerable levels. However, and as explained further in this response, Envestra has commenced planning works to remedy this situation before the risk to the safe operation of the pipeline increases to unacceptable levels.<sup>556</sup>

The AER notes that \$8.5 million (\$2011) of Envestra's proposed expenditure relates to the initial clearance of the pipelines and associated environmental net gain offset costs.<sup>557</sup> The AER considers that this initial clearance is required for Envestra to catch-up and become compliant with its regulatory obligations. Envestra further proposes an ongoing maintenance program to ensure ongoing compliance with these obligations. The AER also notes that Envestra has indicated that its current opex on vegetation management is \$0.1 million per annum, however, Envestra states that this is inadequate.<sup>558</sup>

The AER does not consider that the expenditure required for Envestra to become compliant with its regulatory obligations complies with r. 91 of the NGR as it 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. The AER considers that a prudent and efficient service provider would have undertaken vegetation management programs from 2001 (when AS/NZS 2885.3-2001 was introduced) onwards to ensure compliance with its regulatory obligations. As such, a prudent and efficient service provider would not require a step change in its opex allowance in the 2013–17 access arrangement period to enable it to become compliant with its regulatory obligations. The AER does not approve a step change for the expenditure required to clear overgrown pipelines and to bring Envestra into compliance with its regulatory obligations.

However, the AER considers that a prudent and efficient service provider would have already instituted an annual vegetation management program to ensure ongoing and continued compliance with its regulatory obligations. As such, the AER considers that it is appropriate that Envestra receives a sufficient opex allowance to fund this expenditure.

The AER has examined whether Envestra's base year opex allowance contains sufficient opex allowance for Envestra to fund an ongoing vegetation management program. The AER notes that Envestra has indicated that it has historical vegetation management costs of approximately \$0.1 million per annum (\$2011)<sup>559</sup>, which the AER considers is included in Envestra's base year opex allowance. The AER accepts that that this is insufficient for Envestra to undertake a prudent and efficient vegetation management program. While Envestra should have already been undertaking a more rigorous vegetation management program, the AER accepts that Envestra's base year opex does not include an amount to allow Envestra to undertake this program. Accordingly the AER considers that Envestra should be provided with a step change to undertake a prudent and efficient vegetation management program. The AER approves as a step change \$0.7 million (\$2011), which is the amount proposed for the ongoing program for the maintenance of the cleared pipelines less Envestra's historical expenditure on vegetation management, which is already included in Envestra's base year allowance.

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<sup>556</sup> Envestra, *Response to AER information request* 35, 3 August 2012.

<sup>557</sup> Envestra, *Response to AER information request* 10, 1 July 2012.

<sup>558</sup> Envestra, *Response to AER information request* 10, 1 July 2012.

<sup>559</sup> Envestra, *Response to AER information request* 10, 1 July 2012.

## 6.5.5 Escalation of base year opex

### Real cost escalators

The AER is not satisfied Envestra's proposed real labour and materials cost escalators have been arrived at on a reasonable basis or represent the best possible forecast of labour and materials cost escalation over the 2013–17 access arrangement period. Appendix C contains the AER's more detailed consideration of the real cost escalators proposed by Envestra.

Table 6.11 outlines the impact of the AER's draft decision on real cost escalators for Envestra Victoria.

**Table 6.11 Envestra Victoria proposal and AER draft decision on real cost escalation**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	1.6	6.4	9.0	8.9	9.8	35.8
AER's draft decision	0.4	0.7	1.1	1.4	1.8	5.4
Difference	-1.3	-5.7	-7.9	-7.5	-8.0	-30.3

Source: AER analysis.

Table 6.12 outlines the impact of the AER's draft decision on real cost escalators for Envestra Albury.

**Table 6.12 Envestra Albury proposal and AER draft decision on real cost escalation**

	2013	2014	2015	2016	2017	Total
Envestra's proposal	-0.01	0.16	0.26	0.29	0.41	1.10
AER's draft decision	0.01	0.02	0.04	0.05	0.06	0.17
Difference	0.02	-0.13	-0.22	-0.25	-0.35	-0.93

Source: AER analysis.

## 6.5.6 Other adjustments to forecast opex

As discussed in section 6.2.6 Envestra also proposed adjustments to its forecast opex to add costs included in its base year estimate (Network Management Fee, incentive payments and network development costs) and the costs which are not forecast using a base year roll forward method (ancillary reference services).

This section discusses the AER's draft decision on these issues.

## Network Management Fee and incentive payments

Envestra outsources its network operating and maintenance activities to the APA Group for both Envestra Victoria and Envestra Albury, Envestra makes a number of payments to the APA Group, including.<sup>560</sup>

- reimbursement of reasonable costs (direct and indirect) incurred by the APA Group in the performance of its obligations
- a NMF equal to 3 per cent of network revenue
- incentive payments – payable for achieving reductions in costs of new connections and reductions in controllable costs per GJ.

As discussed in appendix E the AER accepts that a NMF of 3 per cent of Envestra's revenue is consistent with the opex criteria but does not consider a forecast of opex that includes incentive payments to be a forecast arrived at on a reasonable basis.

As the NMF is equal to 3 per cent of actual revenue, and the AER has amended Envestra's total revenue forecasts for both Envestra Victoria and Envestra Albury, the AER has approved a lower forecast of the NMF than the forecast submitted by Envestra. To meet the relevant NGR criteria the AER forecasts that the portion of the NMF allocated to opex should be \$11.8 million for Envestra Victoria and \$0.4 million for Envestra Albury. The AER has not included a forecast of incentive payments in its opex forecast.

## Opex for ancillary reference services

Envestra proposed the same ancillary reference services that applied in the 2008–12 access arrangement period.<sup>561</sup>

The AER has reviewed the opex forecasts for ancillary reference services provided by Envestra and is satisfied that the forecasts were arrived at on a reasonable basis and represent the best forecast possible in the circumstances.<sup>562</sup>

## Regulatory costs

Envestra has proposed regulatory costs be forecast using a base year approach and accordingly proposed \$1.3 million per annum across the access arrangement period. The AER requested further information regarding this amount as there was a discrepancy between this amount and the 2011 regulatory costs of \$1.2 million per annum reported in Envestra's Regulatory Information Notice.<sup>563</sup> Envestra advised the AER that the amount of \$1.3 million included \$0.1 million in licence fees and that this amount should have been excluded for the purposes of Envestra's base year estimate.<sup>564</sup> The AER concurs and considers that to meet r. 74(2) of the NGR this amount should be removed from Envestra's opex forecast in the 2013–17 access arrangement period.

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<sup>560</sup> Envestra, *Victorian Access arrangement information March 2012*, pp. 68–39; Envestra, *Albury Access arrangement information March 2012*, pp. 64–65.

<sup>561</sup> Envestra, *Victorian Access arrangement information*, March 2012, p. 50.

<sup>562</sup> NGR, r. 74(2).

<sup>563</sup> AER, Information request 6, June 2012.

<sup>564</sup> Envestra, *Response to AER information request 6*, p. 8.

## 6.5.7 Debt raising costs and liquidity costs

### Debt raising costs

Debt raising costs are transaction costs incurred each time debt is raised or refinanced. These costs may include underwriting fees, legal fees, company credit rating fees and other transaction costs. Debt raising costs are an unavoidable aspect of raising debt that would be incurred by a prudent service provider acting efficiently. Accordingly, the AER provides an allowance to recover an efficient amount of debt raising costs.

The AER's approach to debt raising costs is based on a report from ACG commissioned by the ACCC in 2004.<sup>565</sup> The AER has updated the ACG approach with more recent market data. The AER most recently updated this market data in August 2011. The approach uses a five year window of up to date bond data to reflect current market conditions.

This method provides estimates of debt raising costs that would be incurred by a prudent service provider, acting efficiently. This is because the ACG approach:

- First, identifies the types of transaction costs that a prudent service provider acting efficiently would incur in raising debt.
- Second, quantifies the level of these costs, taking into account the specific circumstances of the service provider, with reference to market rates for the relevant services.

It follows that, this should, in turn, estimate a debt raising cost forecast that provides Envestra with a reasonable opportunity to recover at least its efficient transaction costs in raising finance.<sup>566</sup>

The ACG method involves calculating the benchmark bond size, and the number of bond issues required to rollover the benchmark debt share (60 per cent) of the RAB. The AER's standard approach is to amortise the upfront costs that are incurred using the relevant nominal vanilla WACC over a ten year amortisation period. This is then expressed in basis points per annum (bppa) as an input into the post tax revenue model (PTRM). The AER's approach recognises that credit rating costs can be spread across multiple bond issues, which lowers the benchmark allowance (as expressed in bppa) as the number of bond issues increases.

Envestra proposed debt raising costs of 15 bppa, or \$6.0m (real, 2012) for Envestra Victoria and \$0.16m (real, 2012) for Envestra Albury over the access arrangement period. The debt raising costs were based on a September 2010 Deloitte report (the Deloitte report).<sup>567</sup> Envestra requested that Deloitte provide estimates for the benchmark efficient service provider accessing two types of debt funding: domestic bonds (Medium Term Notes (MTN)) and syndicated bank debt.<sup>568</sup> Envestra stated that given the significant changes in debt

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<sup>565</sup> Simply because the report was written in 2004 does not make it obsolete, Australian Competition Tribunal, Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14 (26 July 2012), paragraphs 314-330.

<sup>566</sup> NEL, s. 24.

<sup>567</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 163. Envestra, *Albury Access arrangement information*, 30 March 2012, p. 147.

<sup>568</sup> Deloitte, *Debt Financing Costs*, September 2010, p. 3.

markets since 2004, the Deloitte report provides a more accurate estimate of the current costs associated with debt financing than the 2004 ACG report—which the AER has relied on in recent decisions.<sup>569</sup>

For the reasons below, the AER does not accept Envestra's debt raising costs method or bbpa rate. The debt raising cost proposed by Envestra are not the costs 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 delivering pipeline services.<sup>570</sup> Also, the forecast costs were not arrived at on a reasonable basis and do not represent the best forecast or estimate possible in the circumstances. As such, the AER considers that Envestra's debt raising costs are not consistent with the opex criteria or revenue and pricing principles, unlike the costs calculated based on the AER's established method. The AER has therefore applied its established debt raising cost method.

### **September 2010 Deloitte Debt Financing Costs report**

Envestra proposed debt raising costs of 15 bbpa, based on a September 2010 Deloitte report (the Deloitte report).<sup>571</sup> The 15 bbpa debt raising cost proposal was based on a five year refinance cycle for a medium term note (MTN). The AER recognises that the Deloitte report submitted by Envestra is the same report that Envestra submitted during the 2011–16 South Australia access arrangement initial proposal and 2011–16 Queensland access arrangement initial proposal.<sup>572</sup> In those submissions, Envestra proposed debt raising costs, as derived in the Deloitte report, of 20.3 bbpa—based on annualised median debt raising costs for the benchmark 10 year corporate bond of 10.1 bbpa and 10.2 bbpa to cover the cost of having short-term bank debt. Although Envestra's proposed debt raising cost bbpa is not the same figure as proposed in the QLD and SA access arrangement proposals, the two figures are both derived from the same Deloitte report and are fundamentally based on the same method.<sup>573</sup>

In the SA and QLD draft decisions, the AER did not agree with the method proposed by the Deloitte report. Envestra agreed to adopt the AER's method in its revised access arrangement proposal.<sup>574</sup> The AER considers that it has comprehensively evaluated the shortcomings of the Deloitte method and those criticisms continue to apply. Envestra has not provided information addressing those criticisms in its current access arrangement proposals.

#### *Assessment of the Deloitte report*

As noted by the AER in the Envestra SA and QLD draft decisions, the AER's standard method for estimating debt raising costs is based on the 2004 ACG report. While the ACG report was commissioned in 2004, its findings on the general methodology are still relevant.

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<sup>569</sup> Envestra, *Victoria Access arrangement information*, 30 March 2012, 163.

<sup>570</sup> NGR, r. 91.

<sup>571</sup> Envestra, *Victorian Access arrangement information*, 30 March 2012, p. 163.

<sup>572</sup> Envestra, *South Australian Access Arrangement Information Public Version*, 1 October 2010, p. 147. Envestra, *Queensland Access Arrangement Information (Public Version)*, 1 October 2010, p. 139.

<sup>573</sup> The two differences being that in this Victorian Access proposal, Envestra has only proposed debt raising costs for MTN and not also short term bank debt, and Envestra has proposed a five year refinance cycle rather than a 10 year cycle.

<sup>574</sup> AER, *Envestra LTD, Access arrangement proposal for the SA gas network 1 July 2011 – 30 June 2016*, June 2011, p. 85. AER, *Envestra LTD, Access arrangement proposal for the QLD gas network 1 July 201 – 30 June 2016*, June 2011, p. 77.



The method uses a five year rolling window of up to date bond data in order to reflect current market conditions.<sup>575</sup> The individual cost components have been indexed to accommodate inflation.<sup>576</sup> Further, the AER has refined the ACG method over time to reflect changing circumstances.<sup>577</sup> The AER considers that is incorrect for Envestra to state that the Deloitte report is more accurate because there have been 'significant changes in debt markets since 2004'.<sup>578</sup> The AER's standard method already accounts for any such changes.

There are several reasons to conclude that the AER's method produces a better estimate than that derived in the Deloitte report. The Deloitte report:

- makes no allowance for multiple bond issues,<sup>579</sup> when the AER's method correctly recognises that because multiple issues spread fixed costs they reduce the unit rate<sup>580</sup>
- does not adjust for the time value of money,<sup>581</sup> when the AER's method appropriately amortises upfront costs<sup>582</sup>
- uses the median bond issue size from 2004 (\$175m),<sup>583</sup> instead of the more up to date estimates (\$250m) used by the AER method<sup>584</sup>
- uses BBB+ rated bonds only,<sup>585</sup> when the AER's method uses a larger and therefore more statistically reliable sample with no loss of relevance<sup>586</sup>
- is not transparent with regard to many key data attributes.<sup>587</sup>

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<sup>575</sup> ACG, Debt and Equity Raising Transaction Costs, Final Report to the Australian Competition and Consumer Commission, December 2004, pp. 49–50; see also AER, Final decision, South Australia distribution determination 2010–11 to 2014–15, May 2010, pp. 131–132.

<sup>576</sup> AER, Draft decision, South Australia draft distribution determination 2010–11 to 2014–15, 25 November 2009, pp. 525–527

<sup>577</sup> For instance, when the WACC increased to such a level that simple division of upfront costs might result in under compensation, the AER adjusted the method to allow amortisation. See AER, Draft decision, South Australia draft distribution determination 2010–11 to 2014–15, 25 November 2009, p. 527–530.

<sup>578</sup> Simply because the report was written in 2004 does not make it obsolete, Australian Competition Tribunal, Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14 (26 July 2012), paragraphs 314–330. Envestra (Vic), Victorian access arrangement information, 30 March 2012, p. 163.

<sup>579</sup> Deloitte, *Debt Financing Costs*, September 2010, p. 7–9.

<sup>580</sup> AER, Final decision, Victorian electricity distribution network service providers, Distribution determination 2011–2015, pp. 368–369.

<sup>581</sup> Deloitte, *Debt Financing Costs*, September 2010, p. 4.

<sup>582</sup> AER, Draft decision, South Australia draft distribution determination 2010–11 to 2014–15, 25 November 2009, pp. 527–530.

<sup>583</sup> Deloitte, *Debt Financing Costs*, September 2010, p. 4, 8 (footnote 7).

<sup>584</sup> AER, Final decision, South Australia distribution determination 2010–11 to 2014–15, May 2010, p. 131–132.

<sup>585</sup> Deloitte, *Debt Financing Costs*, September 2010, p. 7.

<sup>586</sup> In particular, debt raising costs are invariant across all investment grade credit ratings. See ACG, Debt and Equity Raising Transaction Costs, Final Report to the Australian Competition and Consumer Commission, December 2004, pp. xv–xix, 12–13, 15–16, 19–20, 52; AER, Final decision, New South Wales distribution determination 2009–10 to 2013–14, 28 April 2009, pp. 545–549; AER, Final decision, South Australia distribution determination 2010–11 to 2014–15, May 2010, pp. 131.

<sup>587</sup> For example, identifying the number of bonds used as data for tables 5–7 or the derivation of a 5 bpps allowance for credit rating fees. Deloitte, *Debt Financing Costs*, September 2010, pp. 4, 8–9.

Therefore, the debt raising costs forecast by Envestra are neither arrived at on a reasonable basis nor represent the best forecast or estimate possible in the circumstances. Additionally, Envestra's proposed debt raising costs bbpa is more than 50 per cent higher than the other Victorian gas service providers' proposals. It is not reasonable to expect that a benchmark efficient service provider in Envestra's circumstances would have a debt raising cost bbpa 50 per cent higher than other Victorian gas service providers, given all these service providers can operate in the same financial markets.

In its current proposal, Envestra did not seek an allowance for short term bank debt or early refinancing costs as proposed by Envestra in SA/QLD. The shortcomings in the Deloitte report on early refinancing costs in respect of the regulatory regime are not discussed here, but are available in the AER's draft decision for Envestra SA/QLD.<sup>588</sup>

### Benchmark debt raising costs

The AER has applied its established debt raising cost method to Envestra, using Envestra's RAB value which has been updated for this draft decision. The AER's benchmark allowance provides for 3 standard sized bond issues for Envestra Victoria and 1 standard sized bond issues for Envestra Albury. The unit costs and the benchmark debt raising cost are shown in Table 6.13 for Envestra Victoria and Table 6.14 for Envestra Albury. As this draft determination is based on indicative rates, the AER will update this analysis for the final decision based on the debt component of the RAB and WACC to be determined at the time.

**Table 6.13 AER's draft decision on debt raising costs for Envestra Victoria based on a nominal WACC of 7.16 per cent**

Value	Explanation	1 issue	2 issues	3 issues
Total amount raised	Multiples of median MTN (\$250m)	\$250m	\$500m	\$750m
Gross underwriting fee	Median gross underwriting spread, upfront per issue, amortised	6.45	6.45	6.45
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
<b>Total</b>	<b>Basis points per annum</b>	<b>10.8</b>	<b>9.7</b>	<b>9.3</b>

Source: AER analysis

<sup>588</sup> AER, Draft decision Envestra LTD, Access arrangement proposal for the SA gas network 1 July 2011 – 30 June 2016, February 2011, p. 318-320. AER, Envestra LTD, Draft Decision Access arrangement proposal for the QLD gas network 1 July 2011 – 30 June 2016, February 2011, p. 300-302.

**Table 6.14 AER's draft decision on debt raising costs for Envestra Albury based on a nominal WACC of 7.16 per cent**

Value	Explanation	1 issue	2 issues	3 issues
Total amount raised	Multiples of median MTN (\$250m)	\$250m	\$500m	\$750m
Gross underwriting fee	Median gross underwriting spread, upfront per issue, amortised	6.45	6.45	6.45
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
<b>Total</b>	<b>Basis points per annum</b>	<b>10.8</b>	<b>9.7</b>	<b>9.3</b>

Source: AER analysis

This has resulted in the debt raising costs outlined in Table 6.15 for Envestra Victoria and in Table 6.16 for Envestra Albury.

**Table 6.15 Debt raising costs for Envestra Victoria (\$m real, 2012)**

Year	2013	2014	2015	2016	2017
<b>Debt raising costs</b>	0.60	0.63	0.65	0.65	0.66

Source: AER analysis

**Table 6.16 Debt raising costs for Envestra Albury (\$m real, 2012)**

Year	2013	2014	2015	2016	2017
<b>Debt raising costs</b>	0.02	0.02	0.02	0.02	0.02

Source: AER analysis

## Liquidity costs

Envestra proposed liquidity costs of \$9.3 million (nominal) for Envestra Victoria and \$0.09 million (nominal) for Envestra Albury over the 2012–17 access arrangement period.<sup>589</sup> Envestra stated:<sup>590</sup>

'Liquidity risk is the risk that a business will have insufficient funds to meet its financial commitments in a timely manner. The two key elements of liquidity risk are short-term

<sup>589</sup> Envestra Vic, Envestra (Albury) PTRM 'liquidity costs' tab.

<sup>590</sup> Envestra, *Victoria Access arrangement information*, 30 March 2012, p. 163. Envestra, *Albury Access arrangement information*, 30 March 2012, p. 147.

cash flow risk and long-term funding risk. The long-term funding risk includes the risk that loans may not be available when the business requires them or that such funds will not be available for the required term or at acceptable cost. All businesses need to manage liquidity risk to ensure that they remain solvent.'

According to Envestra, to keep the benchmark firm's credit rating of BBB+, Envestra must maintain 'adequate' liquidity as defined by a Standard & Poor's (S&P) paper.<sup>591</sup> Liquidity is measured by S&P by dividing a service provider's liquidity 'sources' by its liquidity 'uses' (the liquidity ratio).<sup>592</sup> These 'uses' and 'sources' are outlined by S&P.<sup>593</sup> According to S&P, to achieve an adequate liquidity ratio, companies should be able to withstand adverse market circumstance for 12 months while maintaining a liquidity ratio of 1.2. Envestra submitted that the main source of liquidity for a regulated gas network is undrawn available bank debt.<sup>594</sup> Further, Envestra submitted, liquidity costs are not captured in the cost of debt or the operating cost building block of revenue.<sup>595</sup>

The AER does not agree with Envestra's proposal for liquidity costs. The AER considers that liquidity costs are provided for in the AER's implicit working capital allowance—which the AER provides through the cashflow timing assumptions in the PTRM.

### **The implicit allowance for working capital in the PTRM**

Firms hold working capital because on average, revenues may be received after expenses are paid. Absent working capital, a firm would not be able to meet its short term liabilities in such cases. Holding working capital, however, gives rise to an opportunity cost because funds are tied up to meet the short term shortfalls and cannot be invested.<sup>596</sup> A network service provider should be compensated for this opportunity cost. Whether an explicit working capital allowance should be provided depends on whether the timing assumptions in the simple building block revenue formula approximately reflect the actual timing of costs and revenues within a year.

In 2002, Allen Consulting Group (ACG) provided the ACCC with a report on working capital.<sup>597</sup> The report concluded that, because the PTRM assumes service providers receive revenue on the last day of the year, target revenue would offset any shortfall in the cost of financing operating expenditure (the required return on working capital). The reports states:<sup>598</sup>

These results provide no rationale for including an additional allowance in target revenue to provide a return on working capital. Rather, the results suggest that, were further precision to be sought in relation to the within-year timing of cash-flow – which underpins the arguments for a return on working capital – then the likely outcome is that the more precise target revenue would be lower than that derived using the PTRM.

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<sup>591</sup> S&P, Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, September 2011.

<sup>592</sup> Envestra, *Victoria Access arrangement information*, 30 March 2012, p. 164. Envestra, *Albury Access arrangement information*, 30 March 2012, p. 148.

<sup>593</sup> P, Methodology and assumptions; liquidity descriptors for global corporate issuers, September 2011, p. 5.

<sup>594</sup> Envestra, *Victoria Access arrangement information*, 30 March 2012, p. 164. Envestra, *Albury Access arrangement information*, 30 March 2012, p. 148.

<sup>595</sup> Envestra, *Victoria Access arrangement information*, 30 March 2012, p. 164. Envestra, *Albury Access arrangement information*, p. 148.

<sup>596</sup> ACG, Working capital—Relevance for the Assessment of Reference Tariffs, March 2002, p. 11

<sup>597</sup> ACG, Working capital—Relevance for the Assessment of Reference Tariffs, March 2002

<sup>598</sup> ACG, Working capital—Relevance for the Assessment of Reference Tariffs, March 2002, p. 2.

Further, the report found that:<sup>599</sup>

The results above imply that [a working capital] allowance is unnecessary – while there may be a (small) financing cost associated with operating expenditure, any shortfall from not including an allowance in respect of working capital is likely to be swamped by the favourable allowance provided in respect of capital assets under the PTRM target revenue formula. It follows that if the Commission were to pursue further precision in relation to the assumptions it makes about the within-year timing of cash flow – which underpins the arguments for a return on working capital – then the likely outcome is that more precise target revenue would be lower than that derived using the PTRM.

In 2007, the AER noted that the PTRM has been modified since the 2002 ACG report to recognise capex in the middle of each year, while still assuming revenues are received on the last day of the year. As noted by the AER previously, this change further benefits the service provider.<sup>600</sup> Service providers and the AER have commonly understood that the favourable cashflow timing assumptions in the PTRM provide an allowance for working capital.<sup>601</sup>

### Liquidity and working capital

Working capital is one measure of a service provider's liquidity.<sup>602</sup> It is calculated as current assets minus current liabilities. 'Current' broadly refers to assets/liabilities that will be realised/settled within 12 months.<sup>603</sup>

While S&P's definition of liquidity includes some additional items to that of the strict definition of working capital, the overall concept is the same—that is, that there be enough cashflow and liquid assets to meet short term liabilities over a 12 month period. The AER provides an allowance to ensure service providers are funded to meet capital requirements that might arise.

When the ACG report was commissioned, the ACCC requested ACG to apply the methodology for determining whether a working capital allowance should be explicitly provided, to a real world example (the Epic-Energy Moomba-Adelaide pipeline). Using 2001 as the test year, ACG found that the cashflow timing assumptions in the PTRM provided Epic Energy with revenue of 1.8 per cent greater than the target revenue. Applying this to the AER's draft decision target revenue for Envestra finds that the benefits received is \$15.45 million (\$ nominal) for Envestra Victoria and \$0.54 million (\$ nominal) for Envestra Albury over the access arrangement period.<sup>604</sup> This is well in excess of the liquidity costs sought by

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<sup>599</sup> ACG, Working capital—Relevance for the Assessment of Reference Tariffs, March 2002, p. 24.

<sup>600</sup> AER, Issues Paper, Guidelines, models and schemes for electricity distribution network service providers, November 2007, p. 11.

<sup>601</sup> AER, Issues Paper, Guidelines, models and schemes for electricity distribution network service providers, November 2007, p. 11. Explanatory Statement, Proposed Electricity distribution network service providers post-tax revenue model, April 2008.

<sup>602</sup> Marshall, I. David, H. Accounting: what the numbers mean, 2nd edn, p. 304. R, Shield, Financial accounting and company accounts, 2004, p. 7.

<sup>603</sup> AASB 101. An entity shall classify an asset as current when:

- (a) it expects to realise the asset, or intends to sell or consume it, in its normal operating cycle;
- (b) it holds the asset primarily for the purpose of trading;
- (c) it expects to realise the asset within twelve months after the reporting period; or
- (d) the asset is cash or a cash equivalent (as defined in AASB 107) unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

An entity shall classify all other assets as non-current.

<sup>604</sup> This is calculated as 1.8 per cent of Envestra's nominal building block requirement.

Envestra and demonstrates that the working capital allowance is more than sufficient to meet S&P's liquidity ratio. If this allowance is included in Envestra's liquidity cost calculation (as should be the case according to S&P's liquidity calculation<sup>605</sup>) then Envestra would not require liquidity costs. Envestra has been provided with a reasonable opportunity to recover at least the efficient costs.<sup>606</sup>

The AER acknowledges that the Moomba-Adelaide pipeline was a transmission pipeline whereas Envestra's access arrangement proposal relates to distribution networks. The same timing assumptions may not be appropriate for both network types. If this is the case, it is unclear to the AER whether the appropriate timing assumptions for a distribution network would favour Envestra or not relative to the Moomba-Adelaide pipeline. The AER is not able to resolve such possible differences in timing assumptions based on the information it has. However, the over compensation that ACG estimated is significantly greater than the liquidity costs sought by Envestra. Therefore, the AER considers that this compensates Envestra for liquidity costs. Envestra, however, may provide its own quantification of the working capital allowance provided for in the PTRM, in its revised proposal. If Envestra does so, it should clearly show the assumptions used and provide evidence supporting them, so that the AER can review them.

Notwithstanding that the concepts of liquidity and working capital are the similar, the AER has examined Envestra liquidity cost calculation. If a separate provision for liquidity costs was appropriate, the AER would not be satisfied with the calculation method and assumptions for several reasons. For example, unlike the assumptions used by Envestra:

- The imputation payout ratio rather than the dividend payout ratio should be used.
- Expected capital expenditure may significantly reduce under an adverse market scenario.
- Distributions would be reduced/removed under an adverse market scenario.

Also, the cost would need to be recalculated in light of the AER's decision on the WACC and forecast expenditures.

In summary, the AER provides Envestra with an allowance for working capital to meet its short term liabilities and therefore, Envestra's proposed liquidity costs are not required. Further, if Envestra included its working capital allowance in its liquidity cost calculation, then using Envestra's calculation method, an allowance for liquidity would not be required. This is the case notwithstanding the unrealistic assumptions in Envestra's calculation methodology. Given that an allowance has already been made, the AER does not agree with Envestra's proposed liquidity costs of \$9.3 million (nominal) for Envestra Victoria and \$0.09m (nominal) for Envestra Albury. Allowing Envestra to double recover costs would not 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.<sup>607</sup> Also, Envestra has been provided with a reasonable opportunity to recover at least the efficient costs.<sup>608</sup>

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<sup>605</sup> S&P, Methodology and assumptions; liquidity descriptors for global corporate issuers, September 2011, p. 5.

<sup>606</sup> NGO, section 24.

<sup>607</sup> NGO, section 23,

<sup>608</sup> NGO, section 24.

## 6.6 Revisions

### 6.6.1 Envestra Victoria

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

**Revision 1.1:** Make all necessary amendments to reflect the AER's draft decision on the proposed opex allowances for the 2013–17 access arrangement period, as set out in Table 6.1.

**Revision 1.2:** Make all necessary amendments to reflect the AER's draft decision on forecast debt raising costs for the 2013–17 access arrangement period, as set out in Table 6.15.

### 6.6.2 Envestra Albury

The AER requires Envestra Albury make the following revisions to its access arrangement proposal consistent with the NGR and NGL:

**Revision 6.1:** Make all necessary amendments to reflect the AER's draft decision on forecast opex for the 2013–17 access arrangement period, as set out in Table 6.2.

**Revision 6.2:** Make all necessary amendments to reflect the AER's draft decision on forecast debt raising costs for the 2013–17 access arrangement period, as set out in Table 6.16.

## 7 Incentive mechanisms

Incentive mechanisms are an important tool to provide service providers a continuous incentive 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 relative 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. This is five years, corresponding to the length of the access arrangement period.

This chapter presents the AER's assessment of Envestra's proposed:

- carryovers from the operation of the incentive mechanisms in the 2008–12 access arrangement period, namely the efficiency sharing mechanism
- incentive mechanisms for the 2013–17 access arrangement period.

### 7.1 Draft decision

#### 7.1.1 Carryover from the 2008–12 access arrangement period

##### Envestra Victoria

The AER does not approve Envestra Victoria's proposed carryover of \$4.7 million (\$2012) from the 2008–12 access arrangement period. This proposed carryover was not calculated in accordance with the efficiency sharing mechanism set out in its 2008–12 access arrangement. The AER calculated that Envestra Victoria has instead accrued –\$8.6 million (\$2012) to be carried over from the 2008–12 access arrangement period (Table 7.1).

**Table 7.1 AER draft decision on Envestra Victoria carryover from the 2008–12 access arrangement period (\$million, 2012)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	4.8	2.6	–1.1	–1.6	–	4.7
AER draft decision	2.1	–1.0	–7.5	–2.2	–	–8.6
Difference	–2.6	–3.6	–6.4	–0.7	–	–13.3

Source: Envestra Victoria Access arrangement information, pp. 177–178, Envestra Vic PTRM , AER analysis .

##### Envestra Albury

The AER does not approve Envestra Albury's proposed carryover of zero from the 2008–12 access arrangement period. This proposed carryover has not been calculated in accordance with the efficiency sharing mechanism set out in its 2008–12 access arrangement. The AER calculated that Envestra Albury has instead accrued –\$2.3 million (\$2012) to be carried over from the 2008–12 access arrangement period (Table 7.2).



**Table 7.2 AER draft decision on Envestra Albury carryover from the 2008–12 access arrangement period (\$million, 2006)**

	2013	2014	2015	2016	2017	Total
Envestra proposed	–	–	–	–	–	–
AER draft decision	–0.7	–0.7	–0.7	–0.2	–	–2.3
Difference	–0.7	–0.7	–0.7	–0.2	–	–2.3

Source: AER analysis.

### 7.1.2 Proposed incentive mechanism for the 2013–17 access arrangement period

The AER does not approve Envestra Victoria and Envestra Albury's proposal to not include an incentive mechanism to apply to opex in the 2013–17 access arrangement. The AER may require the inclusion of one or more incentive mechanisms to encourage efficiency in the provision of services by Envestra Victoria and Envestra Albury.<sup>609</sup> The AER has decided to require Envestra Victoria's and Envestra Albury's access arrangements to include the incentive mechanism set out in section 7.4.3.

The AER approves Envestra Victoria and Envestra Albury's proposal to not include an incentive mechanism to apply to capex in the 2013–17 access arrangement.

## 7.2 Envestra proposal

### 7.2.1 Carryovers accrued in the 2008–12 access arrangement period

#### Envestra Victoria

Envestra Victoria proposed a total carryover of \$3.9 million (\$2006) into the 2013–17 access arrangement period from applying the efficiency sharing mechanism during the 2008–12 access arrangement period (Table 7.3).

**Table 7.3 Envestra Victoria proposed carryover from the 2008–12 access arrangement period (\$million, 2006)**

	2013	2014	2015	2016	2017	Total
Opex efficiency carryover	–1.5	–2.2	–3.1	–1.8	–	–8.7
Capex efficiency carryover	5.5	4.4	2.3	0.5	–	12.6
<b>Total</b>	<b>4.0</b>	<b>2.1</b>	<b>–0.9</b>	<b>–1.3</b>	<b>–</b>	<b>3.9</b>

Source: Envestra, *Victoria Access arrangement information*, March 2012, pp. 177–178, Envestra Vic PTRM.

<sup>609</sup> NGR, r. 98.

## Envestra Albury

Envestra Albury proposed a carryover amount of zero in the 2013–17 access arrangement period from applying the incentive mechanism in the 2008–12 access arrangement period. Envestra stated the combined opex and capex efficiency carryover was negative and, in accordance with the Essential Services Commission Appeal Panel's decision of 11 November 2008, the current efficiency carryover mechanism gives no power or discretion that would enable a regulator to impose a negative carry over.<sup>610</sup>

### 7.2.2 Proposed incentive mechanism for the 2013–17 access arrangement period

Envestra Victoria and Envestra Albury proposed to not include an incentive mechanism to apply to either opex or capex in their 2013–17 access arrangements. Envestra considered its outsourcing contract with the APA Group will provide sufficient incentives to achieve lower costs.<sup>611</sup>

## 7.3 Assessment approach

Under the NGR, the AER must:

- take into account the operation of the efficiency carryover mechanism approved in the 2008–12 access arrangement and ensure the revenue calculations made for the 2013–17 access arrangement period properly reflect increments or decrements resulting from the operation of the efficiency carryover mechanism<sup>612</sup>
- decide whether the 2013–17 access arrangement includes one or more incentive mechanisms to encourage efficiency in the provision of services by Envestra Victoria and Envestra Albury<sup>613</sup>

In ensuring the 2013–17 access arrangement period properly reflect increments or decrements resulting from the operation of the efficiency carryover mechanism, the AER calculated the carryover resulting from the application of the efficiency carryover mechanism as set out in the 2008–12 access arrangement.

In determining whether the AER should require an incentive mechanism to be included in the 2013–17 access arrangements, the AER considered:

- the rationale for applying an incentive mechanism and whether it would encourage efficiency in the provision of services by Envestra Victoria and Envestra Albury
- the appropriate parameters of an incentive mechanism and the specific circumstances of Envestra Victoria and Envestra Albury<sup>614</sup>

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<sup>610</sup> Envestra, *Albury Access arrangement information* March 2012, p. 163.

<sup>611</sup> Envestra, *Victoria Access arrangement information* March 2012, p. 179; Envestra, *Albury Access arrangement information* March 2012, pp. 163–164.

<sup>612</sup> Transitional arrangements in the NGR require the AER to ensure revenue calculations made for the access arrangement period properly reflect the operation of any incentive mechanism approved under section 8.44 of the Gas Code in an earlier access arrangement period (NGR, Schedule 1, clause 5(1)(a)).

<sup>613</sup> NGR, r. 98.

- whether the mechanisms are consistent with the RPP.

## 7.4 Reasons for decision

### 7.4.1 Carryover from the 2008–12 access arrangement period

The mechanism for carrying over efficiency gains and losses is set out in clause 7.2(b) of Envestra Albury and Envestra Victoria's 2008–12 access arrangements. The mechanism applies to both opex and capex. How those gains and losses are to be calculated is set out in clause 7.2(a) of Envestra Albury and Envestra Victoria's 2008–12 access arrangements. Clause 7.2(b)(3)(B) states opex and capex benchmarks to calculate the carryover amounts to apply for the 2012–17 access arrangement period should be adjusted to account for differences between forecast output and actual output:

actual expenditure will also be adjusted to take account of the difference between forecast and actual output. This will be done by taking into account the difference in the number of connections (compared to forecast) multiplied by the capital expenditure per connection and operating expenditure per connection.

The Essential Services Commission's (ESC's) final decision provides further guidance on how this should be done for opex:<sup>615</sup>

The Commission considers that adjustments to the operating expenditure benchmarks for growth should be made in accordance with the approach adopted in establishing the operating expenditure benchmarks. Therefore, given that the Commission has adopted a new approach for establishing the operating expenditure benchmarks for the upcoming regulatory period, it is appropriate to include an adjustment mechanism for growth that reflects this new approach.

Envestra used the approach in its access arrangement to adjust the capex benchmarks. However it did not adjust the opex benchmarks using the same approach adopted by the ESC to establish the benchmarks. The AER notes, however, that it was not possible for Envestra to adjust its opex benchmarks using the approach used by the ESC because the required information was not publicly available. The AER obtained the information required from the Pacific Economics Group, which forecast the rate of change for the ESC.

The AER also found errors in the actual opex Envestra used to calculate the carryover. Envestra did not remove its licence fees from actual opex for 2011, which it did for the other years, and included an incorrect estimate of its network management fee for 2011. The AER corrected the actual opex value for 2011 to remove the licence fee paid and reflect actual network management fee paid in 2011.

The AER also removed movements in provisions because it did not consider these to be actual expenditure, as discussed in attachment 6. Actual expenditure should reflect liabilities paid from provision accounts as this reflects the expenses actually paid by a services provider in a given year.

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<sup>614</sup> This is to ensure that the incentive mechanism provides effective incentives to encourage efficiency in the provision of reference services consistent with NGR, r. 98 and the RPP (NGL s. 24).

<sup>615</sup> ESC, *Gas access arrangement review 2008–2012: Final decision*, 7 March 2008, pp. 584–585.

The increase in provisions charged to profit was significant for Envestra Victoria in both 2008 and 2009. However, the liabilities paid from provisions were significantly less in 2008 and no liabilities were paid in 2009. The impact of this was to significantly increase Envestra Victoria's reported opex in 2008 and 2009. This brought forward efficiency losses made by Envestra Victoria. Consequently, these efficiency losses were not carried forward as far in to the 2013–17 access arrangement period and the reward accrued by Envestra Victoria was increased. However, the AER considers the proposed carryover does not reflect the efficiency gains and losses made by Envestra Victoria because movements in provisions do not reflect actual expenditure.

Envestra Albury removed increases in provisions charged to profit from the actual expenditure amounts it used to calculate its carryover (and its opex forecast). Including the liability paid from provision accounts in 2010 and 2011 (none were paid in 2008 and 2009) increases the efficiency loss made in those years. Rolling these losses forward for five years reduces the efficiency carryover accrued by Envestra Albury in the 2008–12 access arrangement period. The AER notes, however, making the same adjustment to Envestra Albury's base opex increases its opex forecast by a greater amount and the net impact of including liabilities paid from provisions is positive.

The AER also recognises the Essential Services Commission Appeal Panel varied Envestra Albury's Final Decision and Further Final Decision concerning the 2008–12 access arrangement to include a zero carryover between the 2003–07 and 2008–12 access arrangement periods.<sup>616</sup> However, the Appeal Panel did not vary the efficiency carryover mechanism in Envestra Albury's access arrangement. Nor did it make any variations requiring any negative carryover accrued in the 2008–12 access arrangement period be set to zero.

As noted above, the AER is required to ensure the revenue calculations made for the 2013–17 access arrangement period properly reflect increments or decrements resulting from the operation of the efficiency carryover mechanism as set out in Envestra Albury's access arrangement.

For these reasons the AER has recalculated the carryover amounts in accordance with clause 7.2 of Envestra Albury and Envestra Victoria's 2008–12 access arrangements (tables 7.4 and 7.5).

**Table 7.4 AER calculation of Envestra Victoria carryover from the 2008–12 access arrangement period (\$million, 2012)**

	2013	2014	2015	2016	2017	Total
Opex efficiency carryover	-1.9	-4.2	-9.1	-2.6	-	-17.9
Capex efficiency carryover	4.0	3.2	1.6	0.4	-	9.3
<b>Total</b>	<b>2.1</b>	<b>-1.0</b>	<b>-7.5</b>	<b>-2.2</b>	<b>-</b>	<b>-8.6</b>

Source: AER analysis.

<sup>616</sup> Essential Services Commission Appeal Panel, Reference: E2/2008, 11 November 2008, paragraphs 154–179.

**Table 7.5 AER calculation of Envestra Albury carryover from the 2008–12 access arrangement period (\$million, 2012)**

	2013	2014	2015	2016	2017	Total
Opex efficiency carryover	-0.7	-0.8	-0.8	-0.2	-	-2.5
Capex efficiency carryover	0.0	0.1	0.1	-0.0	-	0.1
<b>Total</b>	<b>-0.7</b>	<b>-0.7</b>	<b>-0.7</b>	<b>-0.2</b>	<b>-</b>	<b>-2.3</b>

Source: AER analysis.

## 7.4.2 Proposed incentive mechanism for the 2013–17 access arrangement period

The AER does not accept Envestra's proposal not to include an incentive mechanism applying to opex in the 2013–17 access arrangement. Envestra's forecast opex is based on its historical opex in a single year, consistent with the AER's general approach to determining forecast opex allowances. The AER considers it important to give Envestra a continuous incentive to reduce costs through the operation of an incentive mechanism. An incentive mechanism applying to opex would encourage efficiency in the provision of services by Envestra Victoria and Envestra Albury and is consistent with the RPP.

The AER accepts Envestra's proposal not to include an incentive mechanism applying to capex in the 2013–17 access arrangement. The AER considers a capex incentive scheme delivers an inappropriate incentive to inefficiently defer capex, which is inconsistent with an incentive mechanism that encourages efficiency and the RPP.<sup>617</sup>

### Opex incentive mechanism

The AER considered in detail the rationale for opex incentive mechanisms in the electricity distribution and transmission efficiency benefit sharing schemes.<sup>618</sup> The same rationale largely applies to gas distribution businesses as well. The AER's reasons for applying an incentive mechanism to opex are summarised below.

### Rationale for opex incentive mechanisms

The nature of the building block approach to regulation means a service provider is able to retain benefits from reducing expenditure longer if it does so closer to the start of the access arrangement period. Opex is generally recurrent in nature, so the AER has adopted a revealed cost approach as the basis of forecasting opex. A result of adopting this forecasting approach is that service providers have an incentive to shift expenditure into the base year used to set opex forecasts for the following access arrangement period. Applying an incentive mechanism to opex counteracts these incentives. In particular, an incentive mechanism that allows the service providers to retain the benefits of any efficiencies gained for a period of five years after the year in which the efficiency was made provides service providers a

<sup>617</sup> NGR, r. 98; NGL s. 24.

<sup>618</sup> AER, *Final decision: Electricity transmission network service providers Efficiency benefit sharing scheme*, September 2007; AER, *Final decision: Electricity distribution network service providers Efficiency benefit sharing scheme*, June 2008.

continuous incentive to increase efficiency. This removes the incentive to defer efficiency gains or shift expenditure into the base year.<sup>619</sup>

Efficiency carryover incentive mechanisms provide service providers a continuous incentive to reduce expenditure throughout the access arrangement period. If a service provider shifts costs into the base year to increase future allowances, it will face negative carryovers from the 'loss of efficiency' of shifting the costs into the base year. Therefore, the service provider will be no better off and has no incentive to shift costs into the base year.<sup>620</sup> Providing the service provider a continuous incentive to reveal its efficient costs allows those revealed efficient costs to be used to forecast efficient levels of opex for subsequent access arrangement periods, which is in the long term interest of consumers and consistent with the national gas objective.<sup>621</sup>

The AER is also satisfied the inclusion of an opex incentive mechanism in Envestra's access arrangement will provide Envestra a reasonable opportunity to recover at least its efficient costs and be consistent with the RPP.<sup>622</sup> This is because the mechanism rewards efficiency gains and penalises efficiency loss. In this regard it is important to recognise the reward or penalty is set through a combination of using revealed costs to forecast subsequent opex allowances and carryover increments or decrements. For example, if Envestra's opex increases in the base year, its opex allowance for the following access arrangement period will be higher but it will incur a negative carryover ensuring it retains the efficiency loss for five years after the loss being made.

Consequently, how actual opex is used to inform the opex allowance for the following access arrangement period is a key factor in whether the mechanism will allow Envestra to retain the reward associated with efficiency gains for five years. For this to be achieved opex must be forecast based on actual expenditure in the penultimate year of the preceding access arrangement period. If external benchmarks, or a bottom up forecast, is used to set opex allowances Envestra would retain the reward (penalty) of efficiency improving (decreasing) initiatives for longer than five years and would in fact be rewarded (penalised) twice, once in the ex ante opex allowance, which would not reflect the efficiency saving (loss), and a second time in the carryover increments or decrements. Consequently it is important actual expenditure in the base year is used as the basis for setting opex forecasts in the following access arrangement period.

Further, to ensure Envestra retains the reward associated with efficiency improving initiatives for five years, it is important opex forecasts reflect the same level of efficiency as that demonstrated in the opex base year. In this regard it is reasonable to apply real cost escalation and network growth (or scale) escalation. This is because more opex will be required to produce more outputs, or pay higher inputs prices at the same level of efficiency. To ensure step changes also reflect the same level off efficiency, the AER considers step

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<sup>619</sup> The AER discussed the need to provide service providers with continuous incentives to reduce costs and gain efficiencies and the reasons for considering 5 years as the appropriate carryover period in AER, *Final decision: Electricity distribution network service providers Efficiency benefit sharing scheme*, June 2008.

<sup>620</sup> The effects of shifting costs into the base year are modelled in AER, *Final decision: Electricity distribution network service providers Efficiency benefit sharing scheme*, June 2008, appendix B.

<sup>621</sup> NGL, s.23.

<sup>622</sup> NGL, s.24.

changes should only be provided for new regulatory obligations or changes in the external operating environment beyond Envestra's control.

### **Envestra's circumstances**

Envestra considers that its contractual arrangements with the APA Group provide sufficient incentives to reduce costs. However, Envestra has control over both the decision to in-source or out-source services and the design of the pricing arrangements in the contract. Therefore, the AER considers it important to continue to place the same opex incentives on Envestra as it does on other gas service providers.

Envestra also appears to have significant involvement in setting the APA Group's budget and work program for the operation and management of Envestra's networks each year. Envestra's access arrangement information outlines the budget setting process under the outsourcing arrangement with the APA Group.<sup>623</sup> Under the outsourcing arrangement, Envestra sets financial targets for each financial year. The APA Group prepares a draft budget for Envestra based on these financial targets. Envestra reviews the budget prior to a series of meetings between senior executives of Envestra and the APA Group discussing the draft budget. These meetings include discussion of:

- the scope of, and need for, the works program and forecast costs included in the draft budget
- the risks and other associated issues with the proposed works program
- the extent that the draft budget meets the financial targets set by Envestra.<sup>624</sup>

Under its outsourcing arrangement with the APA Group, Envestra is entitled to accept or vary the remainder (referring to discretionary components of the work plan) of the budget submitted to it by the APA Group. Envestra can challenge the budgets submitted by the APA Group for review by questioning how the unit rates are calculated and requiring justification of the opex comprised in the budget.<sup>625</sup>

Further, Envestra states in its access arrangement information that there is:

... "vigorous debate about the activities to be undertaken during the budget year, the volume of gas to be delivered, and the unit rates such as the cost per repair, the cost per meter for construction, the cost per correction of a leak etc" at the meetings discussing the draft budget.<sup>626</sup>

This information indicates that Envestra has significant input in the work program and budget setting process of the APA Group. It is therefore appropriate to provide opex incentives on Envestra to continuously drive lower costs in its outsourcing arrangements with the APA Group. The AER considers this is consistent with r. 98(3) of the NGR and the RPP.

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<sup>623</sup> Envestra, *Victoria Access arrangement information*, March 2012, pp 68–74; Envestra, *Albury Access arrangement information*, March 2012, pp 64–70.

<sup>624</sup> Attachment 5.3 to Envestra's *Access arrangement information*, paragraphs 20–21

<sup>625</sup> Envestra, *Victoria Access arrangement information*, March 2012, p. 71; Envestra, *Albury Access arrangement information*, March 2012, p. 67.

<sup>626</sup> Envestra, *Victoria Access arrangement information*, March 2012, p. 71; Envestra, *Albury Access arrangement information*, March 2012, p. 67.

The pricing mechanisms in the outsourcing arrangement with the APA Group do not provide Envestra with continuous incentives to reduce costs and gain efficiencies in the absence of an opex incentive mechanism. The purpose of the incentive payments in the outsourcing arrangement is to drive the APA Group to achieve lower costs. Envestra benefits from those lower costs during an access arrangement period where the actual costs are lower than the forecast allowance. Envestra therefore has an incentive to drive the APA Group to make efficiency gains through the annual budget setting process. However, as noted in the section above, in the absence of an incentive mechanism, Envestra's incentives to reduce costs decreases in each year of the access arrangement period. Envestra would also have no incentive to reduce costs in the base year, as the actual costs in the base year are used as the basis of determining the forecast allowances. Therefore, it is important to place further opex incentives on Envestra to provide it with a continuous incentive to reduce costs.

The application of an incentive mechanism has been effective in driving efficiency gains. Envestra's past performance indicates the incentive mechanisms have been effective in contributing to Envestra achieving efficient cost outcomes. A partial factor productivity study undertaken by Economic Insights included four different measures of opex (opex per TJ, opex per customer, opex per kilometre and opex per unit output). The benchmarking analysis showed Envestra (both Victorian and Albury networks) decreased opex against all of these measures since 1998.<sup>627</sup>

Envestra should include an incentive mechanism for opex in its access arrangements for 2013–17 because:

- the effective application of an incentive mechanism to Envestra resulted in lower costs
- it is desirable to provide Envestra a continuous incentives to reduce opex.

The AER considers requiring Envestra to include an incentive mechanism for opex in its access arrangements for 2013–17 encourages efficiency in the provision of services and is consistent with the RPP.

### **Capex incentive mechanism**

The AER has previously noted that cumulative efficiency carryover schemes applied to capex can deliver incentives to defer capex to a later access arrangement period even when it is not efficient to do so.<sup>628</sup> This is because the service provider receives a return on that deferred capital twice in the following access arrangement period (in addition to the return on capital provided in the preceding period) if the deferred capex is not removed from the capex forecast:

- first in the ex ante capex allowance

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<sup>627</sup> Economic Insights, *Benchmarking the Victorian Gas Distribution Businesses' Operating and Capital Costs Using Partial Productivity Indicators*, 26 March 2012, Figures 5, 6, 7 and 8.

<sup>628</sup> Modelling undertaken by the AER in the development of the electricity distribution EBSS demonstrates that service providers would retain significantly more than 30 per cent of the benefits of the capex deferral. This is set out in detail in AER, *Final decision: Electricity distribution network service providers Efficiency benefit sharing scheme*, June 2008, Appendix C.



- a second time in the return on the unspent capex provided by the capex incentive mechanism carryover.

The ESC considered this when it decided to continue to apply the capex incentive mechanism in its 2007 draft decision for the Victorian gas distribution networks.<sup>629</sup> The ESC considered the nature of capex in the gas industry, and its ability to monitor volumes and unit rates better than in the electricity industry, provided it with the ability to adjust benchmarks to reflect the actual amount of capital works undertaken. With gas distribution, a large part of capex is recurrent in nature because a large proportion is ongoing projects, such as replacements. The ESC considered there was scope for service providers to make efficiency gains that are achievable indefinitely into the future in such ongoing projects. This provided it with greater certainty that carryovers would not be generated due to inefficient deferral of capital expenditure.<sup>630</sup>

A comparison of the actual capex spend of the Victorian gas distribution businesses against forecast capex in the 2003–07 and 2008–12 access arrangement periods supports the hypothesis that the distribution businesses are increasingly deferring their capex programs. These deferrals are occurring in all capex categories, including significant deferral of non-volume driven capex.

In addition, the incentive to maintain service standards must also be considered. Ideally capex incentives would be balanced with an equal incentive to maintain or improve service levels. This would encourage efficiency driven capex reductions without a fall in service standards. Because service standard obligations are only loosely defined for gas distribution businesses,<sup>631</sup> and no service standard incentive mechanism is in place, the AER considers Envestra does not have a balanced incentive to maintain service levels.

For these two reasons, the AER considers a capex incentive mechanism similar to the scheme in Envestra's 2008–12 access arrangements would not provide effective incentives to promote efficient investment. The incentives to defer capex, and the lack of a balanced service standard incentive, would lead to the potential for underinvestment in the pipeline and over utilisation of the pipeline. The AER considers the potential risk of underinvestment in the pipeline outweighs the potential benefits of the incentives to generate capex efficiencies. Therefore, a capex incentive mechanism would result in outcomes inconsistent with the requirements in the RPP<sup>632</sup> and would be inconsistent with r. 98 of the NGR. For these reasons, the AER accepts Envestra's proposal not to apply an incentive mechanism to capex.

### 7.4.3 AER draft decision incentive mechanism to apply in the 2013–17 access arrangement period

The AER has set out an incentive mechanism to be included in Envestra Victoria and Envestra Albury's 2013–17 access arrangements that it considers will encourage efficiency in the provision of services and is consistent with the RPP.

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<sup>629</sup> ESC, *Gas Access Arrangement Review 2008–2012 Draft Decision*, 28 August 2007, pp. 522–524.

<sup>630</sup> ESC, *Gas Access Arrangement Review 2008–2012 Draft Decision*, 28 August 2007, pp. 523–524.

<sup>631</sup> Under the Gas Industry Act 2001 (Victoria).

<sup>632</sup> In particular, NGL, s24(3)(a), (3)(c), (6) and (7).

## Incentive mechanism

1. The incentive mechanism should only apply to operating expenditure.
2. The incentive mechanism provides Envestra a continuous incentive to find operating expenditure efficiencies through a combination of:
  - an ex ante forecast of operating expenditure in Envestra's Total Revenue
  - increments or decrements from the operation of this incentive mechanism that allow Envestra to retain efficiency gains or losses for five years.
3. The operating expenditure annual efficiency gain (or loss) for 2013 will be calculated as:

$$E_{2013} = (F_{2013} - A_{2013}) - (F_{2012} - A_{2012}) + (F_{2011} - A_{2011})$$

where:

$E_{2013}$  is the efficiency gain in 2013

$F_{2013}$  is the forecast opex for 2013

$A_{2013}$  is the actual opex for 2013

$F_{2012}$  is the forecast opex for 2012

$A_{2012}$  is the actual opex for 2012

$F_{2011}$  is the forecast opex for 2011

$A_{2011}$  is the actual opex for 2011

4. The operating expenditure annual efficiency gain (or loss) for 2014 to 2017 will be calculated as:

$$E_i = (F_i - A_i) - (F_{i-1} - A_{i-1})$$

where:

$E_i$  is the efficiency gain in year  $i$  of the access arrangement period

$F_i$  is the forecast opex in year  $i$  of the access arrangement period

$A_i$  is the actual opex in year  $i$  of the access arrangement period

$F_{i-1}$  is the forecast opex in year  $i-1$  of the access arrangement period

$A_{i-1}$  is the forecast opex in year  $i-1$  of the access arrangement period

5. Opex in 2017 is to be estimated using the following equation:

$$A_{2017}^* = A_{2016} + F_{2017} - F_{2016}$$

where:

$A_{2017}^*$  is the estimate of opex for 2017

$F_{2017}$  is the forecast opex for 2017

$F_{2016}$  is the forecast opex for 2016

$A_{2016}$  is the actual opex for 2016

6. For the avoidance of doubt, the operating expenditure annual efficiency gain (or loss) for 2017 will be assumed to equal zero.
7. The annual efficiency gain or loss will be added to Envestra's Total Revenue for five years after the year in which the efficiency gain (or loss) was achieved. If necessary, the annual efficiency gain or loss will be carried forward into the access arrangement period commencing 1 January 2018 until it has been retained by Envestra for a period of five years.
8. To ensure efficiency gains or losses made in 2017 are retained for five years, opex for the access arrangement period commencing in 2018 should be forecast in a manner consistent with the estimate for opex in 2017,  $A_{2017}^*$ , in clause 5. This provides Envestra the same reward had the expenditure level in 2017 been known.
9. Increments or decrements from the summation of annual efficiency gains or losses calculated in accordance with the approved incentive mechanism in the Access Arrangement Period will give rise to an additional 'building block' in the calculation of the Total Revenue amounts.
10. The following costs will be excluded from the operation of the efficiency carryover mechanism:
  - a. costs associated with complying with any retailer of last resort requirements
  - b. amounts for approved Cost Pass Through Events
  - c. unaccounted for gas expenses
  - d. licence fees
  - e. debt raising costs
  - f. network management fee
  - g. incentive fees
  - h. movements in provisions
  - i. any other activity that Envestra and the Regulator agree to exclude from the operation of the efficiency carryover mechanism.
11. For the avoidance of doubt, the forecast expenditure amounts that are used as the basis for measuring efficiencies are equal to the forecast operating cost for that year as shown in Table X.X<sup>633</sup> in Envestra's Access Arrangement Information, with the following exception:

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<sup>633</sup> For Envestra Victoria, this should refer to the table in Envestra Victoria's access arrangement information 2013–17 that replicates Table 7.6. For Envestra Albury, this should refer to the table in Envestra Albury's access arrangement information that replicates Table 7.7.

- a. the carryover of cost-related efficiency gains will be calculated in a manner that takes account of any change in the scale of the activities which form the basis of the determination of the original benchmarks. The opex benchmarks will be adjusted consistent with the way in which the benchmark was determined. That is, any adjustment will be made according to the following formula:

$$\text{Adjustment} = (\text{forecast number of connections} - \text{actual number of connections}) \times \text{approved opex per connection}$$

12. Where Envestra changes its approach to classifying costs as either capex or opex during the access arrangement period, Envestra will adjust the forecast opex in table X.X<sup>634</sup> in Envestra's Access Arrangement Information so that the forecast expenditures are consistent with the capitalisation policy changes.

13. If there is a change in Envestra's approach to classifying costs as either capex or opex, Envestra must provide to the AER a detailed description of the change and a calculation of its impact on forecast and actual opex.

Table 7.6 must be added to Envestra Victoria's access arrangement information for 2013–17 to specify the forecast expenditure used as the basis for measuring efficiencies.

**Table 7.6 Envestra Victoria forecast operating expenditure for the purposes of the incentive mechanism in the 2013–17 access arrangement (\$million, 2012)**

	2011	2012	2013	2014	2015	2016	2017
Forecast opex	52.4	52.4	54.2	54.9	55.6	56.3	57.0

Source: AER analysis.

Table 7.7 must be added to Envestra Albury's access arrangement information for 2013–17 to specify the forecast expenditure used as the basis for measuring efficiencies.

**Table 7.7 Envestra Albury forecast operating expenditure for the purposes of the incentive mechanism in the 2013–17 access arrangement (\$million, 2012)**

	2011	2012	2013	2014	2015	2016	2017
Forecast opex	2.42	2.42	2.49	2.51	2.53	2.55	2.57

Source: AER analysis.

## 7.5 Revisions

### 7.5.1 Envestra Victoria

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

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<sup>634</sup> For Envestra Victoria, this should refer to the table in Envestra Victoria's access arrangement information 2013–217 that replicates Table 7.6. For Envestra Albury, this should refer to the table in Envestra Albury's access arrangement information that replicates Table 7.7.

**Revision 7.1:** amend the access arrangement proposal and access arrangement information as necessary to reflect the AER's draft decision on carryover amounts from the current access arrangement period as set out in tables 7.1 and 7.4.

**Revision 7.2:** amend the access arrangement proposal to include the incentive mechanism set out in section 7.4.3.

**Revision 7.3:** amend the access arrangement proposal and access arrangement information to include Table 7.6.

## 7.5.2 Envestra Albury

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

**Revision 7.1:** amend the access arrangement proposal and access arrangement information as necessary to reflect the AER's draft decision on carryover amounts from the current access arrangement period as set out in tables 7.2 and 7.5.

**Revision 7.2:** amend the access arrangement proposal to include the incentive mechanism set out in section 7.4.3.

**Revision 7.3:** amend the access arrangement proposal and access arrangement information to include Table 7.7.

## 8 Corporate income tax

When determining the total revenue for Envestra's Victorian and Albury distribution businesses (Envestra), the AER must estimate the Envestra's cost of corporate income tax.<sup>635</sup> Envestra has adopted the post-tax framework to derive its revenue requirements for the 2013–17 access arrangement period.<sup>636</sup> Under the post-tax framework, a separate corporate income tax allowance is calculated as part of the building blocks assessment.

### 8.1 Draft decision

The AER approves the Envestra's proposal to use a combination of the ESC's tax roll forward model and the AER's post-tax revenue model (PTRM) to estimate the forecast corporate income tax allowance. However, the AER does not approve Envestra's proposed forecast corporate income tax allowances for the 2013–17 access arrangement period of:

- Envestra Victoria—\$40.3 million (\$nominal)<sup>637</sup>
- Envestra Albury—\$2.0 million (\$nominal).

This is mainly because of the AER's adjustments to Envestra's proposed opening tax asset base as at 1 January 2013 (section 8.4.1), rate of return (attachment 4) and forecast opex (attachment 6).

The AER approves Envestra's proposed method to establish the opening tax asset base as at 1 January 2013. However, the AER does not approve some of Envestra's proposed tax additions during the 2008–12 access arrangement period, and therefore does not approve Envestra's proposed opening tax asset base as at 1 January 2013. The AER's adjustments to the tax additions reduce Envestra's proposed opening tax asset bases as at 1 January 2013 by approximately:

- Envestra Victoria—\$1.1 million (nominal), or 0.3 per cent
- Envestra Albury—\$0.4 million (nominal), or 4.9 per cent.

The AER accepts Envestra's proposal to maintain separate tax groups for tax depreciation purposes. The disaggregation of tax groups reflects the different historical tax treatment applied to Envestra's assets. Unlike the capital base, the tax asset base reflects requirements under tax law. These requirements change over time but assets should be rolled forward in line with prevailing tax law at the time the capex enters the tax asset base. Maintaining disaggregated tax groups allows for this.

The AER approves most of Envestra's proposed standard tax asset lives for group 7 tax assets associated with forecast capex for the 2013–17 access arrangement period. These

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<sup>635</sup> NGR, r. 76(c).

<sup>636</sup> Envestra Victoria, *Post tax revenue model* March 2012; Envestra Albury, *Post tax revenue model* March 2012

<sup>637</sup> 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 corporate income 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.

proposed lives are consistent with the ESC's approved standard tax asset lives for group 6 tax assets in the 2008–12 access arrangement period. The AER also accepts Envestra's proposed change to its tax depreciation approach from the declining balance method (with the exception of the 'Land & buildings' asset class) to the straight-line method for its group 7 tax assets. Both the declining balance and straight-line methods are permissible under the tax law.

The AER's adjustments result in an estimated cost of corporate income tax allowances of:

- \$20.9 million (\$nominal) for Envestra Victoria as shown in Table 8.1
- \$1.5 million (\$nominal) for Envestra Albury as shown in Table 8.2

Based on the approach to modelling the cash flows in the PTRM for this draft decision, the AER has derived effective tax rates of 23.73 per cent and 33.87 per cent for Envestra Victoria and Envestra Albury respectively.

**Table 8.1 AER's draft decision on corporate income tax allowance for Envestra Victoria (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Tax payable	1.5	3.6	6.0	7.7	9.1	27.9
Less: value of imputation credits	0.4	0.9	1.5	1.9	2.3	7.0
Net corporate income tax allowance	1.1	2.7	4.5	5.7	6.8	20.9

Source: AER analysis.

**Table 8.2 AER's draft decision on corporate income tax allowance for Envestra Albury (\$million, nominal)**

	2013	2014	2015	2016	2017	Total
Tax payable	0.3	0.4	0.4	0.5	0.5	2.0
Less: value of imputation credits	0.1	0.1	0.1	0.1	0.1	0.5
Net corporate income tax allowance	0.2	0.3	0.3	0.4	0.4	1.5

Source: AER analysis.

## 8.2 Envestra's proposal

For the 2013–17 access arrangement period, Envestra proposed a total corporate income tax allowances of:

- Envestra Victoria—\$40.3 million (\$nominal) as set out in Table 8.3.
- Envestra Albury—\$2.0 million (\$nominal) as set out in Table 8.4.

Envestra used a combination of the ESC's tax roll forward model and the AER's PTRM to calculate the corporate income tax allowance for each year of the 2013–17 access arrangement period.<sup>638</sup> In estimating its corporate income tax allowances, Envestra used:<sup>639</sup>

- an opening tax asset base of \$383.8 million (\$nominal) as at 1 January 2013 for its Victorian distribution business
- an opening tax base of \$8.2 million (\$nominal) as at 1 January 2013 for its Albury distribution business
- 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 tax depreciation approaches set out in its proposed PTRMs.

**Table 8.3 Envestra Victoria's proposed corporate income tax allowance (\$million, nominal)**

	2012	2013	2014	2015	2016	Total
Tax payable	6.0	8.3	11.1	13.1	15.2	53.8
Less value of imputation credits	1.5	2.1	2.8	3.3	3.8	13.4
Net corporate income tax allowance	4.5	6.2	8.3	9.8	11.4	40.3

Source: Envestra Albury, *Post tax revenue model*, March 2012.

**Table 8.4 Envestra Albury's proposed corporate income tax allowance (\$million, nominal)**

	2012	2013	2014	2015	2016	Total
Tax payable	0.4	0.5	0.5	0.6	0.6	2.6
Less value of imputation credits	0.1	0.1	0.1	0.2	0.2	0.7
Net corporate income tax allowance	0.3	0.4	0.4	0.5	0.5	2.0

Source: Envestra Victoria, *Post tax revenue model*, March 2012.

Consistent with its earlier access arrangements, Envestra maintained separate tax groups to allow for different standard tax asset lives to be applied to capex incurred in a particular access arrangement period. These standard tax asset lives reflect the tax law applicable at the time. Envestra did not propose any remaining tax asset lives at an asset class level, rather it calculated depreciation in separate tax groups broken down to reflect any changes in tax treatment over time.

<sup>638</sup> Envestra, *Post tax revenue model*, March 2012.

<sup>639</sup> Envestra, *Post tax revenue model*, March 2012.



For the 2013–17 access arrangement period, Envestra proposed a new tax group (group 7) for capex to be incurred in 2013–17. Envestra proposed changing its tax depreciation approaches from the declining balance method to the straight-line method for most of the group 7 tax assets. This change is shown in Table 8.5.

**Table 8.5 Envestra's proposed group 7 tax depreciation approaches**

Tax asset class	Group 6 (2008 to 2012 capex)	Group 7 (proposed 2013 to 2017 capex)
Mains and services	Declining balance	Straight-line
Meters domestic	Declining balance	Straight-line
Meters industrial & commercial	Declining balance	Straight-line
Land & buildings	Straight-line	Straight-line
Other assets	Declining balance	Straight-line
Repairs	Fully deductible	Fully deductible
Equity raising costs <sup>a</sup>	n/a	Straight-line

Source: Envestra Victoria, *Post tax revenue model*, March 2012; Envestra Albury, *Post tax revenue model*, March 2012

(a). Equity raising costs belong to a new tax group (group 8) which Envestra proposed for the 2013–17 access arrangement period.

### 8.3 Assessment approach

The AER's approach to calculating Envestra's cost of corporate income tax is set out in the PTRM and begins with an estimate of taxable income that would be earned by an efficient company operating Envestra's businesses. The AER has modelled Envestra's tax expenses over the 2013–17 access arrangement period. Interest tax expense is estimated using a benchmark 60 per cent gearing, rather than Envestra's actual gearing. Tax depreciation is calculated using a separate tax asset base. All tax expenses (including other expenses such as operating expenditure) are offset against the service provider's forecast revenue to estimate the taxable income. The statutory income tax rate of 30 per cent is then applied to the estimated taxable income to arrive at a notional amount of tax payable. The AER then applies a discount to that notional amount of tax payable to account for the assumed utilisation of imputation credits ( $\gamma$ ), which has a value of 0.25. This amount is then included as a separate building block in determining Envestra's total revenue.<sup>640</sup>

The corporate income tax allowance is an output of the AER's PTRM. The AER therefore has assessed Envestra's proposed corporate income tax allowances by analysing Envestra's proposed inputs to the PTRM for calculating the tax allowance. These inputs include:

- the opening tax asset bases as at 1 January 2013
- the tax depreciation approaches for each asset class

<sup>640</sup> NGR, r. 76(c).

- the standard tax asset life for each asset class
- the income tax rate
- the value of gamma.

In assessing Envestra's proposals, the AER has had regard to the NGO and the revenue and pricing principles.<sup>641</sup>

The AER considers that the roll forward of the opening tax asset bases to 1 January 2013 should be based on the ESC's approved opening tax asset base as at 1 January 2007 and Envestra's actual capex in earlier access arrangement periods. The value of the actual capex used for rolling forward the tax asset base is subject to the AER's assessment of these values as discussed in attachment 2.<sup>642</sup>

The AER assesses Envestra's proposed standard tax asset lives, where necessary, against those prescribed by the Commissioner for Taxation in Tax Ruling 2012/2. The AER also assesses Envestra's proposed tax depreciation approaches and standard tax asset lives against the ESC's approved tax depreciation approaches and standard tax asset lives in the earlier access arrangement period where necessary.

Given Envestra proposed to use the declining balance tax depreciation approach for most of the group 1–6 tax assets,<sup>643</sup> these tax asset classes do not require remaining tax asset lives.<sup>644</sup>

## 8.4 Reasons for decision

The AER's draft decision on Envestra's corporate income tax allowances is:

- Envestra Victoria—\$20.9 million (\$nominal), which is a reduction of \$19.4 million (\$nominal) or 48.2 per cent compared to the proposed corporate income tax allowance
- Envestra Albury—\$1.5 million (\$nominal), which is a reduction of \$0.5 million (\$nominal) or 23.5 per cent compared to the proposed corporate income tax allowance.

The AER accepts most of Envestra's proposed method for calculating the corporate income tax allowance because Envestra has used a combination of the ESC's tax roll forward model

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<sup>641</sup> NGL, s 28; NGR r. 100(1). The NGO is set out in NGL, s. 23. The revenue and pricing principles are set out in NGL, s. 24.

<sup>642</sup> The asset classes differ between the capital base roll forward and the tax asset base roll forward. However, the total values of annual capex in the 2008–12 access arrangement period will be consistent.

<sup>643</sup> In the earlier access arrangement, the ESC approved the declining balance method be used as the tax depreciation approach for most of the group 1–6 tax assets with the exception of 'Land & buildings' and 'Repairs' asset classes.

<sup>644</sup> The AER's preferred method to determine the remaining tax asset lives is the weighted average method. The AER considers the weighted average method provides a better reflection of the mix of assets within an asset class and the effective life of the asset class. The weighted average method involves weighting the remaining life of each capital stream within an asset class (that is, the opening tax capital value and the capital expenditures for each year) by the closing tax capital value of that capital stream as a proportion of the total closing tax capital value of the asset class as a whole. The resulting individual values for each capital stream are then added together to obtain the overall weighted average remaining life of the asset class.

and the AER's PTRM for the calculation. However, the AER adjusted several of Envestra's proposed inputs to the PTRM for calculating the corporate income tax allowance, which include:

- the opening tax asset base as at 1 January 2013
- the tax depreciation approach for the 'Land & buildings' asset class in group 7 tax assets
- splitting the 'Land & buildings' asset class into two separate asset classes of 'Land' and 'Buildings'.

In addition, there are various other changes to the building block components in this draft decision that impact forecast revenues. These will consequently affect the forecast corporate income tax allowance.

#### 8.4.1 Opening tax asset base as at 1 January 2013

The AER accepts most of Envestra's approach to determine the opening tax asset base as at 1 January 2013. In particular, the AER accepts Envestra's proposal to use opening tax asset bases as at 1 January 2007 of:

- Envestra Victoria—\$225.0 million (\$nominal)<sup>645</sup>
- Envestra Albury—\$7.6 million (\$nominal).<sup>646</sup>

The ESC approved these amounts in its decision for the 2008–12 access arrangement period.

However, the AER does not approve aspects of the opening tax asset bases. Specifically, the AER has amended:

- tax additions from 2007–12
- the 'Land & buildings' asset class by splitting the asset class into two separate asset classes of 'Land' and 'Buildings'
- minor formulae errors in the proposed tax roll forward model.

The AER considers that Envestra's proposals without these changes do not represent an estimate of the tax asset base that is the best possible in the circumstances, as required by r. 74(2) by the NGR.

#### Tax additions

The AER does not approve Envestra's proposed tax additions for 2007–12 for both distribution businesses. The AER has amended the tax additions to be consistent with the AER's draft decision on the roll forward of the capital base (attachment 2). Because Envestra's historical tax asset classes differ from its capital base asset classes, the AER has estimated these allocations to ensure total capital base additions for each year are fully

<sup>645</sup> Envestra Victoria, *Post tax revenue model*, March 2012

<sup>646</sup> Envestra Albury, *Post tax revenue model*, March 2012

allocated to the tax asset base. The AER's adjustment to Envestra Victoria's tax additions represents an increase of \$2.7 million (\$nominal) from the proposed tax additions for 2007–12. This is caused largely by:

- an increase of \$3.9 million to 2007 tax additions to reflect NGEF capital expenditure
- a reduction of \$1.2 million to 2012 tax additions to reflect the AER's draft decision on capex in in the 2008–12 access arrangement period.

The AER's approved tax additions for 2007–12 are set out in Table 8.6.

**Table 8.6 AER's draft decision on Envestra Victoria's tax additions for 2007–12 (\$million, nominal)**

Tax asset class	2007 gas extension <sup>a</sup>	2007	2008	2009	2010	2011	2012
Mains and services	3.5	36.1	37.1	29.9	43.1	60.2	79.4
Meters (group 5)	0.1	7.8	n/a	n/a	n/a	n/a	n/a
Meters domestic (group 6)	n/a	n/a	5.1	4.9	6.0	6.0	7.8
Meters industrial and commercial (group 6)	n/a	n/a	3.0	2.5	2.0	2.4	1.7
Land and buildings	–	–	0.2	–	–	–	–
Other assets	0.1	4.4	5.4	6.3	3.9	5.9	4.7
Repairs	–	–	–	–	–	–	2.2
<b>Total</b>	<b>3.7</b>	<b>48.2</b>	<b>50.8</b>	<b>43.6</b>	<b>55.1</b>	<b>74.5</b>	<b>95.8</b>

Source: AER analysis.

(a) These tax additions for gas extensions are as approved by the ESC for the 2008–12 access arrangement period.

n/a Not applicable

Similarly, the AER's adjustment to Envestra Albury's tax additions represents a reduction of \$0.5 million (nominal) or 7 per cent of the proposed tax additions for 2007–2012. The AER's approved tax additions for 2007–2012 are set out in table 8.7.

**Table 8.7 AER's draft decision on Envestra Albury's tax additions for 2007–12 (\$million, nominal)**

Tax asset class	2007 <sup>a</sup>	2008	2009	2010	2011	2012
Mains and services	0.6	0.8	0.9	0.6	0.8	0.5
Meters (group 5)	0.3	n/a	n/a	n/a	n/a	n/a
Meters domestic (group 6)	n/a	0.4	0.3	0.2	0.1	0.3
Meters industrial and commercial (group 6)	n/a	0.2	0.1	0.1	0.1	0.0
Land and buildings	–	–	–	–	–	–
Other assets	–	–	–	0.4	–	0.0

Repairs	-	-	-	-	-	0.0
<b>Total</b>	<b>1.0</b>	<b>1.3</b>	<b>1.2</b>	<b>1.2</b>	<b>1.0</b>	<b>0.8</b>

Source: AER analysis.  
(a) The ESC did not approve any tax additions for gas extensions.  
n/a Not applicable

The AER considers that these amended tax additions will result in the best possible estimate of Envestra's tax asset bases and therefore the corporate income tax allowances for the 2013–17 access arrangement period, as required by r. 74(2) of the NGR.

### 'Land & buildings' asset class

The AER does not approve Envestra's proposal to continue using the 'Land & buildings' asset class in the opening tax asset base as at 1 January 2013 for tax depreciation purposes in the 2013–17 access arrangement period. However, consistent with the ESC's decision for rolling forward the tax asset base to 2012, the AER does approve Envestra's proposal to maintain the single 'Land & buildings' asset class up to the closing tax asset base for 2012. From 2013, due to land being a non-depreciable asset, the AER considers that the 'Land & buildings' asset class should then be split into separate 'Land' and 'Buildings' asset classes. Neither Envestra nor the AER has sufficient information to accurately allocate the residual asset value from 2013. For the purposes of maintaining consistency with the tax depreciation treatment of this expenditure by the ESC, the AER has allocated all of the residual value into the 'Buildings' asset class so it can continue to depreciate.

In recent decisions, the AER has consistently separated land from other asset classes, and not assigned a standard tax asset life to land (assigned a term of 'n/a' for modelling purposes) in the tax asset roll forward model and the PTRM.<sup>647</sup> This is because land is a non-depreciable asset under the Australian taxation law, and does not diminish in its useful life.<sup>648</sup> The *Income Tax Assessment Act* (ITAA) 1997 excludes land from the definition of a 'depreciating asset'.<sup>649</sup>

For its Victorian distribution business, Envestra's proposed opening tax asset base as at 1 January 2013 contains an opening tax asset base value of \$2.4 million (\$nominal) for the 'Land & buildings' asset class. However, for Envestra's Albury distribution business, there was no proposed opening tax asset base value for the 'Land & buildings' asset class in the opening tax asset base as a result of it being fully depreciated. The AER sent an information request to Envestra to inquire about a possible split of the opening tax asset base value as at 1 January 2013f between land and buildings for its Victorian distribution business.<sup>650</sup> In response, Envestra stated that it did not have enough information that would allow split of the opening tax asset value of the 'Land & buildings' asset class.<sup>651</sup> It submitted:

The initial capital base (ICB) was established in 1997 by the Energy Projects Division (EPD) of the Department of Treasury and Finance and occurred while the network was

<sup>647</sup> AER, *Roma to Brisbane Pipeline draft decision*, April 2012, p. 22; AER, *Aurora Energy draft distribution determination*, November 2011, p. 262.

<sup>648</sup> Australian Accounting Standard Board, *Accounting standard AASB1021: Depreciation*, August 1997, pp. 10–11.

<sup>649</sup> ITAA 1997, s. 40-30.

<sup>650</sup> AER, *AER information request 16*, 21 June 2012.

<sup>651</sup> Envestra, *Response to AER information request 16*, 25 June 2012.

still owned by the Victorian Government. A depreciation schedule (including depreciation on the "Land and Building" asset category) was also developed by EPD at this time. The valuation and depreciation information formed part of the 1998 to 2002 Access Arrangement submitted by the Victorian Government to the Office of the Regulator-General (ORG).

Envestra has reviewed all relevant documents in our possession. No information has been located to provide further detail on the proportion of the land (if any) included in the ICB. Moreover, it is noted that the ORG and the Essential Services Commission (ESC) continued to apply the depreciation schedule developed by the EPD in 1997 through the subsequent 2003 to 2007 and 2008 to 2012 Access Arrangement periods.

For the 2013 to 2017 Access Arrangement period, Envestra has continued the same approach to depreciating "Land and Buildings" as was earlier applied by the Victorian Government, the ORG and the ESC.

Based on Envestra's response, the AER considers that it is reasonable for Envestra to maintain 'Land & buildings' as a single asset class to roll forward the tax asset base to the end of 2012. However, the AER considers that separate asset classes should apply for the opening tax asset base at 1 January 2013 and for any future tax additions due to the different tax depreciation laws applicable to land and buildings.

Envestra did not forecast any capex for the 'Land & buildings' asset class for either of its Victorian or Albury distribution businesses over the 2013–17 access arrangement period. Nonetheless, the AER has split this asset class into two separate asset classes of 'Land' and 'Buildings' and assigned relevant standard tax asset lives for these two new asset classes. This is discussed further below in section 8.4.3.

The AER's draft decision on Envestra's tax asset base roll forward for the 2008–12 access arrangement period is set out in Table 8.8 and Table 8.9.

**Table 8.8 AER's draft decision on Envestra Victoria's tax asset base roll forward for the 2008–12 access arrangement period (\$million, nominal)**

	2007	2008	2009	2010	2011	2012
Opening tax asset base	225.0	245.7	263.9	274.1	294.5	331.5
Tax additions	51.8	50.8	43.6	55.1	74.5	95.8
Tax depreciation	31.2	32.6	33.4	34.6	37.6	44.6
<b>Closing tax asset base</b>	<b>245.7</b>	<b>263.9</b>	<b>274.1</b>	<b>294.5</b>	<b>331.5</b>	<b>382.7</b>

Source: AER analysis.

**Table 8.9 AER's draft decision on Envestra Albury's tax asset base roll forward for the 2008–12 access arrangement period (\$million, nominal)**

	2007	2008	2009	2010	2011	2012
Opening tax asset base	7.6	7.4	7.7	7.8	8.0	8.0
Tax additions	1.0	1.3	1.3	1.2	1.0	0.8
Tax depreciation	1.2	1.1	1.1	1.1	1.0	1.0
<b>Closing tax asset base</b>	<b>7.4</b>	<b>7.7</b>	<b>7.8</b>	<b>8.0</b>	<b>8.0</b>	<b>7.8</b>

Source: AER analysis.

## 8.4.2 Tax depreciation approaches

The AER accepts Envestra's proposal to maintain separate tax groups for tax depreciation purposes. The AER approves Envestra's proposal to continue applying the same tax depreciation approaches to group 1–6 tax assets as allowed by the ESC in the 2008–12 access arrangements.

The AER approves Envestra's proposed change in tax depreciation approach from declining balance to straight-line for most group 7 tax assets with the exception of the 'Land & buildings' asset class. This is because the ITAA allows both the declining balance method and straight-line method to be used to depreciate new tax additions for tax purposes.<sup>652</sup> The straight-line method is also consistent with the tax depreciation approach approved by the AER in recent decisions.<sup>653</sup>

As land is a non-depreciating asset, the AER has split the 'Land & buildings' asset class into separate asset classes of 'Land' and 'Buildings' from 1 January 2013. Consistent with the 2008–12 access arrangement, the AER considers the 'Buildings' asset class should be depreciated using the straight-line method. However, the AER has not assigned a tax depreciation method for the 'Land' asset class due to the non-depreciating nature of land (assigned a term of 'n/a' for modelling purposes).

The AER's draft decision on Envestra's tax depreciation approaches to group 7 tax assets associated with forecast capex for the 2013–17 access arrangement period is set out in Table 8.10.

**Table 8.10 AER's draft decision on Envestra's tax depreciation approaches for group 7 tax assets**

Tax asset class	Envestra Victoria Group 7 (2013–17 capex)	Envestra Albury Group 7 (2013–17 capex)
Mains and services	Straight-line	Straight-line
Meters domestic	Straight-line	Straight-line
Meters industrial & commercial	Straight-line	Straight-line
Land <sup>a</sup>	n/a	n/a
Buildings <sup>b</sup>	Straight-line	Straight-line
Other assets	Straight-line	Straight-line
Repairs	Fully deductible	Fully deductible
Equity raising costs <sup>c</sup>	n/a	Straight-line

Source: AER analysis.

(a) This asset class is for any actual capex that may be incurred for 2013–17.

(b) This asset class is for depreciating the residual value from 'Land & buildings' as at 1 January 2013, as well as any actual capex that may be incurred for 2013–17.

(c) The AER's analysis in the PTRMs shows that only Envestra Albury will incur benchmark equity raising cost (see attachment 3).

<sup>652</sup> ITAA 1997, s. 40-65.

<sup>653</sup> For example, AER, *Roma to Brisbane Pipeline draft decision*, April 2012, p. 19.

n/a Not applicable.

### 8.4.3 Standard tax asset lives

With the exception of the 'Land & buildings' asset class, the AER approves Envestra's proposed standard tax asset lives for group 7 tax assets for the 2013–17 access arrangement period. This is because most of these proposed lives are consistent with those prescribed by the Commissioner for taxation in Tax Ruling 2012/2 and the ESC's approved standard tax asset lives in the 2008–12 access arrangement period.<sup>654</sup>

Envestra proposed a standard tax asset life of 40 years for the 'Land & buildings' for the purposes of calculating tax depreciation for the 2013–17 access arrangement period.<sup>655</sup> This 40 year life is consistent with the ESC's approved standard tax asset life for Envestra's 'Land & buildings' asset class in the 2008–12 access arrangement.<sup>656</sup>

Although Envestra did not forecast any capex for the 'Land & buildings' asset class for both its Albury and Victorian distribution businesses over the 2013–17 access arrangement period, the AER has split this asset class into two separate asset classes of 'Land' and 'Buildings'. The AER considers that:

- the 'Buildings' asset class should be assigned a standard tax asset life of 40 years. This is consistent with the standard economic life approved by the ESC for the 2008–12 access arrangement period.<sup>657</sup>
- the 'Land' asset class should not be assigned a standard tax asset life reflecting the non-depreciating nature of the asset ('n/a' is assigned for tax modelling purposes in Envestra's PTRMs).

The AER's approved standard tax asset lives for Envestra's group 7 tax assets for the 2013–17 access arrangement period are set out in Table 8.11.

**Table 8.11 AER's draft decision on Envestra's standard tax asset lives for group 7 tax assets**

Tax asset class	Envestra Victoria Group 7 (2013–17 capex)	Envestra Albury Group 7 (2013–17 capex)
Mains and services	20	20
Meters domestic	4	4
Meters industrial & commercial	15	15
Land	n/a	n/a
Buildings	40	40

<sup>654</sup> ESC, *Envestra Vic GAAR 2008 Revenue Model Post Appeal Panel Decision*, 2008; ESC, *Envestra Albury GAAR 2008 Revenue Model Post Appeal Panel Decision*, 2008.

<sup>655</sup> Envestra Victoria, *PTRM*, March 2012; Envestra Albury, *PTRM*, March 2012.

<sup>656</sup> ESC, *Envestra Vic GAAR 2008 Revenue Model Post Appeal Panel Decision*, 2008; ESC, *Envestra Albury GAAR 2008 Revenue Model Post Appeal Panel Decision*, 2008.

<sup>657</sup> ESC, *Envestra Vic GAAR 2008 Revenue Model Post Appeal Panel Decision*, 2008; ESC, *Envestra Albury GAAR 2008 Revenue Model Post Appeal Panel Decision*, 2008.



Other assets	10	10
Repairs	Fully deductible <sup>a</sup>	Fully deductible <sup>a</sup>
Equity raising costs <sup>b</sup>	n/a	5 <sup>c</sup>

Source: AER analysis.

n/a Not applicable.

- (a) 'Repairs' is a deduction under s. 25-10 of the ITAA. For modelling purposes, the tax depreciation rate used to depreciate expenditure associated with repairs is 100 per cent.
- (b) Equity raising costs belong to a new tax group (group 8) which was proposed by Envestra for the 2013–17 access arrangement period.
- (c) The AER's analysis in the PTRMs shows that only Envestra Albury will incur benchmark equity raising cost (see attachment 3). The AER has accepted Envestra's proposal to assign a tax standard economic life of 5 years for the 'Equity raising costs' asset class. This proposed tax standard economic life is consistent with the tax standard economic life for the 'Equity raising costs' asset class approved in previous AER decisions.

#### 8.4.4 Remaining tax asset lives

Envestra did not proposed any remaining tax asset lives at the asset class level. This is because tax depreciation for an individual asset class is calculated in the separate tax groups based on the historical tax approach adopted for each group. Remaining tax asset lives for the majority of Envestra's assets in its tax groups are also unnecessary. This is because the tax depreciation approach used for those assets in the earlier access arrangement periods is the declining balance method, rather than the straight-line method. Therefore, the AER considers that remaining tax asset lives at an asset class level are not necessary for the purposes of calculating Envestra's tax depreciation.

#### 8.4.5 Utilisation of imputation credits (gamma)

Under the Australian imputation tax system, domestic investors receive a credit for tax paid at the company level (an 'imputation credit' or gamma) that offsets part or all of their personal income tax liabilities. For eligible shareholders, imputation credits represent a benefit from the investment in addition to any cash dividend or capital gains received. As part of the post-tax nominal framework, the value of gamma must be applied to calculate the net income tax allowance for the 2013–17 access arrangement period.

The AER approves Envestra's proposal to adopt the value of 0.25 for gamma. The proposed gamma value is consistent with the findings by the Australian Competition Tribunal (Tribunal) in its review of the AER's 2010 distribution determinations for Energex, Ergon Energy and ETSA Utilities.<sup>658</sup> The AER also adopted the value of 0.25 for gamma in its recent final decision for the Roma to Brisbane gas pipeline access arrangement.<sup>659</sup> There is no new evidence before the AER to cause it to vary from the findings of the Tribunal.

### 8.5 Revisions

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

<sup>658</sup> Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No. 5)[2011] ACompT 9*, 12 May 2011, paragraph 42.

<sup>659</sup> AER, *Roma to Brisbane Pipeline final decision*, August 2012, p. 20.

**Revision 8.1:** Make all necessary amendments to reflect the AER's draft decision on the proposed corporate income tax allowance for the 2013–17 access arrangement period, as set out in Table 8.1 and Table 8.2.

**Revision 8.2:** Make all necessary amendments to reflect the AER's draft decision on the tax additions for 2007–2012, as set out in Table 8.6 and Table 8.7.

**Revision 8.3:** Make all necessary amendments to reflect the AER's draft decision on the tax depreciation approach for group 7 tax assets associated with forecast capex for the 2013–17 access arrangement period, as set out in Table 8.10.

**Revision 8.4:** Make all necessary amendments to reflect the AER's draft decision on the standard tax asset lives, as set out in Table 8.11.

## 9 Demand

This attachment sets out the AER's assessment of the demand forecasts proposed by Envestra for its Victorian and Albury gas distribution networks for the 2013–17 access arrangement period. Demand is an important input into the derivation of Envestra's reference tariffs. It also affects opex and capex linked to network growth.

### 9.1 Draft decision

The AER does not approve the proposed demand forecasts as they do not comply with r. 74(2) of the NGR. In applying its forecasting methodology, Envestra used some assumptions and data sets that have biased the modelling results. In particular, for weather normalisation:

- estimates of Effective Degree Day (EDD) used by Envestra resulted in demand forecasts that are biased
- the heating degree days (HDD) data used by Envestra for its Albury network is not the most current data available.

The AER considers that Envestra's proposed demand forecasts are not arrived at on a reasonable basis and do not represent the best forecasts possible in the circumstances. The reasons for the AER's decision are discussed below.

### 9.2 Envestra proposal

Envestra engaged Core Energy Group Pty Ltd (Core) to prepare its demand forecasts. Core applied a six step approach to produce Envestra's proposed demand forecasts:<sup>660</sup>

- normalise historic demand data for weather considerations
- identify drivers of demand for each tariff category and screen available data for completeness and suitability
- select a preferred methodology for demand forecasting based on statistical significance and supportability
- collate required data sets for each tariff category
- derive forecasts for defined variables
- produce forecasts of demand by tariff category and zone as appropriate.
- Table 9.1 below shows the drivers of gas demand that Core considered in developing Envestra's proposed demand forecasts.

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<sup>660</sup> Core Energy Group, *Demand, Energy and Customer Forecasts - Envestra Limited - Gas Access Arrangement Review - Victoria and Albury Networks (2013 to 2017)*, March 2012, p1.

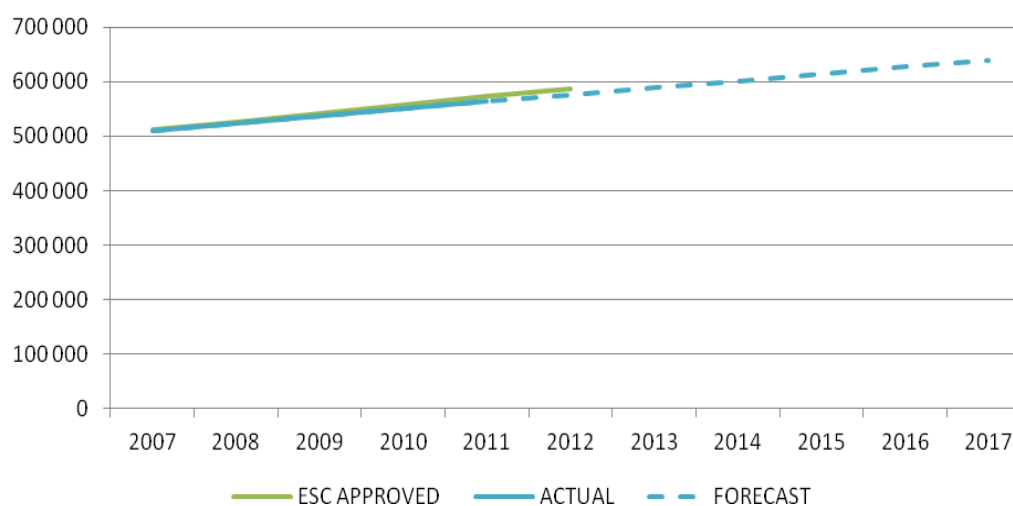
**Table 9.1 Drivers of customer connections and usage of gas**

Tariff	Connection number drivers	Usage drivers
Tariff V - Residential	Starting connections, growth in customer base, substitution and near term planned connections	Historic volumes, weather, persons per dwelling, appliance take ups and retirements, price elasticity
Tariff V - Non-Residential / Small Industrial	Starting connections, growth by industry, policy/incentives , near term planned connections	Historic volumes, gross state product, price elasticity
Tariff D - Industrial Demand	Starting connections, growth by industry, policies/incentives, near term planned connections	Historic MHQ per customer, gross state product, price elasticity

Source: Core Energy Group, *Demand, Energy and Customer Forecasts - Envestra Limited - Gas Access Arrangement Review - Victoria and Albury Networks (2013 to 2017), March 2012, p. 17-19.*

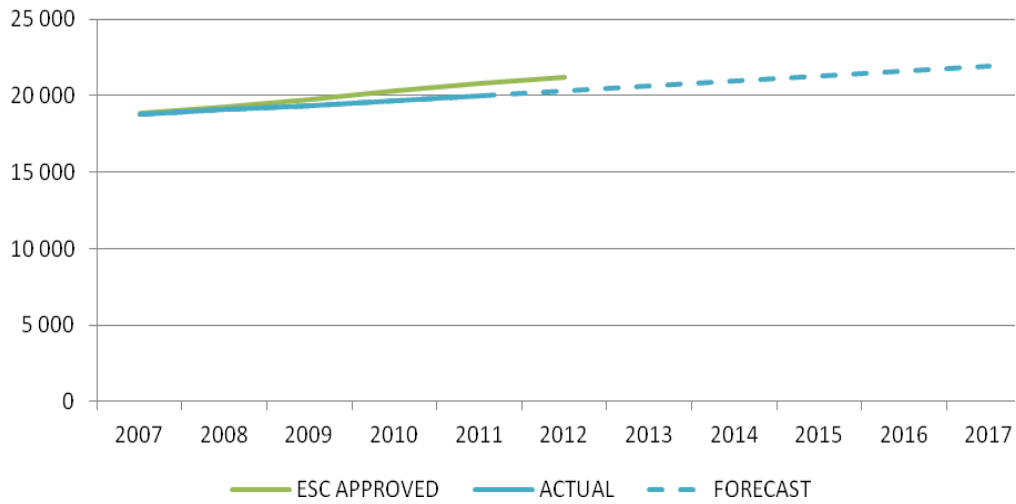
Figure 9.1 to Figure 9.6 illustrate Envestra's proposed demand forecasts.

**Figure 9.1 Envestra Victoria – Tariff V residential and non-residential customer numbers, approved, actual and forecast 2007 to 2017**



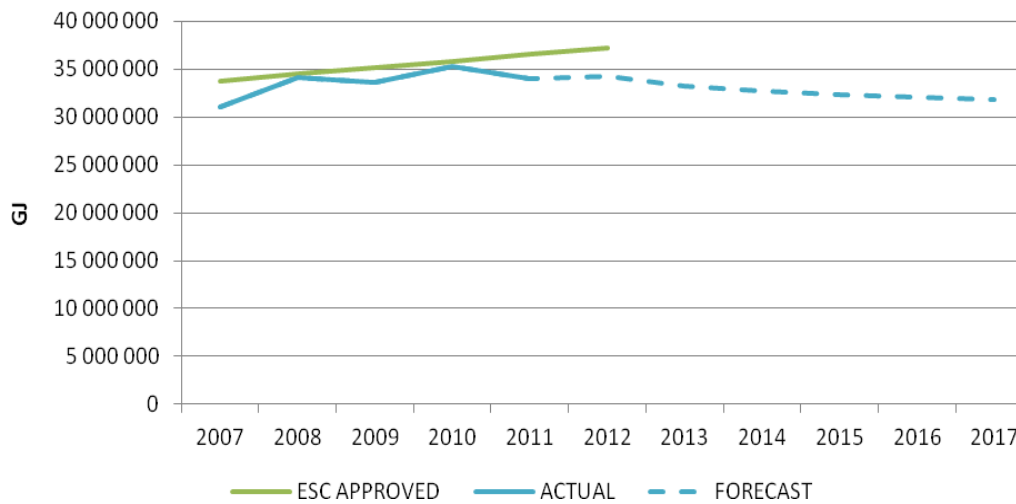
Source: Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 187-210.; and Envestra Victorian, *Regulatory Information Notice*; ESC, *Gas Access Arrangement Review 2008-2012 - Final Decision, March 2008, Chapter 11,*

**Figure 9.2 Envestra Albury – Tariff V residential and non-residential customer numbers, approved, actual and forecast 2007 to 2017**



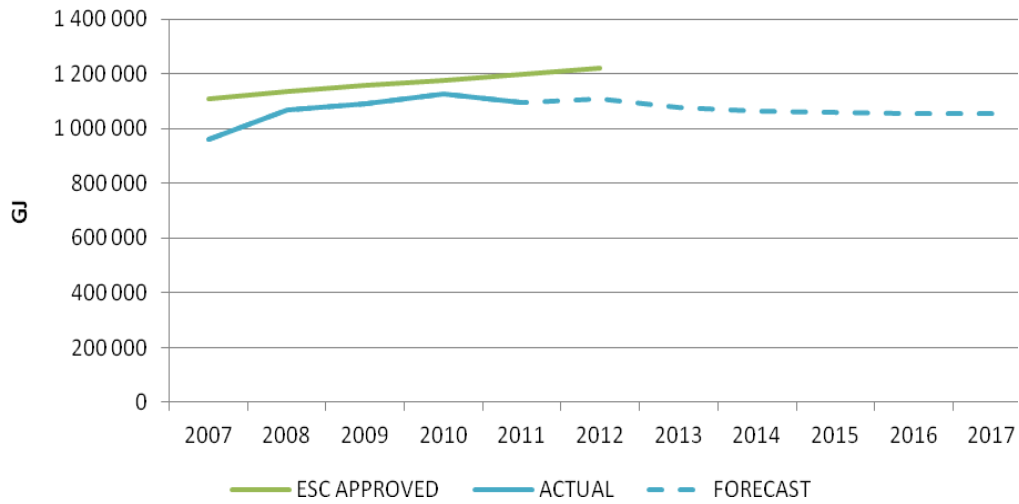
Source: Envestra Albury, *Access arrangement information*, 30 March 2012, p. 171-190.; and Envestra Albury, *Regulatory Information Notice*; ESC, *Gas Access Arrangement Review 2008-2012 - Final Decision*, March 2008, Chapter 11,

**Figure 9.3 Envestra Victoria – Tariff V residential and non-residential consumption, approved, actual and forecast 2007 to 2017**



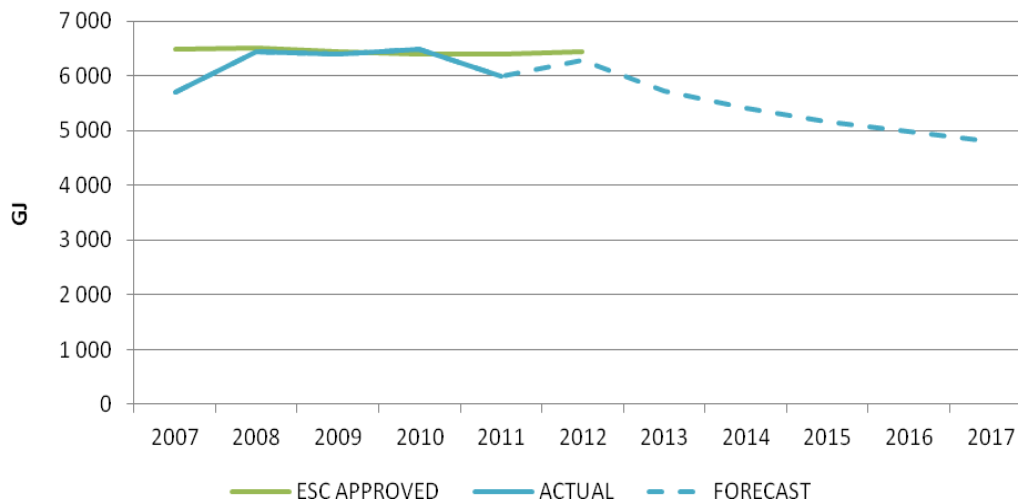
Source: Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 187-210.; and Envestra Victorian, *Regulatory Information Notice*; ESC, *Gas Access Arrangement Review 2008-2012 - Final Decision*, March 2008, Chapter 11

**Figure 9.4 Envestra Albury – Tariff V residential and non-residential consumption, approved, actual and forecast 2007 to 2017**



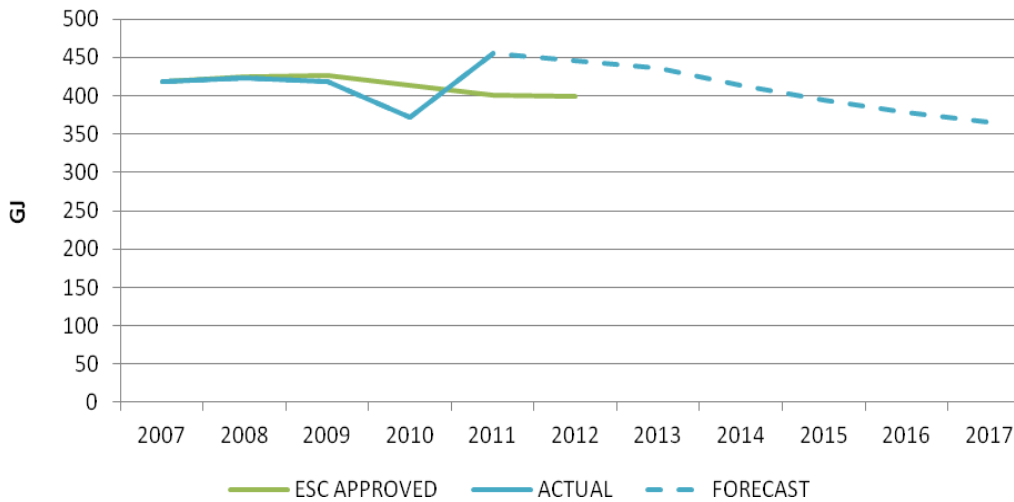
Source: Envestra Albury, *Access arrangement information*, 30 March 2012, p. 171-190.; and Envestra Albury, *Regulatory Information Notice*; ESC, *Gas Access Arrangement Review 2008-2012 - Final Decision*, March 2008, Chapter 11.

**Figure 9.5 Envestra Victoria – Tariff D maximum hourly quantities (MHQ), approved actual and forecast 2007 to 2017**



Source: Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 187-210.; and Envestra Victorian, *Regulatory Information Notice*; ESC, *Gas Access Arrangement Review 2008-2012 - Final Decision*, March 2008, Chapter 11.

**Figure 9.6** Envestra Albury – Tariff D maximum hourly quantities (MHQ), approved, actual and forecast 2007 to 2017



Source: Envestra Albury, *Access arrangement information*, 30 March 2012, p. 171-190.; and Envestra Albury, *Regulatory Information Notice*; ESC, *Gas Access Arrangement Review 2008-2012 - Final Decision*, March 2008, Chapter 11.

### 9.3 AER approach

The NGR require a full access arrangement proposal for a distribution pipeline to include usage of the pipeline over the earlier access arrangement period showing:

- minimum, maximum and average demand; and customer numbers in total and by tariff class<sup>661</sup>
- to the extent that it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.<sup>662</sup>

In making a decision to approve or not to approve an access arrangement, the AER must be satisfied that the forecasts used in setting reference tariffs.<sup>663</sup>

- are arrived at on a reasonable basis
- represent the best forecast or estimate possible in the circumstances.

The AER considers that there are two important considerations in assessing whether demand forecasts are arrived at on a reasonable basis and whether they represent the best forecasts possible in the circumstances.<sup>664</sup> These are:

<sup>661</sup> NGR, r. 72(1)(a)(iii).

<sup>662</sup> NGR, r. 72(1)(d).

<sup>663</sup> NGR, r. 74(2).

<sup>664</sup> NGR, r. 74(2).

- the appropriateness of the forecast methodology – this involves consideration of how the demand forecast has been developed and whether or not all relevant factors have been taken into account.
- the application of the forecasting methodology – this involves consideration of the accuracy of data and assumptions on each of the input parameters.

To determine whether Envestra's proposed demand forecasts are arrived at on a reasonable basis and are the best possible forecasts in the circumstances, the AER reviewed the data used to implement the forecasting methodology. In doing this, the AER had regard to other broader trends of demand forecasts such as recent trends in gas consumption and peak demand relative to expectations at the time the forecasts for the 2008–12 access arrangement were made. The AER then compared actual system performance (gas delivery and peak demand by customer class) during the 2008–12 access arrangement period with forecast demand for the 2008–12 access arrangement period.

The AER engaged ACIL Tasman (ACIL) to advise on Envestra's demand forecasts, and to assist the AER develop alternative demand forecasts where the AER is not satisfied that forecasts comply with the requirements of the NGR.

In making its draft decision, the AER relied on:

- information provided by Envestra as part of its proposed access arrangement; specifically, Envestra's consultant report on demand forecast, demand forecast spreadsheets, access arrangement information, the regulatory information notice (RIN) pro forma.
- additional information provided by Envestra in response to the AER's information requests
- a report provided by ACIL<sup>665</sup>
- submissions received over the course of consulting on the access arrangement proposal.<sup>666</sup>

## 9.4 Reasons for draft decision

The AER approves Envestra's forecasting methodology as a reasonable basis for determining its forecasts. However, the AER does not approve the proposed demand forecasts. In applying its forecasting methodology, Envestra used some assumptions and data sets that have biased the modelling results. In particular, for weather normalisation:

- estimates of Effective Degree Day (EDD) used by Envestra resulted in demand forecasts that are biased

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<sup>665</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012 and ACIL Tasman, *Review of Demand Forecasts for Envestra Albury - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012

<sup>666</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012



- the heating degree days (HDD) data used by Envestra for its Albury network is not the most current data available.

The AER considers that Envestra's proposed demand forecasts are not arrived at on a reasonable basis and do not represent the best forecasts possible in the circumstances. The reasons for the AER's decision are discussed below.

#### 9.4.1 Minimum, maximum and average demand

Under the NGR, Envestra's access arrangement information must include minimum, maximum and average demand for the earlier access arrangement.<sup>667</sup> The AER considers that the information contained within the AAI and the RIN pro forma satisfy the requirement of r. 72(1)(a)(iii)(A) of the NGR. The AER also considers that the total customer numbers as shown in the access arrangement information and the breakdown by tariff class as shown in the RIN pro forma satisfy the requirement of r. 72(1)(a)(iii)(B) of the NGR.

#### 9.4.2 Forecast pipeline capacity and utilisation

Rule 72(1)(d) of the NGR requires that, to the extent practicable, the access arrangement information should include forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period. Envestra did not provide information on pipeline capacity and utilisation. The AER understands that a distribution network is a meshed network made up of interconnected pipes, and there are a number of practical considerations governing why the calculation of utilisation is not straightforward.

#### 9.4.3 Forecasting methodology

Envestra's consultant Core outlined a six step approach to forecast gas demand. One of the steps was to identify key factors that are likely to drive gas demand. To do this, Core adopted a method which assumes that the combined effect of individual drivers of demand is largely represented in the linear trend of weather adjusted historic data. Core submitted that it was not practical to separately estimate the effect of each demand driver due to data limitations (small number of observations).<sup>668</sup> Core submitted that in developing Envestra's proposed demand forecasts, it focused on transparency and repeatable process (i.e. process that can be replicated). The AER understands that the small sample size available to and used by Core made it impracticable for Core to produce reliable estimates of the effect of each gas demand driver.

ACIL reviewed each of the six steps of Core's forecast methodology. It identified a number of issues with Core's methodology that have the potential to introduce bias and distort the results.<sup>669</sup> These issues include:

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<sup>667</sup> NGR, r. 72(1)(a)(iii)(A).

<sup>668</sup> Core Energy Group, *Demand, Energy and Customer Forecasts - Envestra Limited - Gas Access Arrangement Review - Victoria and Albury Networks (2013 to 2017)*, March 2012, p. 37

<sup>669</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4.2.3 and ACIL Tasman, *Review of Demand Forecasts for Envestra Albury - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4.2.3

- simultaneity problem - the two step approach to forecasting gas assumes prices of gas will remain constant throughout the forecast period
- non-linearities in demand
- absence of dynamics and price elasticities in estimation
- potential for spurious correlation and stationarity testing
- omitted variable bias
- degrees of freedom
- discrete dependent variable.

ACIL reviewed each of these issues to determine how they could be addressed and whether addressing these would improve Envestra's forecasting methodology.<sup>670</sup> ACIL stated that given the short time series of data available and the difficulty in estimating the regression coefficients for Envestra's gas demand function, it is not clear that a more rigorous approach would necessarily result in a more reliable forecast. ACIL considered that in the current circumstances the approach used by Core to develop Envestra's proposed demand forecasts is acceptable<sup>671</sup>. The AER accepts ACIL's conclusion and considers that an attempt to improve the model (in terms of either the range of explanatory variables included or the estimates of the demand coefficients) is impracticable. In this context, and given Envestra's transparency in relation to its approach, the AER accepts that the methodology used to forecast the proposed demand is arrived at on a reasonable basis.

#### 9.4.4 Application of the forecast methodology

The AER considers that the proposed demand forecasts are not the best forecasts possible in the circumstances.<sup>672</sup> This is because some assumptions and data sets used in applying Envestra's forecasting methodology have biased and distorted the modelling results. This section outlines the AER's reasons for its conclusion that the inputs and assumptions used by Envestra result in forecasts which are not consistent with r. 74(2) of the NGR.

##### Weather normalisation of historical data

There is a strong relationship between gas demand and climate. Lower than normal temperatures increase gas demand for residential heating. Therefore, the AER recognises the need to adjust actual gas consumption to ensure that one-off events do not unduly bias demand forecasts.

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<sup>670</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4 and ACIL Tasman, *Review of Demand Forecasts for Envestra Albury - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4

<sup>671</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p.5 and ACIL Tasman, *Review of Demand Forecasts for Envestra Albury - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p. 5-6

<sup>672</sup> NGR, r. 74(2)(b)

Envestra's forecasts account for the impact that weather has on gas demand through a process of weather normalisation. Envestra applied a different measure of weather normalisation for each of its distribution networks. These are discussed below.

### **Victorian distribution network**

For its Victorian network, Envestra used measures of annual effective degree days (EDD) derived by the CSIRO to normalise historical gas consumption data.<sup>673</sup> The CSIRO's analysis reveals a warming trend over the past 60 years for Victoria.<sup>674</sup> Envestra accounted for this warming trend by assuming that 'normal' weather is reflected by the CSIRO's medium anthropogenic global warming projection. This assumption implies that there is a 50 per cent probability for 'normal' weather conditions to be exceeded between 2005 and 2010.<sup>675</sup>

ACIL reviewed Envestra's approach to weather normalisation for the Victorian network by assessing the data used and assumptions made.<sup>676</sup> ACIL noted that the key issue with Envestra's approach related to the assumption about normal weather between 2005 and the 2011.<sup>677</sup> ACIL identified that Envestra's forecasts are based on a projection of EDD between 2005 and 2011.<sup>678</sup> ACIL stated that this approach is unusual and that a more appropriate approach would be to base an assumption about normal weather conditions on historical data.<sup>679</sup> Such historical data was published by AEMO following its 2012 review of weather standards for gas forecasting.<sup>680</sup>

In its review of Envestra's proposed demand forecasts, ACIL compared CSIRO's EDD (projections) and AEMO's EDD (historical). CSIRO data cover the period 1950 to 2011, of which data points between 2005 and 2011 are based on a projection. AEMO data cover the period 1970 to 2011 – all data points are based on actual observations.<sup>681</sup> ACIL found that the CSIRO's projection results in a higher EDD value relative to the AEMO's EDD (see Figure 9.7).

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<sup>673</sup> Core Energy Group, *Demand, Energy and Customer Forecasts - Envestra Limited - Gas Access Arrangement Review - Victoria and Albury Networks (2013 to 2017)*, March 2012, p. 12

<sup>674</sup> CSIRO, *Projected changes in temperature and heating degree-days for Melbourne and Victoria, 2008-2012*, March 2007, p. vii.

<sup>675</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p. 28

<sup>676</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4.4

<sup>677</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4.4

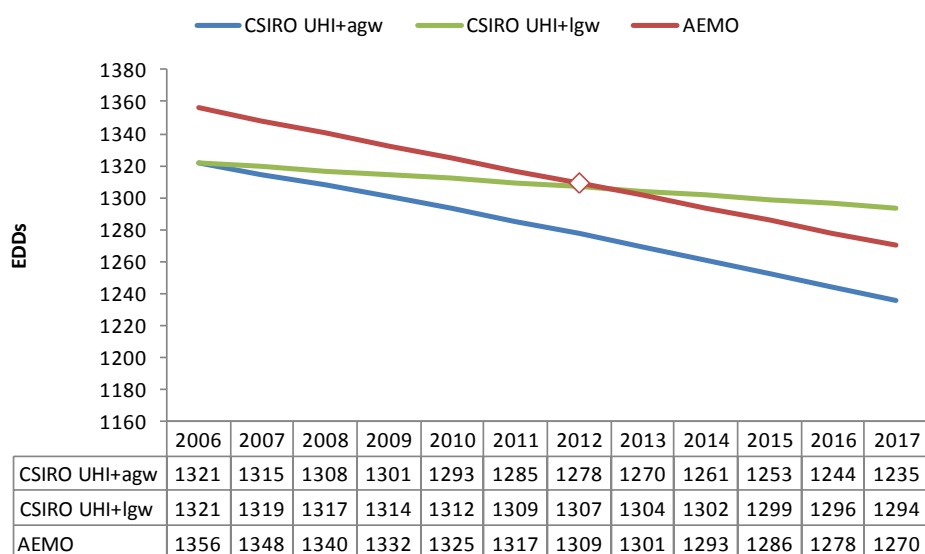
<sup>678</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4.4

<sup>679</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, Section 4.4

<sup>680</sup> Australian Energy Market Operator, *2012 Review of the Weather Standards for Gas Forecasting - Part 1 - Victorian EDD Review*, April 2012

<sup>681</sup> Australian Energy Market Operator, *2012 Review of the Weather Standards for Gas Forecasting - Part 1 - Victorian EDD Review*, April 2012

**Figure 9.7 Comparison of CSIRO EDD projections with AEMO EDD trended values**



Source: ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p. 30.

While AEMO and CSIRO's series show a decline in EDD, the difference between the two series is that the CSIRO's projection starts from a lower base. The effect of using a lower EDD trend based on the CSIRO forecast results is that the demand forecasts are on average lower than if the AEMO regression line was used as the basis of weather normalisation.<sup>682</sup>

In its submission, the EUCV noted that the demand forecasts proposed by the Victorian gas distribution businesses could be understated.<sup>683</sup> The EUCV submitted that AEMO's gas consumption forecasts show a slight increase in consumption in contrast to the forecasts proposed by the distribution businesses. However, the EUCV acknowledged that some of the discrepancy could be explained by gas to power generation and exports to adjacent regions. AEMO's forecasts relate to the Victorian transmission system (VTS). The AER understands that the remaining discrepancy is likely to be explained by the fact that some customers obtain their gas supply through a direct connection to the VTS. The volume of gas supply through a direct connection to the VTS is not captured by the distribution networks.

The AER accepts ACIL's findings on weather normalisation.<sup>684</sup> The AEMO's data for the six years to 2011 are based on actual observations (not on a projection as in the CSIRO's data). The AER considers that the AEMO's series is a reasonable basis and represents the best estimates possible under the circumstances. For this reason, it is appropriate for Envestra to use the current AEMO EDD standard as the basis for weather normalising the historical data. The use of AEMO data to weather normalise historic gas demand will increase Envestra's proposed tariff V demand forecasts by approximately 1.2 per cent. The AER requires Envestra Victoria to amend its demand forecasts as outlined in the revisions section below.

<sup>682</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p. 31

<sup>683</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012, p.42

<sup>684</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Victoria - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p.54

## Albury distribution network

Envestra used measures of annual heating degree days (HDD) instead of EDD to normalise historical gas consumption because of the lack of weather data for Albury.<sup>685</sup> The HDD are recorded by the Bureau of Meteorology (BoM) at Albury Airport. At the time of preparing Envestra's access arrangement proposal, this data was available from 1994 to 2010.<sup>686</sup>

The AER notes that AEMO's preferred measure for weather normalisation is EDD.<sup>687</sup> However, given the absence of such data, the AER accepts the use of HDD to weather normalise Albury's historical gas demand. In its review of the demand forecasts proposed by Envestra, ACIL attempted to replicate Core's weather normalisation using the BoM data which Core referenced as the basis of the weather normalisation calculation. ACIL identified that 11 observations were missing. The AER requested Envestra to explain how it imputed the missing temperature data as the Core model did not show missing data or zero values for HDD on the relevant days.<sup>688</sup> In response, Envestra submitted that Core substituted missing Albury temperature data by using an average of days on either side of the missing data point.<sup>689</sup> The AER accepts that this approach is an acceptable method for imputing the missing temperature data.

ACIL also noted that the rate of change in HDD is sensitive to the length of the input data set. Core's analysis was based on data from January 1994 to December 2010. The BoM has now added data for 2011. The AER understands that the lack of incorporation of the 2011 data reflects the fact that Core's analysis was done before the end of 2011.<sup>690</sup> The AER considers that it is necessary to rely on the most recent and accurate data to produce a gas demand forecast that complies with r. 74(2) of the NGR. The AER has requested Envestra to adjust its demand forecasts for the Albury distribution network to account for the HDD data in 2011.

## Tariff D aggregate MHQ

The proposed maximum hourly quantities (MHQ) for tariff D customers exhibit a declining trend that accelerates towards the end of 2013–17 access arrangement period (Figure 9.5 and Figure 9.6). Envestra did not provide evidence of policy changes or other factors that would justify the steep decline in Envestra's proposed forecasts for tariff D aggregate MHQ. The AER sought clarification on the matter and requested Envestra to re-estimate its tariff D MHQ forecasts taking into account the revised weather normalisation (discussed above).<sup>691</sup> In

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<sup>685</sup> Core Energy Group, *Demand, Energy and Customer Forecasts - Envestra Limited - Gas Access Arrangement Review - Victoria and Albury Networks (2013 to 2017)*, March 2012, p. 12

<sup>686</sup> Core Energy Group, *Demand, Energy and Customer Forecasts - Envestra Limited - Gas Access Arrangement Review - Victoria and Albury Networks (2013 to 2017)*, March 2012, p. 14

<sup>687</sup> Australian Energy Market Operator, *2012 Review of the Weather Standards for Gas Forecasting - Part 1 - Victorian EDD Review*, April 2012.

<sup>688</sup> AER, Information request 9 to Envestra Albury, 13 June 2012.

<sup>689</sup> Envestra Albury, Response to AER: Information request 9, 16 June 2012.

<sup>690</sup> ACIL Tasman, *Review of Demand Forecasts for Envestra Albury - Victorian Gas Access Arrangement for the period 2013-2017*, August 2012, p. 30.

<sup>691</sup> AER, Information request 28 to Envestra Victoria, 10 July 2012; AER, Information request 29 to Envestra Albury, 10 July 2012;

response, Envestra submitted that the declining trend of the proposed MHQ for tariff D customers can be explained by the effect of:<sup>692</sup>

- the introduction of a carbon cost following passage of the Clean Energy Bill 2011, and
- wholesale gas price increases.

Envestra provided the outcome of its analysis of MHQ for tariff customers in the form of a spreadsheet.<sup>693</sup> The AER notes that none of the above effects are incorporated into historical trends. The AER considers that Envestra's assumptions on carbon costs and wholesale gas prices are arrived at on a reasonable basis.

#### 9.4.5 Other issues

##### **Impact of network development and extensions on demand forecasts**

Envestra proposed a network development program to address the trend decline in gas usage.<sup>694</sup> To support the proposed network development program, Envestra included a line item in its proposed opex. The AER has reduced the proposed opex related to network development (Attachment 6). The AER has also reduced the proposed capex related to network extensions (Attachment 3). Accordingly, the AER requires Envestra to reflect the impact of this reduction in opex and capex on its demand forecasts. The revision to demand forecasts outlined below account for this adjustment.

Based on all the above reasons, the AER does not approve the proposed demand forecasts, and considers that the revised forecasts below are the best forecast possible in the circumstances.

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<sup>692</sup> Envestra Victoria, Response to AER information request 28, 24 July 2012, pp.6–7; Envestra Albury, Response to AER information request 29, 24 July 2012, pp.3–4.

<sup>693</sup> Envestra Victoria, Response to AER information request 28, 24 July 2012, pp.6–7; Envestra Albury, Response to AER information request 29, 24 July 2012, pp.3–4.

<sup>694</sup> Envestra Victoria, *Access arrangement information*, 30 March 2012, p. 199.

## 9.5 Revisions

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

**Revision 9.1:** Amend the Victorian network access arrangement information to delete table 13.23 and replace with the following:

**Table 9.2 AER draft decision for Envestra's Victorian Network**

	2013	2014	2015	2016	2017
<b>Residential tariff V</b>					
Customer numbers	565 938	577 776	589 722	601 384	613 288
Demand (TJ)	26 852	26 555	26 297	26 204	25 827
<b>Non-residential tariff V</b>					
Customer numbers	22 950	23 136	23 307	23 413	23 612
Demand (TJ)	6 234	6 062	5 911	5 791	5 704
<b>Tariff D</b>					
Customer numbers	281	283	285	288	290
Demand - MHQ (GJ)	5 721	5 420	5 176	4 983	4 808

Source: AER analysis

**Revision 9.2:** Amend the Albury network access arrangement information to delete table 13.20 and replace with the following:

**Table 9.3 AER draft decision for Envestra's Albury Network**

	2013	2014	2015	2016	2017
<b>Residential tariff V</b>					
Customer numbers	19 700	20 022	20 348	20 680	21 018
Demand (TJ)	849	847	848	850	853
<b>Non-residential tariff V</b>					
Customer numbers	889	892	895	897	900
Demand (TJ)	230	223	218	214	211
<b>Tariff D</b>					
Customer numbers	10	9	9	9	9
Demand - MHQ (GJ)	355	336	321	308	297

Source: AER analysis



## 10 Tariff setting

This attachment outlines the AER's assessment of the reference tariffs proposed by Envestra against the requirements of the NGR, specifically rr. 93 and 94. The AER's assessment focuses on the structure of reference tariffs. The AER's assessment takes into account the revenue and pricing principles including ss. 24(2) and 24(5) of the NGL.

### 10.1 Draft decision

The AER approves Envestra's proposed restructure of reference tariffs for the 2013–17 access arrangement period. The AER is satisfied the proposed structure of the reference tariffs complies with the requirements under rr. 93 and 94 of the NGR.

However, the AER, taking into account the revenue and pricing principles, considers that the quantum of the proposed reference tariffs must be amended as set out in revision 1.3 of attachment 11 of this draft decision. This revision is required to reflect the changes to forecast total revenue and forecast demand. The reasons for the AER's decision are discussed in detail below.

### 10.2 Envestra Victoria's proposal

Envestra proposed three changes to its current reference tariff structure:

- distinction between tariff V residential and tariff V non–residential<sup>695</sup>
- removal of seasonal pricing (peak/off peak) for tariff V customers (residential and non–residential)<sup>696</sup>
- change to the volume steps for all customers and further distinguish the steps between commercial and domestic customers (Table 10.1). Envestra also proposed to add greater weight to fixed charges in most of its pricing zones (Envestra has 5 pricing zones, including Albury).<sup>697</sup>

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<sup>695</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 213; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 193.

<sup>696</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 214; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 194.

<sup>697</sup> Envestra's pricing zones are: Central, Northern, Murray Valley, Bairnsdale and Albury.

**Table 10.1 Envestra - Reference Tariff V – consumption bands**

Current consumption bands (2008–12)	Proposed consumption bands (2013–17)
Tariff V residential	
First 0.1GJ	First 0.0274GJ
Next 0.1 GJ	Next 0.0219GJ
Next 1.2GJ	Balance
Balance	
Tariff V non–residential	
First 0.1GJ	First 0.05GJ
Next 0.1 GJ	Next 0.50GJ
Next 1.2GJ	Next 0.82GJ
Balance	Balance

Source: Envestra Victorian, *Regulatory Information Notice*; Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 214; Envestra Albury, *Regulatory Information Notice*; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 194.

The reference tariffs proposed by Envestra are outlined in Table 10.2. The proposed tariff classes directly reflect Envestra's proposed reference services. Attachment 1 of this draft decision discusses the proposed reference services.

Envestra proposed to maintain its current ancillary reference service tariffs.<sup>698</sup> For the Victorian gas network, Envestra also proposed to recover carbon tax related costs through a separate carbon tax tariff, which will be determined following the AER's approval of a cost pass through application.<sup>699</sup>

**Table 10.2 Envestra's proposed reference services, tariff classes and tariff parameters: 2013–17 access arrangement period**

Reference services	Tariff class	Tariff parameters
Residential haulage reference services	Tariff V residential – Central zone	All residential tariff V are made up of fixed and stepped variable usage charges
	Tariff V residential – Northern zone	
	Tariff V residential – Murray Valley zone	
	Tariff V residential – Bairnsdale zone	
	Tariff V residential – Albury zone	
Non–residential haulage reference services	Tariff V non–residential – Central zone	All non–residential tariff V are made up of fixed and stepped variable usage charges
	Tariff V non–residential – Northern zone	
	Tariff V non–residential – Murray Valley zone	

<sup>698</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 215; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 195.

<sup>699</sup> Envestra Victorian, *Access arrangement proposal*, 30 March 2012, p. 28.

	Tariff V non-residential – Bairnsdale	
	Tariff V non-residential – Albury zone	
	Tariff D non-residential Central zone	
	Tariff D non-residential Murray Valley zone	All non-residential tariff D are made up of stepped variable demand charges
	Tariff D non-residential Bairnsdale zone	
	Tariff D non-residential Albury zone	
Ancillary reference services	Meter and Gas Installation Test	
	Disconnection	
	Reconnection	Fixed charge
	Meter removal	
	Meter reinstallation	
	Special meter read	

Source: Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 183; p. 206 and p. 203–212; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 193–196.

### 10.3 AER approach

In a full access arrangement, a service provider is required to specify for each reference service the reference tariff, the proposed approach to the setting reference tariffs.<sup>700</sup> This is done by:

- explaining how revenues and costs are allocated, including the relationship between costs and tariffs<sup>701</sup>
- defining the tariff classes<sup>702</sup>
- comparing the revenue to be raised by each reference tariff with the cost of providing each individual reference service<sup>703</sup>
- explaining any pricing principles it employed<sup>704</sup>
- describing any pricing principles it employed.<sup>705</sup>

The AER is required to assess Envestra's proposed reference tariffs. Where the AER does not approve Envestra's proposal, the AER must determine the initial reference tariffs.

In its assessment of Envestra's proposed reference tariffs, the AER considered the:

- information provided by Envestra, particularly:

<sup>700</sup> NGR, rr. 48(1)(d)(i); 72(1)(j)(i); 72(1)(j)(ii)

<sup>701</sup> NGR, r. 93(1)–(2)

<sup>702</sup> NGR r. 94(1)–(2)

<sup>703</sup> NGR, r. 94(3)

<sup>704</sup> NGR, r. 94(3)–(4)

<sup>705</sup> NGR, rr. 48(1)(d)(i); 72(1)(j)(i); 72(1)(j)(ii)

- the access arrangement information (AAI) – this document provides details of Envestra's reference tariffs, including pricing principles, re-balancing constraints and information demonstrating the economic efficiency of Envestra reference tariffs
  - Part B of Envestra's access arrangement – this document sets out Envestra's reference tariffs and reference tariff policy<sup>706</sup>
  - tariff neutrality model – this model shows that Envestra's 2012 tariff V in the proposed structure is revenue neutral relative the approved 2012 tariffs<sup>707</sup>
  - the cost allocation model – this model sets out the method used by Envestra for the attribution of direct costs and the allocation of shared costs to, and between, its categories of gas distribution services
  - additional information provided by Envestra in response to the AER's information requests
- submissions received in the course of consulting on the access arrangement proposal.

### **Identifying the reference service**

The NGR require Envestra to specify a reference tariff for each reference service.<sup>708</sup> In assessing Envestra's proposed reference tariffs, the AER first considers what is (or are) the reference service(s) for the purposes of r. 101 of the NGR. The AER's draft decision on what constitutes the reference services is set out in attachment 1

### **Assessing the tariff setting methodology for the reference service**

The reference tariffs for a full access arrangement must be designed to meet the requirements of rr. 93 and 94 of the NGR. The AER has full discretion under rr. 93 of the NGR and limited discretion under r. 94 of the NGR.<sup>709</sup>

The AER considered how Envestra intends to charge for reference services. Firstly, the AER assessed how Envestra intends to allocate costs and revenues between reference services and other services. Rule 93 of the NGR requires a service provider to demonstrate that total revenue is allocated between reference and other services in the ratio in which costs are allocated between reference and other services.<sup>710</sup>

Secondly, the AER assessed how Envestra grouped its customers into tariff classes.<sup>711</sup> Rule 94(1)-(2) of the NGR requires that a tariff class group together customers for reference services on an economically efficient basis and to avoid unnecessary transaction costs. The AER considered that customer connection and usage characteristics are reasonable cost

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<sup>706</sup> Envestra Victoria's proposed access arrangement is set out in three parts - Part A, Part B and Part C. These documents can be accessed through the following link: <http://www.aer.gov.au/content/index.phtml/itemId/738144>

<sup>707</sup> Envestra provided this model to the AER as part of its access arrangement proposal, however, on a confidential basis.

<sup>708</sup> NGR, r. 48(1)(d)(i).

<sup>709</sup> NGR, r. 94(6).

<sup>710</sup> NGR, r. 93

<sup>711</sup> NGR, r. 94(1)-(2).

drivers within a service providers gas distribution system. The grouping of customers with similar connection and usage characteristics in the same tariff class reveals consistency with r. 94(1)–(2) as this approach is likely to be economically efficient and avoid unnecessary transaction costs.

Thirdly, for the purpose of compliance with r. 94(3)–(4) of the NGR, the AER assessed:

- how the expected average revenue of a tariff class compares with the stand alone cost and avoidable cost of providing the reference service to that tariff class<sup>712</sup>
- whether the tariff takes into account transaction costs associated with the tariff<sup>713</sup>
- whether the tariffs take into account the long run marginal costs of reference services<sup>714</sup>
- whether customers belonging to the relevant tariff class are able or likely to respond to price signals.<sup>715</sup>

## 10.4 Reasons for draft decision

The AER approves Envestra's proposed reference tariff structure. The AER considers the proposed structure of reference tariffs complies with the requirements of the NGR. However, the AER considers that the proposed initial reference tariffs must be amended as set out in the revisions section of attachment 11. This revision is required to reflect the changes to forecast total revenue and forecast demand. The changes in total revenue are outlined in the revenue section of this draft decision and the changes to forecast demand are outlined in attachment 9 of this draft decision.

The NGR do not prevent service providers from restructuring tariffs at the access arrangement review. However, any tariff structure must comply with broad principles, which include:

- the principles guiding the division of customers into tariff classes<sup>716</sup>
- tariffs should be on or between stand alone and avoidable cost<sup>717</sup>
- tariff components reflect long run marginal cost<sup>718</sup>
- consideration be given to transaction costs and whether customers can respond to price signals.<sup>719</sup>

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

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<sup>712</sup> NGR, r. 94(3).

<sup>713</sup> NGR, r. 94(4)(b)(i).

<sup>714</sup> NGR, r. 94(4)(a).

<sup>715</sup> NGR, r. 94(4)(b).

<sup>716</sup> NGR, r. 94(2).

<sup>717</sup> NGR, r. 94(3).

<sup>718</sup> NGR, r. 94(4)(a).

<sup>719</sup> NGR, r. 94(4)(b).

- the allocation of revenues and costs to reference tariffs
- the establishment of tariffs classes
- tariff classes and revenue limits

The Energy Users Coalition of Victoria (EUCV) submitted that there was a significant increase in the level of the proposed reference tariffs compared with the approved level under the ESC. The EUCV noted that all of the distribution businesses have attributed the higher tariffs to the combination of increased claims for rates of return, higher capex and opex claims and an expected reduction in the consumption of gas.<sup>720</sup> The EUCV further noted that great care is required in assessing whether the reference tariffs are cost reflective, citing that it was unable to make its own assessment due to information asymmetry.<sup>721</sup>

The AER has considered the EUCV submissions in making this draft decision on Envestra's proposed reference tariffs.

#### 10.4.1 Allocation of revenues and costs to reference tariffs

The AER is satisfied that Envestra's proposed allocation of total revenue and costs between reference services and other services complies with r. 93(1)–(2) of the NGR for the following reasons:

- Envestra submitted that the costs set out in its access arrangement information relate only to reference services (including reference ancillary services) and that these costs are allocated between the two reference services provided by Envestra.<sup>722</sup> Costs incurred in providing non-reference services are not included in the access arrangement information because they are directly recovered from the particular customers requesting the service.<sup>723</sup> The reference services provided by Envestra are further discussed in attachment 1 of this draft decision. The AER reviewed Envestra's costs allocation and it is satisfied that the approach to allocating costs between reference services and non-reference services is consistent with r. 93(1)-(2) of the NGR.
- The AER reviewed Envestra's costs allocation model (CAM).<sup>724</sup> This model shows how costs are allocated between the two reference services provided by Envestra.<sup>725</sup> The CAM also allocates the building block revenue components to each tariff class based on a combination of cost allocators, which include asset values, customer numbers and consumption.<sup>726</sup> The AER is satisfied that Envestra's costs and revenue allocation approach is consistent with r. 93(1)-(2) of the NGR.

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<sup>720</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012, p. 3

<sup>721</sup> Energy Users Coalition of Victoria, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, June 2012, p. 66

<sup>722</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 212; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 192.

<sup>723</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 212; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 192.

<sup>724</sup> The CAM was provided to the AER on a confidential basis as part of Envestra's access arrangement proposal.

<sup>725</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 212; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 192.

<sup>726</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 212; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 192.

## 10.4.2 Establishment of tariff classes

Rules 94(1)–(2) of the NGR set out the requirements for tariff classes for a distribution pipeline. The AER assessed the proposed structure of reference tariffs against these requirements and also assessed the impact of the proposed changes on customers. The results of the AER's assessment are outlined below.

### **Distinction between residential and non-residential customers**

Envestra proposed to split its tariff V customers into residential and non-residential tariff V customers.<sup>727</sup> Envestra proposed a similar distinction during the 2011 Envestra South Australia review which was accepted by the AER.<sup>728</sup> Other Victorian gas service providers, specifically Multinet and SP AusNet, already have such a split in their tariffs. The AER considers that the distinction between tariff V residential and non-residential customers is likely to be more economically efficient because the consumption profile of these customers groups is likely to be driven by different factors. Further, the proposed split of tariff V customers is likely to promote greater cost reflectivity. Therefore, the AER is satisfied that the proposed split of tariff V customers into residential and non-residential is consistent with r. 94(1)–(2).

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<sup>727</sup> Envestra Victorian, *Access arrangement information*, p. 213; Envestra Albury, *Access arrangement information*, p. 193.

<sup>728</sup> AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016*, February 2011, p.206; AER, *Draft decision, Envestra Ltd access arrangement proposal for the QLD gas network, 1 July 2011–30 June 2016*, February 2011, p.188.

## Removal of peak and off peak tariffs

Envestra proposed to remove the distinction between peak and off peak charging for tariffs V residential and non-residential.<sup>729</sup> Envestra submitted that customers cannot respond to these price signals.<sup>730</sup> The AER considers that seasonal based pricing is unlikely to provide significant price signals to customers. It is impossible for the vast majority of customers to shift consumption to other seasons, although they may curtail consumption to some degree during peak seasons due to higher tariffs. However, this incentive to shift consumption is weakened by Envestra's proposed restructuring of the volume steps (discussed below). The proposed restructuring of the volumes steps has a bigger impact on prices than the rationalisation of peak and off peak tariffs. The AER considers that Envestra's proposed rationalisation of tariff V is likely to simplify tariffs and reduce transaction costs (for example, menu costs) to some degree, and is therefore consistent with rr. 94(2) and 94(4)(b)(i). The AER is satisfied that, in designing the proposed reference tariffs, Envestra had regard to the ability of customers to respond to price signals as required under r. 94(4)(b)(ii) of the NGR.

## Tariff steps and fixed charges

Envestra proposed to change the volume steps for all customers and further distinguished the steps between residential and non-residential customers as shown in Table 10.1. Envestra also added greater weight to fixed charges in most of its pricing zones.<sup>731</sup> Envestra submitted that these changes better reflect the nature of the costs it incurs.<sup>732</sup> The outcome of these changes is that the steps now begin at lower volumes of consumption than previously. Envestra also proposed a significant increase to the tariffs associated with the initial steps.<sup>733</sup> The AER understands that Envestra's proposal is designed to introduce more cost reflective tariffs structures at the small customer level. This approach is similar to that of Envestra in South Australia and Queensland, as approved by the AER.<sup>734</sup>

The AER considers that the proposed steps are not inconsistent with the requirements of r. 94 of the NGR. In particular, the tariff steps can be considered to reflect long run marginal costs at each of the different consumption levels. Envestra proposed to change targets cut-off points in the steps that relate to particular customer profiles (Table 10.1). This is consistent with r. 94(4)(a) of the NGR.

## Impacts of proposed changes for small customers

Envestra stated that for smaller customers, its restructured tariffs now deliver annual bills more in line with, but still lower than, other gas service providers. It also stated that the charges are more reflective of costs.<sup>735</sup> The AER analysed the bill impact of the proposed

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<sup>729</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 214; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 194.

<sup>730</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 214; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 194.

<sup>731</sup> Envestra, Response to AER: information request 1, 11 May 2012.

<sup>732</sup> Envestra, Response to AER: information request 1, 11 May 2012.

<sup>733</sup> Envestra, Response to AER: information request 1, 11 May 2012.

<sup>734</sup> AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016*, February 2011, p.206; AER, *Draft decision, Envestra Ltd access arrangement proposal for the QLD gas network, 1 July 2011–30 June 2016*, February 2011, p.188.

<sup>735</sup> Envestra, Response to AER: Information request 1, 11 May 2012.



changes on small customers with annual consumption of 10 GJ (top of first step), 18 GJ (top of second step) and 28 GJ (10GJ into the third step). Envestra submitted that such consumption levels would represent a customer with gas cooker only (10 GJ) and a customer with gas cooker and gas hot water system (18GJ).<sup>736</sup> Consumption of greater than 18GJ per annum would pick up customers using gas for space heating.<sup>737</sup> The AER's analysis focused on zones with the bulk of customers, namely Central (82 per cent of all customers) and North Victoria (12 per cent of all customers). The annual bill impacts of the proposed restructure are shown in Table 10.3.

**Table 10.3 Annual bill impacts of tariff restructure**

<b>Envestra: Central Vic - 82% of total customers</b>					
Consumption level (GJ pa)	Approved tariffs	2012	Restructured tariffs	2012	Change
10	\$106		\$133		\$28
18	\$154		\$182		\$28
28	\$215		\$216		\$0
<b>Envestra: North Vic - 12% of total customers</b>					
Consumption level (GJ pa)	Approved tariffs	2012	Restructured tariffs	2012	Change
10	\$96		\$123		\$27
18	\$137		\$165		\$29
28	\$188		\$194		\$7

Source: AER analysis

Envestra submitted that 23 per cent of residential customers fall within the first two steps under the revised structure.<sup>738</sup> This suggests about a quarter of all residential customers will experience an annual bill increase of about \$30 based on this tariff restructuring alone. Small residential customers in the Envestra pricing zone of Bairnsdale (which has less than one per cent of all customers) will be most significantly affected with those consuming 10GJ or 18 GJ per annum experiencing around a \$40 annual bill increase.<sup>739</sup>

The AER compared Envestra's restructured 2012 bills against the 2012 residential customers' bills for SP AusNet's and Multinet's tariff V residential customers. These results indicate that Envestra's charges, despite the restructure, are still comparable with the other service providers, at least for those zones with the bulk of customers (Table 10.4).<sup>740</sup>

**Table 10.4 Annual bills (residential customers)–SP AusNet and Multinet customers**

<b>Multinet: Metro - 97 per cent of total customers</b>		
Consumption level (GJ pa)	Approved	2012

<sup>736</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 214; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 194.

<sup>737</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 214; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 194.

<sup>738</sup> Envestra, Response to AER: information request 1 of 4 May 2012, 11 May 2012.

<sup>739</sup> Domestic customers in the pricing zone of Murray Valley and Albury will experience increases in their annual bills of about \$30 and \$25 respectively.

<sup>740</sup> The AER's analysis assumes that consumption occurred evenly across the seasonal periods.

	tariffs
10.00	\$132
18.00	\$188
<b>SP AusNet: Central - Majority of customers</b>	
Consumption level (GJ pa)	Approved 2012 tariffs
10.00	\$123
18.00	\$193

Source: AER analysis

### 10.4.3 Tariff classes and revenue limits

The AER is satisfied that Envestra's proposed reference tariffs are consistent with the NGR requirements.<sup>741</sup> The NGR provide that reference tariffs for each tariff class should lie on or between the stand alone cost of providing the reference service to customers who belong to that class and the avoidable cost of not providing the reference service to those customers.<sup>742</sup>

The AER reviewed Envestra's definitions of avoidable and stand alone costs for residential, non-residential and demand tariff classes and considers that they are acceptable for assessing compliance with rule 94(3). Envestra demonstrated that for each tariff within the tariff V and tariff D classes, the expected tariff revenue lies on or between the avoidable and stand alone costs (Table 10.5 and Table 10.6). The AER notes that it reviewed the stand alone and avoidable costs for Tariff V split by residential and non-residential customers, although this information has been aggregated in the below tables for confidentiality reasons.

<sup>741</sup> NGR, r. 94(3)–(4).

<sup>742</sup> NGR, r. 94(3).

**Table 10.5 Envestra Victoria – avoidable, expected and stand alone costs (excluding GST, \$2013 million)**

Tariff class	Avoidable costs	Weighted average revenue	Stand alone coast	Compliance with rule 94(3)
Tariff V – Central	14.20	165.65	185.33	Yes
Tariff V – North	1.94	19.67	53.60	Yes
Tariff V – Murray Valley	0.23	1.76	34.54	Yes
Tariff V – Bairnsdale	0.08	1.15	33.41	Yes
Tariff D – Central/North	0.00	3.97	16.42	Yes
Tariff D – Murray Valley	0.00	0.11	16.42	Yes
Tariff D – Bairnsdale	0.00	0.04	16.42	Yes
Meter and gas installation test	0.00	0.01	0.01	Yes
Disconnection test	0.00	0.45	0.45	Yes
Reconnection	0.00	0.50	0.50	Yes
Meter removal	0.00	0.17	0.17	Yes
Meter reinstallation	0.00	0.01	0.01	Yes
Special meter reads	0.00	1.25	1.25	Yes

Source: Envestra Victorian, *Access arrangement information*, 30 March 2012, p.218.

**Table 10.6 Envestra Albury – avoidable, expected and stand alone costs (excluding GST, \$2013 million)**

Tariff class	Avoidable costs	Weighted average revenue	Stand alone coast	Compliance with rule 94(3)
Tariff V	0.51	6.05	7.72	Yes
Tariff D	0.00	0.25	1.60	Yes
Meter and gas installation test	0.00	0.00	0.00	Yes
Disconnection test	0.00	0.05	0.05	Yes
Reconnection	0.00	0.05	0.05	Yes
Meter removal	0.00	0.01	0.01	Yes
Meter reinstallation	0.00	0.00	0.00	Yes
Special meter reads	0.00	0.05	0.05	Yes

Source: Envestra Albury, *Access arrangement information*, 30 March 2012, p.198.

## 10.5 Revisions

Before the access arrangement can be approved, SP AusNet must amend the proposed reference tariffs as outlined below.

**Revision 10.1:** Amend Annexure B of the access arrangement proposal as indicated in revision 11.3 of attachment 11

# 11 Tariff variation mechanism

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

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

## 11.1 Draft decision

The AER does not approve Envestra's proposed tariff variation mechanism for the 2013–17 access arrangement period. The AER considers that some elements of Envestra's proposed tariff variation mechanism are not consistent with the NGL and the NGR or that there are alternatives to some elements of the proposal that better meet the purpose of the NGR and NGL. In particular, the AER considers that:

- The CPI definition, the magnitude of the rebalancing constraint, elements of the cost pass through variation mechanism and the annual reference tariff variation process are not consistent with r. 97 of the NGR regarding the mechanics of tariff variation. These proposed elements must be amended as indicated below.
- the proposed initial reference tariffs and x factors must be amended to reflect the changes to the forecast total revenue identified in the revenue section of the draft decision.
- The definition of Network User Failure Event, Tax Change Event and Insurance Cap Event require amendment.

The reasons for the AER's decision are further discussed below.

## 11.2 Envestra's proposal

Envestra proposed a tariff variation mechanism that is generally consistent with that of the current access arrangement other than updated values for the x factor and an increased rebalancing constraint.<sup>743</sup> The proposed tariff variation mechanism includes:<sup>744</sup>

- an annual reference tariff adjustment mechanism and process, which applies for each year of the access arrangement period

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<sup>743</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 228; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206.

<sup>744</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 225-236; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 203-212.

- a cost pass through reference tariff variation mechanism and process.

## 11.2.1 Annual tariff variation mechanism

### Haulage reference services

Envestra proposed an annual tariff variation mechanism in the form of a weighted average price cap (WAPC) formula, consistent with its current access arrangement.<sup>745</sup> The proposed tariff control formula is:<sup>746</sup>

$$\frac{\sum_{i=1}^n \sum_{j=1}^m p_t^{ij} \cdot q_{t-2}^{ij}}{\sum_{i=1}^n \sum_{j=1}^m p_{t-1}^{ij} \cdot q_{t-2}^{ij}} \leq (1 + CPI_t)(1 - X_t)(1 + L_t)$$

where:

$CPI_t$  is the CPI for year t<sup>747</sup>

$X_t$  see Table 11.1 below for different values corresponding to year/business.

$n$  is the number of different haulage reference tariffs;

$m$  is the different components, elements or variables ("components") comprised within a haulage reference tariff;

$p_t^{ij}$  is the proposed component  $j$  of haulage reference tariff  $i$  in year  $t$ ;

$p_{t-1}^{ij}$  is the prevailing component  $j$  of haulage reference tariff  $i$  in year  $t-1$ ;

$q_{t-2}^{ij}$  is the quantity of component  $j$  of reference tariff  $i$  sold in year  $t-2$

$L_t$  is the licence fee pass through adjustment factor for calendar year  $t$ .

$CT_t$  refers to the carbon tax tariff.

Envestra proposed a separate carbon tax tariff formula to recover its carbon tax costs for the Victorian distribution network.<sup>748</sup>

<sup>745</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 226; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 204.

<sup>746</sup> Envestra Victorian, *Access arrangement proposal*, 30 March 2012 p.34; Envestra Albury, *Access arrangement proposal*, 30 March 2012 p.32.

<sup>747</sup> CPI means the Consumer Price Index (All Groups Weighted Average for the Eight Capital Cities) as published by the Australian Bureau of Statistics or its successor or, if that Consumer Price Index is not published for any reason; whatever alternative index Envestra determines (with the AER's approval) from time to time is reasonably equivalent to that Consumer Price Index.

<sup>748</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 230.

**Table 11.1      Envestra: x factors proposed for the 2013–17 access arrangement period**

Year	Envestra Victoria	Envestra Albury
2014	-0.123	-0.066
2015	-0.073	-0.016
2016	-0.073	-0.016
2017	-0.073	-0.016

Source: Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 227 and Envestra Albury, *Access arrangement information*, 30 March 2012, p. 205.

The key change from Envestra's current tariff variation mechanism is an increase in the rebalancing constraint from two per cent to 10 per cent.<sup>749</sup>

### Ancillary services

Envestra is proposing to maintain its current tariff variation mechanism for ancillary reference services. This mechanism increases the level of ancillary reference tariffs by CPI on an annual basis.<sup>750</sup>

## 11.2.2 Cost past through tariff mechanism

Envestra proposed a number of cost pass through events.<sup>751</sup> However, Envestra did not include a cost pass through adjustment factor in its proposed tariff variation formula.<sup>752</sup> The cost pass through events proposed by Envestra include:<sup>753</sup>

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

<sup>749</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 228; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206.

<sup>750</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 233; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 208.

<sup>751</sup> Envestra Victorian, *Access arrangement proposal*, 30 March 2012 p.10; Envestra Albury, *Access arrangement proposal*, 30 March 2012 p.9.

<sup>752</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 227; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 205.

<sup>753</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 233–235 and Envestra Victorian, *Access arrangement proposal*, 30 March 2012 p.10; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 209–211 and Envestra Albury, *Access arrangement proposal*, 30 March 2012 p.10.

- an insurance cap event
- a natural disaster event

Envestra proposed no materiality threshold for these pass through events.<sup>754</sup>

### 11.2.3 Annual tariff variation process

Envestra proposed to notify the AER in respect of any reference tariff variations at least 35 business days prior to implementation.<sup>755</sup> The proposed time frame includes 20 business days for the AER to approve or reject the proposed variations and 15 business days for market participants to prepare for the implementation of the new tariffs.<sup>756</sup>

## 11.3 Assessment approach

Under the NGR, a reference tariff variation mechanism for an access arrangement:

- must be designed to equalise (in present value terms):<sup>757</sup>
  - forecast revenue from reference services over the access arrangement period and
  - the portion of total revenue allocated to reference services for the access arrangement period
- may provide for variation of a reference tariff:<sup>758</sup>
  - in accordance with a schedule of fixed tariffs or
  - in accordance with a formula set out in the access arrangement or
  - as a result of a cost pass through for a defined event or
  - by the combination of two or more of these operations

A formula for variation of a reference tariff may (for example) provide for variable caps on the revenue to be derived from a particular combination of reference services; or tariff basket price control; or revenue yield control; or a combination of all or any of these factors<sup>759</sup>

A reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff.<sup>760</sup>

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<sup>754</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.235; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 211.

<sup>755</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 232; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 208.

<sup>756</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p. 232; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 208.

<sup>757</sup> NGR, r. 92(2).

<sup>758</sup> NGR, r. 97(1).

<sup>759</sup> NGR, r. 97(2).

<sup>760</sup> NGR, r. 97(4).



The AER is required to have regard to the following factors in deciding whether a reference tariff variation mechanism is appropriate for an access arrangement:<sup>761</sup>

- the need for efficient tariff structures
- the possible effects of the reference tariff variation mechanism on administrative costs
- the regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism
- the desirability of consistency between regulatory arrangements for similar services
- any other relevant factor.

Based on these factors, the AER considered the implications of the proposed reference tariff variation mechanism for efficient tariff structures and administrative costs of the AER, Envestra and natural gas consumers or potential consumers.<sup>762</sup> The AER took into account the nature and scope of pipeline reference services to which reference tariffs are applicable. Further, the AER compared the proposed reference tariff variation mechanism arrangements with the current arrangements for the Envestra and with other recent gas distribution access decisions for consistency in approach across the provision of similar services.

Rule 97(3)(e) of the NGR provides the AER with broad discretion to take into account any factors it considers relevant in deciding whether particular mechanics for reference tariff variation are appropriate. In this context, the AER assessed the potential impacts of Envestra's proposal on incentives for pipeline operation in a manner consistent with the National Gas Objectives (NGO) and with the revenue and pricing principles (RPP).<sup>763</sup> The AER considered the implications of Envestra's proposal for the allocation of operational risk amongst the pipeline operator and users of pipeline services. Further, the AER assessed the implications of Envestra's proposed reference tariff variation mechanism for effective risk management in light of the long term interests of consumers of natural gas.

The AER has full discretion in assessing Envestra's proposed reference tariff variation mechanism.<sup>764</sup> Accordingly, the AER can reject a proposed element of the reference tariff variation mechanism if it considers a preferable alternative exists that complies with the requirements of the NGL and the NGR. To reach its decision, the AER, had regard to the above factors and:

- assessed whether the proposed tariff variation mechanism meets the requirements of the NGL and NGR
- considered whether an alternative to the proposed reference tariff variation mechanism would better promote the purpose of the regulatory framework.

In making its decision, the AER relied on:

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<sup>761</sup> NGR, r. 97(3)(a)–(b).

<sup>762</sup> NGR, r. 97(3)(b).

<sup>763</sup> NGL, ss. 23 and 24.

<sup>764</sup> NGR, r. 40(3).

- information provided by Envestra; particularly, the access arrangement information (AAI) and Part B of the proposed access arrangement – these documents provide details of Envestra's proposed price control mechanism
- additional information provided by Envestra in response to the AER's information requests
- submissions received in the course of consulting on the access arrangement proposal.

## 11.4 Reasons for decision

The AER does not approve Envestra's proposed tariff variation mechanism for the 2013–17 access arrangement period. The AER considers that some elements of Envestra's proposed tariff variation mechanism are not consistent with the NGL or the NGR or that there are alternatives to some elements of Envestra's proposed tariff variation mechanism that better promote the purpose of the regulatory framework.<sup>765</sup> The elements that the AER does not approve relate to limited aspects of Envestra's proposal.

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

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

### 11.4.1 Annual tariff variation mechanism

#### Revenue equalisation

Under r. 92(2) of the NGR, the annual tariff variation mechanism over an access arrangement period must be designed to equalise (in present value terms) the forecast revenue from reference services and the portion of forecast total revenue allocated to reference services. Envestra's proposed annual tariff variation formula complies in principle with r. 92(2) of the NGR. However, the AER considers that the initial reference tariffs must be amended as set out in revision 1.3. This amendment is required to reflect the changes to forecast total revenue and forecast demand. The changes in total revenue are outlined in the revenue section of the draft decision and changes to forecast demand are outlined in attachment 9 of this draft decision.

#### Annual tariff variation formula

The AER approves the overall structure of Envestra's proposed formula for variations to the reference service tariffs. The proposed form is consistent with that of the current access arrangement, in that it provides for an inflation adjustment, an x factor adjustment and a licence fee factor adjustment. However, the AER does not approve some elements of that proposed formula, including the proposed:

- magnitude of the rebalancing constraint,

<sup>765</sup> NGR, rr. 92(2) and 97(3).

- definition of CPI,
- x factors.

The reasons for the AER decision in regard to the proposed CPI definition and the magnitude of the rebalancing constraint are discussed below. The AER's reasoning for not approving the proposed x factor values is discussed in the revenue section of this draft decision.

### Rebalancing constraint

The AER approves Envestra's proposal not to apply the rebalancing constraint in the first year of the access arrangement period. In accordance with r. 97(3)(d) of the NGR, the AER has taken into account the factor that Envestra's proposal is consistent with how the rebalancing constraint applies in other gas decisions made by the AER and in the electricity industry.<sup>766</sup>

Envestra submitted that the proposed increase in the rebalancing constraint (from two to 10 per cent) will provide it with a reasonable opportunity to recover its efficient costs (as required by the RPP).<sup>767</sup> It also stated that the proposed rebalancing constraint would allow Envestra to transition to the revised tariff structures in a way that effectively manages price changes to the customers (as required by the NGO).<sup>768</sup> Envestra added that an increased rebalancing constraint would provide some consumers with protection from large price changes.<sup>769</sup>

In assessing the rebalancing constraint within the proposed tariff variation mechanism, the AER had regard to the relevant factors under r. 97(3) of the NGR. The AER's reasoning is outlined below.

The AER does not approve the proposed increase (two to 10 per cent) of the rebalancing constraint. In summary:

- The proposed rebalancing constraint could lead to increased price volatility and potential price shocks to customers within the access arrangement period. The AER considers that such outcomes are not consistent with the NGO.<sup>770</sup>
- The AER notes that the proposed rebalancing constraint is inconsistent with Envestra's current arrangements; the current arrangements for the other Victorian gas service providers; and the AER's recent decisions for Queensland and South Australia gas service providers.
- The AER has agreed to the rebalancing of Envestra's 2012 reference tariffs which will significantly mitigate the need for further rebalancing.

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<sup>766</sup> AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016, February 2011*, p.206; AER, *Draft decision, Envestra Ltd access arrangement proposal for the QLD gas network, 1 July 2011–30 June 2016, February 2011*, p.188.

<sup>767</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.228-229; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206-207.

<sup>768</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.228-229; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206-207.

<sup>769</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.228-229; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206-207.

<sup>770</sup> NGL, s. 23

- The AER considers that the current form of rebalancing constraint, in combination with the cost pass through provisions under the NGR, provides Envestra with a reasonable opportunity to recover at least its efficient costs.

*The need for efficient tariff structures (rule 97(3)(a))*

Envestra submitted that the proposed increase in the rebalancing constraint will allow it to transition to the revised tariff structures in a way that effectively manages price changes to the customers and provide some consumers with protection from large price changes.<sup>771</sup> The AER has approved a significant tariff restructuring proposed by Envestra (see attachment 10 of this draft decision). The AER considers that a higher rebalancing constraint could lead to increased price volatility and potential price shocks to customers within the regulatory period. This would create uncertainty for downstream users which, in turn, may be detrimental to the efficient investment in and utilisation of pipeline assets. The AER considers that a reference tariff control should preferably result in a price path with a reasonable degree of certainty and predictability. This view was also raised by AGL.<sup>772</sup> This is important for a retailer in considering medium and long term contracts for consumers and its ability to manage the cost of providing services.<sup>773</sup> The AER considers that such outcomes are not inconsistent with the RPP.<sup>774</sup> Therefore, a rebalancing constraint of two per cent is appropriate for the 2013–17 access arrangement period.

*Effects of the reference tariff variation mechanism on administrative costs (rule 97(3)(b))*

The AER considers that once reference tariffs have been allowed to change, relative to the prices in year t-1, the administrative costs to the AER and the service provider of assessing a larger change in tariffs are likely to be immaterial.

*The regulatory arrangements applicable to the relevant reference services (rule 97(3)(c))*

The AER notes that the proposed reference tariff variation mechanism is different from that which applies to Envestra currently.

*Consistency between regulatory arrangements for similar services (rule 97(3)(d))*

Envestra submitted that its proposed rebalancing constraint of 10 per cent is consistent with that approved by the AER for the New South Wales gas distributor.<sup>775</sup> The AER acknowledges that it determined a rebalancing constraint of 10 per cent for Jemena Gas Networks (NSW).<sup>776</sup> However, the AER revised its view on the magnitude of the rebalancing constraint in its revenue determination decision for the Victorian electricity DNSPs, setting a

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<sup>771</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.228-229; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206-207.

<sup>772</sup> AGL, *Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals*, 29 June 2012, p. 2-3

<sup>773</sup> AGL, *Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals*, 29 June 2012, p. 2-3

<sup>774</sup> NGL, s. 24(3)(c).

<sup>775</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.229; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206.

<sup>776</sup> AER, *Final decision, Jemena gas network access arrangement proposal for the NSW gas network 1 July 2010 to 30 June 2015*, June 2012, p.372.,

rebalancing constraint of two per cent.<sup>777</sup> This view was recently reaffirmed in the AER's decision on Envestra's QLD and SA access arrangement.<sup>778</sup> The AER considers that it is desirable for the Envestra's rebalancing constraint to be consistent with the rebalancing constraints in the recent access arrangements decided by the AER. The AER notes that a rebalancing constraint of two per cent currently applies to Envestra, the other Victorian gas service providers and electricity DNSPs.<sup>779</sup>

#### *Other relevant factors 97(3)(e)*

Envestra submitted that the proposed increase in the rebalancing constraint is required to provide it with a reasonable opportunity to recover its efficient costs.<sup>780</sup> As noted above, the AER has approved a significant tariff restructuring proposed by Envestra (see attachment 10 of this draft decision). The AER considers that a higher rebalancing constraint could lead to increased price volatility and potential price shocks to customers within the regulatory period. This would create uncertainty for downstream users which, in turn, may be detrimental to the efficient investment in and utilisation of pipeline assets.

For all the above reasons, the AER does not approve the rebalancing constraint as proposed by Envestra. The AER considers that a rebalancing constraint of two per cent is appropriate for the 2013–17 access arrangement period. The AER will consult with market participants to assess how this decision aligns with their preference.

#### **Definition of CPI**

Envestra defined the CPI as:

the Consumer Price Index (All Groups Weighted Average for the Eight Capital Cities) as published by the Australian Bureau of Statistics or its successor or, if that Consumer Price Index is not published for any reason; whatever alternative index Envestra determines (with the AER's approval) from time to time is reasonably equivalent to that Consumer Price Index.<sup>781</sup>

The AER considers that this definition is vague and it is not consistent with the CPI definition of other Victorian gas service providers. The AER considers that an indicator of inflation that closely aligns with the annual tariff variation process is appropriate.<sup>782</sup> The CPI to apply to Envestra over the 2013–17 access arrangement period should appropriately reference the CPI change from the September quarter immediately preceding the start of the relevant calendar year for the tariff variation (t-1) to the September quarter immediately preceding the calendar year (t-2). The AER is of the view that this is consistent with the most accurate measure available of the inflationary impacts on Envestra's costs and the CPI definition

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<sup>777</sup> AER, *Draft decision, Victorian distribution network service providers, distribution determination, 2011–2015*, June 2010, pp.59–70; AER, *Final decision, Victorian distribution network service providers, distribution determination, 2011–2015*, June 2010, pp.31–33, 40–57.

<sup>778</sup> AER, *Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016, February 2011*, p.206; AER, *Draft decision, Envestra Ltd access arrangement proposal for the QLD gas network, 1 July 2011–30 June 2016, February 2011*, p.188.

<sup>779</sup> NGR, r. 97(3)(d).

<sup>780</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.228; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 206.

<sup>781</sup> Envestra Victorian, *Access arrangement proposal*, 30 March 2012 p.19; Envestra Albury, *Access arrangement proposal*, 30 March 2012 p.19.

<sup>782</sup> NGR, r. 97.

currently applied to Envestra. Envestra is required to amend its proposed definition of CPI as indicated in revision 1.1, before its tariff variation mechanism can be approved.

### Other technical issues

Envestra did not include a cost pass through adjustment factor in its proposed tariff variation formula for the haulage reference service. The AER notes that Envestra outlined its proposed approach to cost pass through (further discussed below). However, the proposed reference tariff variation formula does not show how Envestra intends to implement any pass through amount approved by the AER. For clarity and certainty, it would be preferable for Envestra to show to all stakeholders how the cost pass through will operate within the annual reference tariff variation formula. The AER requires Envestra to include a pass through adjustment factor in its formula for the annual variation of haulage reference services before it can be approved as prescribed by revision 1.4.<sup>783</sup>

### Ancillary reference services

The AER approves Envestra's proposed variation formula for ancillary reference services. The proposed formula is consistent with the earlier access arrangement in that it provides for an inflation adjustment.<sup>784</sup> However, the definition of CPI that Envestra proposed to use for the adjustment of ancillary reference services is not the same to that of the haulage reference service tariff variation mechanism; it refers to:<sup>785</sup>

...the CPI for the year ending 31 March immediately preceding the start of year t, divided by the CPI for the year ending 31 March immediately preceding the start of year t-1.

The AER considers that the proposed definition is not consistent with the most accurate measure available of the inflationary impacts on Envestra's costs that should apply to the annual variations of ancillary service tariffs. As discussed above, the CPI change from the September quarter immediately preceding the start of the relevant calendar year for the tariff variation (t-1) to the September quarter immediately preceding the calendar year (t-2) would be more appropriate for that purpose. Therefore, the AER does not approve the proposed CPI definition. The AER requires Envestra to amend its proposed definition of CPI as indicated in the revision section below.

Envestra's proposed access arrangement does not indicate whether ancillary reference service tariffs will be adjusted in accordance with the proposed rebalancing constraint formula.<sup>786</sup> Historically, the rebalancing constraint has not been applied to ancillary reference service tariff variations. This is also consistent with the approach taken by Multinet and SP

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<sup>783</sup> Envestra included a carbon tax tariff factor in its tariff variation formula for the Albury gas distribution network. However, its recent carbon tax pass through application to the AER, Envestra submitted that its Albury distribution network is not covered under the carbon tax pricing legislation as it emits less than 25,000 tonnes of CO<sub>2</sub>. The AER sought clarification on this matter. In response, Envestra submitted that the inclusion of the carbon tax tariff factor in its tariff variation formula for the Albury gas network was an error. Given that this error was made only in the access arrangement information, there is no requirement on Envestra to amend its access arrangement for the Albury distribution network.

<sup>784</sup> Envestra Victorian, *Access arrangement information*, 30 March 2012, p.233; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 208.

<sup>785</sup> Envestra Victorian, *Access arrangement proposal*, 30 March 2012, p. 9; Envestra Albury, *Access arrangement proposal*, 30 March 2012, p. 9.

<sup>786</sup> Envestra Victorian, *Access arrangement proposal*, 30 March 2012 p.9; Envestra Albury, *Access arrangement proposal*, 30 March 2012 p.9.

AusNet. Taking this into account, the AER requires Envestra to amend the proposed access arrangement to specify that the rebalancing constraint will not apply to ancillary reference service tariff variations over the 2013–17 access arrangement<sup>787</sup>

### Energy Safe Victoria levy

The AER understands that Energy Safe Victoria (ESV) has proposed to change the level of gas industry levies that it charges to the Victorian gas distribution businesses. The ESV is currently consulting with the pipeline and gas industry on its proposal. A decision on the matter is unlikely to be made before the AER's draft decision is published. If the proposed changes are adopted, the AER notes that there is likely to be a material increase in the ESV levy for the Victorian gas distribution businesses from 2013–14. To account for this potential increase in the ESV levy, the AER proposes that gas distribution businesses include an additional element in the annual tariff variation mechanism that will recover the incremental amount of the ESV levy – that is, the amount above their proposed ESV levy related opex forecasts. Envestra is to submit a revised annual tariff variation formula with an additional factor (similar to the licence fee). The AER will assess the revised tariff variation formula in making its final decision on the 2013–17 access arrangement.

### 11.4.2 Cost pass through tariff variation mechanism

The AER approves most aspects of Envestra's proposed cost pass through tariff variation mechanism. The cost pass through categories and definitions, while largely new to Envestra's Victorian distribution system are generally consistent with recent gas pipeline decisions by the AER.<sup>788</sup> The AER approves the proposed categories of cost pass through events and most of the proposed definitions without change. The AER requires minor amendments to the definitions of some of the proposed cost pass through events, to bring them into conformity with definitions approved by the AER in previous gas pipeline decisions, including pipelines owned by Envestra.

However, the AER does not approve Envestra proposal of no materiality threshold in respect of cost pass through events. The reasons for the AER's decision are further discussed below.

#### Carbon tax

The AER understands that to recover its carbon tax costs in respect of the Victorian gas network for the 2013–17 access arrangement period, Envestra proposed to:

- include an opex allowance made up of the costs of administering the carbon tax scheme

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<sup>787</sup> NGR, r. 97(3)(d),

<sup>788</sup> AER Draft decision: *APT Pipeline PTY LTD, Roma to Brisbane Pipeline*, April 2012, p. 70-72; AER, *Draft decision: N.T. Gas access arrangement*, April 2011, p. 166–167; AER, *Draft decision: Envestra Ltd: Access arrangement proposal for the Qld gas network 2011–2016*, February 2011, p. 191 (AER, *Draft decision: Envestra access arrangement Qld*, February 2011); AER, *Draft decision: Envestra Ltd: Access arrangement proposal for the SA gas network 2011–2016*, February 2011, p. 209 (AER, *Draft decision: Envestra access arrangement SA*, February 2011); AER, *Draft decision: APT Allgas: Access arrangement proposal for the Qld gas network 2011–2016*, February 2011, p. 138–140.

- set a separate carbon tax tariff intended to recover its carbon tax liability costs with a true up mechanism each year.<sup>789</sup>

Envestra submitted a revised carbon tax tariff formula following the AER's decision on its carbon tax cost pass through application for the Queensland and South Australian distribution network.<sup>790</sup> Based on this information, the AER requires Envestra to amend the proposed access arrangement to account for the AER's recent decision on carbon tax cost pass through. Given the proposed true up mechanism, Envestra is to provide the AER with all information that will enable it to assess the carbon tax tariff as part of the annual tariff variation. The AER requires Envestra to amend its access arrangement proposal to specify the required information as outlined in revision section below.

## Pass through events

Rule 97(1)(c) of the NGR provides that a reference *tariff variation mechanism* may provide for variation of a reference tariff as a result of a *cost pass through* for a defined event. The AER has full discretion to withhold its approval to an element of a *reference* tariff variation mechanism if it believes that a preferable alternative exists.<sup>791</sup>

The AER needs to assess a Service Provider's proposal to make a decision on a proposed reference tariff variation mechanism. When deciding whether a reference tariff variation mechanism is appropriate to an access arrangement the AER must have regard to the factors in r. 97(3) of the NGR. The cost pass through provisions of an access arrangement must be consistent with these rules and the NGO.<sup>792</sup>

The AER considers the requirements of a cost pass through mechanism should be designed to achieve the NGO through the support of an appropriate level of administrative costs. The AER considers a cost pass through mechanism should appropriately balance the risk of material, unexpected and uncontrollable events that impact on a service provider with the long-term interests of consumers.

In particular, the AER considers there should be incentives for a service provider to bear some risk of unexpected events, as this will encourage the service providers to manage or mitigate the costs associated with such events. The AER also considers that any pass through mechanism should be symmetric, such that users will benefit from unexpected or uncontrollable events that materially reduce the costs faced by a service provider. The AER considers that a pass through mechanism should seek to minimise any administrative costs.

Cost pass through events should provide service providers and other stakeholders with sufficient protection against unexpected and uncontrollable risks. However, the AER considers that cost pass through events should not remove incentives from service providers to engage in efficient business practices.

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<sup>789</sup> Envestra, *Access arrangement information*, 30 March 2012, p.230.

<sup>790</sup> AER, Decision on Envestra - Pass through application - change in taxes event - 2012. This document can be accessed via the link: <http://www.aer.gov.au/node/15351>

<sup>791</sup> NGR, r. 40(3).

<sup>792</sup> NGR, r. 100.



All businesses are subject to the risk of unexpected and uncontrollable events and like unregulated businesses, regulated businesses should be required to bear some of these costs as part of the normal course of doing business. The AER considers that cost pass through events should be designed to encourage service providers to engage in prudent and efficient business practices.

### Assessment Criteria

In deciding on the appropriateness of a proposed cost pass through event the AER must consider the factors in r. 97(3) and assess its consistency with the NGO. The AER, in its Victorian Electricity Distribution Network Service Provider's Draft Decision, set out a detailed consideration of its conceptual approach to assessing cost pass through events.<sup>793</sup> The AER developed a number of criteria to assist it in assessing proposed cost pass through events against the NEO. The AER considers that the NEO are sufficiently similar to the NGO for the same criteria to be applicable. However, the National Electricity Rules do not contain a rule analogous to r. 97(3). Nonetheless, the AER considers that these criteria can act as general principles to assist it in assessing whether a proposed cost pass through event for a gas network is consistent with the NGO.

- the event is not already provided for:
  - through the opex allowance (e.g. the insurance or self insurance components)
  - through the WACC (events which affect the market generally and not just the provider are systematic risk and already compensated through the WACC), or
  - through any other mechanism or allowance
- the event is foreseeable—in that the nature or type of event can be clearly identified
- the event is uncontrollable—in that a prudent service provider through its actions could not have reasonably prevented the event from occurring or substantially mitigated the cost impact of the event
- the event cannot be self-insured because a self insurance premium cannot be calculated or the potential loss to the business is catastrophic
- the party who is in the best position to manage the risk is bearing the risk
- the passing through of the costs associated with the event would not undermine the incentive arrangements within the regulatory regime.<sup>794</sup>

The AER has had regard to these criteria in assessing Envestra's proposed cost pass through events against the NGO. However, the AER has not applied the criteria strictly and has departed from them where it considers it necessary to better promote the NGO.

Envestra has included a number of new cost pass through events in its access arrangement proposal. These events are largely consistent with recent AER decisions.<sup>795</sup>

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<sup>793</sup> Victorian Electricity Distribution Network Service Provider's Draft Decision, p 716.

<sup>794</sup> Victorian Electricity Distribution Network Service Provider's Draft Decision, p 716.

The AER considers that most of Envestra's *proposed* cost pass through events meet the criteria outlined above and are needed to provide Envestra with sufficient cover when acting prudently and efficiently. The AER requires the definition of three of Envestra's proposed cost pass through events to be amended. The AER also requires the inclusion of two new cost pass through events.

Except for the events discussed below, the AER accepts Envestra's proposed cost pass through events and definitions. The following discussion only covers the additional cost pass through events required by the AER and the proposed cost pass through events or definitions that the AER does not accept on the basis that they do not comply with the requirements of the NGL or the NGR or that a preferable alternative exists that better satisfies the requirements under the NGL and the NGR, as well as the NGO and revenue and pricing principles.<sup>796</sup>

Where the AER requires the definition of a cost pass through event to be revised, the revised definition is set out in section 1.6 below.

### **Network user Failure Event**

Envestra proposed the following definition for this event:

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

The definition of this event is largely consistent with the definition the AER approved in Envestra's South Australian access arrangement. However, Envestra's proposed definition contains the additional phrase 'becomes insolvent, or'. The AER requires this insertion to be removed.

The AER considers that the inclusion of insolvency does not add any value to this definition. Firstly, the use of 'or' means that the events of insolvency or an inability of the network user to supply gas to its customers are disjunctive. In the definition, 'those customers' referred to are the customers that the network user would be unable to supply. If the relevant event is insolvency, there is no prior reference to the customers that are 'those customers'. Accordingly, with respect to insolvency, the definition becomes unclear. Secondly, if a network user was to become insolvent, it would not be able to continue to supply gas to its customers. Therefore, the definition would apply anyway.

### **Tax Change Event**

Envestra proposed the following definition for this event:

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<sup>795</sup> AER Draft decision: APT Pipeline PTY LTD, Roma to Brisbane Pipeline, April 2012, pp. 70-72; AER, Draft decision: N.T. Gas access arrangement, April 2011, pp. 166-167; AER, Draft decision: Envestra Ltd: Access arrangement proposal for the Qld gas network 2011-2016, February 2011, p. 191 (AER, Draft decision: Envestra access arrangement Qld, February 2011); AER, Draft decision: Envestra Ltd: Access arrangement proposal for the SA gas network 2011-2016, February 2011, p. 209 (AER, Draft decision: Envestra access arrangement SA, February 2011); AER, Draft decision: APT Allgas: Access arrangement proposal for the Qld gas network 2011-2016, February 2011, pp. 138-140.

<sup>796</sup> NGL, ss. 23 and 24.

Tax Change Event' occurs if any of the following occurs during the course of an access arrangement period for Envestra:

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

(b) the removal of a Relevant Tax; or

(c) the imposition of a Relevant Tax; and

in consequence, the costs to Envestra of providing prescribed reference services are increased or decreased.

This definition is largely consistent with the definition approved in recent decisions by the AER. However, the exception to those recent decisions is that the materiality requirement has been excluded. The AER requires this definition to be amended by the insertion of 'materially' between 'are' and 'increased' in the final line.

The purpose of the cost pass through mechanism is to offer protection to service providers, from uncontrollable events that impact on the costs to the business. It is not intended to recover all costs that a business would otherwise be expected to absorb. The AER considers that, in general, cost pass through events should only apply where the event has a material impact on costs. Events that have a small or non material impact on costs should be considered to be part of the general costs and risks of doing business and service providers should not be able to pass them on.

### **National Energy Customer Framework Event**

The AER requires Envestra to include a new pass through event in its access arrangement to allow it to recover costs that it may incur following the implementation of the National Energy Customer Framework (NECF) in Victoria or any part of NECF.

In its access arrangement proposal, Envestra proposed a step change to recover additional operating expenditure that it considered it would incur as a result of the implementation of NECF in Victoria.<sup>797</sup> Envestra's proposal was based on the expectation that NECF would commence in Victoria on 1 July 2012 in line with the intended timeframe for its national implementation. The Victorian Government, subsequent to Envestra submitting its access arrangement proposal, announced its decision to delay the introduction of NECF in Victoria. The Victorian Government has yet to announce an alternative date for when the relevant legislation will be implemented to give effect to NECF.

Given the uncertainty around when NECF will commence in Victoria, the AER does not consider that Envestra's proposed step change reflects expenditure that would be incurred by a prudent and efficient service provider. The AER therefore does not accept Envestra's proposed step change for NECF related expenditure (refer to attachment 6, section 6.5.4).

Notwithstanding this decision, the AER considers that it is appropriate for Envestra to recover any expenditure it incurs in implementing NECF following its implementation in Victoria. The AER considers that any such expenditure should be assessed as a pass through application once NECF, or any part of it, is adopted in Victoria.

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<sup>797</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 100.

The AER considers that the future commencement of NECF in Victoria would satisfy the AER's criteria for a defined pass through event. The AER considers that it can be clearly defined with reference to the commencement of NECF in Victoria, and is uncontrollable to the extent that it will only be triggered following a legislative act or decision of the Victorian Government. Further, the event represents an incremental cost as it has not been provided for through Envestra's opex allowance, as discussed above.

Lastly, the AER does not consider that a materiality threshold should apply for this defined pass through event. The AER recognises that Envestra may have incurred additional expense as a result of the delayed commencement of NECF in Victoria. Further, the AER notes that there continues to be ongoing uncertainty as to the timeframe for its implementation and the extent to which the state regulatory regime may be amended to reflect NECF in the interim. Given this added uncertainty—and noting that this event is entirely beyond Envestra's control—the AER considers it appropriate to allow Envestra to pass through costs associated with the commencement of NECF in Victoria, without the additional criteria that those costs be material.

The AER requires Envestra to revise its access arrangement proposal to include the following definition of a National Energy Customer Framework Event:

A National Energy Customer Framework Event means:

A legislative act or decision that:

- (a) occurs during the access arrangement period;
- (b) has the effect of implementing in Victoria, either in part or in its entirety, the National Energy Customer Framework; and
- (c) increases the costs to Envestra of providing Reference Services.

For the purposes of this pass through event, the National Energy Customer Framework means any legislation, regulations or rules, that give effect in Victoria to any or all of the Schedule to the National Energy Retail Law (South Australia) Act 2011, the National Energy Retail Regulations (South Australia) and the National Energy Retail Rules (South Australia) as amended from time to time.

### **Mains replacement pass through event**

The AER requires Envestra to include a new pass through event in its access arrangement to recover costs that it has incurred, or will incur, to complete a volume of mains replacement in excess of the volumes approved by the AER in its access arrangement final decision. This pass through event is limited to the replacement of low pressure distribution mains with high pressure polyethylene mains.

In its access arrangement proposal, Envestra proposed capital expenditure based on a forecast increase in its rate of low pressure mains replacement over the annual average achieved during the 2008–12 access arrangement period.<sup>798</sup> The AER does not approve Envestra's proposed capital expenditure and considers that the volume of mains replacement proposed by Envestra exceeds what is necessary and what would be delivered by a prudent and efficient service provider (refer to attachment 3). The AER considers that a reasonable

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<sup>798</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 120.

basis for determining volume related capex is to base this on historical volumes actually delivered over the 2008-12 access arrangement period adjusted for the 2013-17 period.

Nevertheless, the AER recognises that the timing of low pressure mains replacement is somewhat discretionary and potentially subject to the changing risk profile of the network and resource availability. The AER considers that Envestra should be afforded sufficient flexibility to respond to changing conditions, including in the market, which may require Envestra to alter the volume of mains replacement delivered during the 2013–17 access arrangement period.

The AER therefore considers that an additional event should be included in Envestra pass through tariff variation mechanism to cover mains replacement. This event will allow Envestra to pass through costs it incurs, or is to incur, to complete a volume of mains replacement that exceeds the volumes approved by the AER in its access arrangement final decision. The AER considers, however, that for this pass through event to be clearly defined it should be limited in its scope to the forecast volumes of mains replacement in Envestra initial access arrangement proposal. Any costs that Envestra incurs, or is to incur, to complete a volume of mains replacement in excess of its forecast volumes will not fall within the scope of this defined pass through event.

Lastly, the AER does not consider that a materiality threshold should apply to this defined pass through event, given the nature of the costs to be passed through. The AER notes that the replacement of low pressure mains is undertaken for safety and reliability reasons. Further, alterations in the volume of mains replacement delivered may be driven by factors such as new information on safety risks and changes in the relative costs for different methods for mitigating or removing those safety risks. The AER therefore does not consider it appropriate to apply a materiality threshold where it may operate as a disincentive to Envestra to undertake mains replacement work where it may be efficient and prudent having regard to the existing risk profiles of its network.

The AER requires Envestra to revise its access arrangement proposal to include the following definition of a Mains Replacement Event:

A Mains Replacement Event means an event whereby Envestra completes the Adjusted Historical Volumes of Mains Replacement during the course of the 2013–17 access arrangement period and:

(a) costs are incurred, or are to be incurred, by Envestra in the remainder of the 2013-17 access arrangement period to complete a volume of Mains Replacement in excess of the Adjusted Historical Volumes; and

(b) the total volume of Mains Replacement to be completed during the 2013-17 access arrangement period is not greater than the volumes proposed by Envestra in its initial access arrangement proposal for that period.

For the purposes of this Mains Replacement Event:

(c) Adjusted Historical Volumes means 265 km, being the average annual volume of mains replacement completed by Envestra for the four years from 2008 to 2011 applied across the 2013-17 access arrangement period, with reference to the AER's decision to approve the 2013-17 access arrangement and its reasons as set out in its Final Decision; and

(d) Mains Replacement means mains replacement for low pressure to high pressure block rollout, which involves the replacement of low pressure distribution mains with high pressure polyethylene mains through a process of dividing a low pressure region into

smaller areas (referred to as blocks) which are then subject to systematic low pressure to high pressure replacement.

## **Insurance Cap event**

Envestra proposed the following definition for this event:

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

An insurance cap event allows a service provider to pass through costs that exceed the maximum payout that the service provider receives from its insurer when an insured risk eventuates.

Envestra's current access arrangement does not include an Insurance Cap Event or any event analogous to the proposed Insurance Cap Event.

The AER requires the definition of an Insurance Cap Event to be amended so that the policy limit referred to in the definition is 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 Envestra'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 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.

Envestra's base forecast operating expenditure allowance includes a component for insurance coverage. There is an expectation that Envestra will expend that component to

obtain an efficient level of insurance coverage, but the AER cannot compel Envestra to actually do this.

This raises the risk that Envestra 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 Envestra to amend the definition of an Insurance Cap 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.

The AER therefore requires Envestra to amend the definition of an Insurance Cap Event in its access arrangement proposal as follows:

An Insurance Cap Event means an event whereby:

- (a) Envestra makes a claim on a relevant insurance policy;
- (b) Envestra incurs costs beyond the relevant policy limit; and
- (c) The costs beyond the relevant policy limit materially increase the costs to Envestra of providing reference services.

For the purposes of this Insurance Event:

- (d) The relevant policy limit is the greater of Envestra's actual policy limit at the time of the event that gives rise to the claim and its policy limit at the time the AER made its Final Decision on Envestra's access arrangement proposal for the period 2013-17, with reference to the forecast operating expenditure allowance approved in the AER's Final Decision and the reasons for that decision; and
- (e) A relevant insurance policy is an insurance policy held during the 2013-17 Access Arrangement Period or a previous period in which access to the pipeline services was regulated.

The AER considers that an assessment of Envestra's decisions and actions in relation to the pass through event—including whether the event which was the subject of the relevant insurance claim was within Envestra's control—is relevant to the AER's decision whether or not to approve the Relevant Pass Through Event.

To give effect to this, the AER considers that the cost pass through mechanism should include an additional factor which the AER must consider when assessing whether to approve a proposed Relevant Pass Through Event. This factor would require the AER to consider the efficiency of Envestra's decisions, actions and omissions in relation to the risk of a pass through event, including whether Envestra has taken action to mitigate the risk of the pass through event occurring or the magnitude of the costs of the event. This assessment is not limited to those actions that concern the taking out of an appropriate insurance policy to cover particular risks, but also extends to the actions taken by Envestra, or not taken, to mitigate the risk of the event which is the subject of the relevant insurance claim and which has resulted in the pass through event application being made. The AER will assess the extent to which this was within Envestra's control.

The AER considers that this will incentivise Envestra to take mitigating action to reduce the likelihood of the risk of an Insurance Event eventuating and the extent of costs associated with the occurrence of this pass through event.

The AER considers that this approach will best achieve the NGO. The AER considers that it needs to examine the circumstances that led to or resulted in an application for a pass through of costs in excess of an insurance cap, when making a decision that is in the long term interests of consumers. These circumstances will inform the AER's assessment of what was within the service provider's control. This is both with respect to the insurance that it obtained and the cause of the claim that led to incurring the excess above the insurance cap.

For this reason, the AER has not excluded negligence. Under the additional factor, the AER considers that its enquiry will necessarily encompass any claims or findings of negligence in the context of the specific regulatory framework which empowers the AER to make a pass through determination.

Information concerning the circumstances of the event may include negligence as determined by a court of law. As part of its broad enquiry, the AER may also consider claims of negligence that have not been proved or made in a court of law. For example, there may be claims of negligence but no public admission of negligence, or a confidential settlement that prevents public disclosure. It is also possible that what constitutes negligence may not be settled. The NGL and NGR do not limit the AER in taking such information into account. The AER will consider all such information available to it. Such information may or may not be determinative of whether the event was in the service provider's control for the purposes of the AER's decision on the pass through application.

The AER further notes that unlawful conduct and gross negligence would not be covered by an insurer and that acts or omissions resulting from such unlawful conduct or gross negligence could not trigger this pass through event.

### **Materiality Threshold**

Envestra submitted that it should not be necessary to specify a materiality threshold because:

- the cost of preparing a cost pass through application places a discipline on a distributor in respect of making claims;



- cost pass through events are, by their nature, infrequent;
- it is inconsistent to apply a materiality threshold to a cost pass through amount, when no such threshold exists when determining amounts to be recovered by way of forecast costs during an access arrangement review process;
- the costs would have been included in the forecast expenditure had they been known, regardless of their magnitude;
- to-date, where no defined materiality threshold has applied, Envestra has not made any frivolous claims in respect of any of its networks;
- the NGR otherwise require the administrative costs to be considered.<sup>799</sup>

The AER does not accept Envestra's reasons for excluding the materiality threshold. The purpose of the cost pass through mechanism is to offer protection to service providers, where unexpected events place the financial viability of the service provider at risk. It is not intended to recover all costs that a business would otherwise be expected to absorb. The AER considers that the exclusion of a materiality threshold removes the incentive for Envestra to mitigate the risk and costs of a cost pass through event. The AER considers this would disproportionately burden end users with risk. Envestra has submitted that in the past it has not made any frivolous applications and the cost of preparing a cost pass through application places a discipline on a distributor when making a claim. The AER considers that, notwithstanding Envestra's submissions, the exclusion of a materiality threshold provides a service provider with the option of claiming any additional costs covered by a cost pass through event and that there may be some costs which would be below the materiality threshold proposed but which would exceed any administrative cost in preparing the application.

The AER considers that a materiality threshold of one per cent better accommodates the efficiency incentives required under the regulatory regime, and better satisfies the revenue and pricing principles under the NGL.<sup>800</sup>

The Australian Competition Tribunal recently upheld the AER's exercise of its discretion in relation to setting the materiality threshold for the Victorian electricity DNSPs at one percent of the smoothed forecast revenue.<sup>801</sup>

Envestra's cost pass through events have not previously been subject to a specific materiality threshold.<sup>802</sup> However, the AER considers a defined materiality threshold better serves the long term interests of energy stakeholders by providing greater certainty and consistency for Envestra and its customers.

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<sup>799</sup> Envestra Victoria, Access arrangement information, 30 March 2012, p.235

<sup>800</sup> NGL, s. 24.

<sup>801</sup> Application by United Energy Distribution Pty Limited [\[2012\] ACompT 1](#) (6 January 2012)

<sup>802</sup> See Envestra's 2008 access arrangement

### 11.4.3 Procedure for oversight and approval of tariff variations

The NGR state that a reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff.<sup>803</sup>

#### Part Year tariffs

The AER's final decision on the 2013-17 access arrangements for the Victorian gas service providers is due to be made in March 2013. This is after the 1 January 2013 revision commencement date specified in the 2008-12 access arrangements for these service providers.

Rule 92(3) of the NGR prescribes that in the event of 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:

- (a) the reference tariff in force at the end of the previous access arrangement period, continue without variation for the interval of delay; but
- (b) the operation of this subrule may be taken into account in fixing reference tariffs for the new access arrangement period

There will be a delay in the making of the final decision. The AER has therefore taken into account the operation of r. 92(3) of the NGR in fixing reference tariffs for the 2013–17 access arrangement period. The AER considers that the 2013 reference tariffs under the 2013-17 access arrangements should take effect from 1 July 2013 until 31 December 2013.

The AER considers that the interval of delay should not result in service providers incurring a windfall gain or loss, compared with what would have occurred if the 2013-17 access arrangements had taken effect from 1 January 2013. This approach is consistent with the efficiency objectives under the NGO and long term interest of gas consumers. This approach will also provide service providers with a reasonable opportunity to recover at least the efficient costs of providing reference services as approved in the access arrangements, consistent with the RPP.

The AER considers that the Reference Tariff Policy must be amended as set out in revision 11.8.

#### Annual and Within-Year Variations

Envestra proposed a conflicting timeframe of when it is to notify the AER in respect of any reference tariff variations.

- In its access arrangement information, Envestra proposed at least 35 business days prior to the implementation.<sup>804</sup> The proposed time frame includes 20 business days for the AER

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<sup>803</sup> NGR, r. 97(4)

<sup>804</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 232; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 208.

to approve or reject the proposed variations; and 15 business days for market participants to prepare for the implementation of the new tariffs.<sup>805</sup>

- In its access arrangement, Envestra proposed 50 business days prior to the implementation.<sup>806</sup>

The AER sought clarification on the matter.<sup>807</sup> In response, Envestra proposed a continuation of the current process for tariff variation approvals, which requires the tariff adjustment notification to be submitted to the AER 35 days before the tariffs are proposed to come into effect.<sup>808</sup> Envestra also submitted that a 50 business day notification period is not efficient given it requires it to submit two tariff notifications:<sup>809</sup>

- the first with an estimated September quarter CPI
- then, a revised submission once the CPI become known.

The AER notes that this process does not require Envestra to revise its entire tariff notification as the required revision is limited to one figure (the CPI). The NGR state that a reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff.<sup>810</sup> The proposed 20 business days does not provide it with adequate time to assess the tariff variation notification.<sup>811</sup> The AER considers that 50 business days prior to the new tariff implementation is appropriate and will give the AER adequate oversight as required under rule 97(4) of the NGR. This will give the AER 30 business days to approve or reject the proposed variation; and 20 business days for market participants to prepare for the implementation of the new tariffs. This approach is consistent with the AER's recent decision on gas access arrangements.<sup>812</sup>

However, this timeframe may not be appropriate for the AER to approve tariff variation if an application is incomplete or information is not substantiated. As a result, the AER considers that Envestra's access arrangement must be amended as outlined in revision 1.8. This is consistent with the AER's recent decisions on gas access arrangements.<sup>813</sup>

An important input in the proposed annual tariff variation mechanism is the use of past gas quantities to weight each tariff components. The AER considers it is appropriate that Envestra be required to provide an independent statement to support the actual gas quantities. This will

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<sup>805</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 232; Envestra Albury, *Access arrangement information*, 30 March 2012, p. 208.

<sup>806</sup> Envestra, *Access arrangement proposal*, 30 March 2012, p. 12; Envestra Albury, *Access arrangement proposal*, 30 March 2012, p. 12.

<sup>807</sup> AER, Information request 19, 26 June 2012.

<sup>808</sup> Envestra, Response to the AER's information request 19 of 26 June 2012, 27 June 2012.

<sup>809</sup> Envestra, Response to the AER's information request 19 of 26 June 2012, 27 June 2012.

<sup>810</sup> NGR, r. 97(4).

<sup>811</sup> Envestra proposed 35 business days, which include 20 business days for the AER to review the proposal and 15 business for market participants to prepare for implementation.

<sup>812</sup> AER, Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016, February 2011, p.207; AER, Draft decision, Envestra Ltd access arrangement proposal for the QLD gas network, 1 July 2011–30 June 2016, February 2011, pp.188–189.

<sup>813</sup> AER, Draft decision, Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016, February 2011, p.207; AER, Draft decision, Envestra Ltd access arrangement proposal for the QLD gas network, 1 July 2011–30 June 2016, February 2011, pp.188–189.

allow the AER to verify the quantities used in the tariff variation mechanism.<sup>814</sup> The independent verification statement should provide for audited or verified quarterly and annual quantities for the year consistent with the proposed changes in CPI. This information is to be collected as part of the annual reporting requirements (audit requirement to be set out in RIN). The AER requires Envestra to amend its access arrangement proposal as outlined in revision 1.8. .

Based on the above reasons the AER does not approve the proposed annual tariff reference variation process for the 2013–17 access arrangement period. Envestra is required to amend its proposed reference tariff variation process as outlined in revisions of this draft decision before it can be approved.

### **Relevant Pass Through Events**

Envestra's proposed approach is substantially the same as that approved by the AER in its recent decisions, including the decision on Envestra's South Australian pipeline. However, the proposal does differ in some respects. The AER considers that the cost pass through approval mechanism should be amended to be consistent with its recent decisions.

Following the move to a national regulatory framework, the AER is responsible for regulating all network businesses in the National Energy Market. A consistent approval process is therefore desirable from the perspective of transparency and administrative efficiency. By specifying a consistent approach whereby it has to apply the same process for each cost pass through application, the AER will be able to process cost pass through applications in a more timely and efficient manner. The AER considers that the application of a consistent approach to the assessment of the same type of application from different service providers is consistent with the NGO.

The AER considers that it must be notified of a cost pass through event within 90 days of the costs being incurred, regardless of whether the event would result in a positive or negative impact on tariffs. The AER considers it should notify Envestra of its decision on any cost pass through application within 90 days of the application, except where it considers the cost pass through application is sufficiently complex as to require an extension. The AER must notify Envestra where this is the case. The AER considers that there is a risk that 30 days will be an insufficient period of time for it to make a complete and informed decision.

The AER considers that the time frames described above should balance the need for a timely response, with the flexibility for the AER to make a complete and informed decision.

The AER considers that a tariff variation as a result of a cost pass through event should take effect from the next 1 January, following approval of the cost pass through application.

The AER considers that the factors to be taken into account when assessing a cost pass through application should be uniform across access arrangements. The AER proposes to amend the factors proposed by Envestra to align them with the factors approved by the AER in recent gas pipeline decisions, subject to the inclusion of an additional factor as discussed above in the context of the Insurance Cap Event definition. The AER considers that this is consistent with the NGR and NGO.

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<sup>814</sup> NGR, r. 97(3)(e).

## 11.5 Revisions

Before the access arrangement can be approved, Envestra must make the following amendments.

**Revision 11.1:** Amend glossary in the access arrangement proposal to include the following statement before the table (page 19) as follows:

Delete definition of CPI and replace with the following:

CPI is:

(a) the consumer price index: all groups index for the eight state capitals as published by the Australian Bureau of Statistics for the September quarter immediately preceding the start of the relevant Calendar Year (a);

divided by

(b) the consumer price index: all groups for the eight state capitals as published by the Australian Bureau of Statistics for the September quarter immediately preceding the September quarter referred to in paragraph (a);

minus one.

**Revision 11.2:** Amend Annexure B of the access arrangement proposal to include the following statement before the table (page 27):

The initial reference tariffs are expressed in real 2013 dollars and the first annual tariff variation is made for the year commencing 1 January 2014.

**Revision 11.3:** Amend Annexure B of the access arrangement proposal as follows:

Delete tables in Annexure B and replace them with the following updated tables for Envestra Victoria and Envestra Albury, respectively

**Table 11.2 Envestra Victoria -Tariff V - Tariff Schedule 2013**

<b>Central Zone</b>	
<b>Residential</b>	
Base Charge (\$/day)	0.1418
Charge for the first 0.0274GJ of gas delivered (\$/GJ)	8.1048
Charge for the next 0.0219GJ of gas delivered (\$/GJ)	6.0786
Charge for additional gas delivered (\$/GJ)	3.3371
<b>Non-residential</b>	
Base Charge (\$/day)	0.1419
Charge for the first 0.05GJ of gas delivered (\$/GJ)	6.2784

Charge for the next 0.50GJ of gas delivered (\$/GJ)	3.4995
Charge for the next 0.82GJ of gas delivered (\$/GJ)	2.6154
Charge for additional gas delivered (\$/GJ)	1.0601

#### North Zone

##### Residential

Base Charge (\$/day)	0.1418
Charge for the first 0.0274GJ of gas delivered (\$/GJ)	7.0552
Charge for the next 0.0219GJ of gas delivered (\$/GJ)	5.2891
Charge for additional gas delivered (\$/GJ)	2.9037

##### Non-residential

Base Charge (\$/day)	0.1418
Charge for the first 0.05GJ of gas delivered (\$/GJ)	5.5249
Charge for the next 0.50GJ of gas delivered (\$/GJ)	3.0795
Charge for the next 0.82GJ of gas delivered (\$/GJ)	2.3005
Charge for additional gas delivered (\$/GJ)	0.9329

**Murray Valley Zone**

<b>Residential</b>	
Base Charge (\$/day)	0.1968
Charge for the first 0.0274GJ of gas delivered (\$/GJ)	6.1454
Charge for the next 0.0219GJ of gas delivered (\$/GJ)	4.6091
Charge for additional gas delivered (\$/GJ)	2.9973
<b>Non-residential</b>	
Base Charge (\$/day)	0.1968
Charge for the first 0.05GJ of gas delivered (\$/GJ)	4.9418
Charge for the next 0.50GJ of gas delivered (\$/GJ)	3.5153
Charge for the next 0.82GJ of gas delivered (\$/GJ)	2.6261
Charge for additional gas delivered (\$/GJ)	1.2439

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**Bairnsdale Zone**

<b>Residential</b>	
Base Charge (\$/day)	0.2335
Charge for the first 0.0274GJ of gas delivered (\$/GJ)	13.3420
Charge for the next 0.0219GJ of gas delivered (\$/GJ)	10.0065
Charge for additional gas delivered (\$/GJ)	5.4934
<b>Non-residential</b>	
Base Charge (\$/day)	0.2335
Charge for the first 0.05GJ of gas delivered (\$/GJ)	10.6351
Charge for the next 0.50GJ of gas delivered (\$/GJ)	5.9278
Charge for the next 0.82GJ of gas delivered (\$/GJ)	4.4284
Charge for additional gas delivered (\$/GJ)	1.7958

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**Table 11.3 Envestra Victoria - Tariff D - Tariff Schedule 2013**

	Central Zone	North Zone	Murray Valley	Bairnsdale
10 GJ or less (\$/GJ)	1,164.1660	1,164.1660	1,356.8950	1,925.5727
Next 40GJ (\$/GJ)	711.6544	711.6544	837.2898	1,192.9003
Additional GJ (\$/GJ)	129.9627	129.9627	142.6052	217.5580

**Table 11.4 Envestra Albury -Tariff V - Tariff Schedule 2013**

<b>Residential</b>	
Base Charge (\$/day)	0.2410
Charge for the first 0.0274GJ of gas delivered (\$/GJ)	6.7884
Charge for the next 0.0219GJ of gas delivered (\$/GJ)	5.0913
Charge for additional gas delivered (\$/GJ)	2.7950
<b>Non-residential</b>	
Base Charge (\$/day)	0.2410
Charge for the first 0.05GJ of gas delivered (\$/GJ)	5.2434
Charge for the next 0.50GJ of gas delivered (\$/GJ)	2.9226
Charge for the next 0.82GJ of gas delivered (\$/GJ)	2.1833
Charge for additional gas delivered (\$/GJ)	0.8854

**Table 11.5 Envestra Albury - Tariff D - Tariff Schedule 2013**

10 GJ or less (\$/GJ)	1 148.9952
Next 40GJ (\$/GJ)	713.6256
Additional GJ (\$/GJ)	172.4526

**Revision 11.4:** Amend Annexure D of the access arrangement proposal as follows:

Include a cost pass through adjustment factor in the tariff control formula – page 32 for the Albury distribution network and page 34 for the Victorian distribution network.

Include a demonstration of how this pass through adjustment factor will be calculated.

**Revision 11.5:** Amend Annexure D of the access arrangement proposal as follows:

Delete  $Y_t = 0.10$  in the rebalancing control formula in Annexure D, Box 3 and replace with and replace it with  $Y_t = 0.02$ .



Delete the definition of  $X_t$  in tariff control formula in Annexure D, Boxes 1, 2 and 3; and replace with:

$X_t$  is defined by the alignment of the service provider's building block revenue requirement with the NPV of its forecast revenues and is determined to be:

Victorian Distribution Network

$X_t = 2.8\%$  in 2013

$X_t = 0.0\%$  in 2014-17

Albury Distribution Network

$X_t = 3.4\%$  in 2013

$X_t = 0.0\%$  in 2014-17

**Revision 11.6:** Amend Annexure D of the access arrangement proposal as follows:

- Delete the content of Box 15.4 and replace with:

When assessing Envestra's proposed tariffs, submitted in accordance with this Access Arrangement, the AER will assess whether the Carbon Payment Revenue ( $CPR_t$ ), is less than or equal to the Maximum Carbon Payment Revenue allowed ( $MCPR_t$ ) as follows:

$$CPR_t \leq MCPR_t$$

where:

$CPR_t$  is the total of Envestra's proposed Carbon Payment Revenue charges multiplied by the corresponding forecast quantities to be distributed for each tariff component of each tariff, in calendar year t.

$MCPR_t$  is the maximum revenue that Envestra is allowed to receive from its Carbon Payment Revenue tariffs from all consumers for the calendar year t and is expressed as:

$$MCPR_t = CPP_t - K_t$$

where:

$CPP_t$  is the aggregate of all costs that Envestra forecasts it will incur in respect of the Carbon Scheme in calendar year t, and

$K_t$  is a correction factor to account for any under or over recovery arising from actual Carbon Payment Revenue tariffs in relation to allowed revenue and is expressed as follows:

$$K_t = (CPRa_{t-2} - MCPR_{t-2}) - (CPPa_{t-2} - CPP_{t-2})$$

where:

$CPRa_{t-2}$  is the actual total revenue earned by Envestra from Carbon Payment tariffs in respect of all distribution customers in calendar year t-2;

$MCPR_{t-2}$  is the value calculated for MCPR for year t-2;

$CPPa_{t-2}$  is the cost of carbon permit acquisition that Envestra actually incurred in respect of the Carbon Scheme in year t-2; and

$CPP_{t-2}$  is the figure used for CPPT when calculating MCTR for year t-2.

Note:  $K_t$  is zero for years 2012/13 and 2013/14

**Revision 11.7:** Amend section 3 of the access arrangement proposal as follows:

Delete section 3.1 of the access arrangement and replace with the following:

The Tariff Schedule set out in Annexure B to this Access Arrangement shows the initial Reference Tariffs that will apply to the Haulage Reference Services.

The initial Reference Tariffs will apply from 1 January 2013, until those Reference Tariffs are varied in accordance with section 4 of this Access Arrangement.

All Haulage Reference Tariffs for the Victorian distribution network have been designed to effectively increase by 2.8% in year 1, and 0% in each of the subsequent years and 3.4% in year 1, and 0% in each of the subsequent years for the Albury distribution network.

The Charges payable in respect of a DP vary according to the Tariff Zone in which that DP is located.

The Reference Tariffs for Reference Services will be set out in Tariff Schedules that Envestra will publish from time to time on its website at [www.envestra.com.au](http://www.envestra.com.au).

**Revision 11.8:** Amend section 4 of the access arrangement proposal as follows:

Delete the fourth paragraph in section 4.4.1 of the access arrangement and replace it with:

The second Reference Tariff Control Formula is designed to ensure that the average revenue (in \$/GJ or \$/GJ of MDQ) that Envestra receives from any single type of Haulage Reference Service, after any proposed variation to Reference Tariffs, does not increase by more than CPI plus 2 per cent.

Delete definition of CPI in section 4.4.2 of the access arrangement and replace with the following:

CPI<sub>t</sub> is the CPI as defined in the glossary for year t

Delete section 4.6.1 of the access arrangement and replace with the following:

(i) Where Envestra wishes to vary any Reference Tariff pursuant to section 4.4, Envestra will notify the AER in respect of the proposed variation, such that variations occur on the first of January of any year. The notification will be made at least 50 Business Days before the date of implementation and include:

(a) the proposed variations to the Reference Tariffs; and

(b) an explanation and details of how the proposed variations have been calculated.

If Envestra proposes variations to the Reference Tariffs pursuant to section 4.4 and those variations have not been approved by the next 1 January then the Reference Tariffs will be varied with effect from that next 1 January by the same percentage increment or decrement as occurred on the previous 1 January, until such time as variations to Reference Tariffs are approved by the AER.

If it appears to the AER that any past tariff variation contains a material error or deficiency because of a clerical mistake, accidental slip or omission, miscalculation or misdescription, the AER may change subsequent tariffs to account for these past issues.

Within 30 Business Days of receiving Envestra's variation notice, the AER will inform Envestra in writing of whether or not it has verified the proposed haulage reference tariff and/or haulage reference tariff components in the service provider's variation notice as compliant with the annual tariff variation mechanism.

The 30 Business Day period may be extended for the time taken by the AER to obtain information from Envestra, obtain expert advice or consult about the notification. However, the AER must assess a variation application within 90 Business Days of receiving Envestra's variation notice, including any extension of the decision making time.

(ii) Envestra will include a statement to support the gas quantity inputs in the tariff variation formula. The statement will be independently audited or verified and the quantity input will reflect the most recent actual annual quantities available at the time of tariff variation assessment. The actual quantity will be provided as four quarters of gas quantity data reconciling to an annual total quantity of gas.

(iii) At the same time as submitting the reference tariff variation notice to the Regulator, Envestra will also provide to the Regulator information in respect of the carbon tax tariff, including the following information and supporting documentation:

(1) the most recent available certified emissions figure for the network, this being the reported figure for the previous financial year

(2) a forecast of emissions for the current financial year

(3) a forecast of emissions for the subsequent financial year

(4) the actual cost of carbon permit acquisition for the previous financial year

- (5) a forecast cost of carbon permit acquisition for the current financial year
  - (6) a forecast cost of carbon permit acquisition for the subsequent financial year
  - (7) the dollar amount allowed each year by the AER for recovery, for all previous years
  - (8) the difference between amounts allowed and the actual or forecast cost for the previous and current financial year; and
  - (9) the amount being sought for recovery in the following financial year, being the sum of (6) and (7) above, which amount is to be included in the carbon tariff.
- (iv) Envestra will include a rounding convention in section 4.6.

In making these amendments Envestra needs to take account of the need:

- to make clear the Reference tariffs which applied in 2012 will continue to be apply in nominal terms until 1 July 2013.
- to make clear that 2013 Reference tariffs will only apply for the period 1 July 2013 to 31 December 2013
- to make changes to the process of the access arrangement to reflect that 2013 Reference tariffs will commence on 1 July 2013 rather than on the start of the calendar year (1 January).

**Revision 11.9:** Amend the definition of Network User Failure Event in section 4.5 of the access arrangement proposal as follows:

Delete the words 'becomes insolvent or'.

**Revision 11.10:** Amend the definition of Tax Change Event in section 4.5 of the access arrangement proposal as follows:

Insert the word 'materially' between “are” and “increased” in the final line.

**Revision 11.11:** Amend the definition of Insurance Cap Event in section 4.5 of the access arrangement proposal as follows:

Delete the definition of Insurance Cap Event and insert the following:

An Insurance Cap Event means an event whereby:

- (a) Envestra makes a claim on a relevant insurance policy;
- (b) Envestra incurs costs beyond the relevant policy limit; and
- (c) The costs beyond the relevant policy limit materially increase the costs to Envestra of providing reference services.

For the purposes of this Insurance Cap Event:

(d) The relevant policy limit is the greater of Envestra's actual policy limit at the time of the event that gives rise to the claim and its policy limit at the time the AER made its Final Decision on Envestra's access arrangement proposal for the period 2013-17, with reference to the forecast operating expenditure allowance approved in the AER's Final Decision and the reasons for that decision; and

(e) A relevant insurance policy is an insurance policy held during the 2013-17 Access Arrangement Period or a previous period in which access to the pipeline services was regulated.

**Revision 11.12:** Amend section 4.5 of the access arrangement proposal as Follows:

After the second paragraph, change factor (e) to (f) and insert a new factor (e) as follows:

(e) the efficiency of Envestra's decisions and actions in relation to the risk of the Relevant Pass Through Event occurring, including whether Envestra has failed to take any action that could reasonably be taken to reduce the magnitude of the costs incurred as a result of the Relevant Pass Through Event and whether Envestra has taken or omitted to take any action where such action or omission has increased the magnitude of the costs; and

**Revision 11.13:** Amend section 4.5 of the access arrangement proposal as follows:

Insert the following definition of a National Energy Customer Framework Event:

A National Energy Customer Framework Event means:

A legislative act or decision that:

(a) occurs during the access arrangement period;

(b) has the effect of implementing in Victoria, either in part or in its entirety, the National Energy Customer Framework; and

(c) increases the costs to Envestra of providing Reference Services.

For the purposes of this pass through event, the National Energy Customer Framework means any legislation, regulations or rules, that give effect in Victoria to any or all of the Schedule to the National Energy Retail Law (South Australia) Act 2011, the National Energy Retail Regulations (South Australia) and the National Energy Retail Rules (South Australia) as amended from time to time.

**Revision 11.14:** Amend section 4.5 of the access arrangement proposal as follows:

Insert the following definition of a Mains Replacement Event:

A Mains Replacement Event means an event whereby Envestra completes the Adjusted Historical Volumes of Mains Replacement during the course of the 2013–17 access arrangement period and:

(a) costs are incurred, or are to be incurred, by Envestra in the remainder of the 2013-17 access arrangement period to complete a volume of Mains Replacement in excess of the Adjusted Historical Volumes; and

(b) the total volume of Mains Replacement to be completed during the 2013-17 access arrangement period is not greater than the volumes proposed by Envestra in its initial access arrangement proposal for that period.

For the purposes of this Mains Replacement Event:

(c) Adjusted Historical Volumes means 265 km being the average annual volume of mains replacement completed by Envestra for the four years from 2008 to 2011 applied across the 2013-17 access arrangement period, with reference to the AER's decision to approve the 2013-17 access arrangement and its reasons as set out in its Final Decision; and

(d) Mains Replacement means mains replacement for low pressure to high pressure block rollout, which involves the replacement of low pressure distribution mains with high pressure polyethylene mains through a process of dividing a low pressure region into smaller areas (referred to as blocks) which are then subject to systematic low pressure to high pressure replacement. Insert a new definition of Materiality threshold as follows:

**Revision 11.15:** Amend section 4.5 of the access arrangement proposal as follows:

Insert the following definition of Material:

For the purpose of any relevant pass through event, an event is considered to materially increase or decrease costs where that event has an impact of one per cent of the smoothed forecast revenue specified in the AER's final decision, in the years for the regulatory control period that the costs are incurred. **Revision 11.16:** Amend section 4.6.2 of the access arrangement proposal as follows:

Delete 4.6.2 and insert the following:

Envestra will notify the AER of cost pass through events within 90 business days of the relevant pass through event occurring, whether the costs would lead to an increase or decrease in Reference Tariffs.

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

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

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



## 12 Non-tariff components

Envestra's access arrangement proposal sets out terms and conditions that are not directly related to the nature or level of tariffs paid by users. However, these are important to the relationship between Envestra and Network Users. These are referred to by the AER as non-tariff components of the access arrangement and include:

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

A more detailed consideration of the terms and conditions of Envestra's access arrangement is also set out below. The remaining non-tariff components are considered after the terms and conditions.

### 12.1 Terms and conditions

Rule 48(d)(ii) of the NGR requires that a full access arrangement specify for each reference service the other terms and conditions on which the reference service will be provided. The terms and conditions set out in an approved access arrangement will be the terms and conditions that the AER must give effect to in the event that there is an access dispute, requiring it to make an access determination.<sup>815</sup>

Notwithstanding this, nothing in the NGL prevents a Service Provider from entering into an agreement with a user or a prospective user about access to a pipeline service that is different from the applicable access arrangement.<sup>816</sup> The parties are therefore able to negotiate terms and conditions that are suitable to their commercial circumstances. The AER expects that the terms and conditions as set out in an approved access arrangement would act as a starting point for such negotiations.

#### 12.1.1 Draft decision

The AER does not approve Envestra's non-tariff components. The AER requires Envestra to make revisions to the following non-tariff components:

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<sup>815</sup> NGL, s. 189.

<sup>816</sup> NGL, s. 332.



- Terms and conditions to qualify Envestra's discretion and provide for a greater degree of reciprocity of rights and obligations
- Envestra's capacity trading approach
- Change to receipt or delivery points

### 12.1.2 Access arrangement proposal

Envestra's proposed general terms and conditions are contained in Annexure F of its access arrangement proposal.<sup>817</sup> Envestra's proposed terms and conditions vary significantly from the terms and conditions in its current access arrangement. However, the proposed terms and conditions are broadly consistent with the terms and conditions the AER recently approved for Envestra's South Australian and Queensland gas distribution networks.<sup>818</sup>

Envestra submits that the main differences between the terms and conditions in its proposed access arrangement and those in its approved South Australian and Queensland access arrangements relate to:

- changes necessary to ensure the access arrangement reflects the National Energy Customer Framework (NECF)
- terms dealing with specific Victorian legislation or regulations.

Envestra states that the continued use of terms and conditions similar to those in the current Victorian access arrangement would create inefficiencies in relation to Envestra's Victorian distribution network. Specifically, the terms in the Victorian network would be different to Envestra's South Australian and Queensland networks.<sup>819</sup> Envestra's goal is to adopt terms and conditions in each jurisdiction that are as consistent as is possible, with variations for differences between the jurisdictions that arise from regulatory derogations or different tariff structures.<sup>820</sup>

Envestra submits that its proposed approach will:

- streamline negotiations with retailers
- streamline the contracting process
- streamline the process of seeking legal advice in relation to terms and conditions
- enable Envestra to develop and utilise consistent internal procedures across multiple jurisdictions
- streamline Envestra's response to regulatory change
- streamline the process of regulatory reviews

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<sup>817</sup> Envestra, *Access arrangement proposal: Annexure F - General terms and conditions*, 30 March 2012.

<sup>818</sup> *Access arrangement* for Envestra's Queensland Gas Distribution System 2012 - 2016, Annexure G; *Access Arrangement* for Envestra's South Australian Gas Distribution System 2013 - 2017, Annexure G.

<sup>819</sup> Envestra, *Access arrangement information*, 31 March 2012, p. 238.

<sup>820</sup> Envestra, *Access arrangement information*, 31 March 2012, p. 239.

- reduce legal and administrative costs.<sup>821</sup>

### 12.1.3 Assessment Approach

Non-tariff components must be consistent with the NGO.<sup>822</sup> But, otherwise, the AER has full discretion in dealing with them.<sup>823</sup> The AER has considered whether each term of Envestra's access arrangement proposal is consistent with the NGO.<sup>824</sup> The AER considers that assessing consistency with the NGO requires the AER to assess and balance the competing interests of the Service Provider, Network Users and consumers. In particular, the AER has considered:

- the appropriate allocation of risk
- the desirability of avoiding a prescriptive approach on commercial matters in the access arrangement.

#### Allocation of risk

The NGO involves the promotion of efficient investment in and efficient operation and use of natural gas pipeline services for the long term interest of consumers. The AER considers that requiring risk to be borne by the party best able to manage it promotes this objective. This is because such an approach provides the opportunity to minimise the risk, which can lead to greater efficiency and lower prices.

The AER considers that non-price terms and conditions that unduly favour a gas pipeline service provider are not consistent with the NGO. Such terms could discourage new businesses from entering the retail sector. They are also likely to increase Network Users' costs, which retailers would pass on to end consumers. A similar logic applies to terms and conditions that unduly favour Network Users. If the gas pipeline service providers face an inefficient level of risk, they are likely to pass additional costs on to the Network Users and consumers.

#### Commercial matters

The AER considers that consistency with the NGO requires terms and conditions to be sufficient to provide for a clear, legally certain and effective ongoing relationship between the parties. This becomes particularly relevant should an access dispute arise. In that scenario, the terms and conditions in the access arrangement will come into central focus.<sup>825</sup> The AER does not consider an access arrangement's terms and conditions can or need to cover every possible area of interaction between the parties.

The AER considers that Envestra and a Network User may wish to reach agreement on several aspects of their commercial relationship, separate from the access arrangement's terms and conditions. These aspects are likely to depend on the parties' particular circumstances. The AER considers that it should provide such parties with commercial

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<sup>821</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 238.

<sup>822</sup> NGR, r. 100.

<sup>823</sup> NGR, r. 40(3).

<sup>824</sup> NGL., s. 23; NGR, r. 100.

<sup>825</sup> NGL, ss. 181, 184 & 189.

flexibility to agree on terms that are relevant to their businesses and circumstances, consistent with s. 322 of the NGL. A prescriptive approach would not provide this flexibility. The AER considers that such an approach would not be consistent with the NGO.

In general, the AER considers that the terms and conditions Envestra has proposed are necessary for there to be a clear, effective and legally certain agreement between Envestra and a Network User.

By itself, a term may be necessary for an agreement to be clear, effective and legally certain. However, there may still be scope to adapt the language or level of detail of that term to apply to different commercial circumstances. In these cases, the AER considers that amending a term will be consistent with the NGO. Nonetheless, for commercial reasons, a Network User may seek to vary the wording or depth of a term. In these cases the AER considers that the proposed term should be approved. The parties can then negotiate any changes to the wording or detail of the term.

In these cases, the AER will generally avoid proposing amendments. This is particularly the case where the AER has received submissions that it considers go to the commercial form of a term, rather than its operation.

For the above reasons, the AER considers that this assessment approach will deliver a result consistent with the NGO.<sup>826</sup>

### 12.1.4 Reasons for the Decision

The following discussion focuses on the terms and conditions that the AER has concerns with and requires to be amended. Appendix D sets out the AER's reasoning with respect to proposed terms that it has accepted and submissions that it has not referred to in the following discussion.

Envestra has completely redrafted its proposed terms and conditions, with minimal carry over from its current Victorian access arrangement. The AER considers that much of the change is acceptable. However, there are some proposed terms that involve a significant derogation of the users' rights when compared against Envestra's current Victorian access arrangement.

Envestra has stated that the differences between its proposed Victorian terms and conditions and the terms and conditions approved by the AER in South Australia and Queensland are to give effect to the NECF and to deal with Victoria specific legislation and regulations. However, there are differences that do not appear to relate to either of these reasons and Envestra has not explained them.

Many of the proposed changes in Envestra's terms and conditions are designed to implement NECF. However, since Envestra lodged its access arrangement proposal, the Victorian government has deferred implementing the NECF.<sup>827</sup> Victoria's decision to defer the implementation of NECF means that Envestra has proposed terms and conditions to give

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<sup>826</sup> The AER considered the Australian Competition Tribunal's decision in *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12 in considering this issue.

<sup>827</sup> Premier of Victoria, Press Release, *Victorian Government Defers National Energy Retail Law to safeguard consumer protections*, 13 June 2012.

effect to a new regulatory regime that is not currently in place. There are also a number of clauses in the approved South Australian terms and conditions that Envestra has not proposed for its Victorian proposal. Envestra has not given any reasons for these.<sup>828</sup>

The AER acknowledges Envestra's desire for nationally consistent terms and conditions. One reason is that it will enable Envestra, and the gas retailers with which it contracts, to take a consistent national approach to regulation and contracting on Envestra Networks.<sup>829</sup>

However, AGL submits that there should be as much consistency as possible across all gas distribution agreements. It considers that the proposed access arrangements are less uniform than those proposed in previous review periods.<sup>830</sup> Origin submits that the terms and conditions for all distributors in Victoria should be consistent using similar terminology, structure and content.<sup>831</sup>

The AER therefore considers that there is a tension between Envestra's desire for nationally consistent terms and conditions across its networks and Network Users' desire for jurisdictionally consistent terms and conditions across the various Service Providers.

In assessing Envestra's proposed terms and conditions the AER has taken both points of view into consideration.

### 12.1.5 Proposed revisions to terms and conditions

#### NECF

The NECF contains a number of provisions governing the relationship between gas distribution and retail businesses and consumers. It also contains two parts that govern the relationship between Network Users and Service Providers (retail support obligations).<sup>832</sup> As discussed above, the Victorian Government has deferred the adoption and implementation of the NECF and these parts are not operative in Victoria.

Envestra states that the proposed Victorian General Terms and Conditions incorporate changes from its South Australian and Queensland terms and conditions to reflect the NECF.<sup>833</sup> The AER notes that there are a number of clauses in Envestra's proposed terms and conditions that refer to or adopt provisions of the NECF.

In its submissions AGL suggested that in order to avoid confusion over which NECF provisions are incorporated in the access arrangements, all access arrangements should incorporate the NECF as if it was in force in Victoria.<sup>834</sup> Origin submitted that:

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<sup>828</sup> Envestra South Australia, *Access Arrangement 2012 - 2016*, Annexure G, clauses 5, 6, 7, 8, 23.2 and 23.5.

<sup>829</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 239.

<sup>830</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 28 June 2012, p. 2.

<sup>831</sup> Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 28 June 2012, p. 2.

<sup>832</sup> Part 5 of the National Energy Retail Rules (SA) 2012 and Part 21 of the National Gas Rules, as amended by the National Gas (National Energy Retail Law) Amendment Rules SA 2012, made pursuant to the *National Energy Retail Law (South Australia) Act 2012*.

<sup>833</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 239.

<sup>834</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 29 June 2012, Attachment B.

- the NECF would largely ameliorate the need for gas access arrangement terms and conditions
- the terms and conditions for all service providers in Victoria should be consistent; and
- the AER should incorporate suitable provisions into the service providers' terms and conditions to accommodate a transition to the NECF once it commences in Victoria.<sup>835</sup>

The AER considers that it would not be appropriate to require Envestra to implement the NECF as though it had been adopted in Victoria. This is because the Victorian Government has made a decision to delay its adoption. For the AER to require Envestra to implement the NECF as though it had been adopted in Victoria would be to act inconsistently with the policy of the Victorian Government and to pre-empt the Government's decision. Further, this approach would also create inconsistency between the terms and conditions and the current regulatory framework.

Sub-clause 22.1 of Envestra's proposed terms and conditions refers to the National Energy Retail Law (NERL) and the National Energy Retail Rules (NERR). Sub-clauses 21.5 and 23 refer to rule 510 of the NGR. The NERL, NERR and rule 510 of the NGR are components of the NECF reforms. These reforms have not been adopted in Victoria.

In order to avoid confusion arising from references to legislative instruments that are effective in other jurisdictions, but have not been adopted in Victoria, the AER requires these clauses to be amended.

The AER requires Envestra to amend its proposed terms and conditions as follows:

- Amend clause 21 by inserting a new clause 21.7 and duplicating NECF rule 510 of the NGR in that new clause.
- Amend sub-clause 21.5 by deleting "rule 510 of the National Gas Rules" and replacing it with "clause 21.7"
- Amend sub-clause 22.1 by inserting the following after "NERR":
 

(once they are adopted in Victoria)
- Amend clause 23 by deleting "Rule 510 of the National Gas Rules" and replacing it with "clause 21.7"

### **Haulage reference Services**

The AER does not accept sub-clause 2.7. The AER requires Envestra to amend sub-clause 2.7 in accordance with Revision 12.1.

Sub-clause 28.2(f) permits Envestra to terminate the Agreement if it ceases to hold a distribution licence.

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<sup>835</sup> Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 28 June 2012, p. 2.

The AER considers that Envestra losing its distribution licence could potentially cause serious harm to Network Users and consumers. If Envestra was to lose its licence, it could no longer legally operate its network and no gas could be delivered.

Envestra's compliance with its licence conditions is solely within its control and is outside Network Users' control. Further, there is minimal scope for Network Users to avoid or mitigate the risk of Envestra losing its distribution licence.

The AER considers that these factors warrant an obligation for Envestra to exercise its best endeavours to avoid the loss of its distribution licence. The AER considers that such an obligation promotes the efficient operation and use of natural gas services, which is an aspect of the NGO.

The AER requires Envestra to amend sub-clause 2.7 as follows:

- Insert the following between "holds" and "whatever".

and exercise its best endeavours to ensure that it continues to hold

### **Guaranteed Service Level Payments**

The AER does not accept clause 3. The AER requires Envestra to amend clause 3 in accordance with Revision 12.2.

Clause 7.6 of Envestra's current access arrangement contains obligations surrounding guaranteed service levels. Envestra proposes to remove these obligations for the 2013–17 access arrangement period.

The AER considers that including a clause requiring Envestra to notify a Network User when it makes a guaranteed service level payment is beneficial. It avoids the potential of duplicated payments. The AER considers avoiding duplication promotes the efficient operation of natural gas services, an aspect of the NGO.

AGL's submission highlighted this issue.<sup>836</sup> Also, in its response to the retailers' submissions, Envestra stated that it was amenable to this amendment.<sup>837</sup>

- The AER requires Envestra to amend clause 3 as follows:

- Insert new sub-clause 3.4 as follows:

The Service Provider must notify the Network User where it makes a Guaranteed Service Level payment directly to a Customer under the Regulatory instruments.

- The AER requires Envestra to amend clause 10 of its access arrangement as follows:

- Insert a new definition as follows:

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<sup>836</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 29 June 2012, Attachment B.

<sup>837</sup> Envestra, letter dated 20 July 2012.

**Guaranteed Service Levels** or **GSL's** means the standard of service that must be provided by the Service Provider in respect of certain Distribution Services as set out in a regulatory instrument.

## Payments for Network User Services

The AER does not accept sub-clause 3.5. The AER requires Envestra to amend sub-clause 3.5 in accordance with Revision 12.3.

The AER considers that it is consistent with the NGO to require the inclusion of a clause that provides for payment by the Service Provider for services provided to it by the Network User. To not include such a term would limit Network Users' ability to seek payment for services they provide to Envestra. The AER considers that consistency with the NGO requires each party to receive appropriate compensation for services they provide as this promotes the efficient operation of gas services, which is an aspect of the NGO.

AGL highlighted this issue. It notes that the proposed terms and conditions do not include a provision for the payment of Network User services. AGL also submitted that the terms and conditions should include a clause similar to that SP AusNet or Multinet proposed.<sup>838</sup>

In Envestra's response to the retailers' submissions, it stated that it was amenable to AGL's proposal.<sup>839</sup>

The AER requires Envestra to amend sub-clause 3.5 as follows:

■ Insert new sub-clause 3.5 as follows:

The Service Provider shall pay the Network User fair and reasonable fees in respect of any Retail Services provided by the Network User to the Service Provider at the request of the Service Provider.

The Network User may render an invoice to the Service Provider upon the provision of any Retail Services.

An invoice issued under clause 7.2(b) shall be in a format determined by the network User and must contain sufficient information as is reasonable to allow the Service Provider to assess the accuracy of the charges specified in the invoice.

If the Service Provider receives an invoice from the Network User the Service Provider must pay the Network User the aggregate amount stated in the invoice not later than 10 Business Days after having received the invoice.

If the Service Provider disputes the fairness or reasonableness of the charge for Retail Services or otherwise disputes its obligation to pay all or part of that invoice, the dispute will be resolved in accordance with the procedure set out in clause 23.

■ Amend section 10 of the access arrangement proposal by inserting a new definition for Retail Services as follows:

Retail Services means the following services that are provided by a User to the Service Provider at the Service Provider's request:

processing of Guaranteed Service Level payments;

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<sup>838</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 29 June 2012, Attachment B.

<sup>839</sup> Envestra, Letter dated 20 July 2012.

notification of Reference Tariffs;

provision of information and documentation to Shared Customers; and

delivering to a Shared Customer any notification, information or documentation as requested by the Service Provider

but does not include any such services to the extent that the User is obliged to perform those services under the Regulatory Instruments;

## **Overselling capacity**

The AER does not accept sub-clause 4.5. The AER requires Envestra to amend sub-clause 4.5 in accordance with Revision 12.4.

Sub-clause 4.5 provides that Envestra must not connect a new Delivery Point (DP) to the Network or expand the capacity of an existing DP if it believes that, under normal conditions there will be insufficient capacity in the Network to meet the anticipated demand.

The AER has concerns with unfettered discretion. Such discretions may allow a party to act on its own belief, regardless of whether it has a reasonable basis for that belief. The AER considers that this is not consistent with the NGO because it may allow an element of arbitrariness into the Agreement or create uncertainty. Such arbitrariness and uncertainty may create unnecessary additional risk to other parties. Such an outcome would not promote efficient investment in and operation of the network, which is an aspect of the NGO.

AGL highlighted this issue. AGL considers that Envestra's discretion must be reasonable.<sup>840</sup> Also, in its response to the retailers' submissions Envestra stated that it was amenable in principle to this amendment.<sup>841</sup>

- The AER requires Envestra to amend sub-clause 4.5 as follows:
- Insert "reasonably" between "Envestra" and "believes"

## **Maintenance and removal**

The AER does not accept sub-clause 9.3. The AER requires Envestra to amend sub-clause 9.3 in accordance with Revision 12.5.

Sub-clause 9.3 relevantly provides that where a Metering Installation at a DP includes equipment for telemetry or interval metering and the law no longer requires that equipment at that DP, then the Network User will bear the costs of removing that equipment.

Envestra has not given any reasons for the inclusion of this sub-clause. However, in its draft decision on Envestra's South Australian access arrangement the AER referred to an analogous clause.<sup>842</sup> In its submissions on its revised access arrangement proposal Envestra

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<sup>840</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 29 June 2012, Attachment B.

<sup>841</sup> Envestra, Letter dated 20 July 2012.

<sup>842</sup> AER, *Draft Decision - Envestra (SA) Access Arrangement 2011 - 2016*, p. 229.



stated that it did not include the removal of interval meters in the cost of providing reference services.<sup>843</sup>

The AER does not consider that it is reasonable for Envestra to be able to make a unilateral decision to remove the relevant equipment and require the Network user to pay. The AER considers that the terms and conditions should only oblige the Network User to pay removal costs where it requests Envestra to remove the equipment. If Envestra decides of its own accord that it wants to remove the equipment, it should bear the costs of doing so.

Requiring each party to bear the costs of a removal that it requests or decides on will cause the relevant party to make an assessment of the need or benefit to be obtained from removing the equipment. If the Network User could request the equipment's removal without bearing costs, or Envestra could remove it and demand the cost from the Network User, there would be no incentive to make an informed and considered decision.

The AER considers that the party that requires the removal of the equipment should cover the costs of removal. This provides an incentive for the party requesting removal to consider the most efficient use of that equipment and, therefore, promotes the efficient operation of Envestra's gas services, an aspect of the NGO.

AGL highlighted this issue. AGL submitted that this clause deemed the Network User liable for the costs of removal, regardless of the circumstances and that the Network user should only be liable for these costs where it has requested the removal.<sup>844</sup>

- The AER requires Envestra to amend sub-clause 9.3 as follows:
- Insert the following phrase between the words "DP," and "then":

And the Network User requests that the equipment be removed,

### **Maximum correction**

The AER does not accept sub-clause 10.8. The AER requires Envestra to amend sub-clause 10.8 in accordance with Revision 12.6.

Sub-clause 10.8 provides that Envestra will not have to correct the readings taken from any metering installation more than one year prior to the relevant test date, unless the law requires otherwise.

The language in the remaining meter accuracy clauses refers to 'the party that is responsible for a Metering Installation' and 'the other party'. This language is neutral and can apply to either Envestra or the Network User. However, the limitation in clause 10.8 is restricted to Envestra.

As this clause stands, if a Network User is responsible for a Metering Installation and readings from that Metering Installation have been inaccurate over a number of years, the Network User would have to correct the readings for the entire period of the inaccuracy.

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<sup>843</sup> Envestra (SA), *Access arrangement information*, 23 March 2011, Attachment 16-1, p. 10.

<sup>844</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement, 29 June 2012, Attachment B.

The AER does not consider that this clause is consistent with the NGO. It applies to one party whereas the remaining meter accuracy clauses apply to both parties. There does not appear to be any reason for this imbalance. The AER considers that such imbalance could have a potential impact on consumer pricing.<sup>845</sup> Making this obligation reciprocal promotes efficiency and places an incentive on each business to ensure their meter readings' accuracy. The promotion of efficiently operating gas services is an aspect of the NGO.

AGL highlighted this issue. It submitted that the AER should require Envestra to correct the readings as far back as possible if the reading would lead to an overcharge.<sup>846</sup>

However, the AER does not accept AGL's further submission that where the reading would lead to an undercharge, Envestra should be limited to nine months.<sup>847</sup>

The AER does not accept AGL's view that corrections should apply differently to Network Users and Envestra. The AER considers that this sub-clause should be reciprocal and that reciprocity promotes an efficiently operating gas service, which is an aspect of the NGO.

- The AER requires Envestra to amend sub-clause 10.8 as follows:
- Delete the word "Envestra" in the first line and replace it as follows:

The party responsible for a Metering Installation
- Delete the word "Envestra" in the second line and replace it with the word "it".

### **No measurements**

The AER does not accept sub-clause 11.7. The AER requires Envestra to amend sub-clause 11.7 in accordance with Revision 12.7.

Sub-clause 11.7 provides for the manner in which Envestra will estimate the volume of gas delivered at a DP if the meter does not measure the volume at the DP. Factor (c) is "on whatever basis Envestra considers reasonable in the circumstances."

The AER has outlined its concerns with unfettered discretions above.<sup>848</sup> Accordingly, the AER considers that the criterion of reasonableness should be objective and not what Envestra considers to be reasonable.

- The AER requires Envestra to amend sub-clause 11.7 as follows:
- Delete the phrase "whatever basis Envestra considers reasonable in the circumstances" and replace it with

A basis that is reasonable in the circumstances.

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<sup>845</sup> For instance, under clause 22.2 statements of charges can be rectified to correct any error in metering data.

<sup>846</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>847</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>848</sup> See the discussion in paragraph 3 under "Overselling Capacity".

## **Specifications**

The AER does not accept sub-clause 12.1. The AER requires Envestra to amend sub-clause 12.1 in accordance with Revision 12.8.

Sub-clause 12.1 requires the Network User to ensure that gas delivered into the network by or for its account meets any specifications imposed by law, and to the extent consistent with the law, the specifications reasonably specified from time to time by Envestra.

Based on the information available to the AER, it considers that requiring a Network User to ensure that gas meets additional specifications beyond the specifications imposed by law is not in accordance with accepted good industry practice. The AER understands that upstream suppliers will not agree to obligations over the specifications imposed by law. The AER considers that allowing Envestra to unilaterally specify additional specifications beyond accepted standards will create uncertainty and may place Network users in a position where they are unable to comply. This obligation and its potential to lead to uncertainty creates additional risk to the Network User, which does not promote efficient investment in and operation of the Network, aspects of the NGO.

The AER's decision takes into account AGL's submission that Specifications should cover gas quality sufficiently and is what is referenced in the upstream agreements.

The AER requires Envestra to amend sub-clause 12.1 as follows:

- Delete the following phrase

And, to the extent consistent with the law, the specifications reasonably specified from time to time by Envestra by notice given to the Network User.

## **Temperature**

The AER does not accept sub-clause 12.2. The AER requires Envestra to delete sub-clause 12.2 in accordance with Revision 12.9.

Sub-clause 12.2 states that for the purposes of sub-clause 12.1 Envestra notifies the Network User that gas delivered into the network must have a temperature of at least two degrees Celsius.

For the reasons discussed in relation to sub-clause 12.1 above, the AER considers that Envestra should not be able to impose additional specifications. Further, the AER's proposed amendment to sub-clause 12.1 renders this sub-clause unnecessary.

The AER's decision takes into account AGL's submission that a Network User's ability to control temperature is limited to what is in the specifications.

The AER requires Envestra to delete sub-clause 12.2.

## **Failure to comply**

The AER does not accept sub-clause 12.3. The AER requires Envestra to amend sub-clause 12.3 in accordance with Revision 12.10.

Sub-clause 12.3 provides for Envestra to undertake a number of acts it considers necessary if gas delivered into the Network does not meet the Specifications.

The AER has outlined its concerns with unfettered discretions above.<sup>849</sup> Accordingly, the AER considers that Envestra should only be able to exercise this discretion reasonably.

AGL and Origin highlighted this issue. They submitted that Envestra's discretion should be reasonable.<sup>850</sup> Envestra stated that it was amenable in principle to including a reasonableness qualification.<sup>851</sup>

- The AER requires Envestra to amend sub-clause 12.3 as follows:
- Insert the word "reasonable" between "other" and "steps".

### **Notice**

The AER does not accept sub-clause 12.4(a). The AER requires Envestra to amend sub-clause 12.4(a) in accordance with Revision 12.11.

Clause 12.4(a) requires the Network User to notify Envestra as soon as practicable if there is a possibility that gas, which does not meet the specifications, may be delivered into the Network.

Clause 12.4(b) refers to Envestra becoming aware that gas that does not meet the specifications is being or may be delivered into the Network. The AER considers that the language between these two sub-clauses should be consistent. The AER also considers that it is important to the stability and efficient operation of the Network that Envestra be notified at the earliest possible stage that gas that does not meet the specifications is being delivered into the Network.

For the purposes of clarity the AER considers that clause 12.4(a) should make it clear that the Network User must notify Envestra if it becomes aware that off specification gas has been delivered into the Network. This obligation is designed to ensure the efficient operation and use of Envestra's gas services, which is an aspect of the NGO.

- The AER requires Envestra to amend sub-clause 12.4(a) as follows:
- At the end of the sub-clause insert the following:

Or if it becomes aware that such gas is being or has been delivered into the Network by  
or for the account of the Network User.

### **Payment of Charges**

The AER does not accept sub-clause 19.2. The AER requires Envestra to amend sub-clause 19.2 in accordance with Revision 12.12.

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<sup>849</sup> See the discussion in paragraph 3 under "Overselling Capacity".

<sup>850</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B; Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 2.

<sup>851</sup> Envestra, Letter dated 20 July 2012.

Sub-clause 19.2 provides that Envestra is entitled to charge for Ancillary reference Services requested by the Network User and that the charge will be calculated from time to time in accordance with the Agreement and the applicable Tariff Schedule.

The AER considers that Envestra should not be permitted to charge for a service it has not provided in full, unless it was unable to complete the service because of an act or omission of the Network User or an event beyond its control. The AER considers that where Envestra has been unable to provide the Ancillary Reference Service in full because of an act or omission by the Network User or an event beyond its control, Envestra should be able to charge a pro-rata amount.

The AER considers that this requirement will provide incentives for Envestra to provide Ancillary Reference Services promptly and fully and the Network User not to impede the full and prompt provision of that service. This will promote the efficient operation and use of Envestra's gas services, which is an aspect of the NGO.

AGL submitted that Envestra should only be allowed to charge for Ancillary Services that have been completed.<sup>852</sup> Envestra responded that it was amenable in principal to AGL's proposed amendment.<sup>853</sup>

- The AER requires Envestra to amend sub-clause 19.2 as follows:

- Insert (a) at the beginning of the first line:

- Insert the following at the end of the first sentence:

after Envestra has provided the requested Ancillary Reference Service

- Insert the following new sub-clause:

(b) Where Envestra is unable to provide the Ancillary Reference Service or unable to fully provide the Ancillary Reference Service because of an act or omission by the Network User or an event beyond its control, Envestra may calculate the charge on a pro-rata basis for the portion of the Ancillary Reference Service provided.

## **Adjustment of Charges**

The AER does not accept sub-clause 22.3. The AER requires Envestra to delete sub-clause 22.3 in accordance with Revision 12.13.

This clause sets out when Distribution Service Charges contained in a statement of charges may be varied. Sub-clause 22.3 specifies a time limit for adjustments.

The AER notes that sub-clauses 22.1 and 22.2 are based on rule 508 of the proposed National Gas (National Energy Retail Law) Amendment Rules, which implement NECF. Sub-clause 22.3 is additional to rule 508. The AER considers that where Envestra has chosen to mirror these proposed amendments in its terms and conditions, it should not be permitted to limit the operation of the proposed amendment.

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<sup>852</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>853</sup> Envestra, Letter dated 20 July 2012.

Further, the AER agrees with the view expressed by AGL that a Network User's ability to dispute incorrect charges should not be limited and that there is a need to be able to recover incorrectly billed charges when they are identified.<sup>854</sup>

There may be circumstances that prevent the identification of an incorrect charge for some time, regardless of the steps the parties take to verify the accuracy of statements of charges. In these circumstances, the party who benefits from the incorrectly billed amount should not be permitted to obtain a windfall gain. This is especially the case where the benefitting party is responsible for the error.

The AER considers that the deletion of this sub-clause prevents either party from benefitting from a windfall gain and removes an incentive to take active steps to conceal an overcharge. It also gives the parties an incentive to resolve outstanding issues in a timely manner. This minimises price distortions from inadvertent or deliberate overcharging being passed on to consumers. It will also aid the efficient operation of the gas system, which is an aspect of the NGO.

The AER requires Envestra to amend sub-clause 22.3 as follows:

- Delete sub-clause 22.3

### **Overdue Interest**

The AER does not accept sub-clause 26.1. The AER requires Envestra to amend sub-clause 26.1 in accordance with Revision 12.14.

Sub-clause 26.1 places an obligation on the Network User to pay interest on any amount that is not paid by the due date.

The AER considers that the proposed terms and conditions contain a number of obligations on each party to make payments or refunds. It is reasonable to expect that any payment or refunds will be paid within a required or specified time frame. Where a payment or refund is not made within a specified or required timeframe, it is a standard business practice to impose interest.

The AER considers that allowing the charging of interest acts as an incentive on the parties to make payments by the due date. For this reason, the AER agrees with the submissions made by AGL that the obligation to pay interest should be reciprocal where one party needs to pay or make a repayment to the other.<sup>855</sup> Further, the AER agrees with Origin that this obligation should be reciprocal for any amounts that the Network User is owed by Envestra.<sup>856</sup>

The AER considers that the inclusion of an overdue interest clause is consistent with the NGO, and should apply to both parties where applicable. The AER does not see why an overdue interest clause should be a unilateral obligation, as proposed by Envestra. The AER

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<sup>854</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>855</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>856</sup> Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 3.

considers that incentivising each party to pay due amounts by the due date encourages the efficient operation of the network and imposes a disincentive on non-payment. The absence of such a disincentive could cause price distortions if Network Users had to recoup un-refunded amounts via increased customer charges. Such price distortions would not be in the long term interests of consumers, which is an aspect of the NGO.

In its response to the retailers' submissions Envestra stated that it was amenable to this change.<sup>857</sup>

- The AER requires Envestra to amend sub-clause 26.1 as follows:
- In the first line, delete "the Network User" and replace with "a party"
- In the first line, delete "Envestra" and replace with "the other party"
- In the second line, delete "the Network User" and replace with "that party"
- In the second line, delete "Envestra" and replace with "the other party"
- In the fifth line, delete "to Envestra"

### **Right to Set Off Unpaid Amounts**

The AER does not accept sub-clause 26.2. The AER requires Envestra to amend sub-clause 26.2 in accordance with Revision 12.15.

Sub-clause 26.2 provides for a party to set off unpaid amounts against amounts owing.

Clause 23 adopts the process for disputing a statement of charges specified in r. 510 of the National Gas (National Energy Retail Law) Amendment Rules SA 2012. That rule provides for the payment of the undisputed amount of the statement of charges or 80 per cent of the total amount due. Where a party has acted in accordance with this term of the agreement, the other party should not be able to set off the difference between the amount paid and the amount claimed. This would render the adopted r. 510(c) in clause 23 nugatory.

The AER considers that to be consistent with the NGO, an access arrangement should not contain terms that derogate from rights created in other provisions. This can potentially lead to uncertainty and disputes over the interpretation of the terms and conditions. Such an outcome is not efficient and has the potential of increasing each party's expenses, which could then be passed through to consumers. The AER considers that clear, consistent and unambiguous terms and conditions avoid uncertainty and promote efficiently operating gas services, which is an aspect of the NGO.

Accordingly, the AER agrees with AGL's submission that this sub-clause should be subject to clause 23, which sets out the process for disputing a statement of charges.<sup>858</sup>

- The AER requires Envestra to amend sub-clause 26.2 as follows:

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<sup>857</sup> Envestra, Letter dated 20 July 2012.

<sup>858</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

- Insert "and clause 23" after "sub-clause 21.5"

## Right to Suspend Services

The AER does not accept sub-clause 26.3. The AER requires Envestra to amend sub-clause 26.3 in accordance with Revision 12.16.

Sub-clause 26.3 provides that if a Network User does not pay any amount due to Envestra, then Envestra may cease delivering gas through any DP and may cease performing any of its other obligations until such time as the Network User has paid in full all unpaid amounts due to Envestra.

Envestra has a legitimate interest in ensuring that it receives payment for the services it provides and the inclusion of terms that achieve this outcome is consistent with the NGO. However, the AER considers that this sub-clause specifies a significant sanction for non payment. This sub-clause would arguably permit Envestra to cease delivering gas to all Shared Customers if a Network User was \$1 in arrears. The AER does not consider that such an outcome is consistent with the NGO. As suggested by AGL, this clause appears to permit Envestra to randomly target innocent customers and has the same effect as terminating the agreement.<sup>859</sup>

The terms and conditions provide a number of remedies to Envestra where there is an amount outstanding.<sup>860</sup> Envestra would also have recourse to the general law. Accordingly, the AER considers that there is adequate protection and remedies available to Envestra in the event that payment is not made by the due date.

The AER considers that a remedy that affects consumers and potentially allows Envestra to cut their gas supply due to a minor breach by a Network User is not consistent with the NGO. Such a remedy is extreme and in the circumstances where there are other, less onerous remedies available, unnecessary. The AER considers that this remedy is not consistent with a secure and reliable supply of natural gas and creates uncertainty that is not in the long term interests of consumers, aspects of the NGO.

The AER agrees with AGL that this sub-clause essentially permits Envestra to punish consumers for the failure of a Network User.<sup>861</sup> The AER is also concerned at the lack of any qualification on the application of this clause. The AER considers that the inclusion of this clause is not consistent with the long term interests of consumers with respect to reliability and security of supply of natural gas, which is an aspect of the NGO.

The AER requires Envestra to amend sub-clause 26.3 as follows:

- Delete sub-clause 26.3

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<sup>859</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>860</sup> Sub-clause 26.1, sub-clause 26.2, sub-clause 28.2.

<sup>861</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.



## Credit Support

The AER does not accept sub-clauses 27.4 and 27.6. The AER requires Envestra to amend sub-clauses 27.4 and 27.6 in accordance with Revision 12.17.

Clause 27 sets out the processes relating to obtaining, drawing on and refunding credit support. This clause was not included in Envestra's South Australian or Queensland access arrangements approved by the AER<sup>862</sup> and appears to be based on the credit support provisions in the National Gas (National Energy Retail Law) Amendment Rules SA 2012. However, the AER notes that some aspects of those credit support provisions that benefit Network Users have not been adopted by Envestra.

The AER considers the general approach taken by Envestra, of adopting provisions from rules that are intended to govern the relationship between service providers and Network Users, is appropriate. This approach avoids inconsistency between contract and regulatory obligations and achieves administrative efficiency.

The AER notes AGL's concerns with the credit support regime included in the National Gas (National Energy Retail Law) Amendment Rules SA 2012 and that it has foreshadowed the possibility of amendments. However, this outcome is by no means certain. The AER considers that where a Service Provider has proposed a term that mirrors a regulatory regime, it is desirable to retain that term because of the benefits arising out of consistency. The AER also considers that notwithstanding AGL's concerns, the parties will be required to comply with the relevant term in the National Gas (National Energy Retail Law) Amendment Rules SA 2012, once it is adopted by Victoria. As things currently stand, that will be in the form of the clause proposed by Envestra. Accordingly, the AER considers that Envestra's general approach is appropriate and consistent with the NGO.

However, the AER is concerned that Envestra chose not to fully adopt the regulatory approach, and excluded provisions that benefit Network Users. The AER does not consider such an approach to be consistent with the NGO as it is weighted in favour of Envestra. This places additional burdens on Network Users which could result in higher costs being passed onto consumers.

The AER considers that as Envestra has proposed an approach that largely adopts the provisions contained in the National Gas (National Energy Retail Law) Amendment Rules SA 2012, the interests of consistency with the NGO require it to fully adopt that approach. To allow Envestra to partially adopt that approach is to balance the credit support regime in favour of Envestra. This places a burden on Network Users which could potentially feed into higher prices for consumers.

The AER considers that Envestra should be obliged to refund credit support or a portion thereof where an independent expert appointed pursuant to clause 37 finds that it was not entitled to it. To allow Envestra to retain incorrectly requested funds or not pay interest would be inconsistent with these terms and conditions, potentially leading to another dispute and would also financially disadvantage the Network User. The AER considers that this would not be consistent with an efficiently operating network and the efficient operation and use of

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<sup>862</sup> Access Arrangement for Envestra's Queensland Gas Distribution System 2012 - 2016, Annexure G; Access Arrangement for Envestra's South Australian Gas Distribution System 2013 - 2017, Annexure G.

Envestra's gas service and could lead to unjustifiable price increases for consumers. This is not in the long term interests of consumers, which is an aspect of the NGO.

AGL submitted that the changes made to the credit support regime in the National Gas (National Energy Retail Law) Amendment Rules SA 2012 were not consulted on and took the retail sector by surprise and are likely to be the subject of a rule change request. AGL submits that the National Gas (National Energy Retail Law) Amendment Rules SA 2012 credit support obligations should not be replicated in Envestra's terms and conditions and the credit support obligations proposed in Multinet's terms and conditions should be adopted by Envestra.<sup>863</sup>

Australian Power and Gas submitted its support for a provision to implement the National Gas (Retail Support) Amendment Rules 2012 immediately following their commencement in Victoria.<sup>864</sup>

The AER notes that the retailers that made submissions on the credit support obligation was concerned with the form of the obligation rather than the inclusion of such an obligation.

- The AER requires Envestra to amend sub-clauses 27.4 and 27.6 as follows:
- Amend Sub-clause 27.4 by inserting (1) at the start of the sub-clause and inserting:
  - (2) Where an independent expert appointed under clause 37 determines that Envestra was not entitled to the credit support provided by the Network user, in whole or in part, Envestra must:
    - (a) reimburse the Network User for any costs incurred to procure the credit support (including the costs of funding any cash collateral provided to the issuer of credit support), in excess of the costs that the Network User would have incurred if the correct amount had been requested; and
    - (b) pay the Network User interest at the default interest rate on the amount of those excess costs.
- Delete sub-clause 27.6 and replace it as follows:
  - Envestra may only apply or draw on the credit support if:
    - (a) Envestra has given not less than 3 business days' notice to a retailer that it intends to apply or draw on the credit support in respect of an amount due and payable by the Network user to Envestra, and that amount remains outstanding; and
    - (b) there is no unresolved dispute under clauses 23 or 37 of this Agreement about the Network User's liability to pay that amount.

## Termination by Envestra

The AER does not accept sub-clause 28.2. The AER requires Envestra to amend sub-clause 28.2 in accordance with Revision 12.18.

Sub-clause 28.2 provides the circumstances where Envestra may terminate the Agreement with seven days notice.

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<sup>863</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>864</sup> Australian Power and Gas, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, p. 1.

Envestra submitted that sub-clauses 28.2(d) and (i) are new when compared to its South Australian and Queensland access arrangements. Sub-clause 28.2(d) is intended to cover the situation where under section 41 of the Victorian *Gas Industry Act 2001*, the Essential Service Commission appoints an administrator where the security of gas supply is threatened by a contravention of a licence condition. Sub-clause 28.2(i) enables termination where Envestra ceases to hold its gas distribution licence.<sup>865</sup>

The AER considers that termination of an Agreement with Network Users would have serious consequences for Shared Customers supplied by that Network User. Consumers would arguably be left without the supply of gas with less than seven days notice (after receiving notice from Envestra the Network User would then have to notify its customers, often by mail, thus reducing the amount of notice that consumers would receive).

As sub-clause 28.2(a) is drafted, Envestra could conceivably terminate the agreement, leaving a large number of consumers without a supply of gas, because a Network User fails to pay \$1 by the due date. The AER considers this to be a perverse outcome that is not consistent with the NGO because it is not in the long term interest of consumers.

Envestra should be free to take steps necessary to protect its commercial interests. However, those steps should be consistent with the NGO. The AER considers that maintaining Envestra's right to terminate, subject to qualifications, is more consistent with the NGO. The AER considers that the provision of a notice and remedy period for non payment would continue to protect Envestra's commercial interests whilst also protecting the interests of consumers and achieving consistency with the NGO. Envestra would still be permitted to terminate if the payment was not made within the notice period. However, the long term interests of consumers, which is an aspect of the NGO, would be protected by removing Envestra's ability to terminate for minor breaches.

The AER's consideration is consistent with the concerns expressed by AGL and Origin. AGL submitted that Envestra's ability to terminate with seven days notice of a Network User's failure to pay any amount is particularly harsh and should be deleted. AGL also submitted that this clause does not take into account any disputes that may be subject to dispute resolution procedures.<sup>866</sup> Origin submitted that sub-clause 28.2(a) allows Envestra to terminate the agreement where the Network User fails to pay any amount on time in the manner required by the agreement. Origin also submitted that there is no provision for a breach notice or cure period.<sup>867</sup>

The AER considers that the remaining grounds of termination in sub-clause 28.2 apply to matters that are more serious than small delays in payment or non payment of small sums. The AER considers that each of these grounds could have an effect on the efficient operation and use of Envestra's gas services and are therefore consistent with the NGO.

The AER also considers that Envestra should not be able to terminate the agreement where there is either a disputed invoice under clause 23 or the dispute resolution mechanism

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<sup>865</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 240.

<sup>866</sup> AGL, *Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals*, 29 June 2012, Attachment B.

<sup>867</sup> Origin, *Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals*, 28 June 2012, p. 3.

process under clause 37 has been commenced. To allow termination where these processes were in operation would render them nugatory. The AER does not consider that this outcome is consistent with the NGO. Accordingly, the AER requires this sub-clause to be subject to the dispute resolution processes in clauses 23 and 37.

- The AER requires Envestra to amend sub-clause 28.2 as follows:
- At the beginning of sub-clause 28.2 insert "Subject to clauses 23 and 37".
- At the end of sub-clause 28.2(a) insert the following:
  - and the Network User fails to pay the amount due within 14 days after it receives a written notice specifying the amount that is due.

## **Mitigation**

The AER does not accept sub-clause 29.4 The AER requires Envestra to amend sub-clause 29.4 in accordance with Revision 12.19.

Sub-clause 29.4 obliges the Network user to use reasonable endeavours to mitigate every Claim it might have against Envestra.

The AER considers that a requirement on each party to mitigate any loss is consistent with the NGO. If such an obligation does not exist, the AER considers that there would be less incentive for a party that suffers loss to take steps to mitigate that loss. The absence of such an obligation could lead to increased costs or serious damage and loss that could have been avoided if the indemnified party had engaged in minor acts to mitigate the loss. Such an outcome would not be consistent with the efficient operation and use of Envestra's gas service and could affect the long term interests of consumers with respect to price, which are aspects of the NGO.

The AER's approach addresses AGL's submission that both parties should be required to mitigate their losses.<sup>868</sup>

In its response to the retailers' submissions Envestra stated that it was amenable to this amendment.<sup>869</sup>

- The AER requires Envestra to amend sub-clause 29.4 as follows:
- Delete the definition and replace it with:
  - A party must use reasonable endeavours to mitigate every claim it might have against the other party.

## **Exclusion of Economic Loss and Consequential Loss and Maximum Liability for Other loss**

The AER does not accept sub-clauses 29.6&7 The AER requires Envestra to amend sub-clause 29.6&7in accordance with Revision 12.20.

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<sup>868</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>869</sup> Envestra, Letter dated 20 July 2012.

Sub-clause 29.6 limits the extent of each party's liability to the other party by excluding economic or consequential loss in respect to a Claim.

Sub-clause 29.7 provides that each party's maximum liability for any other loss in relation to a Claim is \$100 million.

Claim is defined in sub-clause 29.3 as a claim a Network User has, or believes it has against Envestra.

On their face, sub-clauses 29.6 and 29.7 apply to each party. However, they apply to a Claim, as defined. Because Claim is defined by reference to a claim a Network User has against Envestra, Envestra will never have a Claim. i.e. Envestra is not a Network User and, in any case, will not have a claim against itself.

Accordingly, whilst these sub-clauses appear to have application to both Network Users and Envestra, the definition of Claim means that in practice they will only apply to Network Users.

The AER considers that these sub-clauses should apply to Envestra as well as the Network Users. Accordingly, these sub-clauses should refer to all claims in general, not Claims as defined in sub-clause 29.3.

The AER considers that these sub-clauses, as they are currently drafted, could be misleading. They appear to have general application but are, in fact, limited to Network Users. These sub-clauses act to limit Envestra's liability whilst leaving Network Users with uncapped liability.

The AER does not consider that this is consistent with the NGO. The AER considers that exposing Network Users to uncapped liability creates a barrier to entry into the gas retail market. Any business seeking to become a Network User would be exposed to a high level of insurance costs to cover this uncapped liability. This would limit the retail market to large businesses. The likely result of this is reduced retail competition. This is not in the long term interests of consumers with respect to price, which is an aspect of the NGO.

The AER considers that making these caps mutual would remove this barrier to entry and be more consistent with the NGO.

The AER requires Envestra to amend sub-clauses 29.6 and 29.7 as follows:

- Delete "Claim" and replace it with "claim".

### **Death or Personal Injury**

The AER does not accept sub-clause 33.3 The AER requires Envestra to amend sub-clause 33.3 in accordance with Revision 12.21.

Sub-clause 33.3 requires the Network User to indemnify Envestra against all loss, costs, expenses or damage which it might suffer or incur as the result of the death or injury of specified people caused by the Network User or its agents.

The AER considers that Envestra should offer a similar indemnity to this.

The AER considers that making a party liable for death or personal injury will act as a strong incentive on the party to develop appropriate procedures and safety measures to avoid causing death or personal injury. The AER considers that this is especially important when dealing with an industry that involves the use of vehicles, machinery and a potentially explosive substance.

The AER considers that it is consistent with the NGO to require each party to provide an indemnity in the same terms. Having an indemnity that incentivises a party to take positive steps to avoid or mitigate a particular harm will act to increase the efficient operation and use of Envestra's services. This will encourage the parties to take steps to avoid outcomes that could impact price and is consistent with the long term interests of consumers, which is an aspect of the NGO.

The AER's decision is supported by AGL's submission that this indemnity should be reciprocal<sup>870</sup> and Origin's submission that liability clauses should be reciprocal in rights and obligations unless there is a clear reason to depart from this basic principal.<sup>871</sup>

- The AER requires Envestra to amend clause 29 as follows:
- Delete point (b) from sub-clause 29.1
- Insert a new sub -clause 29.11 as follows:

Envestra will indemnify the Network User against all loss, cost, expense or damage which the Network User might suffer or incur as a result of the death or injury of any servant, agent, contractor or invitee of the Network User that is caused by Envestra or any of its respective officers, servants, agents, contractors or invitees.

## **Assistance**

The AER does not accept sub-clause 32.2. The AER requires Envestra to amend sub-clause 32.2 in accordance with Revision 12.22.

Sub-clause 32.2 requires the Network User to cause or procure each shared customer or Upstream operator to provide Envestra at no cost with information, assistance or co-operation.

The AER is concerned at the extent of the obligation. To cause or procure a third party to do something requires the third party to either be legally obliged or compellable to do it, or willing to do it voluntarily. There may be situations where neither of these circumstances applies.

The AER considers that if a Network User has no means of compelling an unwilling third party to provide information, assistance or co-operation, it could potentially contravene this sub-clause despite having done everything within its power to comply. The AER does not consider that a clause that leads to a breach of the Agreement, notwithstanding that the party in breach did everything it could to avoid the breach is consistent with the NGO. Such a clause punishes a party for actions outside its control. The AER considers that this is not consistent

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<sup>870</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>871</sup> Origin, Submission to the AER, SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 3.

with the efficient use or operation of Envestra's gas network, which is an aspect of the NGO. Accordingly, the AER considers that the obligation on the Network User should be limited to exercising its best endeavours.

The AER notes that the second line refers to information, assistance or co-operation Envestra might reasonably require. However, the final line refers to information, assistance or co-operation Envestra requires. The AER considers that these references should be consistent and the reference in the final line should be qualified as information, assistance or co-operation Envestra reasonably requires.

To leave this inconsistency could potentially lead to disputes, which could increase costs and would not be in the long term interests of consumers with respect to price, an aspect of the NGO.

AGL submitted that the Network User should be able to pass on any costs that are charged by the shared customer or Upstream operator.<sup>872</sup> The AER does not consider that the Network User should be able to pass on these costs. In order to meet its obligation to provide information, assistance or co-operation to Envestra, there will be times when the Network user needs to obtain them from a third party, most likely a shared customer or Upstream Operator. Any cost incurred in doing so should be borne by the Network User as the costs of meeting its obligations.

- The AER requires Envestra to amend sub-clause 32.2 as follows:
- Insert "use its best endeavours to" between "will" and "cause".
- In the final line, insert "reasonably" between "Envestra" and "requires".

### **Network User's Breach**

The AER does not accept sub-clause 33.1. The AER requires Envestra to delete sub-clause 33.1 in accordance with Revision 12.23.

Sub-clause 33.1 requires the Network User to indemnify Envestra against all loss, cost expense or damage which Envestra might suffer or incur as a result of the Network User's breach of the Agreement.

The indemnities provided in this clause are considerably more detailed and more onerous than those imposed by clause 13.5 of Envestra's current access arrangement. Envestra has not explained the reason for this change.

The AER's general approach to the allocation of risk, liability and indemnities is to consider that the interests of the NGO are achieved by requiring the risk to be borne by the party best placed to prevent or mitigate the risk. This will be in the long term interest of consumers with respect to cost and consistent with the NGO.

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<sup>872</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

The AER also considers that where it is not apparent that one party is better placed than the other to prevent or mitigate a risk, the desirability of reciprocity in rights and obligations is consistent with the NGO. This is because reciprocity will incentivise each party to take steps to avoid the risk from arising and promote the efficient use and operation of Envestra's gas service. Avoiding risk will likely reduce costs, which will be in the long term interests of consumers with respect to price, an aspect of the NGO.

The AER considers that the indemnity contained in this sub-clause is extremely broad and does not contain an incentive on Envestra to mitigate or minimise its costs or loss. The provision of such a broad, unqualified indemnity reduces incentives on Envestra to mitigate its loss in the event that a Network User breaches the Agreement. A failure to mitigate loss is likely to lead to increased costs which the Network User would have to cover under the indemnity. These costs would then be likely to be passed on to consumers, which would not be in their long term interests.

The AER also considers that the general common law remedy of damages for breach of contract provides Envestra with adequate protection against any loss arising from a Network User's breach of the Agreement.

The concerns expressed by the AER and discussed above are consistent with AGL and Origin's submissions. AGL and Origin each submitted that:

- indemnities should be reciprocal
- Envestra should also be liable for loss caused through breach of the Agreement;<sup>873</sup> and
- this is a general purpose indemnity for all breaches of contract and does not cover both parties equally, and such a broad indemnity is unnecessary.<sup>874</sup>

The AER requires Envestra to amend sub-clause 33.1 as follows:

- Delete sub-clause 33.1.

### **User's Insurance**

The AER does not accept clause 34. The AER requires Envestra to amend clause 34 in accordance with Revision 12.24.

This clause imposes a number of obligations on Network Users with respect to insurance.

The AER notes that insurance is covered by clause 13.4 in Envestra's current access arrangement. This clause is reciprocal and requires each party to have adequate insurance and provide proof of currency and adequacy of cover at the other party's reasonable request.

The AER considers that it is appropriate for any insurance taken out to note the interest of the other party. This provides that party with greater comfort and certainty that the level of

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<sup>873</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>874</sup> Origin, Submission to the AER, SP AusNet Envestra and Multinet access arrangement proposals, 28 June 2012, p. 3.



potential risk it faces is reduced. This has the potential to reduce costs which is consistent with the NGO.

Both Multinet and SP Ausnet have included insurance clauses in their proposed terms and conditions which are reciprocal and require each party to have adequate insurance and provide proof of currency and adequacy of cover at the other party's reasonable request.<sup>875</sup>

The AER considers it consistent with the NGO to require each party to have appropriate and adequate insurance. The failure of either a Network User or Envestra to take out appropriate and adequate insurance cover could cause the other party considerable harm in the event that a risk that was not insured occurred.

The AER considers that the inclusion of an insurance obligation is consistent with the NGO, and should apply to both parties where applicable. The AER does not see why an obligation to obtain and maintain insurance and provide proof of currency of insurance should be a unilateral obligation, as proposed by Envestra. The AER considers that incentivising each party to take out adequate and appropriate insurance cover encourages the efficient operation and use of services.

This approach will also avoid uncertainty that would be faced by a Network User if there was no obligation on Envestra to take out insurance. This uncertainty creates additional risk to the Network User, which does not promote efficient investment in and operation of the network an aspect of the NGO.

The AER's decision is supported by AGL's and Origin's submissions that the insurance obligations should be reciprocal.<sup>876</sup> The AER has not followed Australian Power and Gas' submission that clause 34.2 effectively requires it to hold separate insurance to cover its relationship with Envestra.<sup>877</sup>

- The AER requires Envestra to amend clause 34 as follows:
- Amend sub-clause 34.1 by deleting "The Network User" and replacing it with "Each Party".
- Amend sub-clause 34.1 by deleting "approved by Envestra (which approval shall not be unreasonably withheld)".
- Delete sub-clause 34.2 and replace it as follows:
  - If either party requires, the other party must ensure that any insurance it obtains or maintains under the Agreement notes the interest of the other party.
- Delete sub-clause 34.3 and replace it as follows:

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<sup>875</sup> Multinet, *Access arrangement proposal: Part C - Terms and Conditions*, 30 March 2012, p. 43; SP AusNet, *Access arrangement proposal, Part C - Terms and Conditions*, 30 March 2012, p. 41.

<sup>876</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B; Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 3.

<sup>877</sup> Australian Power and Gas, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 2013–17.

Whenever reasonably requested by the other party, a party must give the other party a certificate of currency for the insurance.

- Delete sub-clause 34.4 and replace it as follows:

A party must promptly notify the other party whenever an event occurs in relation to the Network which gives rise to, or might give rise to, a claim under any insurance which the party holds under this Agreement.

- Delete sub-clause 34.5 and replace it as follows:

Whenever a claim arises, or might have arisen, in relation to the Network under any insurance which a party maintains under the Agreement, that party must take whatever steps the other party reasonably requires to make and enforce or settle that claim.

- Delete sub-clause 34.6.

- Delete sub-clause 34.7 and replace it as follows:

A party must promptly notify the other party if it fails to obtain or maintain any insurance required under the Agreement. In this case, the other party may obtain and maintain that insurance on behalf of that party at the costs of that party.

## **Access to Premises**

The AER does not accept sub-clause 35.1. The AER requires Envestra to amend sub-clause 35.1 in accordance with Revision 12.25.

This is a new obligation that is not contained in Envestra's current access arrangement.

The AER considers that references to Shared Customers should be removed from sub-clause 35.1. The Network User does not own a Shared Customer's premises and will not be an agent of a Shared Customer. Accordingly, the Network User is not in a position to grant consent to Envestra to enter a Shared Customer's premises. Any consent granted by the Network User is also not sufficient to protect Envestra. The AER considers that it is not consistent with the NGO to require a Network User to agree to something it does not have the authority to agree and that, in any case, does not protect Envestra.

For similar reasons to those set out in Assistance above, the AER considers that any obligation on a Network User to cause or procure a Shared Customer's action should be qualified to exercising reasonable endeavours.

The AER also considers that whilst it is reasonable to not expect Envestra to perform the Agreement because it could not obtain safe, reasonable or unhindered access, it should be required to exercise its reasonable endeavours to do so. To allow Envestra to assert that it could not obtain access without having a requirement to exercise reasonable endeavours could lead to Envestra using this ground when it was not able to attend for some reason.

The AER considers that such an outcome would be inconsistent with the NGO. Requiring Envestra to exercise its reasonable endeavours will reduce the number of unsuccessful visits and promote the efficient operation of the network and the long term interests of consumers with respect to price, which is an aspect of the NGO.

The AER has considered AGL's submission that under the NECF, Envestra has equal responsibility for obtaining access and accordingly this clause should be deleted, or at least subject to Envestra taking reasonable steps to mitigate the reason for not obtaining access.<sup>878</sup>

- The AER requires Envestra to amend sub-clause 35.1 as follows:
- Delete "or any Shared Customer" from sub-clause 35.1.
- Amend sub-clause 35.5 by inserting ",after exercising its reasonable endeavours to do so," between "obtain" and "safe".
- Amend sub-clause 35.7 by inserting "exercise its reasonable endeavours to" between "or" and "cause".

## Assignment

The AER does not accept clause 39. The AER requires Envestra to amend clause 39 in accordance with Revision 12.26.

Clause 39 covers assignment of rights or obligations under the Agreement. Sub-clause 39.1 provides that a Network User may not transfer, assign or otherwise deal with its rights or obligations except in accordance with the Access Arrangement. There is nothing in the Access Arrangement dealing with the Network Users ability to assign or transfer its obligations. Accordingly, a Network User is prohibited from assigning or transferring its rights or obligations.

Sub-clause 39.2 permits Envestra to assign or transfer its rights or obligations to any person who purchases or acquires the Network or possession or control of it.

Clause 19.8 of Envestra's current access arrangement restricts either party from assigning any of its rights or obligations unless it has the written consent of the other party and provides that such consent must not be unreasonably withheld.

Consistent with the concerns raised by AGL and Origin<sup>879</sup> the AER does not see any reason for preventing Network Users from assigning their rights or obligations. The AER considers that this prohibition places a considerable constraint on the business flexibility of Network Users. The AER also considers that there may be circumstances where a Network User needs to sell its gas retail business to maintain its overall financial viability. Preventing a Network user from doing so could potentially cause it to become insolvent and trigger a retailer of last resort event.

The AER considers this outcome would not promote the efficient use of Envestra's network and could result in increased prices, which is not in the long term interests of consumers, an aspect of the NGO.

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<sup>878</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012, Attachment B.

<sup>879</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012; Origin, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 28 June 2012, p. 4.

Further, the AER considers that the lack of business flexibility stemming from this clause could act as a barrier to entry. A business considering entering the gas retail market could be discouraged from doing so if it was concerned that it would be prevented from selling its gas retail business for the life of the Agreement.

The AER therefore considers that the lack of reciprocity in this clause is not in the long term interests of consumers. Making this clause reciprocal is consistent with the NGO as it allows for greater business flexibility which is likely to encourage greater competition and lead to reduced prices in the long term interest of consumers.

- The AER requires Envestra to amend clause 39 as follows:
- Delete sub-clause 39.1.
- Amend the remaining sub-clauses so that they apply equally to either party.

### **Consents**

The AER does not accept sub-clause 41.3. The AER requires Envestra to amend sub-clause 41.3 in accordance with Revision 12.27.

Sub-clause 41.3 provides that where any consent or approval is required from Envestra under the Agreement, it will have no obligation to give the consent or approval except where an obligation is imposed by law.

The AER considers that such a broad discretion is not consistent with the NGO. The AER generally considers that where a party is given a discretion, consistency with the NGO requires the discretion to be qualified with an element of reasonableness.

If Envestra is permitted to refuse to give consent under the Agreement, the uncertainty faced by Network Users would increase, as they could never know whether consent would be given or not. This arbitrariness and uncertainty create additional risk to the Network User, which does not promote efficient investment in and operation of the network an aspect of the NGO.

The AER considers that consistency with the NGO permits Envestra to exercise its discretion. However, such exercise should not be arbitrary. Accordingly, the AER considers that this discretion should be qualified.

AGL submitted that this provision should be deleted or qualified with a requirement on Envestra to consider all requests for consent or approval in a timely manner and to act reasonably.<sup>880</sup>

- The AER requires Envestra to amend sub-clause 41.3 as follows:
- Delete sub-clause 41.3 and replace it with the following:

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<sup>880</sup> AGL, Submission to the AER: SP AusNet, Envestra and Multinet access arrangement proposals, 29 June 2012.

Where any consent or approval is required from Envestra under the Agreement, Envestra must not unreasonably withhold that consent or approval. Envestra may make any consent or approval subject to whatever conditions are reasonably necessary.

## 12.2 Capacity trading requirements

The capacity trading requirements of an access arrangement may allow a user to transfer, by way of a subcontract, all or any of the users contracted capacity to another user.<sup>881</sup> In doing so, it may enable a secondary market with more efficient price signals and levels of usage.

The NGR provides that capacity trading requirements are to be included in a full access arrangement.<sup>882</sup> In particular, the NGR requires that capacity trading requirements must provide for capacity transfers in accordance with the rules or procedures of the relevant gas market, if the service provider is registered as a participant in a particular gas market.<sup>883</sup> If the service provider is not registered, or the rules or procedures do not address capacity trading requirements, a service provider is precluded from withholding consent unless it has reasonable grounds, based on technical or commercial considerations for doing so.<sup>884</sup> Capacity trading requirements may specify conditions under which consent will or will not be given, and the conditions to be complied with if consent is given.<sup>885</sup>

### 12.2.1 AER decision

To ensure that the access arrangement is consistent with the NGR, the AER requires Envestra to amend its proposal to state that there are no applicable capacity trading requirements for the purposes of rule 48(1)(f) or 105(1) of the NGR.

The AER requires Envestra to amend clause 7 of its proposed access arrangement in accordance with Revision 12.28.

### 12.2.2 Access arrangement proposal

Envestra's proposal states that capacity trading is not possible on its network and capacity trading requirements therefore do not apply.<sup>886</sup>

### 12.2.3 Assessment approach

The AER has assessed Envestra's capacity trading requirements against the NGR and rules 48(1)(f) and 105 of the NGR.

### 12.2.4 Reasons for decision

Capacity trading is not possible on the Victorian gas network (including on Envestra's distribution network). This is different to most Australian gas markets, which are based on

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<sup>881</sup> NGR, r. 105(2).

<sup>882</sup> NGR, r. 48(1)(f).

<sup>883</sup> NGR, r. 105(2).

<sup>884</sup> NGR, r. 105(4).

<sup>885</sup> NGR, r. 105(6).

<sup>886</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 7.

bilateral arrangements between producers, major users and retailers linked together through pipeline hubs connecting gas fields to gas consumers.<sup>887</sup> By comparison, in Victoria a wholesale gas market has been established to enable competitive trading based on injections into and withdrawals from a transmission system that links multiple producers, major users and retailers.<sup>888</sup> Under this model, Victorian gas networks (including Envestra's distribution network) are subject to the Declared Wholesale Market Rules in Part 19 of the NGR, which do not provide for capacity trading. Rather, AEMO is responsible for managing capacity, on a daily basis, throughout the Victorian wholesale gas market.<sup>889</sup>

Capacity trading is therefore not applicable to Envestra's network.

However, the NGR require that the access arrangement include capacity trading requirements. As capacity trading requirements are not applicable to the Victorian gas network, in the AER's view, it is enough for Envestra's access arrangement to specify that there are no applicable capacity trading requirements for the purposes of rule 48(1)(f) of the NGR. This is also consistent with rule 105(1)(a) of the NGR,<sup>890</sup> as there are no relevant rules or procedures governing the network regarding capacity trading that a set of capacity trading requirements would need to accord with.

### 12.3 Queuing arrangements

Queuing can be used to determine access to a pipeline that is fully, or close to being fully, utilised. Queuing requirements establish the priority that a prospective user has, against any other prospective user, to obtain access to spare and developable capacity on a covered pipeline.<sup>891</sup> Queuing requirements establish a process or mechanism for establishing an order of priority between prospective users of spare and/or developable capacity.

In a distribution pipeline new users will typically be able to be accommodated because, unlike transmission pipelines, distribution networks do not operate close to full capacity. If use at one point in the network is nearing capacity, augmentation of the network will normally be undertaken to meet the needs of prospective users. Further, the capacity of Envestra's distribution pipelines are managed by AEMO on a daily basis under Part 19 of the NGR (Declared Wholesale Market Rules) meaning that queuing arrangements are unnecessary (there is no queue).

Queuing requirements must be included in an access arrangement for a gas distribution pipeline where the AER notifies the service provider that the access arrangement must

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<sup>887</sup> This model is sometimes referred to as a contract carriage model.

<sup>888</sup> This model is sometimes referred to as a market carriage model. Australian Energy Market Operator, *Victorian Wholesale Market*, see: <http://www.aemo.com.au/en/Gas/Wholesale-Gas-Markets/Victorian-Wholesale-Market>, accessed 30 July 2012.

<sup>889</sup> In accordance with the rules in Part 19 of the NGR.

<sup>890</sup> Rule 105 of the NGR states that: (1) Capacity trading requirements must provide for transfer of capacity: (a) if the service provider is registered as a participant in a particular gas market – in accordance with rules or Procedures governing the relevant gas market; or (b) if the service provider is not so registered, or the relevant rules or Procedures do not deal with capacity trading – in accordance with this rule.

<sup>891</sup> NGL, s. 2.

contain queuing arrangements.<sup>892</sup> Where there are queuing requirements they must establish a process or mechanism (or both) for establishing an order of priority between prospective users of spare or developable capacity. This process must ensure that all prospective users (whether associates of, or unrelated to, the service provider) are treated on a fair and equal basis.<sup>893</sup>

### 12.3.1 AER decision

The AER accepts Envestra's proposal in so far as it does not include queuing requirements.

### 12.3.2 Access arrangement proposal

Envestra's access arrangement proposal did not include any reference to queuing requirements.

### 12.3.3 Assessment approach

The AER has assessed Envestra's proposal in relation to queuing requirements against the NGO and rules 48(1)(e) and 103 of the NGR.

### 12.3.4 Reasons for decision

As the capacity of Envestra's distribution pipeline is managed by AEMO, queuing arrangements are not applicable.

## 12.4 Extension and expansion requirements

Extension and expansion requirements included in an access arrangement specify the method for determining whether extensions or expansions to the covered pipeline are to be covered by the access arrangement.<sup>894</sup>

Extension and expansion requirements must be included in an access arrangement.<sup>895</sup> Extension and expansion requirements may state whether the applicable access arrangement will apply to incremental services to be provided as a result of a particular extension to, or expansion of the capacity of, the pipeline. The requirements may state that whether the access arrangement applies to the extension or expansion will be resolved at a later time on a basis stated in the requirements.<sup>896</sup> If the requirements provide that an access arrangement applies to incremental services, the requirements must deal with the effect of the extension or expansion on tariffs.<sup>897</sup>

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<sup>892</sup> NGR, r. 103(1)(b). Clause 14.2 of the Regulation Information Notice issued by the AER to Envestra on the 13 February 2012, notified Envestra that its access arrangement proposal must provide details of its queuing arrangements.

<sup>893</sup> NGR, r. 103(2).

<sup>894</sup> NGR, r. 104(1).

<sup>895</sup> NGR, r. 48(1)(g).

<sup>82</sup> NGR, r. 104(1).

<sup>83</sup> NGR, r. 104(2).

### 12.4.1 AER decision

The AER accepts Envestra's proposal in relation to extensions and expansions.

### 12.4.2 Access arrangement proposal

The Envestra proposal is that if Envestra proposes a high pressure pipeline extension of the covered pipeline, it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and will be covered by the access arrangement. For these purposes, a high pressure pipeline extension is defined to mean a pipeline (operating above 1050 kPa) that exceeds one kilometre in length and is proposed to be built to a postcode area previously not serviced by reticulated gas.<sup>898</sup>

Envestra's proposal states that if an extension or expansion is to be treated as part of the covered network under the access arrangement, Envestra will offer the incremental service without changing the reference tariffs. However, Envestra states that it may levy a surcharge on users to recover non-conforming capital expenditure.<sup>899</sup>

Envestra's proposal is that any extensions to and expansions of the capacity of the network which are not high pressure pipeline extensions (extensions that are less than 1050kPa which do not meet the test outlined above) will be treated as part of the network and covered by the access arrangement.<sup>900</sup>

Envestra states that its extensions policy allows for generic extensions of the network to be covered under the terms of the access arrangement. Envestra claims that this is necessary if Envestra is to carry out its core business in an efficient manner. Envestra states that notification or application to the AER in respect of extensions should only take place for those extensions which are significant and which were not incorporated into the approved capital expenditure forecasts for the 2013–17 access arrangement period.<sup>901</sup>

Envestra states that a significant extension is one that does not routinely occur within the business and that if the threshold for a significant extension is set too low, it would result in the 'the AER opining over numerous applications from distributors' and that involving the AER in 'business decisions that are of a routine nature is not desirable or appropriate'.<sup>902</sup>

Envestra states that extensions to both high pressure mains operated under 1050 kPa, and to low and medium pressure mains are routine in nature and undertaken on a daily basis.<sup>903</sup>

Envestra argues that the proposed policy strikes an appropriate balance of ensuring that the interests of users are protected, while routine extensions to the network are not subject to inappropriate or inefficient regulatory processes.<sup>904</sup>

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<sup>84</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 8.1.

<sup>85</sup> Envestra states that this is in accordance with rule 83(4) of the NGR.

<sup>86</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 8.3.

<sup>87</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 237.

<sup>88</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 237.

<sup>89</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 237.

<sup>90</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 237.



## Treatment of covered pipelines

The Envestra access arrangement proposal is that if an extension or expansion is to be treated as a covered network under the access arrangement, Envestra will offer reference services for that extension or expansion at Reference Tariffs (i.e. no change to the Reference Tariffs). Envestra may levy a surcharge on Users to recover non-confirming capital expenditure in accordance with r. 83 of the NGR.<sup>905</sup>

Envestra will notify the AER to seek approval of any proposed surcharge to be levied on Users of incremental services, and designed to recover non-confirming capital expenditure or a specified portion of non-confirming capital expenditure (non-confirming capital expenditure, which is recovered by means of a surcharge will not be rolled into the capital base). Surcharges will only be approved subject to r. 83(4) of the NGR.<sup>906</sup>

### 12.4.3 Assessment approach

The AER has assessed Envestra's extension and expansion requirement against the NGO and rules 48(1)(g) and 104 of the NGR.

### 12.4.4 Reasons for decision

#### Coverage – high pressure pipelines

The AER considers that all extensions to high pressure pipelines should be assessed on a case-by-case basis for coverage—consistent with its previous decisions.<sup>907</sup> The AER will be better placed to consider such matters at the time it is notified of a proposed high pressure pipeline extension. There could be many different factors that would impact on whether a high pressure pipeline extension should be covered and whether it should be covered by the same terms as the original pipeline.

For example:

- High pressure pipelines have similar characteristics to transmission pipelines, and could be used either as viable bypass options to end users, or to support the existing network. In this instance, the extension could lead to some competition for pipeline services meaning that it may not be necessary for the extension to be covered.
- The pipeline can be extended for a variety of reasons such as servicing a large industrial user requiring the network to be extended to its premises or supporting the distribution network generally. Where it is supporting the distribution network generally it may be appropriate for the extension to be covered on the same terms as the original network. Non coverage could lead to cross-subsidisation.

Therefore, the reasons for the extension and the degree of its integration into the existing network will assist in determining whether the extension should be covered.

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<sup>91</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 8.2.

<sup>92</sup> Envestra, *Access arrangement proposal*, 30 March 2012, clause 8.2.

<sup>907</sup> For example: AER, *Jemena Gas Network draft decision*, February 2010, pp. 348–350; AER, *ActewAGL draft decision*, November 2009, pp. 185–186; AER, *Country Energy draft decision*, November 2009, pp. 140–141. *Access arrangement proposal for Envestra's SA gas network 1 July 2011-30 June 2016*, draft decision, June 2011, pp. 241–245.

Pipelines that potentially extend to new parts of the market warrant consideration by the AER. New areas outside the current geographic reach of the network will be more likely to be serviced by high pressure pipelines. The AER accordingly considers that if a high pressure pipeline extension is planned, then an application should be made to the AER for a decision as to whether or not the extension is part of the covered pipeline. The use of 'high pressure' provides a means of generally distinguishing in-fill from new extensions to areas and customers.

The AER considers that distinguishing the treatment of high pressure pipelines is beneficial. In particular, it will promote the efficient investment in, operation and use of natural gas services for the long term interests of consumers of natural gas in accordance with the NGO.<sup>908</sup>

### **Coverage – low and medium pressure pipelines**

The AER considers that all low and medium pressure pipeline extensions should be covered by the access arrangement. Low and medium pressure pipeline extensions to distribution networks are often embedded in and occur throughout the network. Coverage by default will allow such extensions to be built and covered by the access arrangement. This is likely to contribute to the promotion of the efficient investment in, and operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to safety, reliability and security of supply of natural gas.<sup>909</sup> For these reasons, the AER considers that all low and medium pipeline extensions should be covered by default.

### **Coverage – expansions**

The AER proposes to accept Envestra's proposal that all expansions to its distribution network will be covered by the access agreement. Network expansions involve the augmentation of pipeline capacity within the existing network, and are likely to be used largely by existing network customers. Relative to network extensions, they are much less likely to serve a new or isolated customer or group of customers as a bypass option. As such, it is appropriate that any network expansions are covered as reference services under the access agreement. This provides certainty to end users.

The AER considers that coverage on this basis would promote the efficient investment in, operation and use of natural gas services, which are aspects of the NGO.

The AER proposes to accept Envestra's proposed extensions and expansions policy.

## **12.5 Terms and conditions for changing receipt or delivery points**

A receipt or delivery point is a point on a pipeline at which a service provider takes delivery of natural gas, or delivers natural gas.<sup>910</sup> A user may wish to change the point at which they receive or take delivery of natural gas.

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<sup>908</sup> NGL, s. 23.

<sup>95</sup> NGL, s. 23.

<sup>910</sup> NGR, r. 3.

The terms and conditions for changing receipt and delivery are to be included in a full access arrangement.<sup>911</sup> Under the NGR an access arrangement must allow a user, with the service provider's consent, to change the user's receipt or delivery point. The access arrangement must not allow a service provider to withhold its consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so.<sup>912</sup> The access arrangement may specify conditions under which consent will or will not be given to be complied with if consent is given.<sup>913</sup>

### 12.5.1 AER decision

The AER requires Envestra to incorporate a term into its proposal which allows users to change their receipt/ delivery points unless Envestra has reasonable grounds, based on technical or commercial considerations, for withholding consent for such a change. The proposal must also explain:

- how users may obtain consent, including identifying any relevant conditions, to change receipt or delivery points;
- where relevant, the technical or commercial considerations and other relevant conditions in the event Envestra intends to withhold consent to a change in a receipt or delivery point.

The AER considers that Envestra's access arrangement proposal should be amended to provide for a policy for the change of receipt or delivery points in the same terms as the policy proposed by SP AusNet.

### 12.5.2 Access arrangement proposal

Envestra's proposal does not include any terms and conditions for changing receipt and delivery points – although the Regulation Information Notice sent to Envestra specified that its proposal should state:

- how users may obtain consent, including identifying any relevant conditions, to change receipt or delivery points;
- where relevant, the technical or commercial considerations and other relevant conditions in the event Envestra intends to withhold consent to a change in a receipt or delivery point.<sup>914</sup>

### 12.5.3 Assessment approach

The AER has assessed Envestra's terms and conditions for changing receipt and delivery points against the NGR and rules 48(1)(h) and 106 of the NGR.

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<sup>97</sup> NGR, r. 48(h).

<sup>98</sup> NGR, r. 106(1).

<sup>99</sup> NGR, r. 106. (2).

<sup>914</sup> *Regulation Information Notice* issued to Envestra by the AER, 13 February 2012, clause 14.7.

### 12.5.4 Reasons for decision

Allowing a user to change its receipt/delivery points may allow users to respond more efficiently to demand and encourage the more efficient use of gas. This would be consistent with the NGO.

The AER is unclear as to why Envestra did not include terms and conditions for changing delivery points in its access arrangement proposal when this is a mandatory requirement of a full access arrangement under the NGR.<sup>915</sup> Envestra's failure to include terms and conditions for changing delivery points in its access arrangement means that the proposal is non-compliant with rule 106 of the NGR. On this basis, the AER proposes not to approve Envestra's access arrangement in this regard.

## 12.6 Review dates

Rule 49(1) of the NGR requires that a full access arrangement that is not voluntary must contain a review submission date and a revision commencement date and must not contain an expiry date.

The NGR provides that, as a general rule:

- a review submission date will fall four years after the access arrangement took effect or the last revision commencement date; and
- a revision commencement date will fall five years<sup>916</sup> after the access arrangement took effect or the last revision commencement date.

The AER is required to accept a service provider's proposed review submission and commencement dates if these are made in accordance with the general rule set out in r. 50 of the NGR.<sup>917</sup> It may also approve dates that do not conform to the general rule if it is satisfied that the dates are consistent with the NGO and the revenue and pricing principles.<sup>918</sup>

### 12.6.1 AER decision

The AER proposes to accept Envestra's proposed revision commencement date but not its review submission date.

### 12.6.2 Access arrangement proposal

Envestra proposed a review submission date on or before 31 March 2017 and a revision commencement date on the later of 1 January 2018 and the date on which the AER's approval of the revisions to the access arrangement takes effect under the NGR.<sup>919</sup>

Envestra's access arrangement proposal did not include a trigger event for the acceleration of the review submission date.

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<sup>101</sup> NGR, rr. 48(1)(h) and 106.

<sup>102</sup> NGR, r. 50.

<sup>103</sup> NGR, r. 50(2).

<sup>104</sup> NGR, r. 50(4).

<sup>105</sup> Envestra, Access arrangement proposal, October 2010, p. 17.

### 12.6.3 Assessment approach

The AER has assessed Envestra's review submission date and revision commencement date against the NGO and rules 48(1)(i) and 48(1)(j) of the NGR.

### 12.6.4 AER consideration

The review submission date of 31 March 2017 proposed by Envestra is later than the 1 January 2017 date indicated by the general rule under r. 50(1) of the NGR and the AER proposes not to accept it. However, Envestra's proposed revision commencement date is consistent with the general rule and the AER proposes to accept it.

## 12.7 Revisions

Before the access arrangement can be approved, Envestra must make the following amendments.

**Revision 12.1:** Amend clause 2.7 as follows:

*Insert the following between "holds" and "whatever":*

and exercise its best endeavours to ensure that it continues to hold

**Revision 12.2:** Amend clause 3 as follows:

*Insert new sub-clause 3.4 as follows:*

The Service Provider must notify the Network User where it makes a Guaranteed Service Level payment directly to a Customer under the Regulatory instruments.

*Insert a new definition in clause 10 of the access arrangement as follows:*

**Guaranteed Service Levels** or **GSL's** means the standard of service that must be provided by the Service Provider in respect of certain Distribution Services as set out in a regulatory instrument.

**Revision 12.3:** Amend clause 3 as follows:

*Insert new sub-clause 3.5 as follows:*

The Service Provider shall pay the Network User fair and reasonable fees in respect of any Retail Services provided by the Network User to the Service Provider at the request of the Service Provider.

The Network User may render an invoice to the Service Provider upon the provision of any Retail Services.

An invoice issued under clause 7.2(b) shall be in a format determined by the network User and must contain sufficient information as is reasonable to allow the Service Provider to assess the accuracy of the charges specified in the invoice.

If the Service Provider receives an invoice from the Network User the Service Provider must pay the Network User the aggregate amount stated in the invoice not later than 10 Business Days after having received the invoice.

If the Service Provider disputes the fairness or reasonableness of the charge for Retail Services or otherwise disputes its obligation to pay all or part of that invoice, the dispute will be resolved in accordance with the procedure set out in clause 23.

*Amend section 10 of the access arrangement proposal by inserting a new definition for Retail Services as follows:*

Retail Services means the following services that are provided by a User to the Service Provider at the Service Provider's request:

- processing of Guaranteed Service Level payments
- notification of Reference Tariffs
- provision of information and documentation to Shared Customers; and
- delivering to a Shared Customer any notification, information or documentation as requested by the Service Provider

but does not include any such services to the extent that the User is obliged to perform those services under the Regulatory Instruments;

**Revision 12.4:** Amend sub-clause 4.5 as follows:

*Insert "reasonably" between "Envestra" and "believes"*

**Revision 12.5:** Amend sub-clause 9.3 as follows:

*Insert the following phrase between the words "DP," and "then":*

And the Network User requests that the equipment be removed,

**Revision 12.6:** Amend sub-clause 10.8 as follows:

*Delete the word "Envestra" in the first line and replace it as follows:*

The party responsible for a Metering Installation

*Delete the word "Envestra" in the second line and replace it with the word "it".*

**Revision 12.7:** Amend sub-clause 11.7(c) as follows:

*Delete the phrase "whatever basis Envestra considers reasonable in the circumstances" and replace it with*

A basis that is reasonable in the circumstances.

**Revision 12.8:** Amend sub-clause 12.1 as follows:

*Delete the following phrase*

and, to the extent consistent with the law, the specifications reasonably specified from time to time by Envestra by notice given to the Network User.

**Revision 12.9:** Amend sub-clause 12.2 as follows:

Delete sub-clause 12.2.

**Revision 12.10:** Amend sub-clause 12.3 as follows:

*Insert the word "reasonable" between "other" and "steps".*

**Revision 12.11:** Amend clause 12.4(a) as follows:

*At the end of the sub-clause insert the following:*

Or if it becomes aware that such gas is being or has been delivered into the Network by or for the account of the Network User.

**Revision 12.12:** Amend sub-clause 19.2 as follows

*Insert (a) at the beginning of the first line:*

*Insert the following at the end of the first sentence:*

after Envestra has provided the requested Ancillary Reference Service

*Insert the following new sub-clause:*

(b) Where Envestra is unable to provide the Ancillary Reference Service or unable to fully provide the Ancillary Reference Service because of an act or omission by the Network User, Envestra may calculate the charge on a pro-rata basis for the portion of the Ancillary Reference Service provided.

**Revision 12.13:** Amend clause 21 as follows:

*inserting a new clause 21.7 and duplicate NECF rule 510 of the NGR in that new clause.*

*Amend sub-clause 21.5 by deleting "rule 510 of the National Gas Rules" and replacing it with "clause 21.7"*

**Revision 12.14:** Amend sub-clause 22.1 as follows:

*Amend sub-clause 22.1 by inserting the following after "NERR":*

(once they are adopted in Victoria)

**Revision 12.15:** Delete sub-clause 22.3

**Revision 12.16:** Amend clause 23 as follows:

*delete "Rule 510 of the National Gas Rules" and replace it with "clause 21.7"*

**Revision 12.17:** Amend sub-clause 26.1 as follows:

*In the first line, delete "the Network User" and replace with "a party"*

*In the first line, delete "Envestra" and replace with "the other party"*

*In the second line, delete "the Network User" and replace with "that party"*

*In the second line, delete "Envestra" and replace with "the other party"*

*In the fifth line, delete "to Envestra"*

**Revision 12.18:** Amend sub-clause 26.2 as follows:

*Insert "and clause 23" after "sub-clause 21.5"*

**Revision 12.19:** Delete sub-clause 26.3

**Revision 12.20:** Amend clause 27 as follows:

*Amend Sub-clause 27.4 by inserting (1) at the start of the sub-clause and inserting:*

(2) Where an independent expert appointed under clause 37 determines that Envestra was not entitled to the credit support provided by the Network user, in whole or in part, Envestra must:

(a) reimburse the Network User for any costs incurred to procure the credit support (including the costs of funding any cash collateral provided to the issuer of credit support), in excess of the costs that the Network User would have incurred if the correct amount had been requested; and

(b) pay the Network User interest at the default interest rate on the amount of those excess costs.

*Delete sub-clause 27.6 and replace it as follows:*

Envestra may only apply or draw on the credit support if:

(a) Envestra has given not less than 3 business days' notice to a retailer that it intends to apply or draw on the credit support in respect of an amount due and payable by the Network user to Envestra, and that amount remains outstanding; and

(b) there is no unresolved dispute under clauses 23 or 37 of this Agreement about the Network User's liability to pay that amount.

**Revision 12.21:** Amend sub-clause 28.2 as follows:

*At the beginning of sub-clause 28.2 insert "Subject to clauses 23 and 37".*

*At the end of sub-clause 28.2(a) insert the following:*

and the Network User fails to pay the amount due within 14 days after it receives a written notice specifying the amount that is due.



**Revision 12.22:** Amend sub-clause 29.4 as follows:

*Delete the definition and replace it with:*

A party must use reasonable endeavours to mitigate every claim it might have against the other party.

**Revision 12.23:** Amend sub-clause 29.6 and 29.7 as follows:

*Delete "Claim" and replace it with "claim".*

**Revision 12.24:** Amend clause 29 as follows:

*Delete point (b) from sub-clause 29.1*

*Insert a new sub -clause 29.11 as follows:*

Envestra will indemnify the Network User against all loss, cost, expense or damage which the Network User might suffer or incur as a result of the death or injury of any servant, agent, contractor or invitee of the Network User that is caused by Envestra or any of its respective officers, servants, agents, contractors or invitees.

**Revision 12.25:** Amend sub-clause 32.2 as follows:

*Insert "use its best endeavours to" between "will" and "cause".*

In the final line, insert "reasonably" between "Envestra" and "requires".

**Revision 12.26:** Delete sub-clause 33.1.

**Revision 12.27:** Amend clause 34 as follows:

*Amend sub-clause 34.1 by deleting "The Network User" and replacing it with "Each Party".*

*Amend sub-clause 34.1 by deleting "approved by Envestra (which approval shall not be unreasonably withheld)".*

*Delete sub-clause 34.2 and replace it as follows:*

If either party requires, the other party must ensure that any insurance it obtains or maintains under the Agreement notes the interest of the other party.

*Delete sub-clause 34.3 and replace it as follows:*

Whenever reasonably requested by the other party, a party must give the other party a certificate of currency for the insurance.

*Delete sub-clause 34.4 and replace it as follows:*

A party must promptly notify the other party whenever an event occurs in relation to the Network which gives rise to, or might give rise to, a claim under any insurance which the party holds under this Agreement.

*Delete sub-clause 34.5 and replace it as follows:*

Whenever a claim arises, or might have arisen, in relation to the Network under any insurance which a party maintains under the Agreement, that party must take whatever steps the other party reasonably requires to make and enforce or settle that claim.

*Delete sub-clause 34.6.*

*Delete sub-clause 34.7 and replace it as follows:*

A party must promptly notify the other party if it fails to obtain or maintain any insurance required under the Agreement. In this case, the other party may obtain and maintain that insurance on behalf of that party at the costs of that party.

**Revision 12.28:** Amend clause 35 as follows:

*Delete "or any Shared Customer" from sub-clause 35.1.*

*Amend sub-clause 35.5 by inserting ",after exercising its reasonable endeavours to do so," between "obtain" and "safe".*

*Amend sub-clause 35.7 by inserting "exercise its reasonable endeavours to" between "or" and "cause".*

**Revision 12.29:** Amend clause 39 as Follows:

*Delete sub-clause 39.1.*

Amend the remaining sub-clauses so that they apply equally to either party.

**Revision 12.30:** Amend sub-clause 41.3 as follows:

*Delete sub-clause 41.3 and replace it with the following:*

Where any consent or approval is required from Envestra under the Agreement, Envestra must not unreasonably withhold that consent or approval. Envestra may make any consent or approval subject to whatever conditions are reasonably necessary.

**Revision 12.31:** Amend clause 7 of the proposed access arrangement to include the following:

There are no applicable capacity trading requirements for the purposes of rule 48(1)(f) or 105 (1) of the NGR.

**Revision 12.32:** Add a term into its access arrangement proposal as follows:

Any change to a Receipt or Delivery Point on the Network will require the consent of the Service Provider. Such consent will not be withheld unless there are reasonable commercial or technical grounds for withholding consent.

As the only Receipt Points on the Network are custody transfer points between the Network and other networks, it is unlikely that the Service Provider would consent to a request to change a Receipt Point.

Requests for changes to any Delivery Point will be considered on case-by-case basis, subject to technical and commercial feasibility, and will be offered as a Negotiated Service.

**Revision 12.33:** Amend clause 9.1 to read as follows:

9.1 Envestra will submit revisions to this Access Arrangement to the AER on or before 1 January 2017.



# **Access arrangement draft decision**

**Envestra Ltd**

**2013–17**

**Part 3**

**Appendices**

September 2012

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A – Capital expenditure is a confidential appendix

## B Rate of return

In attachment 4, the AER presented its considerations on why a rate of return of 7.16 per cent (subject to updating) is a preferable alternative that is commensurate with prevailing conditions in the market for funds. It noted this appendix would address some matters including arguments raised by Envestra and further technical analysis of the evidence.

### B.1 Risk free rate

In attachment 4.3.2, the AER presented why a risk free rate based on 10 year CGS measured as close as practically possible to the commencement of the regulatory period is the most appropriate.

This appendix discusses additional material relevant to the risk free rate:

- the selection of an appropriate averaging period
- contentions raised in the CEG report submitted by Envestra
- a long term average as an alternative averaging period
- the term of the risk free rate
- the EnergyAustralia matter
- the Telstra matter
- the expectations theory on the term structure of interest rates.
- Envestra's main contentions for proposing a 'long term' cost of equity

#### B.1.1 The selection of an appropriate averaging period

In attachment 4 the AER noted that there would be further discussion in this appendix of Envestra's proposed averaging period for the cost of debt. This section contains that discussion.

In its access arrangement proposal, Envestra proposed the use of a short averaging period for the cost of debt. But, Envestra did not specify when the averaging period would occur. Envestra stated that it would lodge a separate and confidential request with the AER to agree, prior to the final decision, the averaging period for setting the cost of debt.<sup>1</sup> The AER had previously outlined in a letter to Envestra that it considered the nomination of an averaging period an integral part of a complete access arrangement proposal.<sup>2</sup>

On 5 April 2012, the AER sent a letter to Envestra to formalise an agreement for nominating an averaging period. The AER proposed the following conditions:

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<sup>1</sup> Envestra, *Access arrangement information*, March 2012, p. 162.

<sup>2</sup> AER, *Letter to Envestra*, 8 December 2011.

1. At the time of publishing Envestra's proposal the AER will publish an indicative timeline for decisions.
2. The AER will notify Envestra, at least 20 business days before and not more than 25 business days before, the release of its draft decision on the revisions to the Envestra access arrangement, of the date on which that draft decision is expected to be released and the date on which the final decision is expected to be released.
3. Not later than 10 business days following the AER's notification, Envestra undertakes to advise the AER of its nominated averaging period. Envestra's nominated averaging period will be for a period commencing after the expected release date of the draft decision and ending not later than 15 business days before the expected release date of the final decision. The advice will specify the term of the averaging period which must be at least 10 and not more than 40 business days.<sup>3</sup>

On 13 April 2012, Envestra responded that it did not accept that the averaging period be nominated 10 business days after the AER's notification.<sup>4</sup> Envestra proposed that the conditions applied in the Envestra South Australia and Queensland draft decision should be applied in this decision.<sup>5</sup> On 16 April 2012, the AER sent another letter to inform Envestra that it considered its access arrangement proposal was 'deficient in respect of the averaging period'.<sup>6</sup> The AER informed Envestra that it had decided to:

...stop-the-clock for any period taken by Envestra to provide information, relevant to the decision maker's decision on the proposal, in response to a notice or requirement issued by the AER under the law.<sup>7</sup>

The AER reiterated that the conditions outlined in the 5 April letter would be acceptable.

In a letter dated 27 April 2012 Envestra accepted the conditions, though it did not agree that its proposal was deficient.<sup>8</sup> Envestra also noted that:

... Envestra may be required by the National Gas rules and Law to revise the proposed nominated averaging period in the event that it becomes apparent that that period would not result in a rate of return that is commensurate with the prevailing conditions in the market for funds. Any such change would require the occurrence of a significant external event that was not known at the time the proposed averaging period was initially set.

In a letter dated 2 May 2012, the AER responded that it accepted that Envestra would provide an averaging period prior to the release of the draft decision.<sup>9</sup>

The AER sent a letter to Envestra on 20 August 2012 informing it of the expected release date of the draft and final decisions and requesting the nomination of an averaging period consistent with the conditions outlined in the letter of 5 April.<sup>10</sup>

On 31 August 2012, Envestra provided an averaging period on a confidential basis. Envestra's proposed period is consistent with the conditions outlined in the AER's letter dated

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<sup>3</sup> AER, *Letter to Envestra*, 5 April 2012.

<sup>4</sup> Envestra, *Letter to the AER*, 13 April 2012.

<sup>5</sup> Envestra accepted the constraint that any nominated averaging period start after the date of the draft decision and finish no later than 15 business days from the expected release date of the final decision. Envestra, *Letter to the AER*, 12 April 2012.

<sup>6</sup> AER, *Letter to Envestra*, 16 April 2012

<sup>7</sup> AER *Letter to Envestra*, 16 April 2012.

<sup>8</sup> Envestra, *Letter to the AER*, 26 April 2012.

<sup>9</sup> AER, *Letter to the Envestra*, 2 May 2012

<sup>10</sup> AER, *Letter to Envestra*, 20 August 2012



5 April 2012. The AER therefore accepts Envestra's proposed averaging period for the cost of debt.

In the 31 August letter, Envestra did not qualify its proposed averaging period for the cost of debt, such as with the additional condition outlined in its letter dated 27 April 2012. However, to the extent that Envestra still presses the condition outlined in the 27 April letter, the AER does not accept that condition. This is because:

- Leaving open the right to revise the averaging period would introduce unbalanced incentives. Service providers have an incentive to seek a WACC that is as high as possible, because it will increase their profits. If a service provider can select an averaging period by observing market yields, this may introduce the possibility of upward bias because they could select a period with the highest yield available.<sup>11</sup> Service providers would be unlikely to depart from the process where such departure is not in its financial interests.
- It is also important for the AER to hold Envestra to the method as proposed. Doing so promotes certainty, consistency and predictability in regulatory decision making.<sup>12</sup>

It is therefore preferable for there to be no conditions attached to a proposed averaging period. This allows the AER to make a draft decision on the averaging period and it also provides Envestra with certainty so that it can make any necessary financial arrangements. These concerns are also discussed in section 4.3.2.

For the cost of equity, Envestra proposed a long term average estimate of the risk free rate of 5.99 per cent.<sup>13</sup> The AER does not approve the method proposed by Envestra for determining the risk free rate for the cost of equity. The AER does not consider that a long term average is likely to produce an appropriate estimate of the risk free rate, as discussed at appendix B.1.3. The AER considers a prevailing risk free rate will produce the most appropriate estimate and is preferable.<sup>14</sup>

For this draft decision, the AER has used an indicative 20 business day averaging period ending on 10 August. The indicative risk free rate has been applied for both the cost of equity and the cost of debt. For the final decision the risk free rate for both the cost of debt and the cost of equity will be updated to reflect the averaging period proposed by Envestra.

## B.1.2 CEG contentions

Envestra submitted a report it commissioned from CEG that makes a number of contentions about the risk free rate. This appendix addresses these additional matters. CEG's main contentions specific to the operation of the CGS market appear to be<sup>15</sup>:

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<sup>11</sup> Lally, M., *Expert Report of Martin Thomas Lally*, 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.

<sup>12</sup> As noted above, the absence of either an averaging period or a process of nomination from SP AusNet's proposals was significant enough for the AER to find its proposal deficient. The AER formed the same position in relation to Envestra's and Multinet's proposals.

<sup>13</sup> Envestra, *Access arrangement information*, March 2012, p. 156.

<sup>14</sup> Section 4.3.2 provides analysis supporting this conclusion.

<sup>15</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, 20-32.

- There is unprecedented demand for CGS
- There is a shortage of supply of CGS in Australia
- The CGS market is out of line with other bond markets in Australia
- CGS yields have been volatile over the last few years

The AER considers each of these issues below. In some cases, the AER largely agrees with CEG's observations, whereas in other cases the AER disagrees. However at the outset it is important to highlight that it is unclear to the AER what conclusion CEG seeks to draw from these observations and contentions. CEG does not argue these contentions make CGS an inappropriate proxy for the risk free rate in Australia.

### **CEG contention: There is unprecedented demand for CGS**

Under this contention there appear to be three main arguments:

- There is a flight to quality
- Demand from non-resident investors is high
- Basel III requirements are placing huge demands on the CGS market

Each of these arguments is discussed below.

#### **There is a 'flight to quality'**

The AER accepts that there may have been 'flight to quality' periods since the onset of the Global Financial Crisis (GFC) or at least, behaviour that fits that description.

A definition of a flight to quality may include:

Flight to quality episodes involve a combination of extreme risk- or uncertainty-aversion, weaknesses in the balance sheets of key financial intermediaries, and strategic or speculative behavior, that increases credit spreads on all but the safest and most liquid assets.<sup>16</sup>

There have been periods since the onset of the GFC that could be described as being flight to quality periods. However, the AER does not consider there has been a sustained flight to quality since the onset of the GFC. Glenn Stevens recently made the following comment:

We saw one such one bout of anxiety in the middle of this year when financial markets displayed increasing nervousness about the finances of the Spanish banking system and the Spanish sovereign.

The general increase in risk aversion saw yields on bonds issued by some European sovereigns spike higher; while those for Germany, the US and the UK declined to record lows. This flight to safety also saw market yields on Australian government debt decline

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<sup>16</sup> Caballero, R. and Kurlat, P., *MIT Department of Economics Working Paper No. 08-21, Flight to Quality and Bailouts: Policy Remarks and a Literature Review*, 9 October 2008, p. 1.

to the lowest levels since Federation. Meanwhile many European economies saw a further contraction of economic activity and share markets decline sharply.<sup>17</sup>

A flight to quality would not provide justification to depart from a prevailing estimate of the risk free rate. Demand for highly liquid assets is likely to increase in a flight to quality period.<sup>18</sup> This would, all else the same, push the yield on risk free assets down. These actions reflect changes in investor expectations and perceptions of the relative value of a risk free asset and would not undermine the risk free nature of that asset.<sup>19</sup>

Shortly before RBA Governor Glenn Stevens made the comments above, the RBA provided the following advice:

I therefore remain of the view that CGS yields are the most appropriate measure of a risk-free rate in Australia.<sup>20</sup>

This suggests that the RBA does not consider a flight to quality period makes CGS an inappropriate proxy for the risk free rate.

### **Demand from non-resident investors is high**

The AER accepts that demand for CGS from non-resident investors has increased over the past few years and non-resident investors now hold a large portion of CGS. This conclusion is supported by the RBA in its advice to the AER:

Within the Australian market, one notable source of demand for risk-free assets has come from non-resident investors, whose holdings of CGS now comprise more than three-quarters of outstanding supply.<sup>21</sup>

The number of AAA rated sovereigns globally has fallen over the past few years. The Treasury and AOFM note that 'Australia is currently one of only eight sovereigns to have a AAA rating with a stable outlook from all three major credit rating agencies.'<sup>22</sup>

The AER does not consider an increase in demand for CGS from non-resident investors, and subsequent decline in CGS yields, suggests a short averaging period is inappropriate. In the WACC Review final decision (2009), the AER stated its position that the benchmark firm operates in markets that inevitably include non-resident investors.<sup>23</sup> The Joint Industry Association also considered this to be appropriate in a submission on the topic:

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<sup>17</sup> Glenn Stevens, *Opening Statement to the House of Representatives - 24 August 2012 - Hansard script*, p. 2.

<sup>18</sup> Caballero, R. and Kurlat, P., *MIT Department of Economics Working Paper No. 08-21: Flight to Quality and Bailouts: Policy Remarks and a Literature Review*, 9 October 2008, p. 2.

<sup>19</sup> Discussed further in section 4.3.2.

<sup>20</sup> Reserve Bank of Australia, *Letter to the ACCC: The Commonwealth Government Securities Market*, 16 July 2012, p. 1 (RBA, *Letter regarding the CGS market*, July 2012).

<sup>21</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>22</sup> Australian Treasury and Australian Office of Financial Management, *The Commonwealth Government Securities Market*, July 2012, p. 2 (Treasury and AOFM, *Letter regarding the CGS Market*, July 2012).

<sup>23</sup> AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, p. 101 (AER, *Final Decision: WACC Review*, May 2009).

(A)ny empirical domestic data on the risk-free rate, MRP, equity beta and gamma parameters have, or will certainly continue to be influenced by, both domestic and international investors.<sup>24</sup>

While the WACC Review is not binding in a gas context, the AER continues to hold this view. Increased non-resident ownership of CGS is reasonable in today's global markets. The increase in demand for CGS from non-resident investors is likely to reflect the low risk nature of CGS and the deep and liquid AAA-rated market.

### **Basel III requirements are placing huge demands on the CGS market**

The AER accepts that Basel III requirements are imposing requirements on the way an Authorised Deposit-taking Institution (ADI) manages its risk. However, the AER does not accept that Basel III requirements are placing undue strain on the CGS market.

The effect of the Basel III requirements is to require these institutions to hold quantities of liquid assets on their balance sheet large enough to withstand a 30-day stress scenario.<sup>25</sup> CEG argued that these requirements are placing strain on the CGS market.<sup>26</sup>

CEG also referred to a speech by Guy Debelle, Assistant Governor of the Reserve Bank, in which he describes the creation of the Committed Liquidity Facility.<sup>27</sup> CEG submitted that the creation of this facility demonstrates that the CGS market is constrained. CEG stated:

Importantly, Assistant Governor Debelle was clearly expressing the view that the liquidity premium in the CGS market was, in November 2011, at historically very high levels (and seemingly well in excess of 15bp). The implementation of Basel III can be expected to ensure that this remains so in the foreseeable future.<sup>28</sup>

The Committed Liquidity Facility was in fact created for the very purpose of ensuring the CGS market continues to function well:

Specifically, the creation of a committed liquidity facility (CLF) by the Reserve Bank is intended to *prevent* a situation in which the liquidity in the CGS market is impaired or in which the premia attached to CGS are increased beyond reasonable levels.<sup>29</sup>

The AER accepts this advice that the CGS market will continue to function well in the presence of Basel III requirements. Furthermore, Assistant Governor Debelle's comments suggest that, over the years prior to the onset of the GFC, the liquidity premium may have been unusually low.<sup>30</sup>

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<sup>24</sup> Joint Industry Associations (Energy Networks Association, The Australian Pipeline Industry Association Ltd and Grid Australia), *Network industry submission: AER Issues Paper, Review of the Weighted Average Cost of Capital (WACC) parameters for electricity transmission and distribution*, 24 September 2008, p. 28 (see also pp. 22, 24, 160, 174).

<sup>25</sup> G. Debelle (Assistant Governor, Financial Markets, RBA), *Speech to the APRA Basel III Implementation Workshop 2011: The Committed Liquidity Facility*, 23 November 2011, p. 1 (Debelle, *Speech on the committed liquidity facility*, November 2011)

<sup>26</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, pp. 30-32.

<sup>27</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, pp. 30-32.

<sup>28</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 32.

<sup>29</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>30</sup> Debelle, *Speech on the committed liquidity facility*, November 2011, p. 2.

Advice from the RBA and Treasury in 2007 suggested the use of nominal CGS as a proxy for the risk free rate was appropriate.<sup>31</sup> The AER does not consider it appropriate to attempt to determine an average, or 'normal', liquidity premium and only accept prevailing CGS when the observed premium is equal to the 'normal' premium.

The AER has confidence those authorities understand the requirements in their jurisdiction and have put in place adequate measures to address potential concerns. The AER concludes that the current demand for CGS does not undermine its usefulness as a proxy for the risk free rate.

### **CEG contention: There is a shortage of supply of CGS in Australia**

The AER does not accept that there is a shortage of supply of CGS in Australia. Consequently, the AER does not accept that there is a 'scarcity premium' included in CGS yields.

As discussed in attachment 4.3.2 above, the Australian Government has a stated position recognising the need to ensure sufficient CGS are available to maintain liquidity in the market.<sup>32</sup>

CEG made the following statement:

This shortage of CGS is well understood to have resulted in a scarcity premium for CGS in recent years - and hence a depressed yield.<sup>33</sup>

CEG provided no empirical evidence of a shortage of supply in the CGS market. CEG also did not discuss how a shortage of supply might be defined or investigated. CEG refer to a quote from Assistant Governor Debelle that 'government paper has been in short supply for many years.' CEG appear to suggest that Assistant Governor Debelle is suggesting that government paper is currently in short supply and that this is commonly understood. For the following reasons, the AER does not consider this to be an accurate suggestion.

Assistant Governor Debelle's comments were made in the context of estimating a historical average liquidity premium that necessarily included the period before the onset of the GFC. CGS were in relatively lower supply at that time.<sup>34</sup> Contrary to CEG's assertion, it does not follow that the supply of CGS is currently low or that prevailing CGS yields are an inappropriate proxy for the risk free rate.

Prior to the GFC the supply of CGS was lower than it is now. In 2007 CGS on issue was approximately \$50 billion. As a result of changes to fiscal policy since that time, CGS on issue is now around \$235 billion.<sup>35</sup> The AER does not consider that an increase in supply of this magnitude is likely to suggest a shortage of supply. Further, the advice from the Australian Treasury and AOFM provides the AER with confidence that there is currently no shortage of supply in the CGS market.

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<sup>31</sup> RBA, *Letter to the AER*, August 2007, p. 1; Australian Treasury, *The Treasury Bond yield as a proxy for the CAPM risk-free rate*, August 2007, p. 1.

<sup>32</sup> Initially stated in 02-03 Budget [www.budget.gov.au/2003-04/bp1/html/bst7.htm](http://www.budget.gov.au/2003-04/bp1/html/bst7.htm); reaffirmed in 11-12 budget. [www.budget.gov.au/2011-12/content/bp1/html/bp1\\_bst7-03.htm](http://www.budget.gov.au/2011-12/content/bp1/html/bp1_bst7-03.htm)

<sup>33</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 29.

<sup>34</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

<sup>35</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

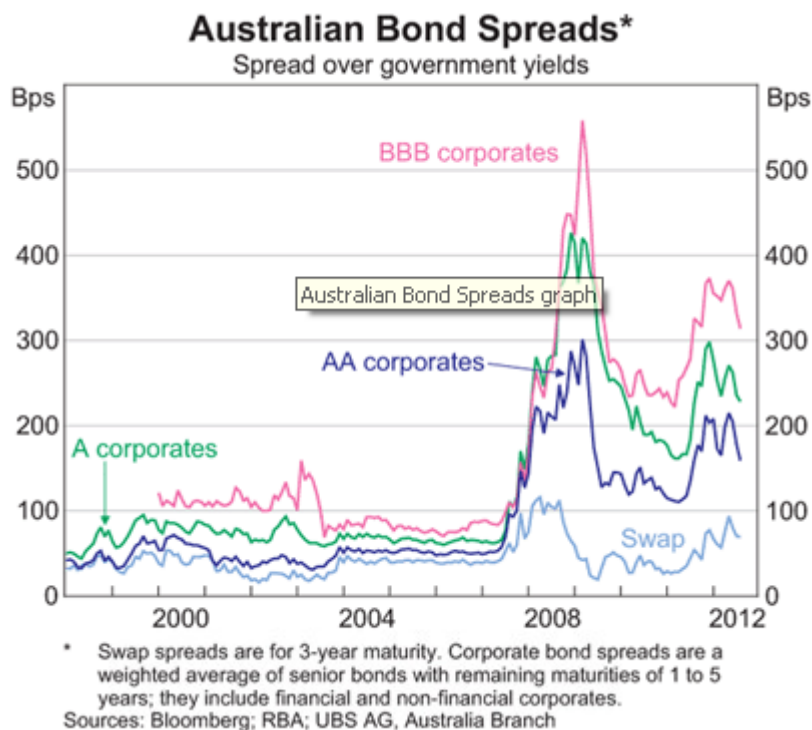
As there is no shortage of supply in the CGS market, there is unlikely to be a scarcity premium unreasonably pushing the yield on CGS down.

### **CEG contention: The CGS market is out of line with other bond markets in Australia**

The AER accepts that the spread between the yield on CGS and other debt securities has increased since the onset of the GFC. This likely reflects relatively greater demand for CGS from non-resident investors and changes in market participants' assessment of the relative riskiness of the assets. The AER does not accept that this suggests that prevailing CGS are not the most appropriate proxy for the risk free rate.

The figure below shows that the spread between the yield on CGS and other debt securities rose significantly after the onset of the GFC and has not returned to pre-GFC levels.

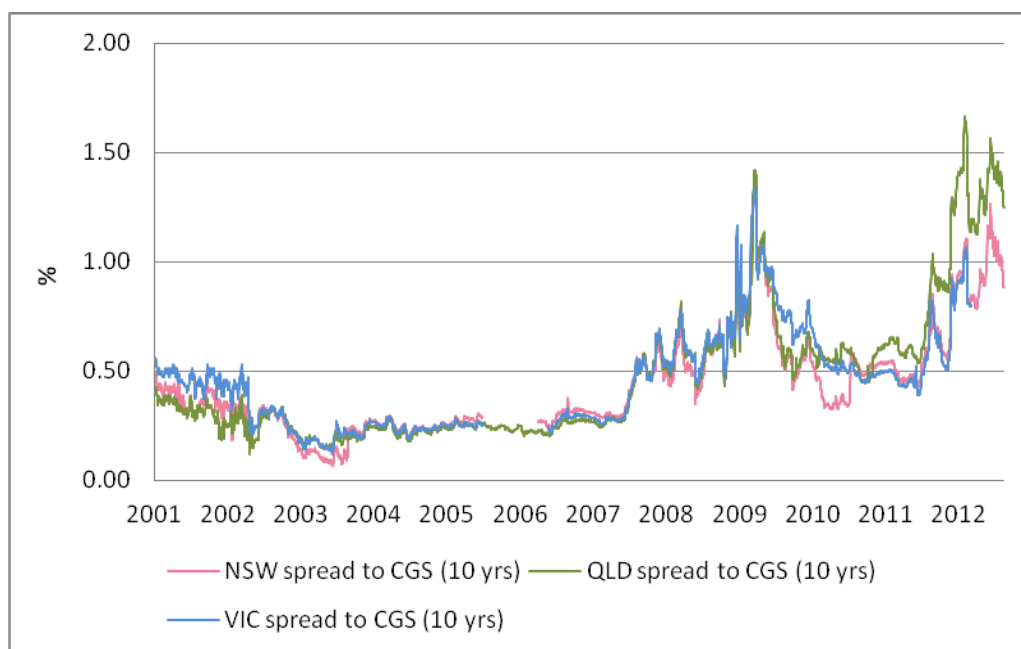
**Figure B.1 Australian Bond Spreads**



Source: RBA

The figure below shows that the widening of spreads can also be observed in the semi-government bond market.

**Figure B.2 Semi-government spreads to CGS**



Source: Bloomberg, AER

The RBA advice notes that '(t)his widening [of spreads] indeed confirms the market's assessment of the risk-free nature of CGS and reflects a general increase in risk premia on other assets.'<sup>36</sup>

The Treasury and AOFM advice makes the following statement:

Other issuers of Australian dollar-denominated debt may not have benefited from this increased demand to the same extent as the Commonwealth owing to investment mandate limitations and/or perceived or actual lower levels of liquidity in other types of debt.<sup>37</sup>

Possibly adding to the spread for semi-government bonds, the September Quarter RBA Bulletin states:

The increase in spreads during periods of heightened risk aversion may in part reflect the fact that some investors, particularly offshore investors, are not always familiar with the extent of vertical fiscal integration in Australia, whereby state governments receive a large share of their revenue via redistributions of Australian Government tax receipts.<sup>38</sup>

Increased demand from non-resident investors has also likely had an influence on the increased spreads. Demand from non-resident investors has been proportionately larger in the CGS market over the past few years. The Treasury and AOFM advice notes that non-resident ownership of CGS increased from around 50 per cent in mid-2009 to around 76 per cent in March 2012.<sup>39</sup> The advice also notes that non-resident ownership of semi-government

<sup>36</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>37</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

<sup>38</sup> Lancaster and Dowling, *The Australian Semi-government Bond Market*, RBA bulletin, September Quarter 2011, p. 54.

<sup>39</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

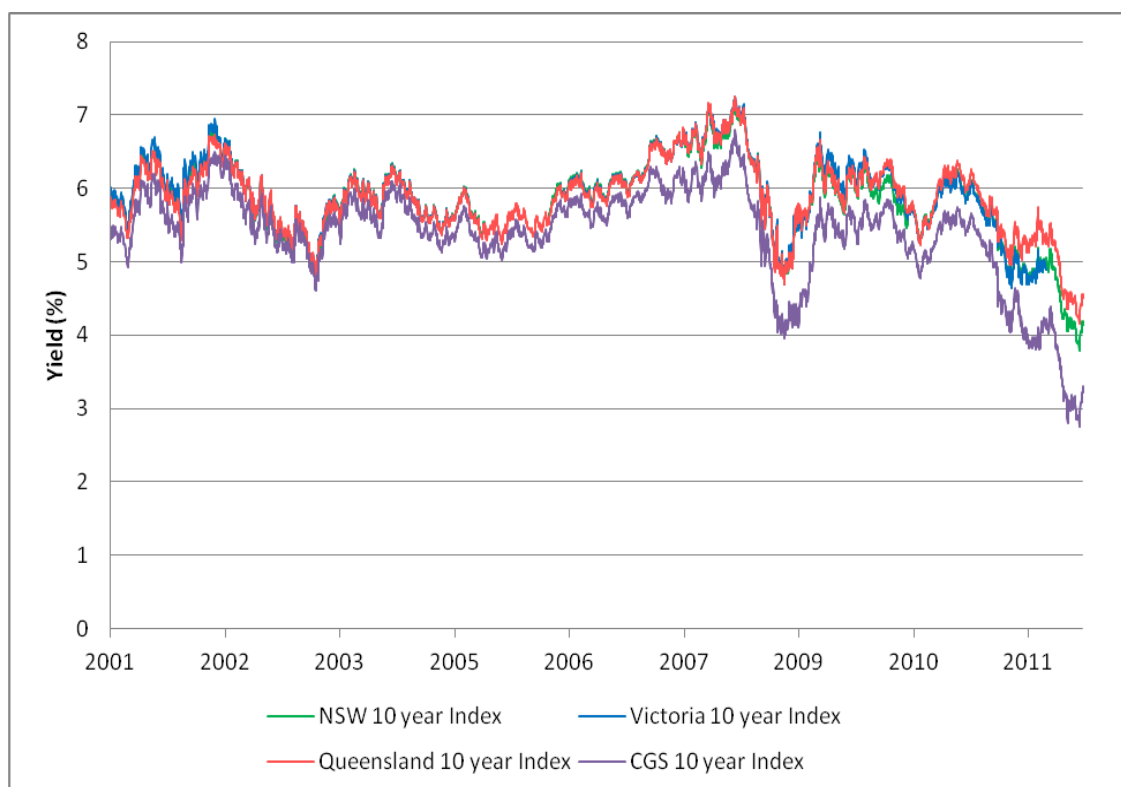
securities has increased in the same period, albeit by a smaller amount.<sup>40</sup> As discussed in section 4.3.2 above, the AER does not consider that increased demand from non-resident investors makes CGS an inappropriate proxy for the risk free rate.

Relative risk assessments are considered in the context of the MRP; found in attachment 4.3.3.

The AER notes that CEG assert that the yield on semi-government securities have not fallen to the same degree as CGS.<sup>41</sup> The AER accepts this is the case. However, semi-government bonds have fallen considerably since the onset of the GFC.

Over the period from mid-2009 to March 2012 the yield on semi government debt has fallen by approximately 100 basis points on average. Before the onset of the GFC the yield on semi government bonds was higher than at present. This suggests that while semi-government bond yields have not moved in lock-step with CGS yields, the forces acting upon them have been very similar. The Figure below demonstrates this clearly.

**Figure B.3 CGS and semi-government indices over time**



Source: Bloomberg, AER

### **CEG contention: CGS yields have been volatile over the last few years**

The AER acknowledges that CGS yields change over time; this does not make CGS yields an inappropriate proxy for the risk free rate. Changes in CGS yields reflect changes in investor

<sup>40</sup> Treasury and AOFM, *Letter regarding the CGS Market*, July 2012, p. 2.

<sup>41</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, pp. 21-25.



expectations and CGS yields therefore remain the best estimate of the forward looking risk free rate at any point in time.<sup>42</sup>

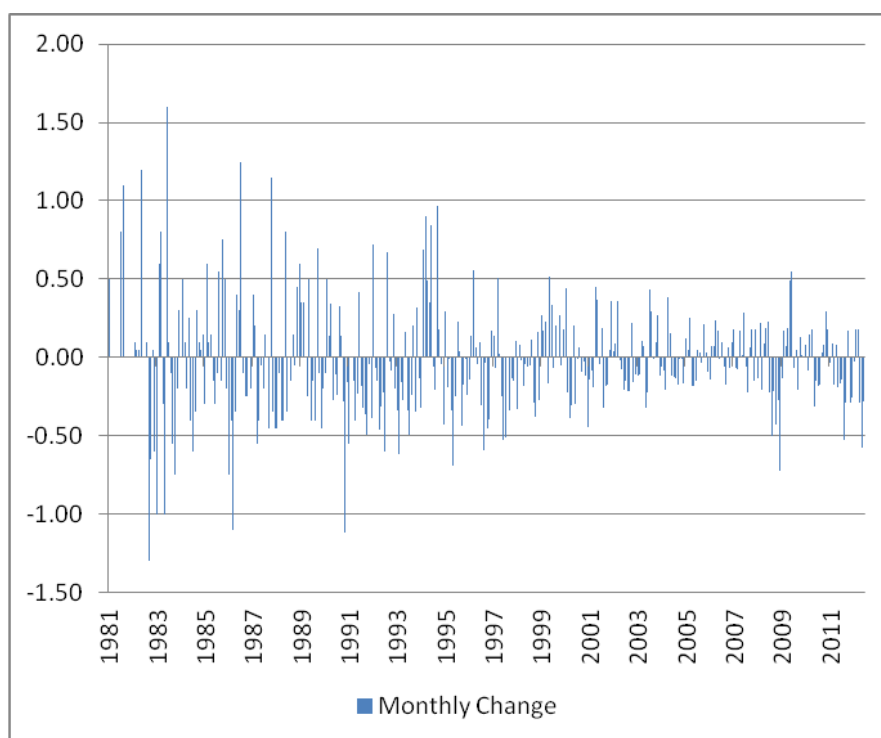
CEG comment that CGS yields have been very volatile over the past few years:

The nominal and CPI indexed yield on 10 year CGS have been very volatile over the last three years. Twice in this period, first in early 2009 and then in late 2011, yields have fallen to levels not previously seen in the last fifty years.<sup>43</sup>

The CEG report does not explore in any detail what the volatility of CGS yields has actually been over the last three years. CEG point to a graph of CGS yields and suggest this demonstrates volatility.<sup>44</sup>

The AER has examined observed changes in average CGS yields since 1981. The observed change in the monthly average yield is displayed in Figure B.4 below. This analysis is not strictly volatility analysis. Nevertheless, it is useful as it provides an indication of how much CGS yields have historically changed from period to period.

**Figure B.4 Observed change of monthly average nominal CGS yields**



Source: RBA, AER analysis

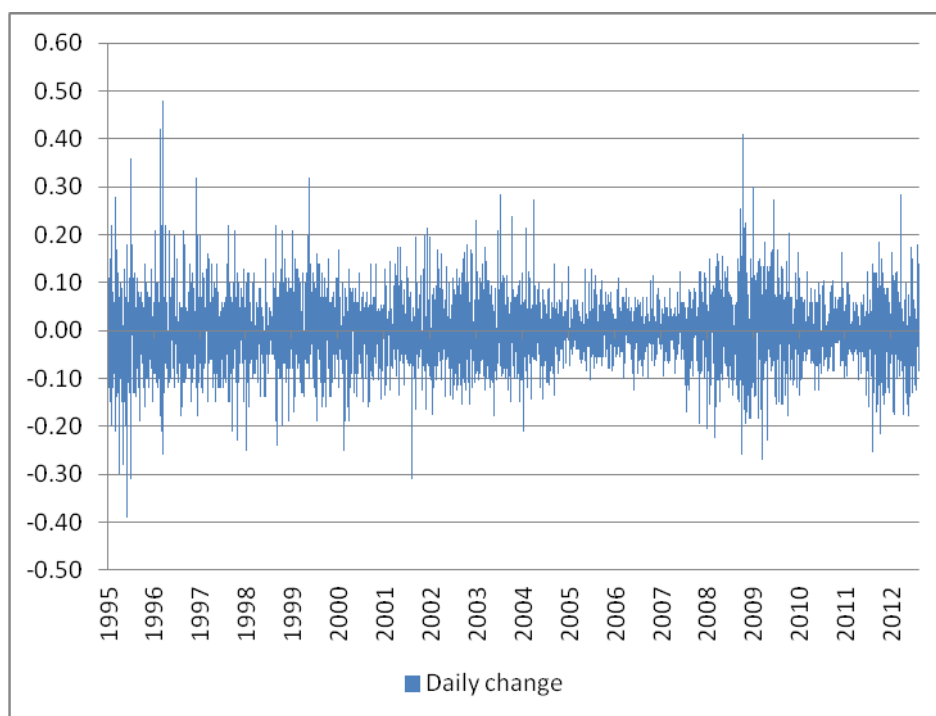
The graph suggests that CGS yields have not been relatively more volatile when compared to observed changes. This observation is likewise reflected in the observed change of daily average yields since 1995 as shown in Figure B.5 below.

<sup>42</sup> Discussed further in section 4.3.2.

<sup>43</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. i.

<sup>44</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, pp. 4.

**Figure B.5 Observed change of daily average nominal CGS yields**



Source: RBA, AER analysis

CEG's concerns appear to rest primarily with the low level of prevailing CGS yields, rather than volatility. This is clear from CEG's statement above. The AER has considered the effect of the low level of prevailing CGS yields in sections 4.3.4 and 4.3.9 when considering the relationship between the MRP and the risk free rate, and the overall rate of return.

### **B.1.3 Long term average as an alternative option**

The AER has given consideration to the alternative of using a long term average historical estimate of the risk free rate and concludes that this would not be an acceptable approach, given the requirements of the NGR. This is because, as discussed below, there is limited evidence that the cost of equity is stable through time, a long term average is not consistent with the present value principle and would expose regulatory decisions to bias.

The AER has consistently employed an approach where it estimates a forward looking MRP and risk free rate based on the best evidence available. CEG proposed departure from this consistent approach to the use of a long term historical average for estimating the risk free rate.<sup>45</sup> CEG proposed the use of inflation indexed bonds averaged over the period from July 1993.<sup>46</sup> This approach was proposed by Envestra Victoria and Albury, SP AusNet and Multinet in their respective initial access arrangement proposals, but not by APA GasNet.<sup>47</sup>

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<sup>45</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 41-47.

<sup>46</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 45-46.

<sup>47</sup> Envestra, *Access arrangement information*, 30 March 2012, p. 156; SP AusNet, *Access arrangement information*, 30 March 2012, p. 189 ; Multinet, *Access arrangement information*, 30 March 2012, p. 154; APA GasNet, *Access arrangement submission*, 31 March 2012, p. 132-133.

CEG stated:

An historical average estimate of the cost of equity can be a reliable proxy for the prevailing cost of equity if the cost of equity is stable through time.<sup>48</sup>

The AER gives consideration to the relationship between the risk free rate and MRP in section 4.3.4 above and considers that there is little evidence that the cost of equity is stable through time.

The reasoning for a departure from the use of prevailing estimates is not clear. Firstly, Envestra Victoria and Albury, SP AusNet, Multinet and CEG appear to argue that there are problems in the CGS market. These concerns are addressed in section 1.3.1 above. Secondly, they appear to suggest that using prevailing estimates of CGS yields is inconsistent with using historical estimates of the MRP. This is a mischaracterisation of the AER's approach as discussed in section 1.3.3.

The AER has a number of concerns with using a long term average approach. Importantly, a long term average is not consistent with the present value principle. Lally found that 'the Present Value principle requires use of the risk free rate at the beginning of the regulatory period.'<sup>49</sup>

As discussed in section 1.3.1, a strict interpretation of the present value principle requires the use of the risk free rate on the first day of the period. However, a pragmatic allowance is made from using this strict interpretation of the present value principle. The allowance is to use a short averaging period as close as practically possible to the beginning of the regulatory period. This reduces the exposure of regulated businesses to unreasonable variation that can be reflected in the yield for a single day.

As Lally points out:

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.<sup>50</sup>

Indeed, the AER considers that a long term average would likely introduce problems that are not involved with using a prevailing rate.

A long term average is unlikely to produce an unbiased estimate of the risk free rate. On the face of it, using a long term average may seem a reasonable approach. A difficulty is that the time that is selected for the beginning of the period has a significant influence on the output. The selection of an appropriate averaging period is subjective and therefore subject to manipulation for desired results.

The AER has calculated historical average yields on nominal and indexed CGS using monthly average yields provided by the RBA.<sup>51</sup> These yields show variation as the time period

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<sup>48</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. i.

<sup>49</sup> M. Lally, *The risk free rate and the present value principle*, 22 August 2012, p. 3 (Lally, *Risk free rate and present value*, August 2012)

<sup>50</sup> Lally, *Risk free rate and present value*, August 2012, p. 7.

<sup>51</sup> RBA, *Capital market Yields - Government Bonds - Monthly - F2*, available at <<http://www.rba.gov.au/statistics/tables/index.html>>, accessed 15 August 2012.

changes, as shown in Table B.1 below. These averages are likely to differ from CEG's as the AER has used monthly average yields as opposed to daily average yields. The difference is not likely to be significant for the purposes of this discussion.

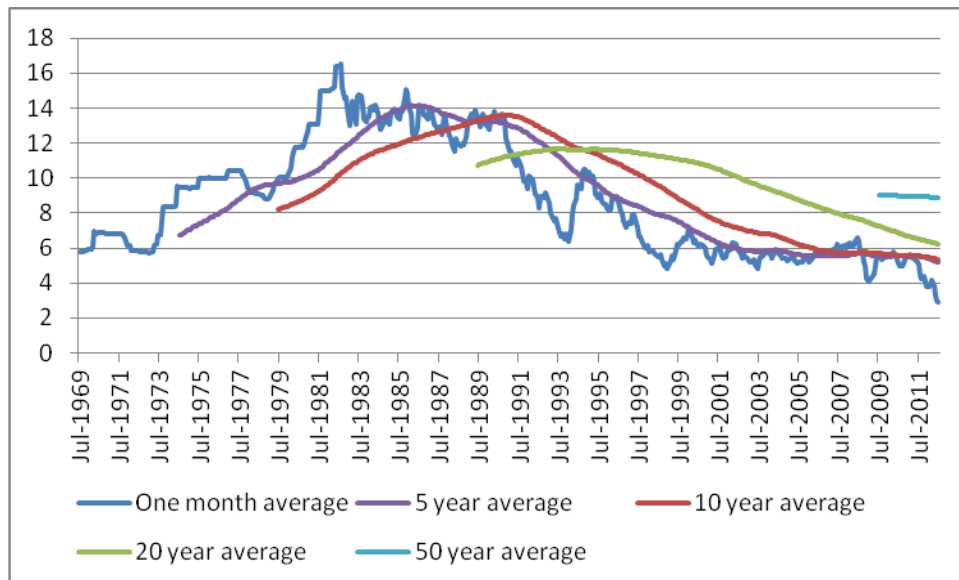
**Table B.1 Historical average yields on nominal and indexed CGS**

	Nominal 10 year CGS	Indexed CGS
All data		
1969	8.72	
1986		3.76
20 year	6.25	3.35
10 year	5.34	2.63
5 year	5.16	2.38
1 year	3.92	1.60

Source: RBA, AER analysis

The declining average yields over the period reflect the lagged impact of the decline in CGS yields over the past 30 years. The figure below demonstrates this lagged impact. When interest rates decline, or increase, over time, a longer historical averaging period produces a greater difference between the observed yield and the historical average. The 20 year average is higher than the 10 year average, for example.

**Figure B.6 Average nominal CGS yields through time**



Source: RBA, AER analysis

Envestra proposed a long term average estimate of the risk free rate of 5.99 per cent.<sup>52</sup> This is consistent with advice Envestra received from CEG.<sup>53</sup> CEG proposed the use of inflation indexed CGS from July 1993 plus an estimate of the future inflation rate of 2.50 per cent.<sup>54</sup> CEG suggested that July 1993 is a reasonable time to begin the estimation period because this is approximately when the RBA formally adopted an inflation targeting regime.<sup>55</sup>

The AER has a number of reservations with this reasoning. Firstly, the selection of the starting point for the averaging period is subjective. In this case, for example, there is a question about whether the adoption of inflation targeting was seen as credible by market participants at that point in time. The credibility of the inflation targeting regime is important because if expectations did not immediately match the target band, then the yield on CGS may have been higher than if expectations did match the target band.<sup>56</sup> This suggests that a historical average over this period might not be a reliable proxy for the real risk free rate in combination with an inflation estimate of 2.5 per cent.

Secondly, the quality of the historical data is important and at times uncertain. As CEG note, indexed CGS went through a period of very limited supply in the years prior to the GFC.<sup>57</sup> Indeed, the RBA and Australian Treasury confirmed this in advice to the AER.<sup>58</sup> This suggests that a historical average of indexed CGS is unlikely to provide an accurate reflection of the real risk free rate over the period.

There are likely to be many alternative long term historical periods that could be used to determine a historical average with positives and negatives for all such historical periods. However, each of these alternatives is an inferior alternative compared to prevailing yields on long dated CGS.<sup>59</sup>

The Tribunal recently acknowledged the difficulties in determining an appropriate long term averaging period:

Clearly, the 'right' period for the estimation of capital market parameters that are to be included in calculations of the WACC under the CAPM is one that is likely never to be agreed by parties in a rate of return calculation.<sup>60</sup>

These comments were made in the context of the Tribunal's decision on MRP where long term averages are commonly used. Nevertheless, they capture the AER's concerns about using a long term average for the risk free rate, particularly as a short term average captures market participant's current expectations for the future.

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<sup>52</sup> Envestra, *Access arrangement information*, March 2012, p. 156.

<sup>53</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 45.

<sup>54</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012 p. 45.

<sup>55</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012 p. 16, 45

<sup>56</sup> 'A change in expected inflation will cause the same change in the nominal interest rate.' R. Brealey, S. Myers, G. Partington, and D. Robinson, *Principles of Corporate Finance*, McGraw-Hill Australia: First Australian Edition, 2007, p. 691.

<sup>57</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 45

<sup>58</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1.

<sup>59</sup> Discussed further in section 4.3.2.

<sup>60</sup> Australian Competition Tribunal, *Application by DBNGP(WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraph 149.

The AER concludes that a long term averaging period is not appropriate and does not result in the best possible estimate in the circumstances. The inherent subjectivity in selecting a period for a long term average increases the likelihood of bias in the estimate of the risk free rate.

#### B.1.4 The term of the risk free rate

##### The term of the risk free rate

Envestra proposed the use of a 10 year term and the AER accepts a 10 year term is appropriate. The AER notes, however, that the selection of an appropriate term is not straightforward.

When determining the term of the risk free rate there are a number of considerations involved. It is important to consider consistency with the present value principle. The AER has also previously considered actual practices by regulated businesses.<sup>61</sup> Finally, a 10 year term ensures consistency in this decision between the risk free rate used for the cost of equity and that used for the cost of debt, including in the calculation of the MRP and DRP. On balance, the use of a 10 year term is appropriate for this decision.

The present value principle is a fundamental element when determining the term of the risk free rate. The AER notes that there are divergent schools of thought on the appropriate term to ensure consistency with the present value principle.

Associate Professor Lally suggests that the AER should use a term that is consistent with the regulatory period when estimating a risk free rate at the start of the period.<sup>62</sup> This suggests the AER should use a 5 year term. Professor Davis has also expressed support for this approach.<sup>63</sup>

On the other hand, the AER notes that there are arguments in favour of using a longer term to more closely match the life of the assets.<sup>64</sup> Broadly, the argument suggests that regulated assets have long lives and corresponding cash flows, therefore the duration of the risk free rate should be as long as is practically possible.

In the WACC Review in 2009, the AER also considered arguments put forward by businesses that common practice was to use long dated financing to manage refinancing risk.<sup>65</sup> This formed an important consideration for the estimation of the DRP using a 10 year term.<sup>66</sup> In contrast, the ERA has recently analysed the average maturity of debt issued by regulated businesses and found this to be approximately 5 years.<sup>67</sup>

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<sup>61</sup> AER, *Final Decision: WACC Review*, May 2009, p. 148–149.

<sup>62</sup> Lally, *Risk free rate and present value*, August 2012, p. 16.

<sup>63</sup> K. Davis, *Determining debt costs in access pricing, a report to IPART*, February 2011, p. 1.

<sup>64</sup> A. Damodaran, *What is the riskfree rate? A search for the Basic Building Block*, December 2008, p. 6-7.

<sup>65</sup> AER, *Final Decision: WACC Review*, May 2009, pp. 156-166.

<sup>66</sup> AER, *Final Decision: WACC Review*, May 2009, p. 168.

<sup>67</sup> ERA, *Final Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline*, Submitted by DBNGP (WA) Transmission Pty Ltd, 31 October 2011, pp. 126–130 (ERA, *Final decision: DBNGP access arrangement*, October 2011).

Consistency between the cost of equity and the cost of debt may also be important. This would mean that the MRP and DRP would need to be estimated consistently. In the recent DBNGP matter, the Tribunal supported the ERA's consideration that this consistency is important.<sup>68</sup> The Tribunal considered consistency with the calculation of the DRP to be most important.<sup>69</sup>

In summary, while there are arguments in favour of a shorter term, it is appropriate at this time to continue to use a 10 year term. The AER therefore accepts Envestra's proposal. The AER also notes that a 10 year term is likely to provide a conservative estimate of the risk free rate.

### **B.1.5 The EnergyAustralia matter**

CEG's submission referred to the Tribunal's decision in *Application by EnergyAustralia and Others [2009] ACompT 8* (the EnergyAustralia matter) to support the position that the averaging period does not need to be as close as practically possible to the commencement of the regulatory control period.<sup>70</sup> The AER has considered carefully whether the Tribunal's decision in the EnergyAustralia matter demonstrates that the approach applied in this decision inappropriate.

There is a history of the AER applying Tribunal decisions. There are two such examples in this determination. The AER has applied the Tribunal's decision on gamma.<sup>71</sup> Also, the AER has followed the Tribunal's decision on the use of the Bloomberg fair value curve to estimate the DRP.<sup>72</sup>

In the time since the EnergyAustralia matter, the Federal Court has handed down its judgement in *ActewAGL Distribution v The Australian Energy Regulator [2011] FCA 639* (the ActewAGL matter). Also, the Tribunal handed down its decision in *Application by Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1* (the Telstra matter).<sup>73</sup> Further, as the EnergyAustralia matter considered provisions in the transitional chapter 6 of the NER, there are differences in the legislation involved. Therefore, despite its history of applying the

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<sup>68</sup> Australian Competition Tribunal, *Application by DBNGP(WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraph 131.

<sup>69</sup> Australian Competition Tribunal, *Application by DBNGP(WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraph 132.

<sup>70</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. v. Source document is Australian Competition Tribunal, *Application by EnergyAustralia and Others (includes corrigendum dated 1 December 2009) [2009] ACompT 8*, 12 November 2009.

<sup>71</sup> Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No 5) [2011] ACompT 9*, 12 May 2011.

<sup>72</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012. Also, in the Victorian electricity distribution determination, the AER accepted Jemena Electricity Network's proposed averaging period, despite it being inconsistent with the SRI methodology. This was on the basis of the Tribunal's decision in the EnergyAustralia matter. The AER stated at the time that it was still examining the full implications of the Tribunal's decision and its relationship to the requirements of the SRI as well as to the broader NER framework. AER, *Final decision: Victorian electricity distribution network service providers: Distribution determination 2011–15*, October 2010, pp. 477–478 (AER, *Final decision: Victorian distribution determination*, October 2010).

<sup>73</sup> Australian Competition Tribunal, *Application by Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010.

Tribunal's decisions, the circumstances surrounding the risk free rate for this determination and the EnergyAustralia matter are somewhat different. Specifically:

- The Envestra decision is made under the NGL and NGR. In contrast, the Energy Australia decision was made under the NEL and NER. Further, the Energy Australia decision was made under transitional provisions of the NER. There are differences in the legislation involved in the EnergyAustralia matter and the legislation the AER applies for the Envestra decision.
- The legislation in the EnergyAustralia matter included provisions deeming the MRP to be 6 per cent.<sup>74</sup> It is not clear to the AER the extent to which these provisions influenced the Tribunal's decision.<sup>75</sup> To the extent this occurred, the AER considers this interpretation was not appropriate. In the ActewAGL matter, the Federal Court upheld the AER's reasons for rejecting ActewAGL's submission that the risk free rate should be adjusted to take into account variations in the MRP. A key reason of the AER was that adjusting the risk free rate to make up for a higher MRP was an attempt by ActewAGL to circumvent the legislation and would undermine the intended certainty provided under the regulatory regime through the deeming provisions.<sup>76</sup>
- At any rate, the legislation here does not include deeming provisions and instead enables the rate of return, including the MRP where the CAPM is adopted as the well accepted financial model, to reflect prevailing conditions in the market for funds. As discussed in attachment 4, the AER has consistently held a position that each WACC parameter should be estimated based on considerations relevant to that parameter, rather than to deal with issues relating to another parameter. In the Telstra matter, the Tribunal made its position clear that CGS yields during the global financial crisis remained representative of the risk free rate, and the mere fact that the yields were 'low' did not change this conclusion.
- In the EnergyAustralia matter, the Tribunal considered that the NER's drafting results in cost of capital needing to represent the return required by investors at the start of each regulatory year. As mentioned above, the legislation here has no such drafting. Also, the Federal Court recognised that the capital asset pricing model (CAPM) requires the use of the most current information for deriving the cost of capital. According to the Federal Court, in theory, this involves the use of the risk free rate at the beginning of the regulatory control period. For the reasons set out in section 4.3.2, the use of the risk free rate near the beginning of the regulatory control period is also consistent with the building block model required under the NGR. Advice from Associate Professor Lally supports both that the CAPM requires the most current risk free rate and that the building block model requires the use of a risk free rate commensurate with prevailing market conditions at the start of the regulatory control period.
- In the EnergyAustralia matter, the Tribunal's reasons for finding that the AER acted unreasonably in withholding consent to EnergyAustralia's proposed averaging period

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<sup>74</sup> NER, Transitional chapter 6 clause 6.5.2(b)

<sup>75</sup> Some support for the conclusion that they did can be found at paragraph 73(d)(1) where the Tribunal stated that a principle assisting it in the determination of the issue was '...whether the period proposed is likely to result in an unbiased risk free rate, given that the equity beta and the market risk premium are deemed to be 1.0 [sic] and 6.0 per cent respectively'. Australian Competition Tribunal, *Application by EnergyAustralia and Others (includes corrigendum dated 1 December 2009)* [2009] ACompT 8, 12 November 2009.

<sup>76</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 148.



included that the AER did not examine the evidence regarding forward interest rates.<sup>77</sup> However, the Federal Court noted evidence that no Australian regulator has done so. It also very much doubted that the NER required the AER to deploy forward rates to make the averaging period decision.<sup>78</sup>

- Further the EnergyAustralia matter involved a legislative regime where a service provider's proposal has presumptive approval, and the AER cannot unreasonably withhold its approval. In contrast, the rate of return provision in the NGR is a full discretion provision. This means the AER retains the discretion to not approve a service provider's proposal, even where that proposal complies with and is consistent with the relevant legislative requirements and criteria. If the AER considers there is a preferable alternative that also complies with and is consistent with the relevant legislative provisions it may implement it.<sup>79</sup>

As the Federal Court noted, the Tribunal and the Federal Court apply different tests. However, given the differences noted above, the AER does not consider it appropriate to merely apply the Tribunal's decision in the EnergyAustralia matter as if it were a precedent. Accordingly, in these circumstances, the AER does not consider that it should accept on face value that the Tribunal's decision demonstrates that the approach applied in this decision is inappropriate. Instead, throughout attachment 4 and this appendix the AER has assessed all of the evidence available on its merits.

For the reasons set out in this decision the AER does not consider the Tribunal's decision in the EnergyAustralia demonstrates that the approach applied in this decision is inappropriate.

In the remainder of this section the AER considers:

- The Tribunal's and the Federal Court's interpretations of the statutory scheme under clause 6.5.2 of the NER.
- The usefulness of forward interest rates in assessing a proposed risk free rate averaging period.
- In section 4.3.2 the AER considers the economic insights that can be gained from the 'present value principle' and how this principle is consistent with both the use of the building block model and the use of the CAPM. In section B.1.6 the AER considers the Tribunal's considerations in the Telstra matter.

### **The Tribunal's and the Federal Court's interpretation of the statutory scheme**

In withholding its approval to EnergyAustralia's proposed averaging period, the AER stated that the AER's regulatory practice was supported by accepted expert views in the economic and finance literature.<sup>80</sup> In response to the reports referenced by the AER, the Tribunal set out its interpretation of the statutory scheme:

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<sup>77</sup> Australian Competition tribunal, *Application by EnergyAustralia and Others (includes corrigendum dated 1 December 2009)* [2009] ACompT 8, 12 November 2009, paragraph 94.

<sup>78</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 145.

<sup>79</sup> NGR, r. 40(3)

<sup>80</sup> The AER referenced the following three reports in support of this statement: M. Lally, *Determining the risk free rate for regulated companies*, August 2002; K. Davis, *Report on the risk free interest rate and equity and debt*

The rate of return, or WACC, is applied to the value of the regulatory asset base of the NSP as at the beginning of a regulatory year to produce the return on capital (in dollar terms) for that regulatory year (cl 6.5.2(a)). (The regulatory asset base is updated each year (cl 6.5.1(e)(2).) Thus the WACC is applied in each of the five regulatory years within the regulatory control period. It follows that the WACC to be applied each year should in principle be the rate of return required by investors at the beginning of that year. This rate of return would naturally be expected to differ from year to year.

That is not, however, the scheme set out in cl 6.5.2. Rather it provides for a single value of the WACC to be calculated and applied to each year's starting regulatory asset base.

...

The risk free rate, whether agreed or specified, is, it seems to be agreed by all parties, that which prevails at some time (the averaging period) prior to the start of the regulatory control period; similarly with the benchmark corporate bond rate. Those inputs might generate a rate of return value reasonably close to that actually required by investors at the start of the regulatory control period, and applied to the first year's starting regulatory base. But with changes in market conditions over the regulatory control period, it is hard to see why the rate of return value would represent the return required by investors at, say, the start of the final year of the regulatory control period.

In the meantime, the risk free rate and corporate bonds rates would almost certainly have varied from their initial values. Consequently, there appears to be no virtue in setting those rates at values that prevailed close to the start of the regulatory control period, or to the publication of a final determination.

It may be accepted that, [the AER's practice] ...and the practice of regulators more generally has been to apply a nominal risk free rate averaging period closer to the start of the regulatory period. This practice has been supported by economic experts. The Tribunal observes, however, that this is not a universal practice. In market conditions that are not wildly out of the norm, this may be expected to provide a figure that is fairly close to being an unbiased estimate of the risk free rate consistent with market conditions at the time of the final determination; and may consequently be expected to provide a reasonable estimate of the rate of return on capital that would be required by investors at the time of the final determination.

But as explained above, there is no proper basis for seeking such an estimate. The views of economic experts appear to be based on a model where the regulatory control period is considered to be a single period (of five years), not five consecutive one-year periods. In the scheme set out in the Transitional Rules, the nexus is broken between the period to which the rate of return applies and the period for which that rate of return is estimated. Once that is realised, the basis for withholding agreement to an averaging period proposed by EA falls away. [Emphasis added]<sup>81</sup>

As is clear from this quote, the Tribunal considered that the statutory scheme rendered expert economic advice in support of the AER's position irrelevant. The Tribunal's view appears to be that the rate of return set under clause 6.5.2 of the NER needs to be representative of the (10 year) return required by investors at the start of each year of the regulatory control period.<sup>82</sup> Once again, the NGR do not contain any drafting similar to that the Tribunal referred to. Therefore, it appears that the EnergyAustralia decision has limited influence in the present circumstances.

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*beta determination in the WACC*, 28 August 2003; M. Lally, *The cost of capital for regulated utilities—Report prepared for the QCA*, 26 February 2004 (Lally, *Cost of capital for regulated utilities*, February 2004).

<sup>81</sup> Australian Competition Tribunal, *Application by EnergyAustralia and Others (includes corrigendum dated 1 December 2009)* [2009] ACompT 8, 12 November 2009

<sup>82</sup> The term of the risk free rate was deemed to be 10 years in the transitional chapter 6 clause 6.5.2 that applied in the EnergyAustralia matter.

In the ActewAGL matter, the Federal Court was careful to point out that the tests it applied on judicial review are different from the tests applied in the Tribunal's merits review. The Federal Court expressly stated that the Tribunal's view on the merits of the AER's decision were irrelevant in the judicial review.<sup>83</sup> However, in commenting on the statutory scheme, the Federal Court also stated:

The relevant equation is that which determines the return on equity (ke), which paragraph (b) provides must be determined using the Capital Asset Pricing Model ("CAPM") and certain defined parameters. ...

The Capital Asset Pricing Model requires the use of the most current information for deriving the rate of return. This in theory involves the use of the risk-free rate on the day that required returns are to be estimated (in this case, the beginning of the regulatory period). Nevertheless, there are recognised problems with the use of an on-the-day rate which an averaging period is intended to address. In particular, deploying an averaging period will minimise day-to-day volatility in the market.<sup>84</sup> [Emphasis added]

Clearly, this is not an express statement that the Tribunal's interpretation is incorrect. However, it appears that the Tribunal considered clause 6.5.2(a) to require the rate of return to be that required by investors at the beginning of each regulatory year. On the other hand, the Federal Court recognised that the CAPM—proposed by Envestra and approved by the AER—requires the rate of return to be that required by investors at the beginning of the regulatory period. It seems difficult to reconcile the two statements. Based on this reason and others,<sup>85</sup> the AER considers that the economic evidence it presented in the EnergyAustralia matter remains relevant. Further, the economic evidence presented in Associate Professor Lally's report to the Federal Court in the ActewAGL matter and recent advice to the AER is also relevant. Those reports are considered in the section 4.3.2.

On this basis, the AER considers that, conceptually, the rate of return set under the CAPM should represent the return required by investors at the beginning of the regulatory control period (over the relevant forward looking period). The AER does not consider that rule 87 of the NGR requires a rate of return (over the specified term) representative of the return required by investors at the start of each year of the regulatory control period.

### **The use of forward interest rates**

In the EnergyAustralia matter, the Tribunal said the AER should use forward interest rates to assess a service provider's proposed averaging period. The Tribunal stated:

Rather than assume that the rate at a closer date would give a better estimate, the AER should have examined the evidence regarding expected future rates. Such evidence of forward interest rates, ie, rates that will apply at some future time for a prospective period, is available from market data. Comparisons could be made between the rates expected to prevail during the averaging period proposed by the NSP and rates expected at later periods. But it follows from the Tribunal's reasoning that it would be insufficient

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<sup>83</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 113.

<sup>84</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraphs 22 and 28.

<sup>85</sup> For example, if the Tribunal's interpretation is correct, it seems that the AER misinterpreted clause 6.5.2(a). If so, it seems likely that the Federal Court would have made a similar finding. However, it did not. The AER acknowledges that the Federal Court did not address this issue in detail.

and inappropriate to only compare with rates expected to prevail close to the time of the final determination.<sup>86</sup>

The AER has considered the usefulness of forward interest rates to assess the averaging period's predictability of the risk free rate at a future point in time. In their reports to the Federal Court, Lally and Houston advised that they were not aware of any Australian regulatory decision in which forward rates had been used to guide the selection of an averaging period for the risk free rate.<sup>87</sup>

Lally further advised that there were 'two major difficulties' in using forward interest rates in this way. On the first major difficulty, he advised that the appropriate predictor of a future interest rate is not the forward rate but the forward rate less the term premium.<sup>88</sup> On estimating the term premium, Lally stated:

However, the sizes of the term premiums vary over time and they are not precisely determinable. So, any attempt to estimate the extent to which an interest rate at a given point in time is a biased predictor of a subsequent rate would be fraught with difficulty.

Lally concluded:

...in choosing an interest rate to serve as the best predictor of the rate prevailing at a particular future point in time, the best interest rate will be that which is closest in time to the predicted date.<sup>89</sup>

As is clear from the Tribunal's decision, the Tribunal's view on the usefulness of forward interest rates was based on its view that the relevant rate of return is that required by investors at the start of each year of the regulatory control period rather than the rate required at the start of the regulatory control period. The AER does not agree with this position, as explained above.

The problems associated with using forward interest rates that Lally raised were in the context of predicting the 'spot' interest rate at the start of the regulatory control period—a period only two months after the publication of the AER's final decision. If forward interest rates are an unsuitable predictor of interest rates over such a short time horizon, they would appear to be at least an equally unsuitable predictor of the 'spot' interest rate at more distant points in the future (which is the context in which the Tribunal considered them).

Accordingly, there are both in principle and practical difficulties with using forward interest rates in determining the risk free rate.

In the ActewAGL matter there was some debate between the experts on the use of forward interest rates, in a context that involves a deemed MRP value. That aside, Justice Katzmann concluded:

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<sup>86</sup> Australian Competition Tribunal, *Application by EnergyAustralia and Others (includes corrigendum dated 1 December 2009)* [2009] ACompT 8, 12 November 2009, paragraph 94.

<sup>87</sup> Federal Court of Australia, *ActewAGL Distribution v The Australian Energy Regulator* [2011] FCA 639, 8 June 2011, paragraph 145.

<sup>88</sup> Lally advised this is because the 'expectations hypothesis' is not a satisfactory characterisation of the term structure of interest rates. Lally went on to explain that even if the expectations hypothesis held, the use of forward interest rates to assess two different averaging periods is still a flawed approach. M. Lally, *Expert report of Martin Thomas Lally*, 13 February 2011, p. 15 (Lally, *Expert report*, February 2011).

<sup>89</sup> Lally, *Expert report*, February 2011, p. 15.

Whether or not the criticism of the AER's decision is valid, I very much doubt the AER is bound by the statutory scheme to deploy forward rates to make the averaging period decision.<sup>90</sup>

Based on the Federal Court's view, the AER concludes that the use of forward interest rates to assess averaging periods is not a requirement of the NER (let alone the NGR). Based on Lally's advice, the AER also concludes there are sound economic reasons for not using forward interest rates. The AER has not used forward interest rates to assess Envestra's proposed averaging period.

For the above reasons, the AER considers that the Tribunal's comments do not demonstrate that an averaging period as close as practically possible to the commencement of the regulatory control period is not appropriate.

### B.1.6 The Telstra matter

The AER has reviewed the Tribunal decision in *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010. The Tribunal's reasons appear to support the approach adopted by the AER in this decision.

Like this decision, the Telstra matter also involved the appropriate estimation of the risk free rate at a time when CGS yields were 'low' compared to historically observed rates. The ACCC adopted a 4.51 per cent risk free rate. Telstra submitted the risk free rate was 6.33 per cent.<sup>91</sup>

Telstra submitted that the global financial crisis had significantly impacted on the yields of CGS resulting in an anomalous or unrepresentative risk free rate value during the relevant averaging period. The Tribunal disagreed. The Tribunal considered:

The dispute turns on whether the data derived over the period chosen by the ACCC is anomalous or unrepresentative.

The risk free rate refers to the return from an asset with no risk of default. There is every reason to assume (and little evidence to doubt) that the yields on commonwealth bonds over this period continued to provide an accurate proxy for a return on assets bearing no risk of default. To the extent that the yields factored the impacts of the global financial crisis, the bond rate continued to provide a representative indicator of the risk-free rate.

It is also not unusual for yields to move from time to time in order to reflect prevailing market conditions and the expectations about the prospect for prices into the future. A downward movement in yields over this period is therefore hardly anomalous, given market conditions.<sup>92</sup>

The Tribunal also stated that Telstra's proposal introduced value judgements. This is similar to the AER's findings, in this appendix, that a long term average creates the potential for arbitrariness and introduces subjectivity into the estimation of the risk free rate. The Tribunal considered:

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<sup>90</sup> Australian Competition Tribunal, *Application by EnergyAustralia and Others (includes corrigendum dated 1 December 2009) [2009] ACompT 8*, 12 November 2009, paragraph 145.

<sup>91</sup> Australian Competition Tribunal, *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010, paragraph 364.

<sup>92</sup> Australian Competition Tribunal, *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010, paragraph 415-417.

... that the approach advanced by Telstra would impose an obligation on the regulator (or the Tribunal) to make value judgments. Those value judgments include whether the period over which the data is taken is in some manner unusual, and whether the data derived is in some way anomalous or unrepresentative of the value that should apply to that parameter. This could involve predicting future rates, although means are available to do that.<sup>93</sup>

It is clear that the Tribunal did not consider that the decrease in CGS yields caused by the effects of the global financial crisis impinged upon CGS yields being an appropriate proxy for the risk free rate.<sup>94</sup>

The Tribunal made its position clear that CGS yields during the global financial crisis remained representative of the risk free rate. The mere fact that the yields were 'low' did not change this conclusion.

The averaging period in the Telstra matter was in March to April 2009 and resulted in a risk free rate of 4.51 per cent. The indicative averaging period adopted by the AER for Envestra is in August 2012 and results in a risk free rate of 2.98 per cent. The Tribunal's reasons why CGS yields remained an appropriate proxy for the risk free rate in March to April 2009 continue to apply in August 2012.

### **B.1.7 The expectations theory on the term structure of interest rates**

In sections 1.3.1 and 1.3.3 the AER raised the concept of the term structure of interest rates and the relevance of the 'expectations theory' when considering a forward looking estimate of the risk free rate. The expectations theory provides support for the use of prevailing 10 year CGS yields as forward looking estimates. The theory is further explained in this section.

The expectations theory is generally regarded as an important part of the explanation of the term structure of interest rates.<sup>95</sup> The term structure is also commonly referred to as the yield curve.<sup>96</sup> As Brailsford, Heaney and Bilson describe:

[The expectations theory] says that the only reason for an upward-sloping term structure is that investors expect future spot rates to be higher than current spot rates; and the only reason for a declining term structure is that investors expect spot rates to fall below current levels. The expectations hypothesis also implies that investing in short-term bonds...gives exactly the same return as investing in long-term bonds.<sup>97</sup>

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<sup>93</sup> Australian Competition Tribunal, *Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1*, 10 May 2010, paragraph 418.

<sup>94</sup> In a recent determination process Aurora Energy Pty Ltd submitted that the Tribunal's comments at paragraph 422 supported a departure from a short term average approach. The AER does not take the same interpretation of those comments. Further discussion can be found in the Aurora final determination. AER, *Final distribution determination: Aurora Energy Pty Ltd 2012–13 to 2016–17, Appendixes*, April 2012, p. 11–13 (section A.1.4).

<sup>95</sup> E. Elton, M. Gruber, S. Brown and W. Goetzmann, *Modern Portfolio Theory and Investment Analysis*, Wiley: Eighth edition, 2010, pp. 516–521.

<sup>96</sup> G. Peirson, R. Brown, S. Easton and P. Howard, *Business Finance*, McGraw-Hill: Eighth edition, 2003, p. 103.

<sup>97</sup> T. Brailsford, R. Heaney, and C. Bilson, *Investments: concepts and applications*, Nelson Australia Pty Ltd: Third edition, 2007, p. 710.

The expectations theory suggests then that current yields on long-dated bonds incorporate current market yields on short dated bonds and expectations of future market yields on short dated bonds. This relationship is explained in the following mathematical expression<sup>98</sup>:

$$(1+OR_n) = (1+OR_1)(1+E_0[1R_2])...(1+E_0[n-1R_n])$$

Where:

$E_0[sR_n]$  = expected nominal yield per annum for the period from time s to time n,

with expectations formed at time 0

$OR_s$  = nominal yield per annum observed now for the period 0 to s

The expectations theory is not the only theory that has been developed to explain the term structure of interest rates. Other theories are the 'liquidity premium theory', the 'segmented markets theory' and the 'preferred habitat theory'.

The expectations theory is unlikely to provide a complete explanation of the term structure of interest rates.<sup>99</sup> There are many factors that may influence the term structure. Notwithstanding this, the expectations theory provides an important and relevant understanding of the term structure of interest rates.

### **B.1.8 Envestra's main contentions for proposed a long term cost of equity**

Envestra proposed a cost of equity estimate of 10.8 per cent using the 'long term' approach. It suggested this approach avoids short term movements in CGS yields from distorting the return on equity. It is also consistent with the method used to derive the other CAPM variables and reflects the long term nature of the assets it is funding.<sup>100</sup>

The AER considers using an averaging period as close as possible to the start of the regulatory period is appropriate. The prevailing 10 year CGS yield reflects the risk free rate over the next 10 years. The AER also notes determining the averaging period for a long term average introduces arbitrariness and may produce an upward bias. The AER discusses its considerations in attachment 4.3.2.

As discussed in attachment 4.3.4, both risk free rate and the MRP determined by the AER are forward looking estimates, although they are estimated using different types of data.

Although regulated assets are generally long term, it is important to note the regulatory returns are updated every five years. The NGR prescribe the use of the building block model when the AER is calculating the total revenue allowance.<sup>101</sup> As noted by Dr. Darryl Biggar, the building block model is a tool for ensuring the present value of the revenue streams of the

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<sup>98</sup> T. Brailsford, R. Heaney, and C. Bilson, *Investments: concepts and applications*, Nelson Australia Pty Ltd: Third edition, 2007, p. 156.

<sup>99</sup> These concerns have been raised by Lally when considering the use of forward interest rates to predict future interest rates. Lally, *Expert report*, February 2011, p. 15–17.

<sup>100</sup> Envestra, *Albury access arrangement information*, March 2012, p. 142; Envestra, *Victoria access arrangement information*, March 2012, p. 158.

<sup>101</sup> NGR, r. 76

regulated firm matches the present value of its expenditures.<sup>102</sup> For the risk free rate, an averaging period that is as close as practical to the start of the regulatory period promotes consistency with the CAPM, the building block model and the present value principle. On the other hand, Lally noted a long term average risk free rate would not satisfy the present value principle.<sup>103</sup> This is discussed in detail in section B.1.3 above.

## B.2 Market risk premium

Envestra proposed a 'current' MRP of 8.3 per cent based on the CEG's dividend growth model estimate.<sup>104</sup> Envestra also submitted reports prepared by Capital Research and NERA, advocating the DGM and the regime switching model, respectively. In addition to DGM and regime switching model, the AER also considered other methods (namely, the SFG method and the VAA implied volatility glide path approach) because they are other forms of forward measure, and have been previously proposed by the businesses. It notes those other forward measures currently do not support an MRP above 6 per cent.

In this appendix, the AER considers:

- further analysis on the use of arithmetic and geometric averages to estimate historical excess returns
- survey evidence:
  - an assessment of survey evidence against the criteria suggested by the Australian Competition Tribunal in the Envestra matter
  - an explanation of 'triangulation' and its use in refining survey evidence
- DGM estimates
- consultants' view
  - CEG's approaches
  - Capital Research's DGM estimates
  - NERA's regime switching model
  - the report by Professor McKenzie and Associate Professor PartingtonAssociate Professor Lally's advice
  - the SFG method (implied volatility, credit spread and dividend yield)
  - VAA's implied volatility glide path approach

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<sup>102</sup> 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.

<sup>103</sup> Lally, *Risk free rate and present value*, August 2012, p. 3

<sup>104</sup> Envestra, *Albury access arrangement information*, March 2012, pp. 143-144; Envestra, *Victoria access arrangement information*, March 2012, pp. 156-157.



- further analysis of NERA's regime switching model
- further analysis of the SFG method (implied volatility, credit spreads, dividend yields)
- further analysis on the VAA implied volatility glide path approach
- market commentary
- reasons for the AER's departure from the WACC review

After considering all available approaches to estimate the MRP, the AER applied its judgement and considered an MRP of 6 per cent is the best estimate in the circumstances and commensurate with prevailing conditions in the market for funds.

## B.2.1 Arithmetic and geometric averages of historical excess returns

Historical excess market returns are highly sensitive to the method of averaging returns over multiple periods. Handley, for example, found the historical excess market return (relative to bonds) for the period 1958-2011 was 3.5 per cent using a geometric average or 6.1 per cent using an arithmetic average.<sup>105</sup>

If returns vary over time, then a geometric average will always be less than an arithmetic average—the greater the volatility in returns is, the greater is the difference between an arithmetic average and a geometric average.<sup>106</sup> With the level of volatility present in historical stock market returns, a difference of around 200 basis points (2 per cent) is common. Box B.1 uses a simple numeric example to explain the difference between an arithmetic average and a geometric average.

Box B1.1                      The difference between arithmetic averages and geometric averages

Arithmetic averages are more appropriate when observations are considered independent in a statistical sense. In contrast, geometric averages are more appropriate when observations are related to each other over time—for example, if yearly excess returns are the relevant observations, then returns can be expected to accumulate over time. As long as returns vary over time a geometric average will always be less than an arithmetic average. The greater the volatility in returns is, the greater is the difference between arithmetic and geometric averages.

The difference between arithmetic and geometric averages becomes apparent through a simple example. Suppose an index starts at 100, falls to 80 (a loss of 20 per cent) by the end of year 1 and then increases again to 100 (a gain of 25 per cent) by the end of year 2.

The arithmetic average return simply takes the average of the rates of return over the life of the investment. In this example, the arithmetic average rate of return = (rate of return in year 1 + rate of return in year 2) / total years of investment = (-20% + 25%) / 2 = 2.5%.

<sup>105</sup> J. Handley, *An estimate of the historical equity risk premium for the period 1883 to 2011*, April 2012, p. 6. Estimates are based on an assumed value of imputation credits of 0.35.

<sup>106</sup> For example, if an index starts at 100, falls to 80 and then increases again to 100, the arithmetic average return is 2.5 per cent (the average of the initial 20 per cent fall and subsequent 25 per cent rise) and the geometric average return is zero (because the value of the index at the end of the second period is the same as at the beginning of the first period).

On the other hand, a geometric average rate of return measures the change between the initial value and final value of the investment over the life of the investment. In this example, the geometric average rate of return =  $(\text{final value of the investment} / \text{initial investment})^{(1 / \text{total years of investment})} - 1 = (100 / 100)^{(1/2)} - 1 = 0\%$ .

If 0 per cent annual return is applied to the index for two years, then the index is at 100 by the end of year 2. This zero return is consistent with the outcome that the index has not changed after two years. By contrast over a two year investment horizon, the arithmetic average would overstate the return because the index value has not changed after two years.

However, if the investment horizon is one year, then the arithmetic return would be the correct estimate. To form an expectation about one year in the future based on historical evidence one would look at what is possible over a one year horizon. In this example, we assume either a loss of 20 per cent or a gain of 25 per cent. Assuming these outcomes are of equal possibility, the expected return would be 2.5 per cent. In this case, the geometric average would be an underestimate of the expected forward looking return.

Since the WACC review, the AER has developed a deeper understanding of the averaging of historical excess returns over multiple periods. It considered the arithmetic average of one year historical excess returns overstates the arithmetic average of 10 year historical excess returns. It held this position in the Envestra South Australia decision (and subsequent decisions),<sup>107</sup> so had regard to both arithmetic and geometric averages in considering the appropriate value for the MRP in this decision.

In July 2011, Envestra sought review by the Australian Competition Tribunal of the AER's reliance on geometric averages, among other matters.<sup>108</sup> In that matter, the AER considered the following:

- The arithmetic average of 10 year historical excess returns would likely be an unbiased estimator of a forward looking 10 year return (the appropriate benchmark).
- However, historical excess returns are conventionally estimated as the arithmetic or geometric average of one year returns. The historical excess return evidence available to the AER was based on this one year returns. Accordingly, the AER interpreted the (one year return) data based on the strengths and weaknesses of how closely the data reflected the relevant benchmark (being a 10 year rate, expressed in annual terms).
- Mathematically, if the one year historical excess returns are variable, then the arithmetic average of one year historical excess returns overstates the arithmetic average of 10 year historical excess returns. This overstatement occurs because the process of averaging one year returns does not account for the cumulative effect of returns over a 10 year horizon.

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<sup>107</sup> See: AER, *Final decision: Envestra Ltd access arrangement proposal for the SA gas network 2011–2016*, June 2011 p. 191 (AER, *Final decision: Envestra access arrangement SA*, June 2011); AER, *Final decision: Envestra Ltd access arrangement proposal for the Qld gas network 2011–2016*, June 2011, p. 179 (AER, *Final decision: Envestra access arrangement Qld*, June 2011); AER, *Final distribution determination, Aurora Energy Pty Ltd 2012–13 to 2016–17*, April 2012, p. 145 (AER, *Final decision: Aurora distribution determination*, April 2012); AER, *Final decision: APTPL access arrangement*, August 2012, p. 69.

<sup>108</sup> See Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012 and Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 4*, 11 January 2012.

- Also mathematically, if the one year historical excess returns are variable, then the geometric average of one year historical excess returns understates the arithmetic average of 10 year historical excess returns.
- The AER concluded the arithmetic average of the data it considered was an overestimate of the relevant benchmark and the best estimate of historical excess returns over a 10 year period was likely to be somewhere between the geometric and arithmetic averages of annual excess returns.<sup>109</sup>

The Tribunal stated it did not have to decide this matter, but made some comments. It appeared to agree with the AER when noting:

It may be accepted that an arithmetic mean of historical excess returns is an unbiased estimate of expected future one year returns. It is not, however, an unbiased estimate of expected future returns over longer time horizons. A geometric mean of historical annual returns does not provide an unbiased estimate of expected returns over longer time horizons, either.<sup>110</sup>

The AER considered a report prepared by SFG in the Roma to Brisbane Pipeline process. In that report, SFG submitted it was wrong to place any reliance on geometric averages and to the extent that reliance is (incorrectly) placed on geometric averages, the resulting MRP estimate is downwards biased. SFG presented a Harvard Business School case note in support of this position.<sup>111</sup>

The AER sought advice from McKenzie and Partington on the SFG report and Harvard Business School case note. In their February 2012 supplementary MRP report, McKenzie and Partington explained the Harvard case study 'assumes away the source of bias in arithmetic averages'.<sup>112</sup> The AER does not consider it is appropriate to assume no uncertainty about the mean of the distribution when analysing historical excess returns. Accordingly, it did not find SFG's evidence persuasive.

SFG also submitted the MRP in the CAPM is an expected return, so the arithmetic average (not the geometric average) 'must' be used.<sup>113</sup> The Tribunal previously dismissed this argument when Envestra presented it:

Envestra's submission that, because the CAPM model uses expected returns, only the arithmetic mean may be used cannot be accepted once it is understood that the arithmetic mean of annual historic returns is not an unbiased estimate of expected ten-year returns.<sup>114</sup>

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<sup>109</sup> Corrs Chambers Westgarth, *Appendix B—market risk premium, the Australian Energy Regulator's submissions*, 11 November 2011, pp. 17–18.

<sup>110</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 157.

<sup>111</sup> SFG, *Market risk premium, Report for APT Petroleum Pipelines Ltd*, 11 October 2011, p. 16 (SFG, *MRP for APTPPL*, October 2011).

<sup>112</sup> In the Harvard case study, it assumes the probability of distribution is known. Since there is no uncertainty about the arithmetic mean of the return, the probability of measuring the MRP as discussed in the MRP section largely goes away. See further discussion at: M. McKenzie and G. Partington, *Report to the AER, Supplementary report on the equity market risk premium*, 22 February 2012, pp. 5–6 (McKenzie and Partington, *Supplementary report on the MRP*, February 2012).

<sup>113</sup> SFG, *MRP for APTPPL*, October 2011, p.1 8.

<sup>114</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 157.

McKenzie and Partington supported the AER's view. After a review of literature on arithmetic and geometric averages, they concluded:

The evidence solidly supports the AER's position that over the ten year regulatory period the unbiased MRP lies somewhere between the arithmetic average and the geometric average of annual returns.<sup>115</sup>

The AER also considered a recent NERA report, which argued against using geometric averages<sup>116</sup>. NERA argued the WACC is used to determine regulated revenue using the building block equation; this equation deals with one year returns. Similarly, the AER noted the new advice from Lally that no compounding effect occurs in regulatory situations. Without a compounding effect, the arithmetic mean is preferable to geometric mean if annual returns are independent and drawn from the same distribution.<sup>117</sup>

The AER noted the building block model is a tool to achieve an outcome whereby the present value of expected revenue equals the present value of expected expenditure over the life of the regulated assets. From this perspective, the AER considers an appropriate discount rate requires the evaluation of an expected multi-period cost of equity.<sup>118</sup> Further as shown in attachment 4, the arithmetic averages of historical excess returns range from 4.9 to 6.1 per cent. Accordingly, even if the AER were to only rely on the arithmetic average, this would not change its position on the appropriate MRP value.

Further, in the Envestra matter, the Tribunal also queried whether there is a method to produce an unbiased estimate. It stated it could not form a conclusion on that issue based on the material before it.

The AER sought McKenzie and Partington's advice on whether such a method is available. They analysed alternative proposals in the literature and concluded in their February 2012 MRP report that no single best estimator is indisputably best for long run excess returns. Given current knowledge, McKenzie and Partington recommended the use of both arithmetic averages and geometric averages, tempered by an understanding of their inherent biases.<sup>119</sup> The advice of McKenzie and Partington supported the AER continuance with its current approach.

The AER notes the consultants have different views, which need assessing to determine a reasonable approach. In view of the conflicting evidence, the AER considers it should review both arithmetic and geometric averages when considering the historical estimates of the MRP. It is aware of potential deficiencies with both averages, so does not exclusively rely on one or the other. In attachment 4.3.3, the AER had regard to both arithmetic and geometric averages of historical excess returns tempered by an understanding of the biases associated with these averages.

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<sup>115</sup> McKenzie, and Partington, *Supplementary report on the MRP*, February 2012, pp. 5–7.

<sup>116</sup> NERA Economic Consulting, *The market risk premium: A report for CitiPower, Jemena, Powercor, SP AusNet and United Energy*, February 2012 (NERA, *MRP for the Vic electricity DNSPs*, February 2012).

<sup>117</sup> M. Lally, *The cost of equity and the market risk premium*, 25 July 2012, pp. 31–32 (Lally, *Cost of equity and the MRP*, July 2012).

<sup>118</sup> The AER's consideration was discussed in detail in AER, *Draft decision, APT Petroleum Pipeline Pty Limited access arrangement proposal for the Roma to Brisbane Pipeline 12 April 2012 – 30 June 2017*, April 2012, pp. 295–296.

<sup>119</sup> McKenzie, and Partington, *Supplementary report on the MRP*, February 2012, pp. 7–9.

## B.2.2 Survey evidence

### Addressing the Tribunal's comments on the use of survey evidence

The AER considers survey results are relevant as they reflect the forward looking MRP applied in practice. The Tribunal reviewed the final decision for Envestra, which included the issue regarding the use of survey evidence to inform the value of MRP.<sup>120</sup> The Tribunal stated while it did not have to decide this matter, it made a few comments:

Surveys must be treated with great caution when being used in this context. Consideration must be given at least to the types of questions asked, the wording of those questions, the sample of respondents, the number of respondents, the number of non-respondents and the timing of the survey. Problems in any of these can lead to the survey results being largely valueless or potentially inaccurate.

When presented with survey evidence that contains a high number of non-respondents as well as a small number of respondents in the desired categories of expertise, it is dangerous for the AER to place any determinative weight on the results.

In its February 2012 report, NERA raised similar questions about the use of survey evidence. About the surveys that the AER cited, NERA stated:

- the surveys typically do not explain how those surveyed were chosen
- a majority of those surveyed did not respond
- it is unclear what incentives were provided to ensure respondents would provide accurate responses
- whether respondents supplied MRP estimates that use continuously compounded or not continuously compounded returns is unclear
- the risk-free rate that respondents use is unclear
- the relevance of some of the surveys is unclear given changes in market conditions since the surveys were conducted.<sup>121</sup>

In light of the Tribunal's comments, the AER engaged McKenzie and Partington to review the Tribunal's criteria on survey evidence. The following sections discuss the main findings of McKenzie and Partington and the AER's own review. These findings apply to much of the concerns raised by NERA.

#### Timing of the survey

The AER considers the timing of the surveys is reasonably clear: Across the surveys, it ranged from 2000 to February 2011. Comparison of survey results over different time periods can provide information on how market practitioners' perception of the MRP change over time. By considering survey results for the past 10 years, the AER notes market participants have not changed their view on the MRP. This consistency in survey responses over time suggests the AER can reasonably rely on the earlier surveys.

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<sup>120</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 3*, 11 January 2012, paragraphs 165–166.

<sup>121</sup> NERA, *MRP for the Vic electricity DNSPs*, February 2012, p. 31.

## Sample of respondents

Financial managers, expert valuers, actuaries and finance academics were the target respondents of surveys. These professionals apply the MRP, so the AER considers the surveys' target populations can make informed judgments about the MRP. McKenzie and Partington supported this view in their February 2012 MRP report.<sup>122</sup> In their August 2012 report, McKenzie and Partington further noted many surveys clearly described the selection of the sample surveyed. These academic papers would be published only with a clear explanation of how the sample was chosen.<sup>123</sup>

## Wording of survey questionnaires

The quality of questionnaire wording is important for reducing bias and promoting the accuracy of survey results. The AER agrees with McKenzie and Partington that the adequacy of survey wording can be subjective to judge and often relies on the quality of the authors.<sup>124</sup>

It also agrees that confidence can be enhanced when the work is published in a refereed academic journal, or when the survey is repeated. In the former case, the work has to be peer reviewed. In the latter case, a stable set of questions allows comparison of responses over time. With repeated surveys, the observed changes over time are less susceptible to issues with the wording. Further, any significant problems with wording and respondents' interpretation of questions may be detected and corrected over time.<sup>125</sup> In terms of the surveys cited here, most were published in refereed journals and/or repeated over time.<sup>126</sup> The AER is thus reasonably satisfied with the adequacy of the wording in the survey questionnaires.

## Adjustment for imputation credits

The AER noted some surveys implicitly acknowledged imputation credits:

- Truong, Partington and Peat (2008) found 15 per cent of responses adjusted for the value of imputation credits. Of the remaining 85 per cent of responses, the main reasons given for not adjusting for imputation credits were:
  - it was too difficult
  - it would have a very small impact
  - it was unnecessary because the market already adjusts stock prices for the value of imputation credits, which are thus already reflected in the cost of capital estimate.

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<sup>122</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 17.

<sup>123</sup> M. McKenzie, and G. Partington, Report to the AER: Review of regime switching framework and critique of survey evidence, 7 September 2012, p. 27 (McKenzie and Partington, *MRP: regime switching framework and survey evidence*, September 2012, p.27)

<sup>124</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 17–18.

<sup>125</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 17–18.

<sup>126</sup> Truong, Partington and Peat (2008) and Asher (2011) were published in academic journals. Fernandez surveys are repeated over time. KPMG (2005), Capital Research (2006) and Bishop (2009) are neither of these.

- In Asher (2001) survey, 27 of 49 respondents indicated they adjusted their MRP estimates for imputation credits.

The AER also notes other surveys suggested respondents do not typically allow for imputation credits. Even for the surveys that discussed imputation credits, the extent of adjustments made to the MRP estimate was unclear. McKenzie and Partington acknowledged this uncertainty and noted any adjustment for imputation would likely be within the margin of measurement error. They thus recommended the AER take the survey evidence at face value, but tempered by the uncertainty of whether an imputation credit adjustment is needed.<sup>127</sup> The AER accounted for this uncertainty when interpreting survey evidence.

### **Survey response rate and non-response bias**

The AER considers a sufficient level of response rate is important for survey evidence. But what constitutes a sufficiently large sample is subjective. McKenzie and Partington suggested a sample size of more than 30 is sufficiently large statistically so a representative sample of 30 respondents is expected to be adequate.<sup>128</sup> Most surveys considered in this decision received around 30 responses.

The AER recognises low response rates are a common problem with the survey evidence. However, while the number of responses in a survey is important, the main concern is whether respondents are representative of the target population. That is, for some reason, non respondents may systematically favour a different MRP from that of the respondents of the survey. McKenzie and Partington supported this view.<sup>129</sup>

A direct assessment of representativeness is difficult because the responses of the non-respondents are unknown. McKenzie and Partington noted Graham and Harvey (2010) concluded the response rate is not a significant concern for representativeness, for the following reasons:

- The response rate was within the range documented in many other survey studies.
- Graham and Harvey (2001) conducted a standard test for non-response biases and found no evidence of bias.
- Brav, Graham, Harvey and Michaely (2005) conducted a captured sample survey at a national conference in addition to an Internet survey. The captured survey responses (to which over two-thirds participated) were qualitatively identical to those for the Internet survey (to which 8 per cent responded)
- Brav, Graham, Harvey and Michaely (2005) contrasted survey responses to archival data from Compustat and found archival evidence was consistent with the responses from the survey sample.
- Campello, Graham, and Harvey(2010) showed the December 2008 response sample was fairly representative of the firms included in the commonly used Compustat database.

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<sup>127</sup> McKenzie and Partington, *MRP: regime switching framework and survey evidence*, September 2012, p. 28.

<sup>128</sup> McKenzie and Partington, *Supplementary report on the MRP, February 2012*, pp. 17–18.

<sup>129</sup> McKenzie and Partington, *Supplementary report on the MRP, February 2012*, pp. 18–19.

The AER recognises the surveys considered in this decision do not specifically address the non-response bias. However, Graham and Harvey's findings are likely to apply to the other survey evidence, so the AER is reasonably satisfied low response rates or a potential non response bias is not reason to exclude the survey evidence from consideration.

## Triangulation

McKenzie and Partington placed weight on the survey evidence because triangulation across surveys enhanced their confidence in the results. The idea behind triangulation is that a specific survey may be subject to a type of bias, even if that bias is not evident. However, this problem would be much less likely to be consistent across surveys with diverse methods and different target populations.

McKenzie and Partington illustrated triangulation in survey evidence considered by the AER. They found the Australian surveys conducted using different methods and different target populations at different times supported a MRP estimate of 6 per cent:

...consider an illustration of triangulation in action. The KPMG survey looks at the market risk premiums used in expert reports. This might be criticised on the basis that the same expert might have produced many reports and thus that one expert's views are overweighted. If that expert's view is divergent from other experts, then the result will be a biased estimate of the MRP for the expert sample. The effect is analogous to non-response bias in a traditional questionnaire survey. Bishop (2009) addresses this problem by surveying experts' reports and collecting the MRP by expert, so each expert's opinion is equally weighted. Bishop also uses a different, although probably overlapping, sample of reports to KPMG. Both studies give a MRP of 6%, thus confidence is enhanced that the MRP used by experts is 6%.<sup>130</sup>

The triangulation of survey results is a relevant consideration. By examining a wide range of survey evidence, which uses different methods and targets different respondents, it improves the reliability of survey results.

## Conclusion on survey evidence

Survey evidence reflects the forward looking MRP when applied in practice. It is subject to limitations, such as the uncertainty on imputation credit adjustment. However, based on its own review and the advice from McKenzie and Partington, the AER considers survey based estimates of the MRP are relevant to inform the forward looking MRP. In this decision, it considered a range of survey evidence conducted in different time periods and targeted at different respondents. The evidence supported a forward looking MRP of 6 per cent as the best estimate in the current circumstances.

### B.2.3 DGM estimates

DGM analysis can provide information on the expected MRP. It examines the forecast future distributions of businesses and derives the cost of equity that makes these distributions consistent with the market valuation of the equity of those businesses. However, the AER considers the DGM based estimates of the return on equity and inferred estimates of the MRP are highly sensitive to the assumptions made. If all assumptions are not sound,

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<sup>130</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 20.



estimated results from DGM analysis may be inaccurate.<sup>131</sup> McKenzie and Partington supported this view in their December 2011 MRP report:

Clearly valuation model estimates are sensitive to the assumed growth rate and a major challenge with valuation models is determining the long run expected growth rate. There is no consensus on this rate and all sorts of assumptions are used: the growth rate in GDP; the inflation rate; the interest rate; and so on. A potential error in forming long run growth estimates is to forget that this growth in part comes about because of injections of new equity capital by shareholders. Without allowing for this injection of capital, growth rates will be overstated and in the Gordon model this leads to an overestimate of the MRP.<sup>132</sup>

In the WACC review and its recent decisions, the AER considered the following:

- The implied MRP produced by DGM estimates is sensitive to both the model specification and the exact point in time of estimation.
- 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.<sup>133</sup>
- Regulators had previously been wary to lower the MRP when DGM estimates were below 6 per cent.<sup>134</sup> 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 (ENA) considered DGM estimates should be used as a 'cross check' on the reasonableness of other methods to estimate the MRP, rather than as the primary method.<sup>135</sup>
- Although DGM is extensively used by the US economic regulators in estimating the return on equity<sup>136</sup>, it is not well accepted for use in the Australian context.<sup>137</sup>

The AER considered submissions advocating DGM inferred MRP estimates. CEG, Capital Research, NERA and Lally all recommended the DGM for estimating a forwarding looking MRP. The DGM estimates derived by CEG, Capital Research and NERA supported an MRP estimate above 6 per cent. But, while DGM based analysis can provide information on the expected MRP, the AER considers the limitations discussed below limit the emphasis that should be attached to that analysis.

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<sup>131</sup> Corporate finance texts have noted '[t]he simple constant-growth DCF [discounted cash flows] formula is an extremely useful rule of thumb' but '[n]aive trust in the formula has led many financial analysts to silly conclusions'. R. Brealey, S. Myers and F. Allen, *Principles of Corporate Finance*, McGraw-Hill Boston: 9th International Edition, 2008, p. 95.

<sup>132</sup> M. McKenzie and G. Partington, *Report to Corrs Chambers Westgarth: Equity market risk premium*, 21 December 2011, p. 25 (McKenzie and Partington, *Equity market risk premium*, December 2011).

<sup>133</sup> Lally, *Cost of equity and the MRP*, July 2012, pp. 11–18.

<sup>134</sup> AER, *Final decision: WACC review*, May 2009, p. 220.

<sup>135</sup> AER, *Final decision: WACC review*, May 2009, pp. 218–219.

<sup>136</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 38.

<sup>137</sup> The AER understands that the US might have better quality data for DGM analysis.

## DGM estimates and its assumptions

BHP, McKenzie and Partington, and Lally supported the view that DGM estimates are highly sensitive to the assumptions made.<sup>138</sup> Further, different consultants produce widely different DGM based MRP estimates over a short period. Table B.2 illustrates the consultants' current estimates, which range from 6.18 per cent to 9.56 per cent.

**Table B.2 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%

Sources: CEG, Capital Research, NERA.

In the February 2012 report, Capital Research estimated an implied MRP range of 6.6 to 7.5 per cent. In estimating this range, it assumed a compound average growth rate of 7 per cent based on analysts' forecast, and a theta value of between 0 and 0.5.<sup>139</sup> Capital Research's analysis demonstrated the sensitivity of the DGM analysis to its assumptions. Capital Research illustrated an increase of 0.5 in the theta assumption translates to a 0.8 to 1.2 per cent increase in the implied MRP.<sup>140</sup> Further, in the March 2012 report, Capital Research updated this estimate to 9.6 per cent (an increase of more than 2 per cent) with a more recent risk free rate and a net theta value of 0.2625.<sup>141</sup>

NERA's DGM estimates also illustrated this problem. NERA estimated an MRP of 5.06 per cent in February 2011 based on the DGM analysis. Using the same dividend yield and growth assumptions, the MRP estimate was at 8.01 per cent in December 2011—a difference of

<sup>138</sup> BHP Billiton, *Submission to the AER: APA GasNet access arrangement proposal*, 29 June 2012, pp. 13–14; McKenzie and Partington, *Equity market risk premium*, December 2011, pp. 23–27; Lally, *Cost of equity and the MRP*, July 2012, pp. 15–18.

<sup>139</sup> Capital Research, *Forward estimate of the market risk premium: Update: A response to the draft distribution determination by the AER for Aurora Energy Pty Ltd*, February 2012, pp. 19–23 (Capital Research, *MRP estimate for the Aurora determination*, February 2012).

<sup>140</sup> Capital Research, *MRP estimate for the Aurora determination*, February 2012, table 2, p.21.

<sup>141</sup> Capital Research, *Forward estimate of the market risk premium: Update: A report prepared for the Victorian gas transmission and distribution businesses: APA Group, Envestra, Multinet Gas and SP AusNet*, March 2012, p. 33 (Capital Research, *MRP estimate for the Vic NSPs*, March 2012).

295 basis points.<sup>142</sup> This difference was a result of the lower risk free rate. Table B.3 illustrates the sensitivity of NERA's DGM analysis to different risk free rates.

**Table B.3 NERA MRP estimates with different risk free rates**

Risk free rate	Dividend yield	Dividend per share growth	MRP estimate
5.47%	Bloomberg consensus forecasts	5.65%	5.06%
3.99%	Bloomberg consensus forecasts	5.65%	7.69%
3.67%	Bloomberg consensus forecasts	5.65%	8.01%

Source: NERA, *Prevailing conditions and the market risk premium*, March 2012, pp. 39 and 50.

Similarly, tables 1.4-1.6 below illustrate how sensitive CEG's DGM based estimate is to different assumptions. The MRP estimates move 'one-for-one' with the changes in assumptions.

**Table B.4 MRP estimates with different growth assumptions**

DPS growth	Div yield	RFR	MRP estimate
6.60%	5.68%	3.77%	8.52%
6.00%	5.68%	3.77%	7.91%
3.50%	5.68%	3.77%	5.41%
0.00%	5.68%	3.77%	1.91%

Source: AER analysis

**Table B.5 MRP estimates with different dividend yield assumptions**

DPS growth	Div yield	RFR	MRP estimate
6.60%	5.68%	3.77%	8.52%
6.60%	5.00%	3.77%	7.83%
6.60%	3.00%	3.77%	5.83%
6.60%	1.00%	3.77%	3.83%

Source: AER analysis

**Table B.6 MRP estimates with different prevailing risk free rates**

DPS growth	Div yield	RFR	MRP estimate
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<sup>142</sup> NERA, *Prevailing conditions and the market risk premium: A report for APA Group, Envestra, Multinet and SP AusNet*, March 2012, pp. 49–50 (NERA, *Prevailing conditions and the MRP*, March 2012).

6.60%	5.68%	3.77%	8.52%
6.60%	5.68%	3.00%	9.28%
6.60%	5.68%	5.00%	7.28%
6.60%	5.68%	6.00%	6.28%

Source: AER analysis

## Bias in DGM estimates

Lally noted other problems with the DGM analysis:

- At a given time, the estimated cost of equity for the market is assumed to be the same for all future years. This 'perfect offsetting' hypothesis is implausible.
- The method assumes the current value of the market matches the present value of future dividends. If the current value of the market is below the present value of future dividends, then the resulting estimate of the market risk premium will be too high.
- Short term fluctuations in the market's earnings retention rate have a significant impact on the estimates. The DGM method does not account for these changes.<sup>143</sup>

In addition to the above limitations, Lally identified two further problems with the 8.5 per cent MRP estimate derived by CEG:

- By using the historical dividend yield, CEG ignores the (1+g) term in deriving the market cost of equity.
- It is inappropriate for CEG to set the dividend growth to the long term GDP growth. By making such an assumption, the expected long term growth rate in all dividends from all companies would exceed that for gross domestic product. This outcome is logically impossible.<sup>144</sup>

Lally considered the net effect of these two problems is to overestimate the MRP by about 1 per cent. This overestimation is additional to the limitations discussed above.<sup>145</sup>

The AER also considered a report by Capital Research in 2005, which derived negative MRP estimates from DGM analysis for the period 1980–2004. Capital Research suggested a negative result is 'nonsense' and noted:

...We must be careful not to ask too much of this model. Recall that it is based on a constant growth assumption. Any model which makes such highly stylised and constant assumptions about the world is going to struggle to be relevant in a world undergoing dramatic changes. The result of the model suggesting negative risk premia is an outcome of a too precious model rather than the investment world being irrational.<sup>146</sup>

<sup>143</sup> Lally, *Cost of equity and the MRP*, July 2012, pp. 15–18.

<sup>144</sup> Lally, *Cost of equity and the MRP*, July 2012, pp. 18–20.

<sup>145</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 20.

<sup>146</sup> Capital Research, *Australian market risk premium*, January 2005, pp. 31–32.

Similarly, the AER notes the CEG AMP method was producing MRP estimates at or below zero per cent back in 1994. The AER does not consider a zero or a negative MRP is realistic at any particular point in time. Lally supported this view:

...this assumption underlying Figure 8 can be tested by observing that the model gives rise to an estimated market risk premium of zero in 1994; this outcome is not plausible and therefore suggests that the underlying assumption is not plausible.<sup>147</sup>

The AER notes DGM analysis is producing high positive MRP estimates. However, it is not aware of evidence suggesting the estimates derived from DGM analysis are more reliable now than in 1994. Further, no new information has come to light that causes the AER to rely more on DGM estimates.

## B.2.4 Consultants' views

The AER considered views from different consultants on the best estimate of the MRP. These views included:

- views submitted by Envestra in support of its proposal—that is, the CEG approaches, Capital Research DGM estimates, and NERA regime switching model
- advice received by the AER—that is, the McKenzie and Partington report and Lally's advice
- approaches proposed by other regulated businesses in recent regulatory processes—that is, the VAA implied volatility glide path approach and the SFG method.

Different consultants have widely different views. After carefully assessing these views, the AER places limited emphasis on DGM, the regime switching model, implied volatility glide path approach and other financial market indicators in estimating the value of the 10 year forward looking MRP. Its reasons are set out below.

### CEG's approaches

CEG proposed three alternative approaches to estimate the cost of equity:

- use DGM to directly estimate the cost of equity for comparable firms
- use DGM to estimate the cost of equity for the market portfolio and derive a DGM estimate for the MRP
- estimate a normal level for cost of equity for the reference service and make adjustments based on the current market evidence.<sup>148</sup>

The DGM estimates proposed by CEG are subject to the same limitations as discussed in the previous section. Lally further noted the CEG approaches are subject to problems, including errors in the AMP method, exposure to fluctuations in the earnings payout rate and ambiguity

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<sup>147</sup> Lally, *Cost of equity and MRP*, July 2012, p. 22.

<sup>148</sup> CEG, *Risk free rate and MRP in the CAPM*, March 2012, p. 49.

over the appropriate averaging period.<sup>149</sup> The AER considers these problems are relevant, so places limited emphasis on the CEG approaches.

### Capital Research's DGM estimates

Capital Research advocated using DGM to directly estimate the forward MRP. It suggested the best forward looking MRP is 9.6 per cent, assuming a risk free rate of 3.73 per cent and a net theta of 0.2625.<sup>150</sup>

Capital Research's DGM estimate is subject to the same limitation as discussed in the DGM section. In addition, the DGM assumes growth at a constant rate in perpetuity. Capital Research use analysts' forecast dividend growth as a proxy.<sup>151</sup> Analysts' forecast is often based on short to medium terms. The AER considers using analysts' forecast growth rate in the DGM analysis is likely to result in an upward bias in the MRP. McKenzie and Partington supported this view:

Since analysts only cover a subset of firms, whether we get a representative estimate for the market is an open question. Another problem is that analyst's forecasts are known to be biased (generally upwards) and subject to gaming (see Scherbina, 2004, and Easton and Sommers, 2006).<sup>152</sup>

### NERA's regime switching model

NERA produced DGM estimates of 7.69 and 7.72 per cent based on Bloomberg and I/B/E/S forecasts. However, NERA proposed a regime switching model would provide the most suitable MRP in the prevailing market condition. This model is highly complex and involves:

- determining the appropriate assumptions of high and low volatility states
- estimating the current probability of being in the high volatility state
- using a Markov chain to roll over this probability
- calculating a short term MRP in relation to the three month bill return
- deriving a forward one year bill rate
- converting the short term MRP to a five year MRP.<sup>153</sup>

The AER is not aware of any regulators that used a regime switching model in deriving their MRP estimates. Further, this complex process could create errors in calculation.<sup>154</sup> In their August 2012 report, McKenzie and Partington found the NERA regime switching model is not

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<sup>149</sup> Lally, *Cost of equity and the MRP*, July 2012, pp. 11–23.

<sup>150</sup> Capital Research, *MRP estimate for the Vic NSPs*, March 2012, p. 33

<sup>151</sup> Capital Research, *MRP estimate for the Aurora determination*, February 2012, pp. 19–23.

<sup>152</sup> McKenzie and Partington, *Equity market risk premium*, December 2011, p. 26.

<sup>153</sup> NERA, *Prevailing conditions and the MRP*, March 2012, pp. 24–31.

<sup>154</sup> For example, NERA estimated the probability of the market remaining in the high volatility state was 0.935 per cent and the probability of it remaining in the low volatility state was 0.951 per cent. However, NERA estimated probability of the high volatility state for 2012–2016 based on the probability of it remaining in the low volatility state (0.951).

a good fit of the data and does not provide sensible volatility estimates. They also noted the SFG report that reviewed the NERA regime switching model did not provide insights to address this problem.<sup>155</sup> Section B.2.5 details the AER's considerations of the NERA regime switching model.

### **McKenzie and Partington report**

In their December 2011 MRP report, Professor McKenzie and Associate Professor Partington considered four areas of evidence: historical excess returns, survey evidence, DGM analysis and other methods (including using international data, credit spreads and implied volatilities). They advised placing weight on historical excess returns and survey evidence; DGM and other methods can be used only as reasonableness checks and need to be interpreted with caution. McKenzie and Partington concluded there is little persuasive evidence for deviating from the long standing regulatory consensus of a market risk premium estimate of 6 per cent. If anything, the risk with this estimate is that it may prove to be an overstatement.<sup>156</sup> McKenzie and Partington remained of this view in their February 2012 and August 2012 report, after having reviewed further materials submitted by businesses.<sup>157</sup> The AER accepts McKenzie and Partington's advice and considers their approach supports an MRP estimate of 6 per cent.

### **Lally's advice**

Associate Professor Lally reviewed the AER's current approach and three approaches suggested by CEG. Lally found a number of problems with the CEG DGM approach and concluded DGM should be considered as a complement to rather than a substitute for the AER's current approach.<sup>158</sup>

The AER considers that Lally broadly supported the methodology to estimating the MRP adopted by the AER. In addition to the historical excess returns and survey evidence, Lally advised weight should also be placed on other methodologies including the Siegal approach, the DGM analysis and results from international markets.<sup>159</sup>

### **SFG's method**

SFG proposed the three financial market indicators (implied volatility, credit spread and dividend yield) for estimating a 10 year forward looking MRP:

- Implied volatility relies on contentious assumptions to derive an MRP estimate.<sup>160</sup> In particular, the assumption that the price of risk per unit of implied volatility is constant is

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<sup>155</sup> McKenzie and Partington, *MRP: Regime switching framework and survey evidence*, September 2012, pp. 21–22.

<sup>156</sup> McKenzie and Partington, *Equity market risk premium*, December 2011, pp. 36–37.

<sup>157</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 5.

<sup>158</sup> McKenzie and Partington, *MRP: Regime switching framework and survey evidence*, September 2012, pp. 24–25.

<sup>159</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 3.

<sup>159</sup> Lally, *Cost of equity and the MRP*, July 2012, p. 34.

<sup>160</sup> Further, the appropriate measure of implied volatility is difficult to determine, with different measures (based on different underlying options) producing conflicting figures.

disputed on theoretical and empirical grounds.<sup>161</sup> As noted above, this method provides only a short term estimate of the MRP (usually three months, matching the term of the implied volatility measure), and the AER is unaware of any settled method to extrapolate to a longer term. Given the relevant MRP is the 10 year forward looking rate, the AER placed limited weight on the MRP estimate derived on this basis.

- Credit spread refers to the difference in yields between bonds with high (AAA rated) and low (BBB rated) credit ratings. Similarly, relative debt spreads will differ based on the method chosen to measure the bond yields. McKenzie and Partington noted this method has no well developed, reliable and precise way to separate out the effect of changes in the MRP from other effects.<sup>162</sup> Given this key limitation to the credit spread analysis, the AER placed limited weight on this method when determining the 10 year forward looking MRP.
- Dividend yield in this context this is calculated for the entire market, using forecast distributions (dividends) for all firms in a broad share market index divided by the total value of those shares. The dividend yield estimate will differ based on the choice of index, the method of obtaining and aggregating dividend forecasts, and the horizon of those dividend forecasts. The AER considers the key limitation is the unclear relationship (if any) between dividend yield and the 10 year forward looking MRP.

Section B.2.6 details the AER's assessment of the three financial market indicators.

### VAA's implied volatility approach

In its 2010 report, the VAA suggested an implied volatility glide path approach in estimating the MRP.<sup>163</sup> It derived the one year MRP estimate from the Black-Scholes option pricing formula for 12 month ASX200 index call options, then estimated a geometric average MRP over five years. The AER considers this approach is not a reliable method of estimating a forward looking 10 year MRP. It has the following concerns with this approach:

- The MRP estimate relies on an assumption that the market risk per unit of option implied volatility is constant at 0.5.
- Academic literature suggests option implied volatility is too highly variable to be used as a basis for estimating the forward looking 10 year MRP.
- Projecting MRP estimates on this short term basis can result in highly variable estimates being produced over different short periods of time.<sup>164</sup>

Section B.2.7 details the AER's consideration of implied volatility.

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<sup>161</sup> See discussions in AER, *Draft decision: Envestra Ltd: Access arrangement proposal for the SA gas network 2011–2016*, 17 February 2011, pp. 282–283 (AER, *Draft decision: Envestra access arrangement SA*, February 2011).

<sup>162</sup> McKenzie and Partington, *Equity market risk premium*, December 2011, pp. 30–31.

<sup>163</sup> VAA, *Market risk premium: Comments on the AER draft distribution determination for Victorian electricity distribution network service providers*, July 2010, p. 19 (VAA, *MRP for Vic electricity DNSPs*, July 2010).

<sup>164</sup> The Australian Competition Tribunal also recognised this view, in the DBNGP decision. See: Australian Competition Tribunal, *Application by DBNGP (WA) Transmission Pty Ltd (No 3) [2012] ACompT 14*, 26 July 2012, paragraphs 153–154.



## B.2.5 NERA's regime switching model

NERA estimated an MRP of 8.44 per cent from the regime switching model. NERA submitted this estimate provided the most suitable guide to the MRP prevailing in the market because it provided an estimate of the MRP in each future year.<sup>165</sup>

NERA's regime switching model was based on Hamilton (1989), in which the probability of being in each state is governed by a Markov chain (the probability of being in the high-volatility state next year will depend only on whether the process is currently in the high-volatility state). It calculated continuously compounded MRP estimates for each of the five future years using Brailsford, Handley and Maheswaran (2011) data and annualised 3 month bill rates. NERA then converted these continuously compounded MRP estimates into average not continuously compounded return of 8.44 per cent.<sup>166</sup> SFG peer reviewed NERA's regime switching model. SFG concluded NERA approach is appropriate for obtaining a prevailing MRP estimate in current circumstances.<sup>167</sup>

The AER engaged McKenzie and Partington to review this approach. They concluded the NERA regime switching model was not a good fit of the data and did not provide sensible volatility estimates. McKenzie and Partington fitted Handley (2012) data to a number of models. Although none of the switching models fit the data particularly well, relatively, the restricted switching model was the best fit. Further, McKenzie and Partington examined a simple GARCH model and found this model was more consistent with events in the equity markets than regime switching models. They advised the AER to reject NERA's approach on the grounds of misspecification of the functional form of the model.<sup>168</sup>

The AER notes McKenzie and Partington's view is relevant. It does not consider NERA's regime switching model can provide the best MRP estimate prevailing in the market when this model is misspecified. The AER also notes this model uses a Markov chain to govern the transition from one state to another. The stochastic nature of the states implies there is great uncertainty of the estimated current state. Tsay (2010) noted it is much harder to estimate a Markov switching model than other models because the states are not directly observable.<sup>169</sup> McKenzie and Partington illustrated this uncertainty with the Brailsford, Handley and Maheshwan (2012) data:

... Figure [9] also features two horizontal dashed lines that represent one and two standard deviations of this data. These standard deviation based reference points serve to highlight the arbitrary nature of the two regime approach NERA (2012) take to modelling volatility. One could just as easily argue that rather than two regimes (high and low), a three regime approach is more sensible with a low, average and high volatility regime classified using these standard deviation based reference points. In fact, an n-regime approach is possible, where n is > 1, with no compelling argument to be made

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<sup>165</sup> NERA, *Prevailing conditions and the MRP*, March 2012, p. 42.

<sup>166</sup> NERA, *Prevailing conditions and the MRP*, March 2012, pp. 24–31.

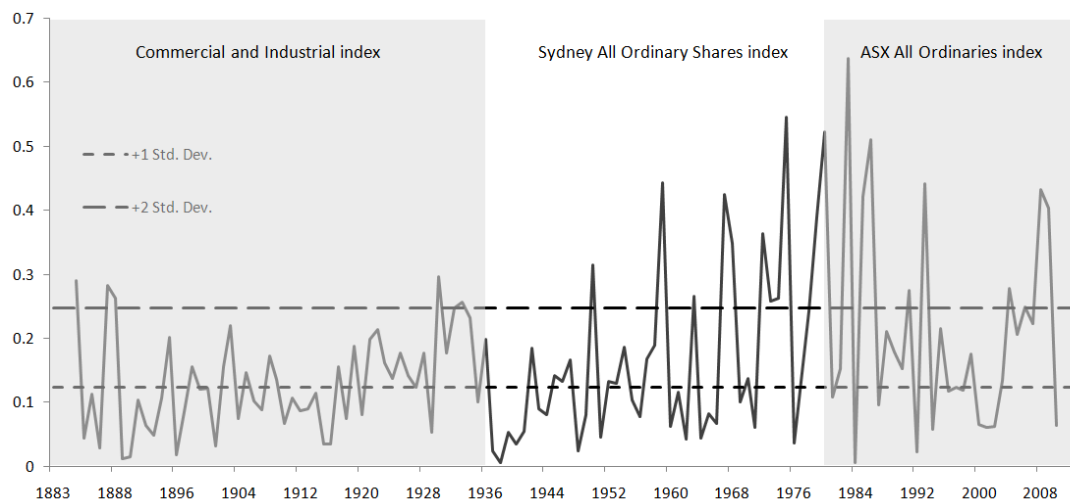
<sup>167</sup> SFG, *Review of NERA regime-switching framework: Report for APA Group, Envestra, Multinet Gas and SP AusNet*, 29 March 2012, p. 8 (SFG, *Review of NERA regime-switching framework*, March 2012).

<sup>168</sup> McKenzie and Partington, *MRP: Regime switching framework and survey evidence*, September 2012, pp. 5–25.

<sup>169</sup> R. Tsay, *Wiley series in probability and statistics: Analysis of financial time series*, Wiley: Third edition, 2010, p. 187.

for any one approach. The two regime model is certainly easier to estimate, however, ease of estimation is not a particularly valid justification for model choice.<sup>170</sup>

**Table B.7 Brailsford, Handley and Mahareswan (2012) data with different source indices highlighted**



Source: McKenzie and Partington, *Review of regime switching framework and critique of survey evidence*, 27 August 2012, Figure 9

## B.2.6 SFG financial market indicators

The AER considered the use of other financial market indicators put forward in recent SFG reports as relevant to the estimation of the prevailing MRP. SFG used three financial market indicators—implied volatility, dividend yields and relative debt spreads—as 'conditioning variables' to adjust the MRP estimate around its long run average.<sup>171</sup>

The SFG approach using financial market indicators was put forward:

- by Envestra in March 2011 as part of the South Australia and Queensland gas access arrangements<sup>172</sup>
- by APTPPL (a subsidiary of APA Group) in October 2011 as part of the Roma to Brisbane Pipeline gas access arrangement<sup>173</sup>
- by the Victorian electricity distribution network service providers (noting the overlap in ownership between these businesses and the Victorian gas networks) in a February 2012 submission on Aurora's regulatory determination<sup>174</sup>

<sup>170</sup> McKenzie and Partington, *MRP: Regime switching framework and survey evidence*, September 2012, p. 20.

<sup>171</sup> SFG, *Market risk premium: An updated assessment and the derivation of conditional and unconditional estimates: Report for the Victorian electricity distribution businesses*, 20 February 2012, pp. 8–13, 26–30 (SFG, *Conditional and unconditional MRP for the Vic DNSPs*, February 2012).

<sup>172</sup> SFG, *Issues affecting the estimation of MRP: Report for Envestra*, 21 March 2011.

<sup>173</sup> SFG, *MRP for APTPPL*, October 2011.

<sup>174</sup> SFG, *Conditional and unconditional MRP for the Vic DNSPs*, February 2012.

This technique was not proposed by Envestra in this review. The Victorian gas networks (including Envestra) did jointly commission two reports from SFG on the estimation of the MRP,<sup>175</sup> but neither report included this technique.

Before assessing the combined SFG approach, the AER considers below each of the three financial market indicators put forward by SFG as relevant to the estimation of the MRP.

### Implied volatility

Implied volatility is calculated from observing the price of put or call options over a broad share market index, such as the S&P/ASX 200. Applying a mathematical formula allows the calculation of the level of market volatility expected by market participants over the life of the underlying options.<sup>176</sup> Hence, the term of the implied volatility will accord with the option term—usually three months, but ranging between one year and one month.<sup>177</sup> The underlying principle is that higher implied volatility is indicative of higher risk and consequently a higher MRP.

The AER considered the use of implied volatility to inform the forward looking MRP in the WACC review and its previous decisions.<sup>178</sup> The AER considers it cannot be used directly to estimate the MRP for the following reasons:

- Term mismatch—the implied volatility measures are short term and there is no reasonable method to extrapolate to a longer term, but the relevant MRP term is 10 years.<sup>179</sup>
- Measurement problems—different implied volatility measures produce different (and sometimes conflicting) results. Further, there is evidence that these measures are systematically biased (upwards).<sup>180</sup>
- Contentious assumptions—observing the amount of risk (via implied volatility) does not equate to the price of that risk (which is what is relevant to the MRP). This gap is most commonly breached by assuming a constant ratio (for example, if the current implied volatility is double the long run average, then the MRP will also be double its long run average. This assumption is disputed on theoretical and empirical grounds.<sup>181</sup>

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<sup>175</sup> SFG, *Review of NERA regime-switching framework*, March 2012; and SFG, *Market risk premium: Response to selected issues arising out of the AER final decision for Envestra (South Australia): Report for APA Group, Envestra, Multinet and SP AusNet*, 29 March 2012 (SFG, *Response on MRP for the Vic DNSPs*, March 2012).

<sup>176</sup> The Black-Scholes option pricing model is most often used, but other methods are possible.

<sup>177</sup> To clarify, options are sold with different maturities beyond this range, but the implied volatility calculations are found only at these short term horizons.

<sup>178</sup> See AER, *Final decision: WACC review*, May 2009, pp. 231–234; AER, *Draft decision: Envestra access arrangement SA*, February 2011, pp. 282–283; and AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 196–197.

<sup>179</sup> See the discussion below on the VAA implied volatility glide path approach; also see AER, *Draft decision: Envestra access arrangement SA*, February 2011, pp. 282–283; and AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 196–197.

<sup>180</sup> See the discussion of Chernov (2007) and Santa-Clara and Yan (2010) in AER, *Draft decision: Envestra access arrangement SA*, February 2011, pp. 282–283; and AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 196–197.

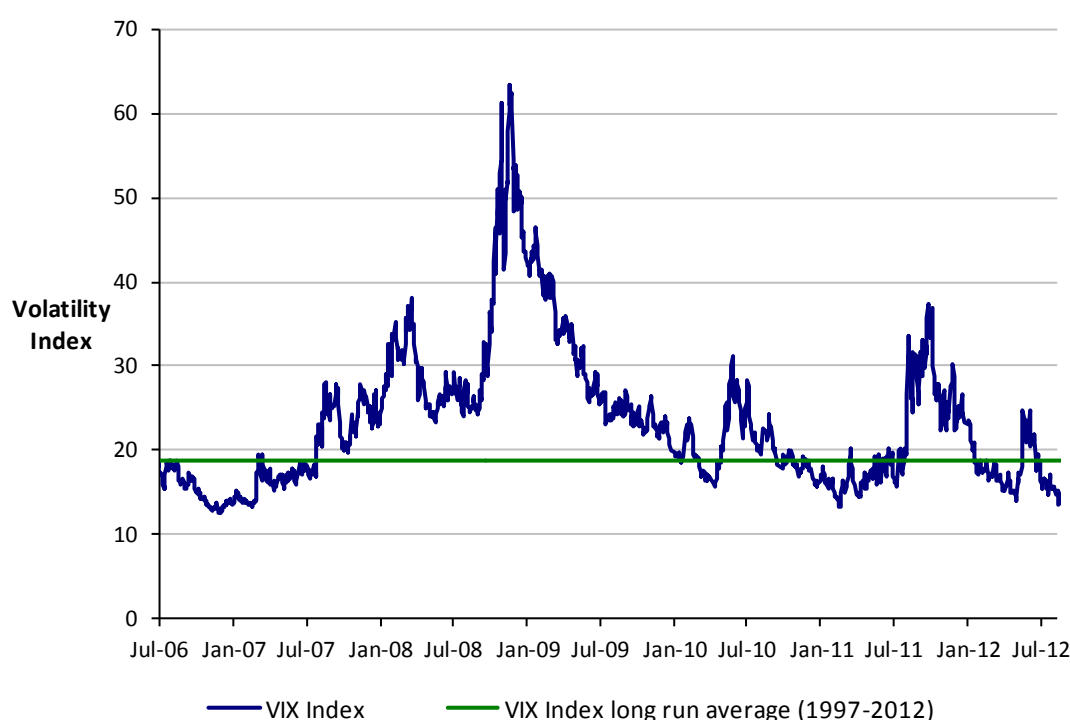
<sup>181</sup> McKenzie, and Partington, *Supplementary report on the MRP*, February 2012. Also see the discussion of Doran (2005) in AER, *Draft decision: Envestra access arrangement SA*, February 2011, pp. 282–283; and AER, *Final decision: Envestra access arrangement SA*, June 2011, pp. 196–197.

The AER's view is shared by McKenzie and Partington who concluded in their February 2012 supplementary MRP report:<sup>182</sup>

Further work on this technique (implied volatility) might be warranted, but given the current state of play it could hardly be regarded as a validated method, let alone an accurate and reliable adjustment to the MRP.

When using its conditioning variables approach, SFG assessed implied volatility using 3 month options over the S&P/ASX 200 (labelled the Citibank Volatility Index or VIX). In its various reports, SFG stated that since the VIX was above its long run average, this indicated that the MRP was similarly above its long run average.<sup>183</sup> Figure B.7 shows the value of this measure of implied volatility relative to its long run average level across the period since the global financial crisis.

**Figure B.7 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.

As is evident from this figure, implied volatility is quite variable and can change substantially in months. The AER considers that this variability suggests implied volatility is not a reliable method to estimate the MRP. Figure also shows that although implied volatility rose dramatically during the GFC, this peak has subsided and the level of implied volatility has dropped below the long run average on several occasions.

<sup>182</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 26–27

<sup>183</sup> Since the SFG assessment of implied volatility is relative to the 'baseline' long run average, the choice of baseline period is particularly important to the final result. The AER has previously noted that SFG inappropriately chose a shorter (post 2000) baseline period in its analysis, rather than the longest available data series; see AER, *Final decision: APTPL access arrangement*, August 2012, pp. 222, 225–226.

SFG advocated using the most recent data available when inferring the current MRP from implied volatility.<sup>184</sup> Using data updated to 10 August 2012, it measures at 15.2 per cent, slightly below the long run average of 18.8 per cent (measured from the commencement of the data series in 1997). If this latest point estimate is used to inform the forward looking 10 year MRP, it appears to support a value at or slightly below the long term average MRP (that is, 6 per cent).<sup>185</sup>

## Credit spreads

SFG also proposed the use of credit spreads to inform the estimation of the MRP. The idea is that the difference between an index of the yield to maturity on BBB-rated bonds and a corresponding index of AAA-rated bonds proxies for credit or default risk. During recessions, this debt yield spread widens, commensurate with an increase in risk premiums generally which implies a higher risk premium for equity.<sup>186</sup>

The AER considered the use of credit spreads to inform the forward looking MRP. But the AER considers a direct comparison of the yield on debt and the MRP is problematic. McKenzie and Partington supported this view for the following reasons:<sup>187</sup>

- McKenzie and Partington expected the widening credit spreads during the GFC were substantially driven by increasing concern about the risk of default and this concern dries up the liquidity in debt markets. A combination of default premiums and liquidity premiums, therefore drove up returns in debt markets.
- Given the GFC, the default risk component of the credit spread might reasonably be expected to have increased. Consequently, much of the change in debt yields during and after the GFC is likely due to a changed assessment of default risk.
- A key element of the GFC was increasing credit risk, with a widespread perception that default risk had increased sharply. Consequently, the expected cash flow on risky debt declined, which caused the price of the debt to fall. Because the yield is calculated on the promised cash flow relative to the price, the yield on risky debt went up and the credit spread widened. This outcome would have happened even if the MRP, or debt betas, did not change.
- An increase in credit spreads due to increased default risk does not automatically require a shift in the MRP. The MRP is an expected return and the yields on debt are a promised return. The promised return is only the same as the expected return for debt when there is no default risk. For all other debt the promised return is higher than the expected return. Because the debt yield and the MRP measure different things, effectively they are measured in different dimensions, they are not constrained to move in the same way and comparisons between them can be misleading.

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<sup>184</sup> However, it appeared that SFG did not always update its reports to include the most recent data, even allowing for a short practical delay encompassing analysis and publication. See AER, *Final decision: APTPPL access arrangement*, August 2012, pp. 218–226.

<sup>185</sup> Briefly, the proposed relationship is that the current value of implied volatility relative to its long term average is indicative of the current value of the market risk premium relative to its long term average.

<sup>186</sup> SFG, *MRP for APTPPL*, October 2011, p. 11.

<sup>187</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 21–23.

## Dividend yields

Dividend yields refer to the forecast dividends (or other distributions) for all shares in a broad based market index divided by the current price of all shares in that index. A data provider generally aggregates the dividend forecasts from reports by different equity analysts, with the forecast horizon generally one year. The dividend yield is thus a simple indicator of the expected return to equity holders through dividends (although not allowing for capital gains/losses or imputation credits) over the next year. While closely related to the DGM, dividend yields are a different direct indicator of MRP.<sup>188</sup>

SFG stated higher dividend yields indicate a higher MRP. It is based this claim on several academic studies that found a statistically significant relationship when using dividend yields to predict equity market returns.<sup>189</sup> The intuitive explanation was that when dividend yields were high, a given set of cash flows was being discounted at a higher rate, indicating a higher MRP. In the February 2012 report, SFG estimated the dividend yield for the Australian share market at 31 January 2012 was 4.69 per cent. This value was above the long run average dividend yield, supporting an MRP above its long run average (SFG proposed 7 per cent).<sup>190</sup>

But the AER does not use the dividend yield approach to inform its MRP estimate because evidence of a relationship between the two is insufficient. While the AER acknowledges the three reports cited by SFG<sup>191</sup> a broader consideration of the academic literature (by McKenzie and Partington) does not indicate the relationship is statistically reliable.<sup>192</sup> The AER agrees with McKenzie and Partington's conclusion on this matter:<sup>193</sup>

SFG presents the dividend yield as a conditioning variable as though it were established fact. In contrast, in our main report we begin by excluding consideration of predictive models based on dividend yield. This is because in our view, this is still a developing area of research, rather than a well developed practical tool. We are not alone in this view as it is shared by others such as Dimson, Marsh and Staunton (2011), who are leading scholars in the area of the MRP.

The AER considers the underlying mechanism relating dividend yields and the MRP (as presented by SFG) is not persuasive. SFG appears to overlook other factors that could result in a higher observed dividend yield even when the MRP was unchanged (or lower).<sup>194</sup> The forecast horizon for the dividends is short (generally one year); so a reduction in expected dividends beyond this point would result in a lower price and a higher dividend yield. That is, a change in expected cashflow (not the discount rate or MRP) explains the result. McKenzie

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<sup>188</sup> More specifically, the DGM includes consideration of changes in dividends beyond the immediate dividend forecast horizon.

<sup>189</sup> SFG, *MRP for APTPL*, October 2011, p. 9.

<sup>190</sup> Specifically, SFG stated that the current dividend yield was 1.02 standard deviations above the long run average. The AER does not consider this calculation to be correct, and discusses this later in the decision. SFG, *Conditional and unconditional MRP for the Vic DNSPs*, February 2012, p. 29.

<sup>191</sup> Fama and French (1988, 1989) and Keim and Stambaugh (1986); see also Cochrane (2011) cited by McKenzie and Partington.

<sup>192</sup> For example, papers by Stambaugh (1999); Fisher and Statman (2000); Goyal and Welch (2003); Armitage (2011), Dimson, Marsh and Staunton (2011); Jun, Gallagher and Partington (2011); and Min (2011). Papers cited in McKenzie and Partington, *Equity market risk premium*, December 2011, p. 4; and McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 13–14, 23–25.

<sup>193</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 23.

<sup>194</sup> Other techniques build on the dividend yield approach in an attempt to address these shortcomings. The DGM projects dividend movements beyond the immediate dividend forecast horizon. The SFG 'market based' assessment using dividend yields combines the dividend yield with a forecast for capital gain/loss.

and Partington explained this point.<sup>195</sup> The dividend yield calculation does not account for expectations about capital gain or loss. So, a change to expect relatively more of the total return from dividends instead of capital appreciation would also result in a higher dividend yield, even if the MRP did not change.

Finally, as with the other financial market indicators, as assessed higher than average dividend yield is predicated on an accurate estimate of the baseline figure. SFG calculated its long run average using data from 2000, but did not justify using this time period.<sup>196</sup> In this case, the relevant data series is available back to 1973.<sup>197</sup> Using the longer data series would result in a higher baseline dividend yield. In turn, this increase would reduce the extent to which the current dividend yield was above the average and thus support a lower MRP.

### Updated data using SFG method

Across recent reports, the conditioning variables presented by SFG have been relatively high. The core argument from SFG is that where there is a consistent pattern across these three financial market indicators, the prevailing MRP will be consistent with this pattern. For instance, if all three indicators are above their long run average, the prevailing MRP will be similarly above its long run average.

Table B.8 summarises the SFG results by presenting one key figure for each variable—the standardised difference between the current value and the long run average. 'Standardised' means that the difference is expressed in terms of the standard deviation for that data series. For example, a standardised value of +1.5 means that the current value is above the average value by 1.5 times the standard deviation for that series.

**Table B.8 Conditioning variables presented by SFG in recent reports**

SFG report date	Implied volatility	Dividend Yield	Relative debt spread
March 2011	+0.80	+0.44	+0.87
October 2011	+2.17	+1.59	+0.77
February 2012	+2.17	+1.02	+1.95

Source: SFG figures provided to the AER, AER analysis

The AER updates the SFG data using a baseline that encompasses the longest available data series. Table B.9 shows the standardised difference between the current value and long run average for the three financial market indicators. However, the AER does not update the relative debt spread figures, because there is no reasonable data available. The table includes the uncorrected relative debt spread figures for comparative purposes.

**Table B.9 Conditioning variables after correction**

Data period	Corrected implied volatility	Corrected dividend yield	Uncorrected relative debt spread
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<sup>195</sup> McKenzie and Partington, *Supplementary report on the MRP*, February 2012, pp. 12–13.

<sup>196</sup> SFG, *Conditional and unconditional MRP for the Vic DNSPs*, February 2012, p. 12.

<sup>197</sup> That is, the data series used by SFG and provided by them to the AER commences at this point.

To 15 March 2011	+0.10	+0.10	+0.87
To 23 September 2011	+2.25	+1.17	+0.77
To 31 January 2012	-0.12	+0.53	+1.95
To 10 August 2012	-0.49	+0.76	NA

Source: SFG figures provided to the AER, Bloomberg, AER analysis

Notes: The dates of the first three rows coincide with the data presented in the three SFG reports. The Datastream data on the relative debt spread (used by SFG) is not available to the AER and so cannot be updated. The Datastream data on dividend yields is not available to the AER, but an alternative series from Bloomberg has been used (correlation of 0.97).

As is evident in Table B.9, based on recent data, there is no consistent pattern across these three indicators. Implied volatility is slightly below its long run average. Dividend yield is slightly above its long run average. It is difficult to speculate on the value of an updated relative debt spread (the most recent SFG figure is now 7 months out of date).<sup>198</sup>

The AER does not consider SFG's approach, using three financial market indicators to establish a conditional MRP, is a relevant basis to estimate a forward looking 10 year MRP. However, even if weight were to be given to this approach, it would support an MRP of 6 per cent.

## B.2.7 VAA implied volatility glide path

VAA previously proposed the use of option implied volatility combined with a 'glide path' to estimate the forward looking MRP.<sup>199</sup> The VAA approach has been put forward:<sup>200</sup>

- by the Australian Pipeline Industry Association (the industry group that represents all of the Victorian gas networks) in its January 2009 submission to the AER's WACC review<sup>201</sup>
- by the Victorian electricity distribution network service providers (noting the overlap in ownership between these businesses and the Victorian gas networks) in their 2010

<sup>198</sup> To prevent misinterpretation, the AER does not consider that this figure is reliable.

<sup>199</sup> The AER has previously referred to this technique as 'Officer and Bishop's implied volatility glide path', recognising that the authors of the VAA reports mentioned in this section are Professor Bob Officer and Dr Steven Bishop.

<sup>200</sup> In addition to those listed below, the VAA approach has also been put forward by ETSA (SA electricity transmission) in June 2009, Westnet Energy (WA gas distribution) in December 2009 before the ERA, in a published journal article, and by NBN Co (national telecommunications) in December 2011 before the ACCC. VAA, *Market risk premium: An estimate for 2010 to 2015: Prepared for ETSA*, June 2009; VAA, *Market risk premium: Estimate for January 2010 – June 2014: Prepared for WestNet Energy*, December 2009; S. Bishop, M. Fitzsimmons, and B. Officer, *JASSA The Finsia Journal of Applied Finance*, 'Adjusting the market risk premium to reflect the global financial crisis', May 2011 (Issue 1 2011), pp. 8–14 (Bishop, Fitzsimmons and Officer (2011)); and VAA, *Report on WACC component of NBN Co's Special Access undertaking*, December 2011.

<sup>201</sup> VAA, *Market risk premium: Further comments: Prepared for Energy Networks Association, Australian Pipeline Industry Association and Grid Australia*, January 2009.



regulatory determination,<sup>202</sup> as well as the 2011 Advanced Metering Infrastructure determination<sup>203</sup>

- by Envestra in the South Australia and Queensland gas access arrangements in 2011.<sup>204</sup>

The AER considered this approach, although Envestra did not propose it in this review.

Like the DGM and NERA's regime switching model, the VAA's approach estimates the prevailing MRP. Since the MRP estimate generated from implied volatility will have the same horizon as the underlying options, VAA estimated the MRP based on a 'glide path' approach. The basis of this technique is to:

- first, estimating the volatility implied by the Black-Scholes option pricing formula for 3 month or 12 month S&P/ASX 200 index options.
- second, converting this to a short term (3 month or 12 month) estimate of the MRP by assuming a constant market risk per unit of option implied volatility (in the range of 40–50 basis points per unit of risk)
- third, estimating the geometric average MRP over five years assuming the MRP would revert (glide) down from the short term MRP estimate to a long term historical average.

VAA has considered different possible glide paths, such as a quicker return to the long term average, or a sustained elevated period before the decline commences. VAA has also given some consideration to 1 month and 6 month options, overseas implied volatility estimates, and the use of realised volatility (that is, the observed historical volatility using a rolling window containing the previous 30 or 90 days of data) as a proxy for implied volatility.

The AER has already set out above (in the discussion of SFG's approach using financial market indicators) concerns with using implied volatility when estimating the MRP. Further to those general concerns, 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.<sup>205</sup> 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 18.8 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 6 per cent.<sup>206</sup>

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<sup>202</sup> VAA, *Market Risk Premium, Estimate for 2011–2015, Draft*, October 2009; and VAA, *MRP for Vic electricity DNSPs*, July 2010. Note that although labelled as 'draft', the October 2009 report was submitted by the service provider as a finalised report.

<sup>203</sup> VAA, *Market Risk Premium, An update prepared in response to the draft determination by the AER on the Victorian Advanced Metering Infrastructure Review: 2012–15 budget and charges applications*, August 2011.

<sup>204</sup> VAA, *Comments on the Market Risk Premium in Draft Decision by AER for Envestra February 2011*, March 2011 (VAA, *MRP for Envestra*, March 2011).

<sup>205</sup> 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).

<sup>206</sup> The AER sets out earlier in this decision its analysis of the historical excess return series.

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.

The AER also has concerns with the glide path approach used to extend this (short term) implied volatility estimate. The glide path approach incorporates a variable three or twelve month estimate of implied volatility and then combines it with a long term historical estimate over a five year time horizon.<sup>207</sup> The AER has previously noted the realised MRP could be below long term estimates in some years. The glide path approach excludes this possibility by construction. The AER also noted that the VAA approach averages five years of MRP estimates, and that this is inconsistent with the 10 year horizon assumed for the risk free rate. Further, the time period for reversion cannot reasonably be determined. Figure 1.1 demonstrates that from the peak, it took just 15 months for implied volatility to fall back below its long run average. This is considerably shorter than the three year reversion period preferred by VAA in their reports.

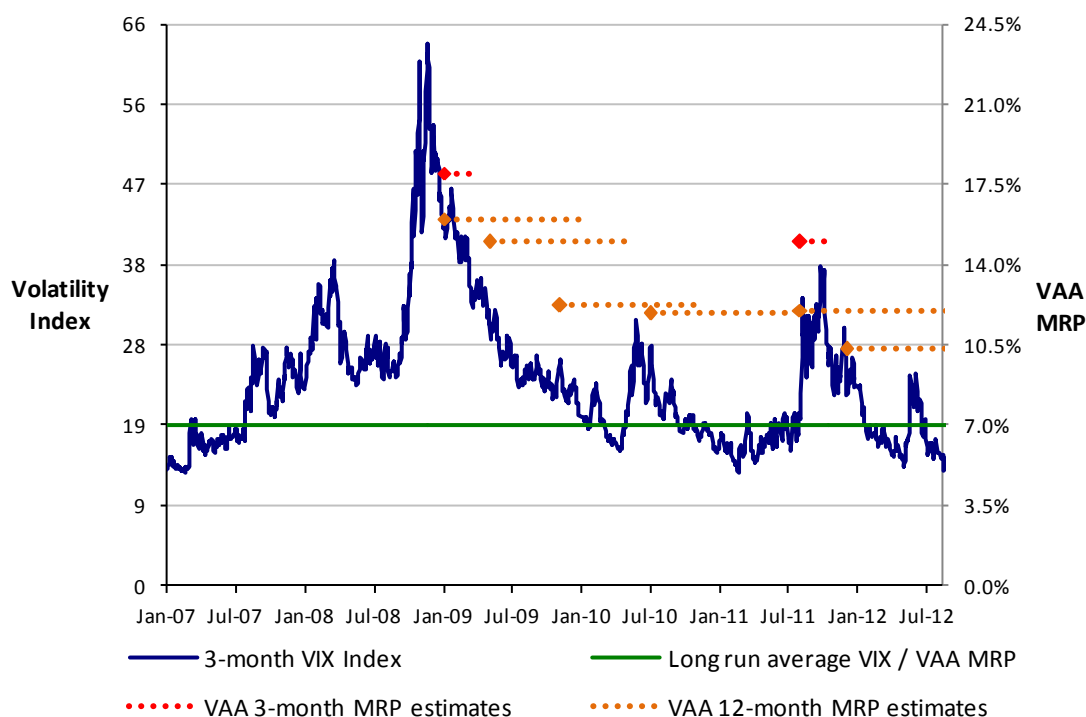
As noted above, although implied volatility was high during the worst of the GFC, the current level is below the long run average. Using data updated to 10 August 2012, it measures at 15.2 per cent, slightly below the long run average of 18.8 per cent (measured from the start of the data series in 1997). It is not entirely clear what glide path would be proposed by VAA in these circumstances, since no VAA report has been submitted where implied volatility was below the long run average.

Figure B.8 shows the same implied volatility measure as the previous figure, generated from 3 month options on the S&P/ASX 200 (plotted against the left hand axis). Superimposed on this are a number of MRP estimates submitted by VAA (plotted against the right hand axis), with a diamond marking the date of the report. These are the implied volatility estimates prior to the application of a glide path. Accordingly, the MRP estimates are for either 3 months or 12 months, as per the underlying option—this is shown by a dashed line extending across the relevant time period. This figure has been rescaled such that the long run average volatility (18.8 per cent, plotted against the left hand axis) matches the long run average MRP proposed by VAA (7 per cent, plotted against the right hand axis).

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<sup>207</sup> A geometric average of the five years is used.

**Figure B.8 Implied volatility and VAA MRP estimates**



Source: Citibank VIX implied volatility index (3 month put/call options on S&P/ASX 200), sourced via Bloomberg code CITJAVIX; VAA reports; AER analysis

Figure B.8 shows the central relationship of the VAA implied volatility glide path approach—where the implied volatility is above its long run average, VAA considers that the MRP will also be above its long run average. In current circumstances, where implied volatility is below its long run average, the VAA approach to estimating the prevailing MRP would indicate that it is below the long run average.

The AER does not consider that VAA's implied volatility glide path approach is a relevant basis to estimate a forward looking 10 year MRP. However, even if weight were to be given to this approach, it would support an MRP estimate of 6 per cent (or slightly below).

## B.2.8 Market commentary and economic outlook

General market commentary and economic outlook provided by eminent bodies gives useful insights into the current and future state of the financial market. However, because most commentaries do not specifically refer to returns in equity markets, the link between the market commentary and the MRP is difficult to quantify. Consistent with comments by the Australian Competition Tribunal in a recent decision<sup>208</sup> and the views of Multinet<sup>209</sup> and SFG<sup>210</sup>, the AER places limited weight on this evidence.

<sup>208</sup> Australian Competition Tribunal, *Application by Envestra Limited (No 2) [2012] ACompT 4*, 11 January 2012, paragraph 161.

<sup>209</sup> Multinet, *Access arrangement information*, 30 March 2012, Appendix H-1, pp. 5–6.

<sup>210</sup> SFG, *Response on MRP for the Vic DNSPs*, March 2012, pp. 18–19.

## B.2.9 Reasons for the AER's departure from the WACC review

The AER agrees with the view of SFG and McKenzie and Partington that the AER's decision to increase the MRP to 6.5 per cent in mid 2009 was not well justified.<sup>211</sup> It was being conservative at a time of significant uncertainty. In the WACC review at that time, the AER considered a range of evidence to decide on the best estimate of the forward looking 10 year domestic MRP. Acknowledging significant uncertainty in financial markets, it considered one of two scenarios could explain the market conditions:

- either the prevailing medium term MRP was above the long term MRP, but would return to the long term MRP over time, or
- a structural break had occurred in the MRP, and the forward looking long term MRP (and thus also the prevailing MRP) was above the long term MRP that previously prevailed.<sup>212</sup>

These reasons led to the AER's departure from the previously adopted value of 6 per cent. The global financial crisis (GFC) was a significant event, and its magnitude should not be understated. However, the impact of the GFC for Australian capital markets was moderate relative to international experience. The alternative scenario contemplated by the AER in the WACC review does not warrant keeping the MRP above the long run average in perpetuity. Information and data available since the release of the WACC review suggests the prevailing medium term MRP has not been above the long term MRP. The AER reached this conclusion based on the following evidence:

- Survey measures since the height of the GFC accord with those from before the GFC.<sup>213</sup>
- Implied volatility since the height of the GFC has returned to its long run average.<sup>214</sup>

Cyclical trends are observed in financial markets over time and typically involve shifts between periods of strong economic growth (boom) and periods of relative stagnation or sharp decline (recession). The fluctuations in financial markets are unpredictable, and cycle duration varies from more than a year to 12 years.<sup>215</sup> When an investor considers the likely return across a 10 year horizon, these cyclical fluctuations are a normal experience. The long term expected return takes account of the expected future investment growth and decline. That is, the long term MRP has always been determined in the inevitable presence of these business cycles.

McKenzie and Partington noted the AER's decision in the WACC review to increase the MRP to 6.5 per cent was not well justified. In their February 2012 MRP report, they stated:

We further consider that the decision to increase the MRP by 0.5% for a ten year regulatory period was not well justified as we would not expect the crisis conditions and extreme volatility to extend over such a long period. With the benefit of observing what

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<sup>211</sup> SFG, *MRP for Envestra*, March 2011, p. 5; McKenzie and Partington, *Supplementary report on the MRP*, February 2012, p. 29.

<sup>212</sup> AER, *Final decision: WACC review*, May 2009, p. 238.

<sup>213</sup> See Fernandez (2009), Fernandez and Del Campo (2010), Fernandez et al. (2011), Asher (2011).

<sup>214</sup> For clarity, the AER notes the differing opinions on the implications of implied volatility measurements for the long run MRP. This statement does not depend on such an assessment. Rather, the return of the implied volatility index to the pre-GFC average indicates this indicator of financial markets conditions did not undergo a structural break.

<sup>215</sup> Burns and Mitchell, *Measuring business cycles*, National Bureau of Economic Research, 1946.

has happened post-GFC it is appropriate for the AER to move back to the relatively safe ground of the unconditional MRP of 6% rather than persist with the conditional MRP of 6.5%. To put it another way the conditions justifying the shift to a conditional MRP have substantially abated so there is good reason to move back to the unconditional MRP.<sup>216</sup>

The AER has developed its understanding since the WACC review. Now, rather than increasing the MRP due to any short term effects, it considers it is reasonable to determine a long term (10 year) forward looking MRP.

The Energy Users Coalition of Victoria (EUCV) supported this view:

Regulated firms were supportive of the AER increasing the MRP in the depths of the GFC because the outcome increased their WACCs at a time when there was great uncertainty. The result of this move was to over-provide a rate of return for a considerable period and provide an unearned and unnecessary benefit to regulated firms. Quite sensibly the AER reduced the MRP when stability returned to the market as a whole and it was seen that the WACC based on a MRP of 650 bp was then providing a WACC that was excessive. Such an approach reflected the requirement for setting an efficient WACC based on best practice – both aspects that are explicitly required by the Gas Rules.<sup>217</sup>

### B.3 Reasonableness checks on overall rate of return

In attachment 4, the AER evaluates the evidence on each WACC parameter individually. It also takes into account the interdependencies between WACC parameters where relevant. In this section the AER evaluates the overall rate of return derived from the individual WACC parameter values. The AER considers its determined overall rate of return is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.<sup>218</sup> In turn, the AER considers this overall rate of return provides a reasonable opportunity for Envestra to recover at least its efficient costs.<sup>219</sup>

In this appendix, the AER examines:

- assets sales
- trading multiples
- broker WACC estimates
- recent decisions by other regulators and the AER
- recent decisions by overseas regulators
- the relationship between the cost of equity and the cost of debt.

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<sup>216</sup> McKenzie and Partington, Supplementary report on the MRP, February 2012, pp. 28–30.

<sup>217</sup> Energy Users Coalition of Victoria, *Submission to the AER: APA GasNet access arrangement proposal*, 18 June 2012, p. 46

<sup>218</sup> NGR, r. 87(1).

<sup>219</sup> NGL, s. 24.

## Recent regulated asset sales

For recent transactions of regulated assets, for which relevant data is available, the AER compares the market value (i.e. the sale price) with the book value (i.e. the regulatory asset base).

Over the past few years, regulated assets have generally been sold at a premium to the RAB. If the market value is above the book value, this may imply that the regulatory rate of return is above that required by investors. Conversely, when the market value is below the book value, this may imply that the regulatory rate of return is below that required by investors.

Caution must be exercised before inferring that the difference indicates a disparity in WACCs, particularly where the difference is small. A range of factors may contribute to a difference between market and book values. A RAB multiple greater than one might be the result of the buyer:<sup>220</sup>

- expecting to achieve greater efficiency gains that result in actual operational and capital expenditure below the amount allowed by the regulator
- increasing the service provider's revenues by encouraging demand for regulated services
- benefiting from a more efficient tax structure or higher gearing levels than the benchmark assumptions adopted by the regulator, and growth options
- expecting to achieve higher returns if regulation is relaxed.<sup>221</sup>

Regulated asset sales in the market are also infrequent allowing limited opportunity to conduct this analysis. This is of particular relevance at present as the AER is setting a lower overall rate of return than in previous decisions. While asset sales in the future may reflect changes to the overall rate of return that are occurring at present, sales that have already occurred will not.

Regulated asset sales do, however, provide a useful real-world indication of whether market participants consider the AER's benchmark WACC to be, broadly speaking, reasonable. The consistent positive trend as discussed below provides evidence that the AER's WACC approach is not unreasonable.

The RAB multiples from each of these transactions, together with the transactions discussed above, are summarised in Table B.10 from most recent to least recent.

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<sup>220</sup> Each of these reasons assumes the purchasing firm is making a rational purchasing decision. Another reason for a RAB multiple greater than one might be that the purchasing firm misjudged the value of the target assets and paid too much for those assets. Each transaction considered by the AER involved sophisticated investors with significant knowledge of the industry. Accordingly, the AER does not consider it likely that the RAB multiples greater than one result from poor valuations of the target assets.

<sup>221</sup> Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock and Brown Infrastructure*, 9 October 2009, p. 77 (Grant Samuel, *Expert report: Babcock and Brown Infrastructure*, October 2009).

**Table B.10 Selected acquisitions – RAB multiples**

Date	Acquirer	Entity/Asset acquired	RAB multiple (times)
Dec 2011	Marubeni Corp/RREEF	Allgas	1.20
Dec 2011	Marubeni Corp/RREEF	Allgas	1.02
July 2011	ATCO	25.9% of West Australian Gas Networks	1.20
July 2011	DUET	20% of Multinet Gas	1.13
July 2011	DUET	20% of Dampier to Bunbury Natural Gas Pipeline	0.95 <sup>222</sup>
Dec 2006	APA	Directlink	1.45
Oct 2006	APA	Allgas	1.64
Aug 2006	APA	APA GasNet	2.19
Apr 2006	Alinta	AGL Infrastructure assets	1.41-1.52
Mar 2006	APA	Murraylink	1.47

Source: DUET<sup>223</sup>, APA<sup>224</sup>, Grant Samuel, AER calculations.

In October 2010, Envestra purchased Country Energy's NSW gas network at a multiple of 1.25 times the 2010 RAB.<sup>225</sup> Further details on this transaction can be found in the AER's draft decision for the QLD/SA gas distribution networks.<sup>226</sup>

In July 2011, DUET sold its 25.9 per cent stake in West Australian Gas Network (WAGN) to ATCO Ltd in return for a 20 per cent interest in the Dampier to Bunbury pipeline (DBP) and a 20.1 per cent interest in Multinet.<sup>227</sup> These transactions were at multiples of 1.20, 0.95 and 1.13 respectively.

<sup>222</sup> Dampier to Bunbury Natural Gas Pipeline (DBNGP) presents an unusual case because it is 96% contracted until 2016 under shipper contracts. As the Economic Regulation Authority (ERA) of Western Australia states, these contracts 'are substantially independent of the access terms and reference tariffs established under the access arrangement for the DBNGP.' ERA, *Final decision: DBNGP access arrangement*, October 2011, p. 14. For this reason the DBNGP RAB multiple appears to be not driven by regulatory rates of return and does not provide a useful comparison for RAB multiples analysis.

<sup>223</sup> DUET, *ASX announcement: Presentation to Macquarie Retail Adviser Network*, 19 January 2012, p. 3, viewed 9 February 2012, <<http://www.asx.com.au/asxpdf/20120119/pdf/423tx0cd2v7qq3.pdf>>.

<sup>224</sup> APA Group, *ASX announcement: Completion of the sale of 80% of Allgas*, 16 December 2011, viewed 10 January 2012, <<http://www.asx.com.au/asxpdf/20111216/pdf/423b5mnt9sqvzh.pdf>> (APA Group, *ASX announcement on sale of Allgas*, December 2011).

<sup>225</sup> AER, *Final decision: Country Energy Gas Pty Ltd: Access arrangement proposal for the Wagga Wagga natural gas distribution network, 2010–2015*, March 2010 and Envestra, *ASX announcement: Envestra's to acquire NSW gas networks - Market presentation*, 26 October 2010, pp. 3, 6–7, viewed 10 January 2012, <<http://www.asx.com.au/asxpdf/20101026/pdf/31tcv1nblp4xqc.pdf>>.

<sup>226</sup> AER, *Draft decision: Envestra access arrangement SA*, February 2011, p. 63.

<sup>227</sup> DUET, *ASX announcement: Completion of AET&D sale process*, 29 July 2011, viewed 9 February 2012, <<http://www.asx.com.au/asxpdf/20110729/pdf/420312nw1jxhdv.pdf>>

In December 2011, APA divested 80 per cent of its holding of APT Allgas (a gas distributor in South East Queensland) to Marubeni Corporation and RREEF; each acquiring 40 per cent equity stakes.<sup>228</sup>

APA stated that net funds released from the sale were \$477 million after transaction costs and the net enterprise value was \$526 million.<sup>229</sup> Applying a RAB value, estimated at the sale date, to this enterprise value produces a multiple of 1.20.

This transaction involved the sale of both regulated and unregulated assets. Accordingly the RAB multiple may overstate the premium on the regulated assets as unregulated assets generally require a higher cost of capital.<sup>230</sup>

APA also stated that the sale price was in line with the book value of the assets. The gross sale price was \$500.9 million, with the book value of assets sold at \$488.8 million.<sup>231</sup> This equates to a multiple of 1.02. These multiples can be considered the upper and lower bound estimates of the RAB multiple for this transaction.

Other historical sales have been at premiums of between 20 and 119 per cent to the regulated asset base.<sup>232</sup>

As Grant Samuel has previously explained, listed infrastructure entities should theoretically trade at, and be acquired at, 1.0 times the RAB.<sup>233</sup> However, nearly all recent asset sales have been transacted at RAB multiples of greater than one.

Acquisition premiums have been substantial and are, as a result, unlikely to be solely explained by the factors noted above. This suggests that the regulated rate of return has been at least as high as the actual cost of capital faced by regulated businesses. Moreover, the consistency of the numbers across many transactions lends support to the conclusion that the regulated rate of return has been at least consistent with the efficient rate of return.

The AER notes that it is not possible to use RAB multiples analysis as an input when assessing individual parameters. The AER does not place any weight on this analysis during that process.

Recent regulated asset sales analysis provides a degree of confidence that the approach used in calculating the rate of return is reasonable. The AER has maintained a largely consistent approach to the calculation of the rate of return since the WACC review and that approach has been maintained for this decision.<sup>234</sup> This suggests the AER's approach in this decision will also provide Envestra with a reasonable opportunity to recover efficient costs.

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<sup>228</sup> APA Group, *ASX announcement on sale of Allgas*, December 2011.

<sup>229</sup> APA Group, *ASX announcement on sale of Allgas*, December 2011 .

<sup>230</sup> Allgas is a holding company that also owns the unregulated Moura pipeline and the Gatton-Gympie easement.

<sup>231</sup> Net proceeds after transaction costs was \$478.4 million, with transaction costs of \$22.5 million and a gain on sale of \$12.1 million. APA Group, *Interim Financial Report for the half year ended 31 December 2011*, 22 February 2012, p. 3.

<sup>232</sup> Grant Samuel, *Expert report: Babcock and Brown Infrastructure*, October 2009, p. 78.

<sup>233</sup> Grant Samuel, *Expert report: Babcock and Brown Infrastructure*, October 2009, p. 77.

<sup>234</sup> Changes have been made to the value of gamma, the value of the MRP and the estimation approach for the DRP.



## Trading multiples

A comparison of the asset value implied by share prices against the regulatory asset base—often expressed as a ‘trading multiple’—also provides insight into the required rate of return.<sup>235</sup>

As with regulated asset sales, a trading multiple above one may imply that the market discount rate is below the regulated WACC. The same cautions with interpreting the results of the regulated asset sales approach apply to trading multiples. In addition, this assessment relies on the assumption that share prices reflect the fundamental valuation of the company.

Recent broker reports have identified RAB trading multiples.<sup>236</sup> These multiples are consistently greater than one, as shown in Table B.11 to **Error! Reference source not found.** None of these multiples are less than or equal to one.

**Table B.11 JP Morgan trading multiples**

Date of report	Company	2010–11	2011–12
10 August 2012	DUET	1.26	1.18
24 August 2012	ENV	1.20	1.25
27 August 2012	SKI	1.26	1.22
29 August 2012	SPN	1.21	1.20

Source: JP Morgan<sup>237</sup>

**Table B.12 Macquarie trading multiples**

Date of report	Company	2011	2012
1 August 2012	DUET	1.14	1.17
27 August 2012	SKI		1.35
28 June 2012	SPN	1.16	1.17

Source: Macquarie Group<sup>238</sup>

<sup>235</sup> The AER has not made any calculations of its own in this section. Trading multiples have only been stated where they could be identified in an external report.

<sup>236</sup> The AER has reported trading multiples from reports published in August 2012—noting that the brokers do not always provide these figures (one report from June 2012 was included). Where possible, trading multiples for the previous year have also been presented to provide context, but only for those broker reports where a recent (August 2012) update was available.

<sup>237</sup> JP Morgan, *Envestra Limited: FY12 Result - dividend growth held back by regulatory concerns*, 24 August 2012, p. 6; JP Morgan, *DUET Group: FY12 Result Preview*, 10 August 2012, p. 5; JP Morgan, *Spark Infrastructure Group: 1H12 result earnings strength driven by regulatory tariff increases*, 27 August 2012, p. 7; and JP Morgan, *SP AusNet: AER decision positive, but risk remains*, 29 August 2012, p. 9.

<sup>238</sup> Macquarie, *DUET Group, Curtail call*, 1 August 2012, p. 3; Macquarie, *Spark Infrastructure Group, ETSA sparkles through reliability*, 27 August 2012, p. 1; Macquarie, *SP AusNet, Cash generation set to improve*, 28 June 2012, pp. 1, 8.

**Table B.13 Credit Suisse trading multiples**

Date of report	Company	2012
7 August 2012	DUET	1.14
7 August 2012	ENV	1.32
7 August 2012	SKI	1.36
7 August 2012	SPN	1.14

Source: Credit Suisse<sup>239</sup>

**Table B.14 Bank of America Merrill Lynch trading multiples**

Date of report	Company	2012
23 August 2012	ENV	1.10
27 August 2012	SKI	1.39

Source: Bank of America Merrill Lynch<sup>240</sup>

Finally, Spark Infrastructure recently released a *Fact Book* showing an unadjusted trading multiple of 1.34 as at 24 February 2012. The *Fact Book* reports that this decreases to 1.10 when adjusted for total revenue excluding customer contributions.<sup>241</sup>

There are also other listed entities that hold regulated assets, such as APA and Hastings Diversified Utilities Fund. These companies are not conducive to RAB multiples analysis because they have a diverse portfolio of assets, sometimes unregulated, which makes it difficult to isolate the RAB.

Each of these figures cannot be considered definitive without careful consideration of the assumptions and methodologies used. They do, however, provide a useful insight into whether market analysts, and indeed industry analysts, consider the AER's benchmark WACC is appropriate. Importantly, each multiple is calculated after the GFC and also after the AER's WACC review.<sup>242</sup>

Recent comments by Macquarie in a broker report also suggest the AER's WACC approach does not under-compensate service providers:

The importance of the RAB growth reflects our belief there is a sustainable arbitrage beyond the current regulatory period, that justifies paying a premium above RAB for these assets...This arbitrage reflects WACC calculations in the regulatory setting have a degree of conservatism.<sup>243</sup>

<sup>239</sup> Credit Suisse, *Regulated Utilities Monthly, Sector review*, 7 August 2012, p. 10.

<sup>240</sup> Bank of America Merrill Lynch, *Envestra Limited, Earnings review, Flat divi in FY13*, 23 August 2012, p. 5; Bank of America Merrill Lynch, *Spark Infrastructure Group, Earnings review, Solid underlying cash flows*, 27 August 2012, p. 5.

<sup>241</sup> Spark Infrastructure, *2012 Fact Book*, 27 February 2012, p. 9.

<sup>242</sup> While the WACC review has no legal standing under the NGL or NGR, the AER has maintained a largely consistent approach across gas and electricity decisions since the WACC review final decision was published.

<sup>243</sup> Macquarie, *DUET Group: Limited RAB growth, At fair value*, 8 November 2011, p. 2.

Comments made by the AEMC in its recent Directions Paper also lend support to the AER's interpretation of broker reports and suggest the cost of debt may be a driver of the RAB multiple premiums:

A number of these [broker] reports indicate that the recommended valuations placed on these businesses by the equity analysts assume an ability for the NSPs to raise debt at a rate lower than the cost of debt allowed by the regulator. A number of the reports have indicated that a major reason why they value the NSPs at above their RAB is due to their ability to out-perform their cost of debt allowance.<sup>244</sup>

When coupled with the consistently high multiples shown above, these comments suggest the regulatory rate of return has been at least as high as the actual cost of capital, and may have been in excess of it. The conclusion then is that the AER's approach to setting WACC parameters provides a degree of confidence that the rate of return has been reasonable. It also provides a degree of confidence that the rate of return has allowed service providers a reasonable opportunity to recover at least efficient costs.

As with recent regulated asset sales, the AER notes that it is not possible to use RAB trading multiples analysis as an input when assessing individual parameters. The AER does not place any weight on this analysis during that process.

However, recent regulated asset sales analysis may provide a degree of confidence that the approach used in calculating the rate of return is reasonable. The AER has maintained a largely consistent approach for calculating of the rate of return since the WACC review and that approach has been maintained for this decision.<sup>245</sup> This suggests the AER's approach in this decision will also provide Envestra with a reasonable opportunity to recover efficient costs.

## Broker reports

Equity analysts publish broker reports on listed companies operating regulated energy networks in Australia. These reports generally include WACC estimates along with a range of information, including analysis of current financial positions and forecasts of future performance.

In several previous decisions, the AER has used the WACC estimates from those broker reports as a reasonableness check on the rate of return determined by the AER through its detailed assessment of each individual parameter. In the *Envestra* matter, the Tribunal noted the reasons put forward by Envestra that the use of broker WACC estimates was an unreliable methodology. In response, the Tribunal stated:

It is fair to note that, as to those matters, the AER largely recognised the possible reasons why broker estimates might be unreliable and sought to make adjustments in that light. More importantly, the Tribunal accepts the AER submission that it did not estimate the WACC or the DRP by reference to the broker reports. It used them as a "useful reasonableness check" that its WACC estimate did not produce results which did not broadly accord with a range of market opinions concerning firms that are a reliable

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<sup>244</sup> Australian Energy Market Commission, *Directions Paper*, 2 March 2012, p. 108.

<sup>245</sup> Changes have been made to the value of gamma, the value of the MRP and the estimation approach for the DRP.

proxy to the benchmark firm. Its use of the broker reports was thus an “output” test of the nominal vanilla WACC rather than an input into its calculation of the WACC.<sup>246</sup>

The Tribunal emphasised that its finding that the AER’s use of broker WACC estimates did not fall into reviewable error was in the context of the ‘limited use’ to which the AER applied the broker WACC estimates.<sup>247</sup>

Consistent with its approach in previous decisions, the AER uses broker WACC estimates as a reasonableness check on the overall rate of return.

The limitations of the use of broker WACC estimates include:

- the broker reports generally do not state the full assumptions underlying their analysis, or provide thorough explanations of how they arrive at their forecasts and predictions. As such, caution should be exercised in the interpretation of these broker reports<sup>248</sup>
- the five listed companies considered undertake both regulated and unregulated activities, which are assessed by the brokers in aggregate. However, only the regulated activities are directly relevant to the risk in providing reference services. It is generally considered that the regulated activities of the firms—operation of monopoly energy transmission and distribution networks—tends to be less risky than the unregulated activities they undertake in competitive markets. As the regulated activities tend to be less risky, the return required on these activities could be expected to be less than the return required by these firms as a whole.<sup>249</sup> This means that the overall WACC estimate implied by broker reports may overstate the rate of return for the benchmark firm
- it is generally not clear what assumptions the brokers have relied upon when developing their WACC estimate. Further, variation in WACC estimates suggests that these assumptions are not consistent across the different brokers
- the broker reports do not always provide sufficient information for the AER to calculate a nominal vanilla WACC estimate. Only those brokers who report the WACC in nominal vanilla form or provide sufficient detail to enable conversion to this form were considered. These figures are not necessarily precise estimates of the broker’s nominal vanilla WACC, since the AER has relied on its interpretation of the information provided

Based on this analysis, Table B.15 sets out the range for the broker WACC estimates (converted to a nominal vanilla WACC) which is 7.76-10.02 per cent.<sup>250</sup> The nominal vanilla

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<sup>246</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 166.

<sup>247</sup> Australian Competition Tribunal, *Application by Envestra Ltd (No 2) [2012] ACompT 3*, 11 January 2012, paragraph 167.

<sup>248</sup> In particular, the AER considers that the price and dividend forecasts from these reports do not constitute a sufficiently reliable basis for calculation of an overall rate of return. However, the broker reports do often report discount rates, which are equivalent to the broker’s estimate of the WACC for the company.

<sup>249</sup> Associate Professor Lally makes this point in relation to dividend growth model (DGM) estimates of the cost of equity which are based on listed regulated energy networks. That is, he states that as the unregulated activities tend to be have higher risk, the estimated cost of equity (based on data which takes into account the entirety of the firm’s activities) will tend to overestimate that for its regulated activities. Lally, *Cost of equity and the MRP*, July 2012, p. 14.

<sup>250</sup> The table presents broker reports from August 2012.

rate of return determined by the AER for Envestra in this draft decision is 7.16 per cent. This is approximately 60 basis points below the range of the broker WACC estimates.

The AER considers that broker WACC estimates do not demonstrate that the overall rate of return, which is based on analysis of individual parameters, is not commensurate with prevailing conditions in the market for funds and the risk involved in providing reference services. For the reasons outlined in the specific parameter sections above, the AER is satisfied this is the case. The broker WACC technique is subject to known limitations and inherent imprecision. Further, the review of broker WACCs is the only aspect of the overall reasonableness check that has indicated a potential concern.

**Table B.15 Broker WACC estimates (per cent)<sup>a,b</sup>**

Measure	Minimum	Maximum
Broker headline post-tax WACC	6.50	8.60
Calculated nominal vanilla WACC	7.76	10.02

Source: AER calculations.

a Issuers of broker reports considered: Credit Suisse, Goldman Sachs, JP Morgan, Deutsche Bank.

b Regulated energy networks evaluated in broker reports: APA, DUET Group, Envestra Limited, Spark Infrastructure Group, SP AusNet.

## Recent decisions by other regulators and the AER

The AER reviews a range of returns it approved for other gas and electricity service providers and also the rates of return in recent decisions by other Australian regulators. This provides a test of the reasonableness of the rate of return in this determination. Recent rate of return values set by the AER since the WACC review are lower than those previously provided. However, recent decisions by other regulators suggest that these values—and 7.16 per cent in this case—are reasonable.

The rate of return range applied by the AER in recent decisions for other gas and electricity service providers is 7.31 to 10.43 per cent.<sup>251</sup> This range covers gas and electricity decisions made by the AER since the WACC review was completed in 2009 and includes the Roma to Brisbane final decision.

The AER has also considered recent decisions by other regulators giving a rate of return range from 5.70 to 9.08 per cent (converted to nominal vanilla form).<sup>252</sup> The decisions

<sup>251</sup> AER, *Final Decision: APTPPL access arrangement*, August 2012; AER, *Final Decision: Aurora distribution determination*, April 2012; AER, *Final Decision: Powerlink Transmission determination 2012–13 to 2016–17*, April 2012; AER *Final Decision: Victorian distribution determination*, October 2010, p. 519; AER, *Final Decision: Queensland electricity distribution network service providers: Distribution determination 2010–11 to 2014–15*, May 2010, p. 267; AER, *Final decision: N. T. Gas access arrangement proposal for the Amadeus gas pipeline 2011–2016*, July 2011, p. 80; Australian Competition Tribunal, *Envestra: Annexure A (Part 2), Amended Access Arrangement*, February 2012, p. 13; Australian Competition Tribunal, *APT Allgas: Annexure A, Amended Access Arrangement*, February 2012, p. 17; Australian Competition Tribunal, *NSW Gas Networks: Annexure A, Amended Access Arrangement*, June 2011, p. 18; Australian Competition Tribunal, *ActewAGL Gas Distribution Network: Order*, September 2010, p. 2.

<sup>252</sup> ACCC, *Final report: Inquiry to make final access determinations for the declared fixed line services*, July 2011, p. 59; ESC, *Final decision: Metro proposed access arrangement*, August 2011, p. 87; ACCC, *Final decision: Airservices Australia price notification*, September 2011, p. 7; ERA, *Final decision: Access arrangement information for the Dampier to Bunbury Natural Gas Pipeline*, December 2011, p. 159; Queensland

reviewed are shown in Table B.16 and have been taken from those made in the last 12 months. The WACC of 7.16 per cent applied for Envestra falls within this range. This suggests that the rate of return for this determination is reasonable and in line with regulatory decisions that have been made in the past year.

**Table B.16 Recent decisions by Australian regulators (per cent)**

Regulator	Decision	Date	Nominal vanilla WACC
ACCC	FAD Fixed line services – Final decision	Jul 2011	8.54
ESC	Metro Access Arrangement – Final decision	Aug 2011	9.08
ACCC	Airservices Australia – Final decision	Sep 2011	8.60
ERA	Dampier to Bunbury Pipeline – Final decision	Oct 2011	7.57
QCA	SunWater – Final decision	Nov 2011	7.55
IPART	Sydney Desalination Plant – Final decision	Dec 2011	8.16–8.59 <sup>a</sup>
ESCOSA	SA Water – Final decision	Feb 2012	8.07
ESCV	V/Line Access Arrangement – Final decision	Jun 2012	8.65
IPART	Sydney Catchment Authority – Final decision	Jun 2012	8.16–8.38 <sup>a</sup>
IPART	Sydney Water Corporation – Final decision	Jun 2012	8.16–8.38 <sup>a</sup>
ERA	Western Power – Final decision	Sep 2012	5.70

Notes: For comparative purposes, all WACCs have been converted to the nominal vanilla WACC formulation consistent with the AER's reported figure for Envestra (which excludes debt raising costs).  
(a) Ranges are presented for recent decisions by the IPART where the point estimate (real post-tax or real pre-tax) was not sufficiently disaggregated to allow precise conversion to the correct formulation (nominal vanilla WACC).

### Cost of equity vs. Cost of debt

While not necessarily directly relevant to the overall rate of return, comparing the cost of equity with the cost of debt can provide a useful indication of reasonableness. Consistent with previous decisions,<sup>253</sup> the AER considers that the expected cost of equity should be greater than the expected cost of debt.<sup>254</sup> This relationship holds in this decision.

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Competition Authority, *Draft Report: SunWater Irrigation Price Review: 2012–17*, Volume 1, November 2011, p. 392; Independent Pricing and Regulatory Tribunal (IPART), *Final Report: Review of water prices for Sydney Desalination Plant Pty Limited*, December 2011, p. 80; Essential Service Commission of South Australia (ESCOSA), *Final Advice: Advice on a Regulatory Rate of Return for SA Water*, February 2012, p. 50; 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.

<sup>253</sup> AER, *Final decision: APTPPL access arrangement*, August 2012, p. 102; AER, *Draft decision: Envestra Ltd: Access arrangement proposal for the Qld gas network 2011–2016*, February 2011, p. 243; AER, *Final decision: Envestra access arrangement Qld*, June 2011, pp. 148–149.

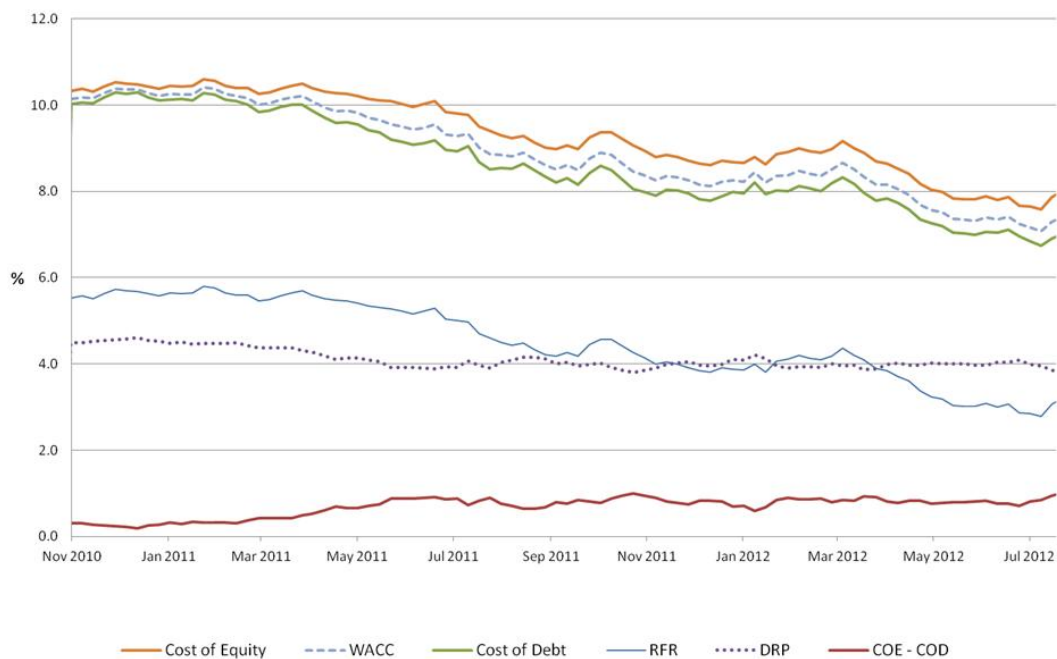
<sup>254</sup> However, the AER does not consider that the *expected* cost of equity should be greater than the *promised* cost of debt. This critical distinction is explained below.

The AER has prepared a graph showing the cost of equity, cost of debt and WACC over time, using the DRP estimation methodology proposed by Envestra. This graph shows that the cost of equity has been consistently greater than the cost of debt over the last two years, using the AER’s approach in this decision. If the cost of debt had been estimated using the ERA’s approach, then the difference between the cost of equity and cost of debt would have been greater.

It is also worth noting that this graph clearly shows that a large portion of the change in the overall rate of return can be attributed to the decline in the cost of debt. The fact that the overall rate of return in this decision is lower than in previous decisions does not of itself make it unreasonable. The cost of debt in this decision makes up 60 per cent of the overall rate of return. The AER accepts Envestra’s approach in determining the cost of debt. It flows from this that the AER and Envestra would agree that this reduction reflects prevailing conditions in the market for funds and the risk involved in providing reference services. This provides the AER with a degree of confidence that a fall in the overall rate of return, in itself, is not unreasonable.

Envestra’s concerns surround the cost of equity and the extent to which the cost of equity determined by the AER in this decision is lower than that determined in previous decisions. The AER has discussed these concerns in detail in attachment 4.

**Figure B.9 Cost of Debt, Cost of Equity and WACC – AAA paired bonds approach**



The conceptual relationship set out above holds when the cost of equity and the cost of debt are expressed in consistent terms—as expected returns. However, there is a distinction between the expected cost of debt and the promised cost of debt:

- the promised cost of debt is calculated by assuming that the bond issuer does not default, and the promised payments of interest and capital occur (in full and on time)

- the expected cost of debt extends this calculation to include consideration of the likelihood of default, where the bond issuer does not make the promised payments of interest and capital<sup>255</sup>
- where there is a non-zero probability of default, the promised cost of debt will exceed the expected cost of debt
- there is no conceptual reason why the expected cost of equity should be greater than the promised cost of debt.<sup>256</sup>

There has been some debate about whether the cost of debt graphed above (and adopted by the AER) reflects the expected or promised cost of debt.<sup>257</sup> The point is inconsequential in current conditions, since under either interpretation the expected cost of debt is below the expected cost of equity.<sup>258</sup> If the cost of debt were to rise above the cost of equity, it would be necessary to carefully examine the cost of debt to ensure that it did not reflect promised returns.

Further, recent advice from the Reserve Bank of Australia (RBA) also touches on the relationship between the cost of debt and the cost of equity.<sup>259</sup> The RBA noted that there was a general increase in the spread between CGS and other Australian-denominated debt securities (i.e. an increase in the DRP). However, the RBA cautioned against directly equating changes in the cost of debt with changes in the cost of equity:

While it is a reasonably simple matter to infer changes in debt risk premia from market prices, it is less straightforward to do so for equity premia. In making use of a risk free rate to estimate a cost of capital, it is important to be mindful of how the resulting relativity between the cost of debt and that of equity can change over time and whether that is reasonable.<sup>260</sup>

Consistent with this advice from the RBA, the AER is mindful of the relative positions of the cost of debt and cost of equity set in this decision. The AER considers that, since the cost of equity exceeds the cost of debt, this check indicates that the AER's estimates are reasonable.

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<sup>255</sup> The basic method is a probability-weighted value calculation. If (for example) there was a 1 per cent chance of default, the calculation would assign 99 per cent weight to the promised yield (when all interest and capital is paid) and 1 per cent to the (much lower) yield arising if the default occurred and interest and capital were not repaid (or paid only in part).

<sup>256</sup> For instance, consider the situation where the expected return on equity is 4 per cent; the promised return on debt is 5 per cent; but there is a non-zero default probability such that the expected return on debt is 3 per cent. There is no problem with the promised return on debt being above the expected return on equity (5 > 4), as long as the expected return on debt is below (4 > 3).

<sup>257</sup> See Lally, *Cost of capital for regulated utilities*, February 2004, p. 75 (footnote 74); Lally, *Comments on submissions relating to the QCA's proposed WACC for the SEQ water utilities*, 31 March 2011, pp. 2, 17; Lally, *Cost of equity and the MRP*, July 2012, p. 9.

<sup>258</sup> That is, if the cost of debt graphed above (of 7.01 per cent) reflects a promised cost of debt, the expected cost of debt would be even lower.

<sup>259</sup> This advice is discussed in appendix B.1.1. Source document is RBA, *Letter regarding the CGS market*, July 2012.

<sup>260</sup> RBA, *Letter regarding the CGS market*, July 2012, p. 1–2.



## B.4 The Black CAPM

In attachment 4, the AER outlined that it would consider whether the Black CAPM should be used to cross check cost of equity estimates. The AER's considerations of this are detailed below.

Envestra submitted a report from NERA on the Black CAPM. It used the NERA report to cross check the cost of equity estimates derived from the Sharpe Lintner CAPM.<sup>261</sup> The AER has previously outlined some of the limitations of the Black CAPM. The AER still holds the following concerns with the Black CAPM:<sup>262</sup>

- The Black CAPM is not a well accepted financial model
- Zero beta returns previously presented are highly variable and most likely unreliable.
- Robust parameter inputs—specifically, the return on the zero beta portfolio—are not available.

The AER has, however, examined the information put forth by Envestra in the NERA report.

### B.4.1 The NERA report on the Black CAPM

The AER has assessed the NERA report to determine whether the cost of equity estimates of the report can be reliably used to cross check Envestra's of equity estimate.

The AER sought advice from McKenzie and Partington to inform its assessment. The advice outlined flaws and raised significant concerns with the NERA report. Based on this advice, the AER considers that the NERA report does not provide useful information which can be relied upon to check cost of equity estimates. McKenzie and Partington outlined that:

- Unlike the yield on a government security used in the Sharpe Lintner CAPM as a proxy for the risk free rate, there is no generally accepted empirical measurement of the zero beta return in the Black CAPM.<sup>263</sup> Also, the zero beta return in the Black CAPM is highly sensitive to the input variables and methods of estimation.<sup>264</sup> For example, McKenzie and Partington demonstrate that the return on two efficient zero beta portfolios differ significantly—from minus 0.85 per cent to minus 50 per cent—despite only a modest (less than 1 per cent) difference in return and standard deviation.<sup>265</sup>
- Despite some commonality in the experts supplying the estimates of excess zero beta return in the NERA report, these estimates vary and range from 6.985 percent to 10.309 percent.<sup>266</sup> The AER considers this to be a significant range in the context of its impact on the cost of equity estimate.

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<sup>261</sup> Envestra, *Victorian access arrangement information*, 30 March 2012, pp. 158–9. Envestra, *Albury access arrangement information*, 30 March 2012, p. 142-144.

<sup>262</sup> AER, *Final decision: Envestra Ltd access arrangement Qld*, June 2011.

<sup>263</sup> M. McKenzie and G. Partington, *Review of NERA report on the Black CAPM*, 24 August 2012, pp. 7–8 (McKenzie and Partington, *Review of NERA Black CAPM*, August 2012).

<sup>264</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, pp. 7–8.

<sup>265</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, p. 10–14.

<sup>266</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, p. 8.

- NERA's preferred estimate of 10.98 percent for the zero beta return is not credible.<sup>267</sup> McKenzie and Partington stated 'The estimated zero beta return looks more like the return to an equity security with a beta of the order of one. The excess zero beta return should be no more than the credit spread, but at 6.99 percent it is more like a high side estimate for the market risk premium.'<sup>268</sup>
- NERA appears to have selectively set aside estimates from the Black CAPM.<sup>269</sup> McKenzie and Partington stated 'the estimate of the zero beta return is accepted in the NERA report, but the absence of a risk premium is not. This implies that the intercept term is measured reliably, but the slope coefficient is not. This is difficult to accept.'<sup>270</sup>

Further, the AER considers:

- The model outputs depend on the inputs, and the AER does not agree with the inputs used in the NERA report. The market risk premiums used by NERA are estimated using a regime switching model and the dividend growth model. The AER's considerations of the estimates derived from these models are in section B.2.5 and B.2.3.

The AER considers that the advice from McKenzie and Partington demonstrates that the NERA report does not provide useful information which can be relied upon in checking the cost of equity estimate.

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<sup>267</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, p. 22.

<sup>268</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, p. 22.

<sup>269</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, pp. 24, 25.

<sup>270</sup> McKenzie and Partington, *Review of NERA Black CAPM*, August 2012, p. 25.

## C Real cost escalation

Real cost escalation is a method for accounting for expected changes in the costs of key factor inputs. Due to market forces, these costs may not increase at the same rate as inflation.

### C.1 Draft decision

The AER's draft decision is not to approve Envestra's proposed labour and materials cost escalators. The AER considers that applying Envestra's proposed escalators will not result in forecast opex and capex arrived at on a reasonable basis.<sup>271</sup> Nor do they provide the best possible forecasts of opex and capex in the circumstances.<sup>272</sup>

The AER instead considers that polyethylene (PE) should be escalated by the consumer price index (CPI) only and that labour should be escalated by the unadjusted Labour Price Index (LPI). The AER considers that applying these escalators to labour costs and material costs would result in the best possible forecasts of opex and capex in the circumstances.<sup>273</sup>

The AER engaged Deloitte Access Economics (DAE) to develop forecasts of labour cost changes.<sup>274</sup> The AER has determined the appropriate labour cost and materials escalators set out in Table C.1.

**Table C.1 AER determined real cost escalators (per cent)**

	2012	2013	2014	2015	2016	2017
Internal labour - specialist	1.7	1.1	1.1	1.2	0.9	1.1
Internal labour - general	1.7	1.1	1.1	1.2	0.9	1.1
Contractors	1.3	0.6	0.8	1.0	0.4	0.9
Polyethylene pipe	–	–	–	–	–	–

Source: AER analysis, Deloitte Access Economics, *Forecast growth in labour costs in Victoria: Report prepared for the AER*, 28 May 2012, p. 67.

### C.2 Envestra's proposal

Envestra proposed that real cost escalations be applied to certain inputs in its opex and capex forecasts in order to forecast real labour and materials costs. Envestra engaged BIS Shrapnel to forecast the change in labour, material, and contractor costs for the 2013–17 access arrangement period. BIS Shrapnel recommended the following escalations:

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<sup>271</sup> NGR, r. 74(2)(a).

<sup>272</sup> NGR, r. 74(2)(b).

<sup>273</sup> NGR, r. 74(2)(b).

<sup>274</sup> Deloitte Access Economics, *Forecast growth in labour costs in Victoria: Report prepared for the AER*, 28 May 2012.

- forecast growth in average weekly ordinary time earnings (AWOTE) in the property and business services (PBS) industry for general labour that provide mainly administration and corporate services
- forecast growth in AWOTE for the electricity, gas and water (EGW) industry for gas network related labour involving construction, maintenance, design and operation of gas networks
- forecast growth in the price of PE pipe for network materials based on forecast movements in international crude oil prices
- forecast growth for general materials as CPI.

Envestra proposed the forecast AWOTE growth rates be adjusted for forecast labour productivity changes.

Envestra proposed different real labour cost escalations for Victoria and Albury (Table C.2 and Table C.3).

**Table C.2 Envestra Victoria proposed real labour cost escalators (per cent)**

	2012	2013	2014	2015	2016	2017
Electricity, gas and water labour AWOTE	1.6	3.0	6.6	4.1	1.0	-0.1
General labour AWOTE	1.9	3.0	6.8	3.6	0.7	0.6
Construction labour AWOTE (capex only)	3.9	2.9	2.8	2.2	0.8	1.8
Network materials	-2.7	2.7	11.5	4.4	-2.5	4.0
General materials	-	-	-	-	-	-

Source: Envestra, Victoria Access Arrangement Information, 30 March 2012

**Table C.3 Envestra Albury proposed real labour cost escalators (per cent)**

	2012	2013	2014	2015	2016	2017
Electricity, gas and water labour AWOTE	-6.3	5.5	6.8	5.6	4.9	6.0
General labour AWOTE	-7.2	5.7	7.7	5.4	4.6	6.7
Construction labour AWOTE (capex only)	2.8	3.9	4.9	2.6	1.5	3.5
Network materials	-2.7	2.7	11.5	4.4	-2.5	4.0
General materials	-	-	-	-	-	-

Source: Envestra, Albury Access Arrangement Information, 30 March 2012

## C.3 Assessment approach

The AER assessed Envestra's proposed real cost escalators against the forecasts and estimates requirements in rule 74 of the NGR.<sup>275</sup>

### 74 Forecasts and estimates

- (1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.
- (2) A forecast or estimate:
  - (a) must be arrived at on a reasonable basis; and
  - (b) must represent the best forecast or estimate possible in the circumstances.

The AER has taken into consideration Professor Borland's report and BIS Shrapnel's report both commissioned by Envestra. In forming its views the AER has also considered advice from its commissioned consultant, DAE, on labour cost escalators.

## C.4 Reasons for draft decision: labour cost escalations

The AER's draft decision is not to approve Envestra's proposed labour and materials cost escalators. The AER considers that applying Envestra's proposed escalators will not result in forecast opex and capex that are arrived at on a reasonable basis, or provide the best possible forecasts of opex and capex in the circumstances.<sup>276</sup> This is because:

- Envestra Albury's real labour cost escalators are unlikely to be different to Envestra Victoria's real labour cost escalators
- forecast movements in labour costs for the electricity, gas, water and waste services (EGWWS) industry provide the best forecast of movements in all internal labour costs possible in the circumstances, rather than PBS industry for general labour and EGW industry for network labour
- the LPI provides a better measure of labour cost changes compared to AWOTE.
- real labour cost escalation should not be productivity adjusted due to issues in measuring and forecasting productivity

The following sections discuss these issues in detail.

### C.4.1 Different forecasts for Victoria and Albury

Envestra proposed different real labour cost escalations for Envestra Albury and Envestra Victoria.

The AER does not approve Envestra's proposed use of different real labour cost escalations for Envestra Victoria and Envestra Albury, as it is not the best possible forecast or estimate in the circumstances.

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<sup>275</sup> NGR, r. 74.

<sup>276</sup> NGR, r. 74(2).

The AER considers that the labour costs incurred by Envestra Victoria and Envestra Albury are likely to align with the real cost escalations in APA GasNet's collective agreement. This is because Envestra has outsourced the operation and management of both the Victorian and Albury distribution network to the APA Group.<sup>277</sup> The APA Group employs staff to operate and manage the two networks under the same collective bargaining agreement.<sup>278</sup> Therefore the AER considers that the same real cost escalations should be applied to both Envestra Victoria and Envestra Albury, and that this represents the best forecast or estimate possible in the circumstances.<sup>279</sup>

Envestra has also confirmed that Albury's labour costs are largely aligned with Victorian costs and accepts that there is merit in applying the same real labour cost escalations for Victoria and Albury.<sup>280</sup>

#### C.4.2 Use of labour force industries

The AER does not approve Envestra's proposed use of the EGW industry in relation to network related labour, and the PBS industry in relation to general labour, to estimate labour cost escalations. The AER does not consider that they are the best possible forecasts or estimates in the circumstances.<sup>281</sup>

The AER considers that using forecast growth in the EGWWS industry to escalate both network related labour and general labour better reflects labour costs for all internal Envestra labour during the 2013–17 access arrangement period.

The Australian Bureau of Statistics (ABS) has previously advised:

... regardless of the type of job, if the job was selected from a business classified to the electricity, gas, water and waste services industry, the jobs pay movements contributes to this industry.<sup>282</sup>

The ABS takes into account the nature of the business, not the nature of the work undertaken, when allocating a job to an industry. The ABS labour price statistics for the EGWWS industry reflects both specialised gas distribution network related labour and general labour.

Since late 2009 the ABS has reported AWOTE and LPI data under the ANZSIC<sup>283</sup> 2006 industry classification, where waste services have been included with the EGW industries, producing an EGWWS industry data series. This replaces the ANZSIC 1993 classification discontinuing the publication of the EGW industry data series.

BIS Shrapnel stated the inclusion of the waste services sub-sector in the classification will lead to lower wage growth outcomes for the combined EGWWS industry, which will no longer

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<sup>277</sup> Envestra, *Victorian Access Arrangement Information*, 30 March 2012, p. 55.

<sup>278</sup> APA GasNet, *APA Network Agreement (Victoria) 2011*, 19 December 2011 p. 4.

<sup>279</sup> NGR, r. 74(2)(b).

<sup>280</sup> Envestra, *Response to Information request 7*, 22 June 2012, p. 10.

<sup>281</sup> NGR, r. 74(2)(b).

<sup>282</sup> ABS, *Email from Kathryn Parlor to Fleur Gibbons*, 8 July 2010.

<sup>283</sup> The Australian and New Zealand Standard Industrial Classification (ANZSIC) provides a framework for organising data about businesses - by enabling grouping of business units carrying out similar productive activities.

accurately reflect the occupations in the EGW industry. Consequently BIS Shrapnel estimated the waste services component and excluded it from both its historical data and forecasts, thus deriving an EGW estimate.<sup>284</sup>

Envestra's proposed labour cost escalation rates are based on BIS Shrapnel forecasts for the EGW industry rather than the EGWWS industry used by the ABS.

BIS Shrapnel note that between 1998 and 2009 the LPI for the EGW industry grew by 4.3 per cent per annum as compared to 4.2 per cent for the EGWWS industry.<sup>285</sup>

The AER does not consider that BIS Shrapnel's reasons for excluding the waste service component (that it would result in a lower wage growth) are sufficient to adjust the EGWWS data. In the absence of any compelling evidence of a difference between the EGW and EGWWS industries, the AER considers it is not necessary to remove the forecast waste services component from EGWWS data. The AER considers removing the waste services component from the data introduces a potential source of forecasting error since it is necessary to estimate the waste services components. Further, there is likely to be forecasting error from applying the discontinued EGW industry data series which concluded in June 2009 when the ABS moved to the ANZSIC 2006 classification. This forecasting error will be magnified overtime as the period between the last available EGW data (2009) and the forecast period increases.

For these reasons, the AER considers that BIS Shrapnel's use of EGW and PBS industries to escalate labour costs would not result in the best labour cost forecast or estimate possible in the circumstances.<sup>286</sup>

DAE has estimated labour costs using the ANZSIC 2006 classification for the EGWWS labour force industry to represent Envestra's internal labour force. The AER is of the view that applying forecasts based on the EGWWS industry rather than the EGW industry will result in the best forecast or estimate possible in the circumstances.

The AER has previously accepted the use of a single ABS labour force industry to represent the total workforce of a network service provider.<sup>287</sup>

### **C.4.3 The choice of labour price measure and use of productivity adjustments**

The AER does not approve Envestra's proposed use of forecast AWOTE growth rates adjusted for forecast labour productivity for the entire regulatory period. The AER does not consider that it permits a forecast to be made on a reasonable basis, and the best possible forecast in the circumstances.

The AER considers that LPI forecasts, unadjusted for productivity effects, permits the best possible forecast of labour cost movements in the circumstances because:

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<sup>284</sup> BIS Shrapnel, *Real cost escalation forecasts to 2017 - Victoria and New South Wales*, November 2011, p. A-5.

<sup>285</sup> BIS Shrapnel, *Real cost escalation forecasts to 2017 - Victoria and New South Wales*, November 2011, p. A-5.

<sup>286</sup> NGR, r. 74(2)(b).

<sup>287</sup> See AER, *Final decision: Powerlink Transmission determination 2012–13 to 2016–17*, April 2012, p. 60.

- productivity measures for the EGWWS industry exhibit estimation bias for the reasons outlined in recent Productivity Commission (PC) analysis<sup>288</sup>
- although productivity adjusted labour price movements provide the best estimate of labour cost movements, estimated productivity adjustments cannot be relied on due to the estimation bias in productivity measures
- the LPI contains less productivity effects than the AWOTE, where the AWOTE includes all productivity effects;
- although the AER considers that LPI forecasts, unadjusted for productivity effects, provide the best possible forecast of labour cost movements, the AER recognises that this will over compensate businesses to the extent that worker productivity gains over the forecast period are positive.

Each of these issues is considered in the sections below.

### **Labour productivity adjustments**

Labour price changes are driven by both productivity effects and other effects. Productivity effects drive labour price changes since more productive labour receives higher wages.<sup>289</sup> Other effects include CPI increases and any price changes driven by labour market supply/demand imbalances.

It is important to make the distinction between labour prices and labour costs. DAE stated:

... labour costs will rise at a different rate [than labour prices] due to the effects of labour productivity growth. Effectively, labour productivity measures the number of units of output an individual employee can produce in a given time period. The more units of output each worker can produce, the fewer workers are required to create a given level of industry output. If productivity is rising, the total cost of labour (the price of each employee multiplied by the number of employees) will rise less rapidly than the individual employee's price.<sup>290</sup>

Broadly labour price changes can be described by three effects:

1. Composition productivity effects reflect increases in workforce productivity due to changes in the skill composition of the workforce. For example, an increase share of high skill workers will increase average workforce productivity and average wage rates per worker. However, because average workforce productivity has increased, fewer workers are required to produce the same amount of output, and any increase in labour costs will be less than the increase in the average labour price.
2. Worker productivity effects are increases in workforce productivity due to increases in the productivity of individual workers. For example, workers may become more productive from working with better capital equipment. Again, because average workforce productivity has increased fewer workers are required and any increase in labour costs will be less than the increase in the average labour price.

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<sup>288</sup> Productivity Commission, *Productivity in electricity, gas and water: measurement and interpretation*, March 2012.

<sup>289</sup> Professor Jeff Borland, *Labour cost escalation report for Envestra Limited*, 2011, p. 2.

<sup>290</sup> Deloitte Access Economics, *Response to Professor Borland: comments prepared for the AER*, 15 April 2011, p. 3.



3. Other effects unrelated to productivity. For example, wage increases due to inflation or labour supply or demand imbalances. Because these effects are unrelated to productivity the same amount of labour is required to produce a given amount of output and the change in labour price results in a corresponding change in labour costs.

Conceptually at least, either the AWOTE or LPI labour price measures can quantify the change in labour costs. However, it is important to use matching labour price and productivity measures.<sup>291</sup> The ABS publishes a number of productivity measures, including labour, capital and multifactor measures. The labour productivity measures are published annually for the market sector as a whole, as well as at the industry division level (for example, the electricity, gas and water industry). These measures indicate value added per hour worked. This conventional measure of labour productivity includes all productivity effects: composition productivity, worker productivity effects and other effects and as AWOTE includes all of these effects; it is the appropriate labour productivity measure for adjusting AWOTE.

A quality adjusted measure of labour productivity which includes worker productivity effects and other effects is the appropriate measure to adjust the LPI. The ABS recently developed quality adjusted measures of labour input and labour productivity. It released estimates for 1982–83 to 1999–2000 in 2005, and has since published yearly statistics from 1994–95.<sup>292</sup> This measure of labour captures the change in the aggregate quality of labour due to compositional changes such as higher education, or longer work experience, so the effect is not ascribed to productivity. Generally, the quality adjusted labour productivity index increases at a slower rate than the conventional labour productivity index, because the conventional index includes compositional productivity effects that may reflect increased skill composition of the workforce. An increase in the skill composition of the workforce, which may manifest itself in an increase in the labour price, does not necessarily suggest a simultaneous increase in the labour cost. This is because an increase in the skill level may mean fewer workers such that labour costs may fall.

The AER considers that Envestra should not be compensated for labour price changes driven by labour productivity effects. This is because labour price changes do not equate to labour cost changes. To the extent labour prices compensate workers for increased productivity, those price increases do not increase labour costs, since fewer workers are required to produce the same output.

Further, the AER has previously stated that to the extent that labour prices are rising due to increased labour productivity (due to either compositional productivity or worker productivity), the increase in labour costs will be less than the increase in the labour price.<sup>293</sup> To determine the impact of labour price increases on the total labour cost to produce a constant level of output, the price impacts of labour productivity effects should be removed from the labour price measure used.<sup>294</sup> However, the PC has noted four broad issues which impact measurement of marginal factor productivity (MFP) growth in EGW industries:

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<sup>291</sup> Deloitte Access Economics, *Response to Professor Borland: comments prepared for the AER*, 15 April 2011, p. 3.

<sup>292</sup> ABS, *Quality-adjusted labour inputs, Research paper*, Catalogue number 1351.0.55.010, November 2005.

<sup>293</sup> See AER, *Draft Decision: Powerlink Transmission determination 2012–13 to 2016–17*, November 2011, p. 57.

<sup>294</sup> AER, *Draft Decision: Powerlink Transmission determination 2012–13 to 2016–17*, November 2011, p. 56.

1. cyclical investment—the lumpy nature of capital in relation to measured output<sup>295</sup>
2. output measurement—difficulty in measuring output which can lead to unanticipated changes in MFP<sup>296</sup>
3. shifts to higher cost technologies—investments as a result of climate-related issues increasing the cost per unit of output<sup>297</sup>
4. unmeasured quality improvements—changes in government regulations mandating improvements in the network that are not directly measured, such as mandatory underground electricity cabling.<sup>298</sup>

The AER considers that the estimation issues identified by the PC contribute to the uncertainty in forecasting productivity adjustments.

Productivity adjustments may also double-count other effects such as scale adjustments. Further, accurately forecasting labour productivity in the medium to long term is extremely difficult, leading to high risk of forecasting error.<sup>299</sup>

Envestra has applied a productivity adjusted AWOTE estimated by BIS Shrapnel. BIS Shrapnel forecasts weak productivity growth over the next six years due to constrained demand and output growth.<sup>300</sup> The AER considers that BIS Shrapnel's productivity forecasts do not take into account the factors described by the PC listed above.

Envestra also sought advice from Professor Jeff Borland on whether the AWOTE or the LPI should be used for the purposes of real labour cost escalation for the 2013–17 access arrangement period.

Professor Borland stated that the productivity adjusted LPI underestimates changes to labour costs by an amount equal to the change in the skill composition of the workforce.<sup>301</sup> The AER agrees with this view if the conventional labour productivity measure is used to adjust the LPI.

In response to Professor Borland, DAE stated their forecasts of LPI and productivity implicitly assumes a zero value for composition productivity. If the compositional productivity adjustment is different from zero, this result would be deducted from both LPI growth and productivity growth resulting in a net effect of zero.<sup>302</sup>

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<sup>295</sup> Productivity Commission, *Productivity in electricity, gas and water: measurement and interpretation*, March 2012, p. 122.

<sup>296</sup> Productivity Commission, *Productivity in electricity, gas and water: measurement and interpretation*, March 2012, p. 126.

<sup>297</sup> Productivity Commission, *Productivity in electricity, gas and water: measurement and interpretation*, March 2012, pp. 128–129.

<sup>298</sup> Productivity Commission, *Productivity in electricity, gas and water: measurement and interpretation*, March 2012, pp. 129–130.

<sup>299</sup> AER, *Draft decision - Access arrangement proposal for the Roma to Brisbane Pipeline 2012–13 to 2016–17*, April 2012, p. 200

<sup>300</sup> BIS Shrapnel, *Real cost escalation forecasts to 2017 - Victoria and New South Wales*, November 2011, p. 44.

<sup>301</sup> Professor Jeff Borland, *Labour cost escalation: Choosing between AWOTE and LPI - Report for Envestra Limited*, March 2012, p. 6.

<sup>302</sup> Deloitte Access Economics, *Response to issues raised in the Victorian Gas Access Review*, 29 May 2012, p. 7.

Professor Borland further notes in his empirical analysis that over the long run changes in labour costs is equal to changes in other productivity effects such as CPI.<sup>303</sup>

The AER considers that in theory productivity adjustments should be applied to real cost escalations if productivity adjustments are not undertaken elsewhere in opex and capex forecasts.

However, the AER notes the high degree of difficulty in estimating both quality adjusted labour productivity and conventional labour productivity as evidenced by the conflicting productivity estimates from BIS Shrapnel and DAE and the analysis conducted by the PC. Thus, while the AER expects worker productivity to improve over the long run, due to estimation difficulties, it has not sought to address this effect, at this stage, in Envestra's forecasts of labour costs.

### **Choice of labour price measure**

Given the difficulty in measuring and forecasting labour productivity movements, the AER considers that productivity adjustments should not be applied to Envestra's labour cost escalations. The AER notes that currently unadjusted labour forecasts of the AWOTE and LPI are above inflation. This approach will allow Envestra to benefit from changes in labour productivity effects. In light of the difficulties in estimating productivity, the AER considers an unadjusted LPI is the best forecast in the circumstances<sup>304</sup> although this figure is upwardly biased by including labour productivity improvements.

Envestra proposed the use of forecast movements in productivity adjusted AWOTE, provided by BIS Shrapnel, to escalate its labour costs for anticipated real labour price increases.

AWOTE measures average employee earnings from working the standard number of hours per week. It is not strictly a price index (that measures the pure price effect) because the composition of labour is not held constant. It captures composition productivity effects, worker productivity effects and other effects. In contrast the LPI is a Laspeyres type price index. As a Laspeyres type price index the LPI measures the change in labour costs with the quantity and quality of work performed held constant.<sup>305</sup> It measures the pure price effect, showing how much the same quantity of labour costs in the current period, relative to the base period. The weights used are for the base period and are updated annually to represent job distribution.<sup>306</sup>

Conceptually at least, either labour price measure can quantify the change in labour costs, provided a correctly matched productivity measure is used.<sup>307</sup>

BIS Shrapnel considers the LPI measures underlying wage inflation but does not measure variations in the quality or quantity of work performed. The AWOTE measures both the

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<sup>303</sup> Professor Jeff Borland, *Labour cost escalation: Choosing between AWOTE and LPI - Report for Envestra Limited*, March 2012, p. 6.

<sup>304</sup> NGR, r. 74(2)(b).

<sup>305</sup> To the extent that some quality changes in the work performed are unquantifiable, the price change would incorporate some of the quality change effect. However, the magnitude of this effect is generally negligible.

<sup>306</sup> ABS, *Labour Price Index: concepts, sources and methods*, Catalogue number 6351.0.55.001, 2004, p. 12.

<sup>307</sup> Deloitte Access Economics, *Response to Professor Borland: comments prepared for the AER*, 15 April 2011, p. 3.

change in the cost of labour and skill level changes within an industry. For this reason BIS Shrapnel prefers the use of AWOTE over the LPI.<sup>308</sup>

DAE noted that there are drawbacks to both the LPI and AWOTE measures. However it considered LPI to be a better measure than AWOTE, because compositional changes such as the pace of recruitment and retirement and the changed relativities in the employment of men and women can distort AWOTE as a proxy for changes in the price of labour.<sup>309</sup>

DAE further notes the advantages of the LPI over the AWOTE as a measure of labour price changes will increase as the ABS commences publishing the AWOTE on a six monthly basis rather than on a quarterly basis and ceases publishing all AWOTE by state by industry information.<sup>310</sup>

However, the AER notes that using the LPI has its own difficulties because of the limited availability of quality adjusted labour productivity index data. The ABS publishes unadjusted labour productivity for the EGWWS industry but its quality adjusted labour productivity index is available only at the overall market sector level.

The ABS also considers the LPI to be their preferred indicator of changes in the price of labour because average weekly earnings (AWE) estimates are affected by changes in both the price of labour and changes in the composition of the labour market.<sup>311</sup>

The AER considers the problems with using AWOTE are greater than those with using the LPI. This is because the higher volatility of the AWOTE, and the inclusion of the composition productivity effects, makes AWOTE unreliable for forecasting labour costs for the utilities industry in comparison with the more stable LPI time series (see Figure C.1).

The LPI unadjusted for labour productivity, which includes worker productivity effects, will more closely represent the true change in labour costs than the unadjusted AWOTE which includes both worker and composition productivity effects.

The AER considers that any labour cost increases associated with compositional change should be offset by productivity benefits. To estimate the efficient labour cost, it is appropriate to hold the labour force composition stable over the forecast period and allow Envestra to retain any efficiency benefits of workforce compositional change.

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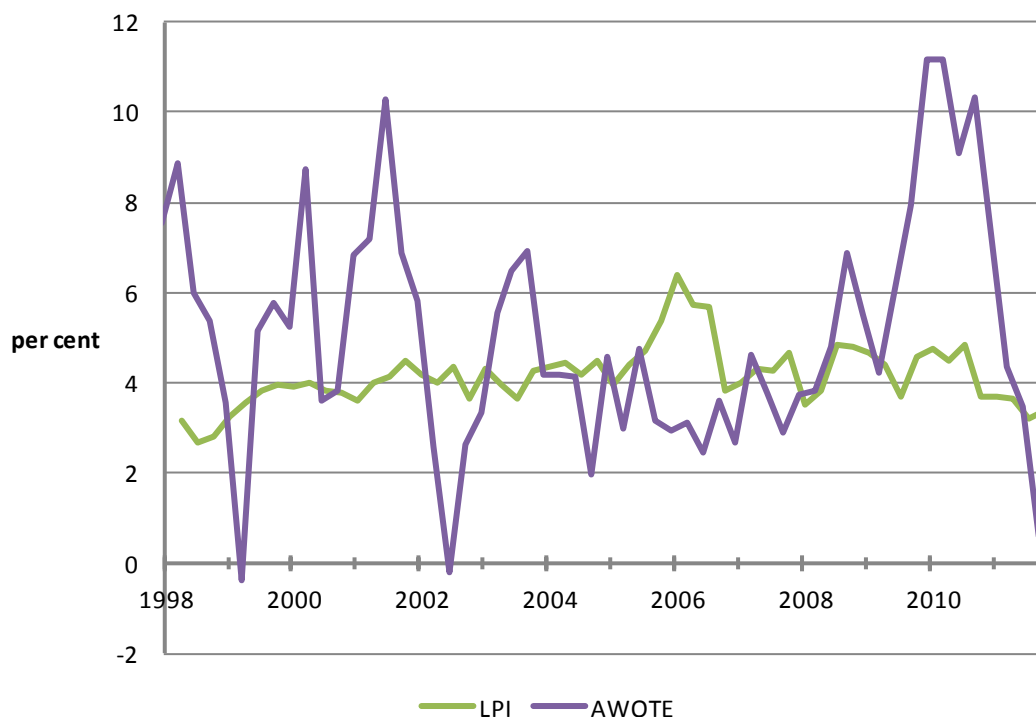
<sup>308</sup> BIS Shrapnel, *Real cost escalation forecasts to 2017 - Victoria and New South Wales*, November 2011, p. 25.

<sup>309</sup> Deloitte Access Economics, *Response to issues raised in the Victorian Gas Access Review*, 29 May 2012, p. 2.

<sup>310</sup> Deloitte Access Economics, *Response to issues raised in the Victorian Gas Access Review*, 29 May 2012, p. 2.

<sup>311</sup> ABS, *Labour Price Index: concepts, sources and methods*, Catalogue number 6351.0.55.001, 2004, p. 43.

**Figure C.1 Annual growth in LPI and AWOTE, EGWWS industry, Australia (per cent)**



Source: ABS, catalogue 6302.0, table H; ABS, catalogue 6345.0, table 9b; AER analysis

The AER notes that the inclusion of labour productivity effects will provide an upwardly biased forecast of labour cost movements if Envestra has positive labour productivity over the forecast period.

### Choice of LPI forecasts

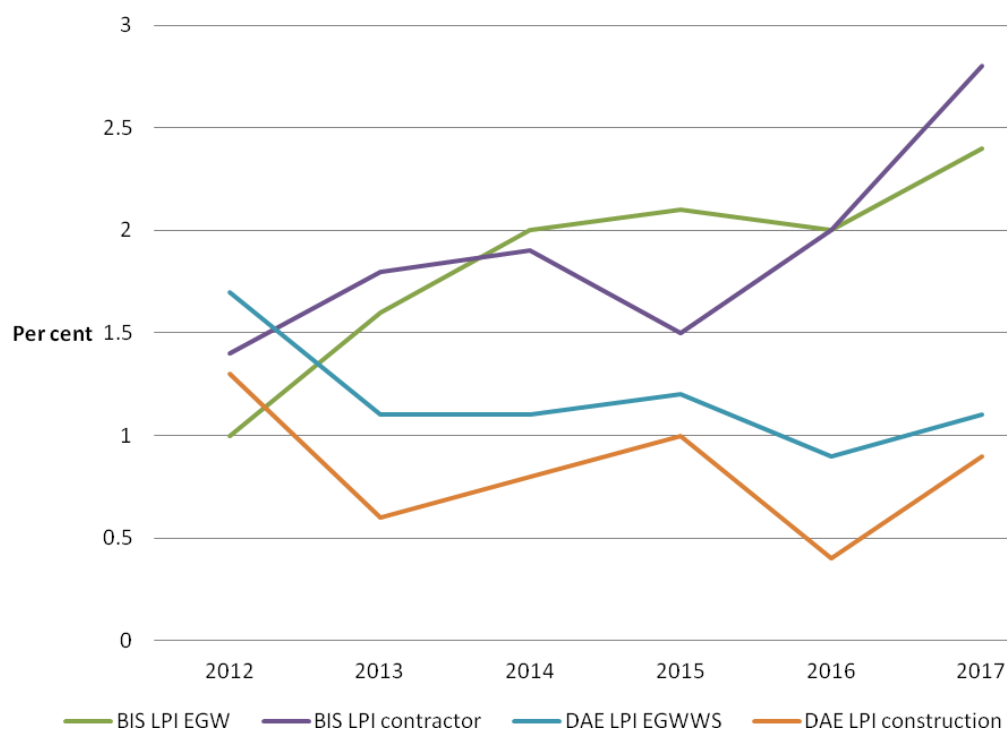
BIS Shrapnel estimated Envestra's forecast movements in both the LPI and AWOTE. DAE analysis has shown BIS Shrapnel's forecasts of LPI have consistently been higher than the actual LPI and DAEs forecasts have been lower.<sup>312</sup> BIS Shrapnel's LPI forecasts, unadjusted for productivity, are higher than those forecast by DAE, consistent with this analysis (Figure C.2)

The AER considers the difference between DAEs forecast LPI and actual LPI is less than the magnitude of DAEs forecast of quality adjusted labour productivity. Should DAE's forecast LPI be lower than actual LPI in the 2013–17 access arrangement period, future worker productivity improvements for that period are likely to outweigh any potential difference between forecast and actual LPI. Therefore the AER considers the LPI estimated by DAE represents the best forecast possible in the circumstances.<sup>313</sup>

<sup>312</sup> Deloitte Access Economics, *Responses to issues raised in various submissions to the Victorian Gas Access Review*, 29 May 2012, p. 25.

<sup>313</sup> NGR, r. 74(2)(b).

**Figure C.2 Real LPI forecasts (per cent)**



Source: BIS Shrapnel, Real Cost Escalation Forecasts to 2017—Victoria and NSW, November 2011; Deloitte Access Economics, Forecast growth in labour costs in Victoria, 28 May 2012

The AER undertook its own analysis and compared both BIS Shrapnel's and DAEs forecasts of LPI movements for the Australian economy (Table C.4). For the forecast series commencing 2006 to 2011 included in the analysis, the average of DAEs and BIS Shrapnel's forecasts had the lowest mean absolute error on three occasions, DAEs forecasts on two and BIS Shrapnel's once. This result is consistent with a significant body of literature concluding forecast accuracy can be improved by combining multiple individual forecasts.<sup>314</sup> It is also consistent with DAEs finding that its forecasts were too pessimistic but BIS Shrapnel's were too optimistic. The AER does not have the necessary data to undertake the same analysis for Victoria.

**Table C.4 Comparison of past LPI forecast**

Forecast	2006–07	2007–08	2008–09	2009–10	2010–11	Mean absolute error
						Utilities
Actual	5.0	4.1	4.5	4.3	4.2	
BIS Shrapnel (March 2007)	5.8	5.8	5.2	4.5	4.7	0.78
DAE (April 2007)	5.6	5.7	5.1	3.6	3.9	0.76

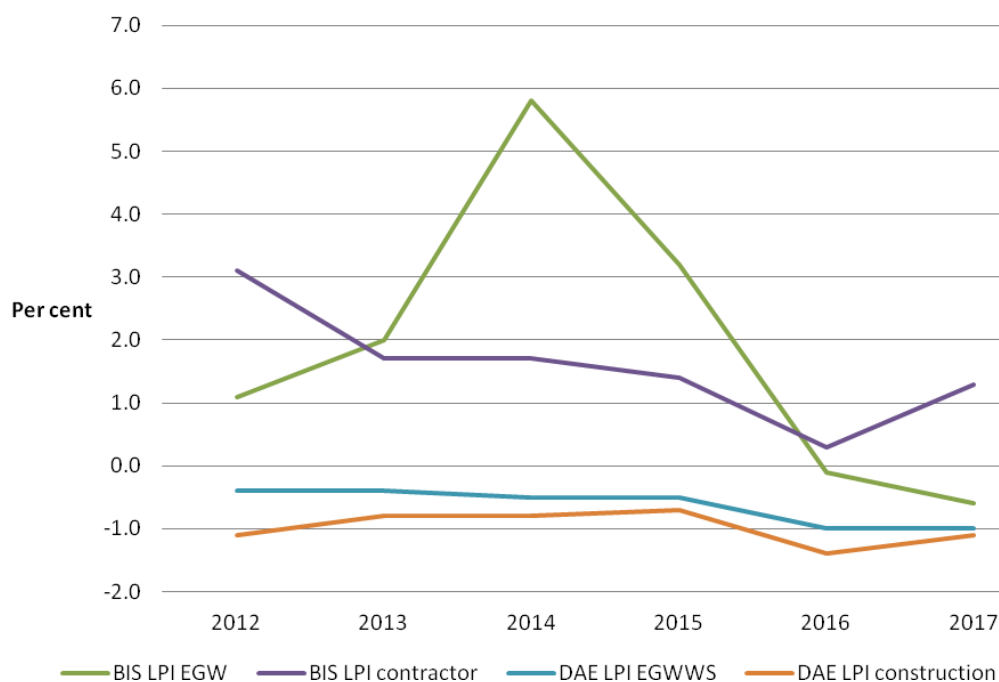
<sup>314</sup> Robert T. Clemen, 'Combining forecasts: A review and annotated bibliography', *International Journal of Forecasting*, volume 5, issue 4, 1989, pp, 559–583.

BIS Shrapnel (April 2009)		4.8	4.7	4.4	0.30
DAE (September 2009)		4.5	3.5	3.4	0.53
BIS Shrapnel (December 2009)			4.3	4.2	0.00
DAE (March 2010)			4.0	3.9	0.30
All industries					
Actual	3.9	4.1	4.1	3.1	3.8
BIS Shrapnel (March 2007)	4.2	4.5	3.8	3.7	4.2
DAE (April 2007)	4.1	4.6	4.4	4.0	4.3
BIS Shrapnel (April 2009)		4.1	3.3	3.1	0.30
DAE (September 2009)		4.1	3.5	3.9	0.17
BIS Shrapnel (December 2009)			3.1	3.3	0.25
DAE (March 2010)			3.2	3.7	0.10

Source: AER analysis; BIS Shrapnel, Labour cost escalation forecasts to 2016–17—Australia and Queensland, January 2012, table 6.1

The AER notes BIS Shrapnel's forecast real productivity adjusted LPI exhibits a high level of volatility (figure C.3). The AER considers BIS Shrapnel's labour productivity adjusted forecasts will overstate labour cost movements. These forecasts exhibit a strong increase in 2014 which is driven by BIS Shrapnel's forecast steep decline in labour productivity. Given the issues raised by the Productivity Commission regarding measured productivity in the EGWWS industry the AER is not satisfied BIS Shrapnel's forecast real productivity adjusted LPI will accurately reflect Envestra's labour costs in the 2013–17 access arrangement period.

**Figure C.3 Real productivity adjusted LPI forecasts (per cent)**



Source: BIS Shrapnel, Real Cost Escalation Forecasts to 2017—Victoria and NSW, November 2011; Deloitte Access Economics, Forecast growth in labour costs in Victoria, 28 May 2012

## C.5 Reasons for draft decision: network materials cost escalators

The AER does not approve Envestra's proposed network materials real cost escalators, because it considers the network materials real price increases forecast by Envestra were not arrived at on a reasonable basis and do not represent the best forecast or estimate possible in the circumstances.<sup>315</sup> Envestra proposed to escalate its network materials costs by expected real price increases for PE pipes, forecast by BIS Shrapnel. The AER considers that BIS Shrapnel did not demonstrate:

- that the total cost basket of network materials purchased by Envestra will increase at a rate greater than CPI
- that PE pipe cost are increasing faster than the CPI
- how foreign exchange forecasts, used to convert commodity prices from US dollars to Australian dollars, were derived
- an empirical relationship between oil prices and PE pipe prices.

Therefore, the AER considers Envestra's proposed materials real cost escalators were not arrived at on a reasonable basis and do not represent the best forecast or estimate possible in the circumstances.<sup>316</sup> The AER considers Envestra's proposed materials real cost

<sup>315</sup> NGR, r. 74(2).

<sup>316</sup> NGR, r. 74(2).



escalators were not arrived at on a reasonable basis because Envestra did not provide quantifiable evidence to demonstrate PE pipeline costs will escalate in real terms. The AER also considers Envestra's proposed materials real cost escalators do not represent the best forecast or estimate possible in the circumstances, because expected inflation produces superior forecasts for PE pipeline inflation.

The AER rejected proposed PE and other plastic pipeline real cost increases forecast in a similar manner in its past decisions for Country Energy, ActewAGL, and the Jemena Gas Networks.<sup>317</sup> BIS Shrapnel also forecast cost escalators for Envestra's gas networks in South Australia and Queensland, which the AER also rejected.<sup>318</sup> In all cases, the AER concluded real cost escalation was not appropriate and PE and other plastic pipe prices should be escalated by CPI only.

The following sections discuss these issues in greater detail.

### C.5.1 Empirical data on network materials costs

The AER considers BIS Shrapnel's forecast PE pipe price increases were not arrived at on a reasonable basis and do not represent the best forecast or estimate possible in the circumstances.<sup>319</sup> It is not reasonable to forecast real price increases when there is no empirical evidence that prices are increasing faster than CPI. The available evidence suggests the recent trend for real PE pipe prices is negative. Envestra provided no contrary empirical evidence.

Envestra provided PE pipe price data in its submission to the 2011–16 access arrangements for its Queensland and South Australian gas distribution networks. These prices represent the nominal weighted average price for four pipe categories used by Envestra for the years 2004 to 2010.<sup>320</sup> When adjusted for inflation, real PE pipe prices in 2010 were similar to those in 2004 (Figure C.4).

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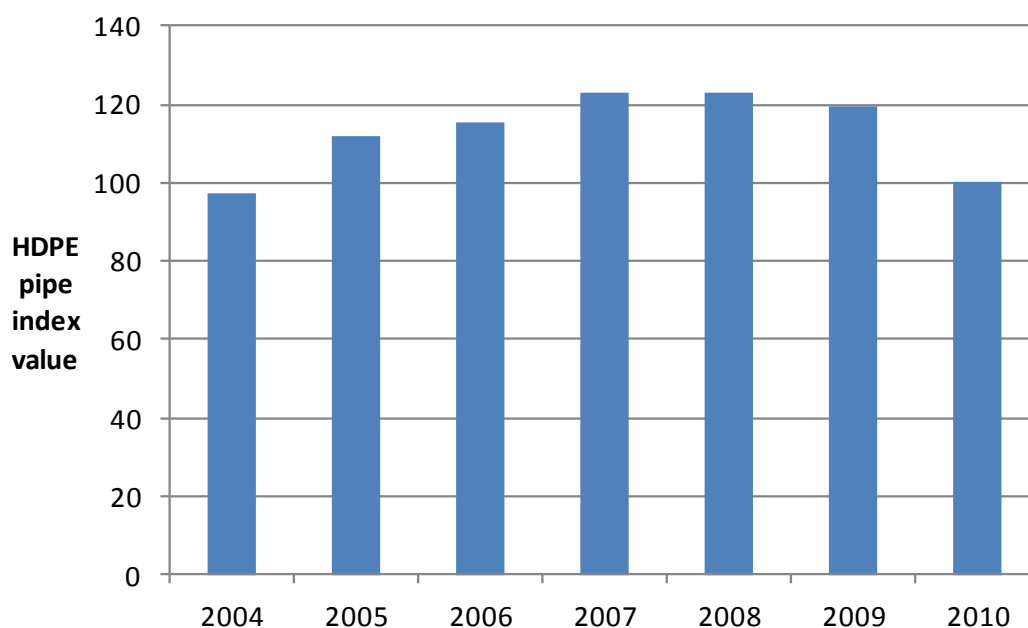
<sup>317</sup> AER, *JGN final decision*, June 2010, p. 85; AER, *Country Energy draft decision*, November 2009, p. 28; and, AER, *ActewAGL final decision*, March 2010, p. 26.

<sup>318</sup> AER, *Envestra Ltd: Access arrangement proposal for the Qld gas network*, final decision, June 2011, p. 217; and AER, *Envestra Ltd: Access arrangement proposal for the SA gas network*, final decision, June 2011, p. 230.

<sup>319</sup> NGR, r. 74(2).

<sup>320</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2015/16*, March 2011, p. 59.

**Figure C.4 Index of real PE pipe prices faced by Envestra 2004–10 (2010 base year)**



Source: BIS Shrapnel<sup>321</sup>

The rigid and semi-rigid polymer product manufacturing output producer price index from the ABS provides further evidence network materials costs are not increasing in real terms. The rigid and semi-rigid polymer product index, although not a direct measure of PE pipe cost escalation, provides some indication of the changes in the price level for products similar to PE pipe. From March 2009 to March 2012 the real value of the index, which includes PE pipe, decreased by 6.2 per cent.<sup>322</sup>

The AER requested Envestra provide any forward contracts it had for PE pipes. The contracts provided gave no evidence PE pipe prices will increase faster than inflation.<sup>323</sup>

### **C.5.2 Network materials cost escalation forecast methodology**

The AER considers BIS Shrapnel's forecast methodology for PE pipe prices does not produce forecasts arrived at on reasonable basis and does not represent the best forecast or estimate possible in the circumstances.<sup>324</sup> The methodology is upwardly biased because it uses a material that it forecasts to increase in real cost as a proxy for all materials. The empirical data available also indicates that CPI based forecasts perform better than the type of methodology utilised by Envestra.

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<sup>321</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2015/16*, March 2011, p. 59.

<sup>322</sup> ABS, Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006; catalogue number 1292.0; Producer Price Indexes, Australia, March 2012, catalogue number 6427.0; and Consumer Price Index, Australia, March 2012, catalogue number 6401.0.

<sup>323</sup> Envestra, *Response to AER information request 18*, 1 July 2012.

<sup>324</sup> NGR, r. 74(2).

Any estimate that uses real cost escalation for only one materials as a proxy for the entire basket of network materials cost escalation, is not arrived at on a reasonable basis and does not represent the best forecast or estimate possible in the circumstances.<sup>325</sup>

This is because while the real cost of some items will increase, others will decrease. Adjusting only for real cost increases, and not decreases, produces upwardly biased cost forecasts. In order to establish that compensation for network materials real cost escalation is necessary, there must be evidence the entire basket of network costs has been increasing by more than CPI. Consequently, even if there is evidence the price of PE pipe will increase more than CPI this does not necessitate that Envestra's network materials costs will increase by more than CPI.

Envestra proposed the cost of network materials be escalated for forecast real cost increases in the price of PE pipe, as forecast by BIS Shrapnel.<sup>326</sup> BIS Shrapnel used an input cost model to forecast the real change in PE pipe prices.<sup>327</sup> An input cost model uses the cost of inputs, and the proportions in which they are used, to predict the price of an end product. There is no evidence that the weights assumed in BIS Shrapnel's input cost model produce accurate forecasts of network materials prices. However, an increase in the price of an input does not necessarily mean the price of related outputs will increase. There may be many causal factors that drive output prices. For example, producers may substitute to cheaper inputs or may not increase prices because customers will substitute to cheaper alternative products.

Past performance of input cost models, relative to CPI based forecasts, in predicting the cost of PE pipes has been poor. Envestra claimed real cost escalation, based on expected increases in oil prices, for PE pipes for its South Australian network's 2007–11 Access arrangement.<sup>328</sup> The forecast price for PE pipes at the end of the period was more than 40 per cent higher than the realised prices provided by Envestra in support of its 2011–16 Access arrangements for its Queensland and South Australia networks.<sup>329</sup> At the end of the same period PE pipe prices forecast based on CPI expectations were 4.7 per cent below realised pipe prices. Furthermore the mean squared prediction error (MSPE) was lower for the CPI based forecast than for Envestra's input cost model. This supports the argument that CPI produces more accurate PE pipe forecasts than input cost models. Therefore, the AER considers that BIS Shrapnel's materials real cost escalators are not arrived at on a reasonable basis and do not represent the best forecast or estimate possible in the circumstances<sup>330</sup>

### C.5.3 Foreign Exchange

The AER and BIS Shrapnel forecast movements in materials costs using data denominated in US dollars. These must be converted to Australian dollars for the purpose of estimating real

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<sup>325</sup> NGR, r. 74(2).

<sup>326</sup> Envestra Victoria, *Access arrangement information*, 30 March 2012, p. 105.

<sup>327</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2015/16*, March 2011, p. 63.

<sup>328</sup> Envestra Ltd, *Response to ESCOSA Draft Decision, Part A*, 5 May 2006, pp. 25–26.

<sup>329</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2015/16*, March 2011, p. 59.

<sup>330</sup> NGR, r. 74(2).

cost escalation. The AER cannot approve forecasts without a statement on the basis of the forecast or estimate.<sup>331</sup>

The AER considers that exchange rate forecasts based on forward markets are the most realistic expectation of exchange rates during the 2013–17 access arrangement period. BIS Shrapnel converted US dollar denominated input prices to Australian dollars using internal forecasts.<sup>332</sup> BIS Shrapnel do not explain how these forecasts were derived.

The timing of the foreign exchange forecasts relative to the commodity forecasts is also unclear in BIS Shrapnel's report. To the extent possible, materials costs forecasts and exchange rate forecasts should be derived at the same time because of the relationship between the two. Demand for the Australian dollar is related to demand for commodities. For example, if exchange rate forecasts were updated, but not the US dollar materials costs forecasts (because long term forecasts had not been updated, for example), then the Australian dollar materials cost forecasts would be biased. If the Australian dollar were to drop after the materials cost forecasts, then the materials cost forecasts would be upwardly biased since commodity prices are also likely to have dropped. Similarly, if the Australian dollar were to rise after the materials cost forecasts, then the materials cost forecasts would be downwardly biased.

#### C.5.4 Commodity price forecasts

The AER considers BIS Shrapnel's oil price forecasts do not represent the best forecast possible in the circumstances.<sup>333</sup> BIS Shrapnel used futures prices to forecast oil prices.<sup>334</sup> The AER has accepted this method of forecasting in past decisions.<sup>335</sup> However, given new evidence, the AER considers that this approach is no longer reasonable nor the best possible in the circumstances.

The AER also considers BIS Shrapnel's PE pipe price forecasts were not arrived at on a reasonable basis, and do not represent the best forecast or estimate possible in the circumstances.<sup>336</sup>

##### Oil

Generally the AER has considered prices in futures markets provide a reasonable basis to forecast commodity prices. BIS Shrapnel used Chicago Mercantile Exchange (CME) futures prices to forecast oil prices.

However a recent discussion paper from the Federal Reserve round that:

More commonly used methods of forecasting the nominal price of oil based on the price of oil futures or the spread of the oil futures price relative to the spot price cannot be recommended. There is no reliable evidence that oil futures prices significantly lower the

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<sup>331</sup> NGR, r. 74(1).

<sup>332</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2017*, November 2011, p. 70.

<sup>333</sup> NGR, r. 74(2)(b).

<sup>334</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2017*, November 2011, p. 70.

<sup>335</sup> AER, *Final decision. Powerlink Transmission determination 2012–13 to 2016–17*, April 2012, p. 50.

<sup>336</sup> NGR, r. 74(2).

MSPE relative to the no-change forecast at short horizons, and long-term futures prices often cited by policymakers are distinctly less accurate than the no-change forecast.<sup>337</sup>

The no-change forecast is a forecast that predicts future prices will be the same as the current price. The paper also noted that over horizons of several years the no change forecast adjusted for expected inflation was a better predictor of nominal oil prices than futures, expert economic forecasts, and the unadjusted current price of oil.<sup>338</sup>

It is also noted in the paper that:

This result is consistent with common views among oil experts. For example, Peter Davies, chief economist of British Petroleum, has noted that “we cannot forecast oil prices with any degree of accuracy over any period whether short or long.”<sup>339</sup>

The AER is not satisfied the proposed oil price forecasts represent the best forecast possible in the circumstances.<sup>340</sup> Based on this new research, the AER considers the best forecast or estimate possible in the circumstances is the expected change in the CPI.

## Polyethylene pipe

The AER considers that BIS Shrapnel's forecast methodology for PE pipe produces forecasts that are not arrived at on a reasonable basis and do not represent the best possible forecast in the circumstances.<sup>341</sup>

The AER does not consider that BIS Shrapnel's methodology for forecasting PE prices is reasonable.<sup>342</sup> BIS Shrapnel did not adequately demonstrate the relationship between PE pipe prices and oil prices. As explained in section C.5.2 an input price increase does not necessarily result in the price of related outputs rising. This problem of estimating causality and proportionality is likely to be compounded because, to determine the relationship between PE pipe prices and oil prices, BIS Shrapnel used thermoplastics as a proxy for PE.

The reasonableness of the model is brought into further question because it conflicts with prior findings. A study by the United States Bureau of Labor Statistics (BLS), the source of BIS Shrapnel's oil and plastics data, also explored the relationship between oil prices and plastic prices. The BLS model indicates an 8.2 per cent increase in US oil prices eventually leads to a 0.6 per cent increase in US plastics prices.<sup>343</sup> By contrast, the model used by BIS Shrapnel to forecast PE pipe prices assumes a 1 per cent increase in oil prices leads to a 0.8 per cent increase in thermoplastic prices.<sup>344</sup> Consequently the effect reported by BIS Shrapnel is more than 10 times that estimated by the BLS. The AER notes BIS Shrapnel's Australian thermoplastic price forecasts also fail to account for the negative

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<sup>337</sup> Alquist, R., Kilian, L. And Vigfusson, J., *Forecasting the Price of Oil*, Board of Governors of the Federal Reserve System, International Finance Discussion Papers, Number 1022, July 2011, p. 69.

<sup>338</sup> Alquist, R., Kilian, L. And Vigfusson, J., *Forecasting the Price of Oil*, Board of Governors of the Federal Reserve System International Finance Discussion Papers, Number 1022, July 2011, p. 2.

<sup>339</sup> Alquist, R., Kilian, L. And Vigfusson, J., *Forecasting the Price of Oil*, Board of Governors of the Federal Reserve System International Finance Discussion Papers, Number 1022, July 2011, p. 26.

<sup>340</sup> NGR, r. 74(2)(b).

<sup>341</sup> NGR, r. 74(2).

<sup>342</sup> NGR, r. 74(2)(a).

<sup>343</sup> Weinhalten, J. C., Price transmission: from crude petroleum to plastics products, *Monthly Labor Review*, December 2006, p. 54.

<sup>344</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2017*, November 2011, p. 67.

constant in its econometric model and thus overstates the effect of oil prices on thermoplastics prices.

Regression diagnostics also raise further concerns about the reasonableness of the model selected for BIS Shrapnel's PE forecasts. The adjusted R squared for BIS Shrapnel's Australian model was 0.11, indicating movements in oil prices explained only 11 per cent of the variation in thermoplastics prices. Thus, the majority of thermoplastics price movements cannot be explained by oil price movements. Given the low adjusted R squared and high correlation between the variables, some of the correlation between oil and thermoplastics prices may be explained by an omitted explanatory variable.

The AER considers BIS Shrapnel's application of their PE price forecasting methodology is not reasonable.<sup>345</sup> This is because by not including the exchange rate as an explanatory variable in its model, BIS Shrapnel have introduced omitted variable bias. BIS Shrapnel used both an Australian model and a US model to estimate the relationship between oil prices and PE prices.<sup>346</sup> The models use different data and the data in the Australian model are transformed into Australian dollars before the regression. This leads to an upward bias in the estimated relationship between oil and thermoplastics prices. This is because when the Australian dollar falls in value, all else being equal, the oil and thermoplastics prices in Australian dollars, will move up together. Conversely, when the Australian dollar increases in value, oil and thermoplastics prices will both decrease. As BIS Shrapnel's regression does not control for the exchange rate, the movements in thermoplastics prices caused by the exchange rate are attributed to oil prices. This may explain why BIS Shrapnel estimates a 1 per cent increase in oil prices will lead to a 0.8 per cent increase in thermoplastics prices in Australia but only a 0.3 per cent increase in the US. While it is necessary to adjust for the exchange rate, this should be done in the input cost model and not before the regression.

The AER found that using the US relationship between oil and thermoplastics, and adjusting for the exchange rate in BIS Shrapnel's Australian CME oil futures input cost model, led to an average nominal annual increase in PE pipe prices of 2.9 per cent over the 2013–17 access arrangement period. BIS Shrapnel forecast average annual CPI inflation to be 2.7 per cent.<sup>347</sup> To test the sensitivity of the model, the AER ran BIS Shrapnel's input cost model with different inputs. The AER found, when properly adjusted for the exchange rate, using BIS Shrapnel internal oil price forecasts instead of CME oil futures in the input cost model forecast a real decrease in PE pipe prices over the 2013–17 access arrangement period. Using the same model again, but replacing forecast changes in the price of oil with expected CPI movements also produced real declines in the price of PE pipe. Given the range of forecasts produced by the BIS Shrapnel model fluctuate around the CPI, depending on the inputs used, the AER considers the model will not provide an improvement on CPI for forecasting network materials price increases. Therefore, the AER considers using the CPI as an inflator for network materials costs produces forecasts that are arrived at on a reasonable basis, and that represent the best forecasts or estimates possible in the circumstances.<sup>348</sup>

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<sup>345</sup> NGR, r. 74(2)(a).

<sup>346</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2017*, November 2011, pp. 66–67.

<sup>347</sup> BIS Shrapnel, *Real Cost Escalation Forecasts to 2017*, November 2011, p. 70.

<sup>348</sup> NGR, r. 74(2).

## C.6 Revisions

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

**Revision C.1:** Opex and capex forecasts should be amended to reflect the labour and materials cost forecasts set out in Table C.1.

## D Terms and conditions – Submissions

The AER has decided to accept a number of Envestra’s terms and conditions that the AER considers are consistent with the NGO. The AER received submissions that do not support the AER’s decision for some of those terms and conditions. The following table addresses those submissions and provides the AER’s reasons for its decision.

Clause	Submission	AER Consideration
New	Customer Relationship  AGL submitted that Envestra has deleted former clause 3, which detailed the relationship between the parties. It is AGL’s preference to insert Multinet’s amended clause 3 on customer relationships.  Envestra was not amenable to the proposed revision.	The AER considers that this is a commercial matter more appropriately negotiated between the parties.
New	Provision of DB and cessation of DB services  AGL submitted that Envestra has deleted clause 4.1. If clause 3 is reinserted, AGL is not concerned if clause 4.1 is not included in the agreement.	The AER considers this a commercial matter more appropriately negotiated between the parties.
2.6	Service Standards  AGL submitted that the network should be operated and managed with 'due care and skill' or 'in accordance with good industry practice'.  Envestra was amenable in principal to the proposed revision.	This clause imposes an absolute obligation on Envestra. The AER considers that AGL’s suggested amendments would impose a lesser standard on Envestra.  The AER considers that an obligation to operate the network in accordance with the access arrangement promotes the efficient operation and use of gas services, an aspect of the NGO. The AER considers that AGL’s proposed amendment to this clause is not more consistent with the NGO.
3.3	Fixed component of Haulage Service Charges  AGL submitted that if there is no shared customer at the Delivery Point (DP) and no consumption, the Network User should not be liable for ongoing service charges. For example, if a customer moves out and no new customer moves in, AGL questions why a Network User should continue to be liable for charges indefinitely. There is no mechanism in place in Victoria to allow Network Users to deregister the DP in these circumstances and cease to be Financially Responsible Operator (FRO) (as AGL understands there is in NSW). Accordingly it is unreasonable for Network Users to be liable for fixed service charges where there is no shared customer.	Under AEMO’s Retail Market Procedures for Victoria, the party registered as the FRO is the party responsible for settling the account relating to the supply point. Accordingly, the AER considers that the proposed sub-clause is appropriate, because it follows the procedures of the market operator. This is consistent with the efficient operation of Envestra’s network, an aspect of the NGO.



		Envestra was not amenable to the proposed revision.	
4.3	Network Limitations	<p>AGL submitted that it is the responsibility of the Service Provider to maintain the pressure and flow rate. Clause 14 (Delivery Pressures) should be adequate to limit the Service Provider's liability. Therefore, AGL submitted that the limiting phrase "and the pressure and flow-rate of Gas within the Network" should be deleted.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that the qualification proposed by Envestra is consistent with the NGO. Envestra should not be obliged to deliver more gas than the technical limitations of the network provide for. The AER considers that pressure and flow-rate amount to technical limitations. The AER considers that clearly specifying the limits on Envestra's obligation promotes the efficient operation use of gas services, an aspect of the NGO.</p>
9.1	Delivery Point Metering installation	<p>AGL submitted that Envestra's discretion must be 'reasonable'.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that this sub-clause is consistent with the NGO. The sub-clause obliges the Network User to ensure that there is a safe source of electricity available at delivery points to enable Envestra to install and operate meters. The AER considers that the Network User is better placed to manage this through its contract with customers. The AER cannot envisage a situation where Envestra would make an unreasonable request.</p> <p>The AER considers that the proposed term provides for the efficient operation and use of gas services, aspects of the NGO. The network would not operate efficiently if Envestra was unable to install and operate its meters.</p>
10.5	Notice of Results	<p>AGL submitted that meter testing requests are usually due to high meter bill enquiries or billing disputes, and therefore have revenue implications. Accordingly, a specific timeframe (such as 10 business days from the date of request) for Envestra to provide the meter test results (rather than 'as soon as practicable') should be included.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that an obligation to act as soon as practicable allows the flexibility to prioritise activities.</p> <p>The AER considers that a flexible approach to the performance of activities promotes the efficient operation and use of gas services, aspects of the NGO.</p>
10.7	Basis for Corrections	<p>AGL submitted that this clause should only bind the Network User to the extent that the Network User can claim from the Customer as per the proposed undercharging and overcharging provisions of NECF.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that this clause is consistent with the NGO. The AER considers that this clause sets out the process for correcting metering errors. The clause is qualified so that corrections will be made in the manner required by law or on a reasonable basis.</p> <p>The AER considers that it is appropriate to provide for the correction of metering errors. If such errors were not corrected, this could lead to</p>

				<p>distorted price signals and incorrect prices. This would not be in the long term interest of consumers with respect to price, an aspect of the NGO.</p> <p>If AGL is concerned about exposure to liability, this is a commercial matter more appropriately negotiated between the parties.</p>
11.1	Schedule Reading	Meter	<p>AGL submitted that Envestra should also be required to use reasonable endeavours to meet the Network User's requested timeframes.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that the specified frequency of meter readings is consistent with the NGO. It provides for regular meter readings. The AER considers that increasing the frequency of meter reading could lead to increased costs. This would not promote the efficient provision or use of gas services, or be in the long term interests of consumers, which are aspects of the NGO.</p> <p>To the extent that AGL requires Envestra to meet its timetable for meter reading, the AER considers this to be a commercial matter more appropriately negotiated between the parties.</p>
11.5 & 11.6	Final Reading		<p>AGL submitted that Envestra's meter reading timeframes should be subject to a special read request.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that the final reading times set out in the proposed access arrangement are consistent with the NGO. Envestra is required to make a reading at whatever time is required by law. In the absence of a law specifying a timeframe, the AER considers that Envestra's proposed timeframes provide it with flexibility.</p> <p>To the extent that AGL requires Envestra to meet its timetable for meter reading, the AER considers this to be a commercial matter more appropriately negotiated between the parties.</p>
13.1	Receipt Pressure		<p>AGL submitted that Envestra should not be able to unilaterally change the Receipt Pressure.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that it is important that Envestra's network is operated in a way that prevents damage to the network. As the owner and operator of the Network, Envestra is best placed to understand its limitations.</p> <p>Retailers can manage any potential changes in Envestra's specified pressure through their contracts with upstream suppliers.</p> <p>The AER considers that this clause is consistent with the NGO because it promotes the efficient operation of the Network.</p>
14.1	Delivery Pressure		<p>AGL submitted that Envestra should also be required to exercise all due care</p>	<p>This clause requires that "Envestra will ensure that gas delivered at each</p>

		and skill.  Envestra was not amenable to the proposed revision.	DP is within the range of pressure prescribed by law..." The AER considers that this clause imposes an absolute obligation on Envestra. AGL proposes to make the obligation that "Envestra will ensure that all gas delivered with all due care and skill at each DP..."  The AER considers that the qualification proposed by AGL would lower the standard of Envestra's obligation. This is because Envestra would only have to ensure that gas was within the range of pressure if the gas was delivered with all due care and skill. The AER considers that the current wording requires Envestra to ensure that gas is within the specified range of pressure regardless of how it is delivered.  The AER considers that delivery pressure is solely in the control of Envestra. Envestra should have an unqualified obligation to make sure the pressure is within a range prescribed by law, or agreed to with the Network User. The AER considers that this will promote the efficient operation and use of the gas system, an aspect of the NGO.
15.3	Limited Responsibility after Delivery	AGL submitted that the Service Provider should be liable if it causes damage through a breach of clause 12, 13 or 14.  Envestra was not amenable to the proposed revision.	The AER considers that these clauses impose a number of obligations on both Envestra and the Network User. These clauses relate to the specifications and ownership of gas. The AER considers that it is important to clarify these obligations so as to incentivise each party to take steps to avoid damage to the gas network. This is consistent with the promotion of efficient operation and use of gas services, aspects of the NGO.  The AER considers that these clauses impose obligations on Envestra. There are contractual remedies available to a Network User that suffers loss as a result of a breach of these clauses.
17.3		Origin submitted that clause 17.3 outlines the order of curtailment Envestra will undertake. Origin is unclear as to why this clause is so specific in its level of detail, since AEMO has powers to direct load shedding based on load curtailment tables. Origin proposes that it be amended to a more general clause similar to 6.1(a) in the SP AusNet Victorian Terms and Conditions, in the interest of consistency across distributors.  Envestra was amenable in principal to the proposed revision.	The AER considers that the clause as proposed is consistent with the NGO. The AER considers that this clause provides a level of detail that enables parties to know in advance what will happen in the event of curtailment. This enables them to take action to mitigate any potential damage. The AER considers that this promotes the efficient operation and use of gas services, aspects of the NGO.

18.1	Grounds Disconnection	for	<p>AGL submitted that this clause should clarify that if Envestra does not disconnect a delivery point on request, it will be liable for any energy charges accrued after that date of the request. AGL further submitted that the clause should also provide that in this situation the Network User is not liable for any Distribution charges after the date of the request.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that it is appropriate to specify that Envestra may disconnect a delivery point where it is permitted by law. This clause avoids uncertainty, which promotes the efficient provision and use of gas services, aspects of the NGO.</p> <p>Under AEMO's Retail Market Procedures for Victoria, the party registered as the FRO is the party responsible for settling the distribution charges relating to the supply point. Notwithstanding the Network User's request to disconnect the delivery point, it will continue to be registered as the FRO, and therefore liable under AEMO's procedures.</p> <p>To the extent that AGL wishes this clause to cover energy charges accrued after the date of request, the AER considers this to be a commercial matter more appropriately negotiated between the parties.</p>
20	Obligation Charges	to Pay	<p>AGL submitted that where the Network User is unable to claim charges from a customer, whether for legal or insolvency reasons, the Network User should not be liable for Distribution Charges. AGL considers that normal commercial allocation of risks, whereby each party is liable for their own losses should apply. For example, the user bears liability for energy costs and the Network User bears liability for distribution charges.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that where a Network User is concerned about the solvency of a customer, it is open to it to manage this risk via its contractual arrangement with the customer. The AER considers that Network User's, as the party with the direct customer relationship, is best placed to manage this risk.</p> <p>As it is framed, the clause provides certainty and promotes the efficient provision and use of gas services, aspects of the NGO.</p>
20.1	Obligation Charges	to Pay	<p>AGL submitted that Network Users should only be liable to pay for charges requested or agreed by the Network User. Network Users would not have visibility of customer or Service Provider initiated services and accordingly should not bear the financial risk if a customer refuses to pay for the service.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that it is appropriate to place an obligation on Network Users to pay Distribution Service Charges to Envestra. This obligation is qualified by sub-clause 20.3, so that the Network User is not obliged to pay where Envestra has entered into a direct billing arrangement with a shared customer. Such an obligation is consistent with the NGO because it promotes the efficient operation and use of gas services.</p> <p>AGL appears to be concerned about its obligation to take over distribution charges once a direct relationship between a customer and Envestra comes to an end. The AER considers that this risk can be managed through the contractual relationship between the Network User and the customer.</p>
21.1	Statement	of	<p>AGL submitted that for the sake of clarity, and to reflect AGL's system capabilities and resource constraints, this clause should specify that billing will</p>	<p>The AER considers that including a term specifying the provision of a statement of charges is consistent with the NGO because it increases</p>

	Charges		not occur more frequently than monthly.  Envestra was not amenable to the proposed revision.	transparency and assists in avoiding errors. This will promote the efficient operation and use of the gas services and is in the long term interests of consumers, aspects of the NGO.  The AER considers that the date and frequency of providing a statement of charges is a commercial matter more appropriately negotiated between the parties.
21.2	Content of Statement of Charges		AGL submitted that Envestra's invoices should be required to contain sufficient information as to allow the Network User to verify/reconcile the charges (including how they determine 'non-fixed' charges, service order numbers and dates of requests.  Envestra was not amenable to the proposed revision.	The AER considers that this clause, as proposed, provides sufficient scope for Network Users to verify/reconcile the charges. The clause expressly states that each statement of charges must include the information required by law. The clause also states that a statement of charges may include any other information which Envestra agrees to include. The AER therefore considers that there is scope for Network users to request the inclusion of additional information.  To the extent that a Network User requires different information in a statement of charges, the AER considers this to be a commercial matter more appropriately negotiated between the parties.
21.5	Due Date for Payment	Not	APG submitted that payment of invoices within 10 business days is not consistent with the timeframe under which retailers are able to receive payment from consumers (13 business days under NECF). This timeline should be equalised.  In clause 21.5 Origin proposes the term 'Tax Invoice' instead of "Statement of Charges" since this sits better with the requirements of GST legislation. Further, Origin proposes that the sentence 'the Network User must pay the full amount specified in each statement of charges, without set-off, by the due date for payment', be modified to 'the Network User must pay the full amount specified in each statement of charges by the due date for payment without deduction or set-off unless required by law', recognising that some deductions and set-offs can be required of recipients by law.  Envestra stated that this clause is already subject to clause 23.	The AER considers that the proposed due date for payment of 10 days after the date of issue of the statement of charges is appropriate. This timeframe provides the Network User with reasonable notice of due payments and allows for each party to manage its cash-flow. This promotes the efficient operation and use of gas services, aspects of the NGO.  The parties are free to negotiate any amendments that they seek. However, the AER considers this as a commercial matter best negotiated between the parties.
22.1	Recovery	Not	AGL submitted that the Network User should not be required to pay amounts where it is unable to recover the amount from the customer for reasons beyond	Clause 22.1 provides that if the Network User is not permitted to recover Distribution Service Charges from a Shared Customer under NECF, then

Permitted	<p>its control—such as customer insolvency. AGL submitted that if Envestra failed to invoice a Network User due to its own negligence and in the meantime the customer cannot be located or is insolvent, Envestra should be responsible for the charges.</p> <p>The reference to the National Energy Retail Law (NERL) and National Energy Retail Rules (NERR), which form part of NECF, should also be deleted as restrictions on recovery also apply in Victoria.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>Envestra is not permitted to recover those Distribution Service Charges from the Network User.</p> <p>The AER has proposed an amendment to this sub-clause to make it clear that it only applies once NECF is adopted in Victoria.</p> <p>The AER does not consider that AGL's submission is relevant to this sub-clause.</p> <p>The AER considers that the concerns raised by AGL can be addressed in its customer contract. Further, the AER considers that these are general risks of doing business. The AER considers that, as the party with the direct customer relationship, the Network User is the most appropriate party to bear this risk.</p> <p>If this type of risk was borne by Service Providers, they would face greater potential liability than a Network User would. This is because they would have to bear the risk for all customers. Requiring the risk to be borne by Network Users reduces the level of risk that each Network User faces. Breaking the risk up is likely to reduce overall costs, which is in the long term interest of consumers with respect to price, an aspect of the NGO.</p> <p>Necessary amendments due to Victoria's non adoption of NECF are discussed at 12.1.5.</p>	
25.1	Method of Payment	<p>APG requests that Austraclear be allowed as an additional payment method to electronic bank transfer.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that the method for making payment is a commercial matter more appropriately negotiated between the parties.</p>
25.2	Business Days	<p>AGL submitted that in accordance with industry, banking and commercial practice payments should be made on the next business rather than the day prior.</p> <p>APG submitted that it opposes the requirement for payment one business day in</p>	<p>The AER considers that specifying the due date for payment avoids uncertainty and the potential for disputes. This promotes the efficient use and operation of gas services, aspects of the NGO.</p> <p>To the extent that the Network Users want to specify a different day, the</p>

		advance of the due date for payment when the due date is not a business day, as it effectively shortens the payment due date to nine business days from the date of invoice. Retailers should have until the next business day to make payment.	AER considers this a commercial matter more appropriately negotiated between the parties.
		Envestra was not amenable to the proposed revision.	
28.5	No Refunds	<p>AGL submitted that Envestra should only be able to set off refunds or repayments due to the Network Users upon agreement with the Network User. Particularly, if the refund is pertaining to an error or overcharge of the Service Provider.</p> <p>Origin submits that clause 28.5 absolves Envestra of any obligation to refund Network Users. Origin submits that this seems too broad, as it also excludes an instance where Envestra has overcharged the Network User. Origin proposes adding the words “except where Envestra has overcharged”.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>This clause provides that Envestra will have no obligation to refund any amount paid by the Network User on account of Distribution Service Charges to become payable under the Agreement.</p> <p>The AER considers that Envestra should not be required to refund payments that have been made on account of Service Charges that are to become payable. If these payments were refunded, once the amount became payable, the Network User would then have to pay. Refunds in this situation would create additional complexity and inefficiency. This is not consistent with the efficient operation of gas services, an aspect of the NGO.</p>
28.6	Imbalance Termination	<p>AGL submitted that for the sake of clarity, clause 28.2 (termination) should be referenced here.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that the reference to termination of the Agreement in this sub-clause is sufficiently clear and it is not necessary to expressly reference sub-clause 28.2.</p>
29.5	Limitation Period	<p>AGL queries the necessity of this provision. It states that three months is a short timeframe to gather full particulars and this clause is not included in other Access Arrangements. AGL submits that it recently discovered errors with an invoice for a retrospective period. The errors demonstrated that Envestra charged thousands of dollars for service orders that AGL did not even raise. AGL submitted that because there is a three month limit on Retailers disputing their network charges, Envestra refused to refund those amounts in SA and Qld even though AGL was charged in error.</p> <p>Origin submitted that clause 29.5 contains a three month limitation period, where statutory limitation periods could apply, or at least a six month period in light of the two month billing cycle.</p>	<p>The AER considers that a limitation period is reasonable and consistent with the NGO. Such a period will encourage Network Users to make a swift decision on whether to commence a claim or not. The AER considers that this removes uncertainty and promotes the efficient operation and use of gas services, aspects of the NGO.</p> <p>The AER notes that the time limit commences once the claim becomes known or should have become known. The AER considers that this protects the Network User whilst imposing a constraint aimed at ensuring the efficient provision of services.</p>

		Envestra was not amenable to the proposed revision.	
32.1	Information	<p>AGL submitted that rule 94 of the NERR, covers assistance and cooperation. This subject matter should default to NECF in the same way other provisions have.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER notes that NECF does not presently apply in Victoria. Whilst (once it is adopted in Victoria) NECF will govern key aspects of information sharing, it will not cover every aspect. The AER considers that clarifying the parties' obligations with respect to information sharing and provision is beneficial. This creates clarity and avoids uncertainty. The AER considers this to be consistent with the NGO as it promotes efficiency in the provision of services.</p>
32.3	Consultation	<p>AGL submitted that Envestra should be subject to the same 'assistance and or cooperation', and no cost and in a timely manner obligations as are imposed on Network Users in clause 32.2.</p> <p>Envestra stated that this clause does not state that it will charge a fee.</p>	<p>The AER does not consider that it is necessary for this clause to be reciprocal. Clause 32.2 provides for the Network User to obtain information or action from third parties. This requires Envestra to provide information to a third party. It is unlikely that Envestra will need to obtain information or action from a third party in the way a Network User will. Accordingly, it is not necessary for the clauses to be reciprocal.</p> <p>The Network User is best placed to ensure that customers and upstream operators provide necessary assistance, cooperation or information in a timely manner. As the Network User has a contractual relationship with these parties, these obligations can be managed through that relationship.</p> <p>The AER considers that obliging the Network User to provide or obtain assistance or information to assist Envestra to comply with its obligations is consistent with the NGO. Such obligations ensure that Envestra can meet its obligations and operate the network efficiently. The AER considers that this promotes the efficient use of services, aspects of the NGO.</p>
33.6	Indemnity Qualification	<p>AGL submitted that the words "negligent or wrongful" should be deleted as any act or omission of Envestra that contributed to the loss or liability should reduce the Network User's liability.</p> <p>Origin submitted that in clause 33.6 the words "negligent or wrongful" should be deleted. Origin submitted that any contribution by Envestra to the loss or liability should reduce the Network User's liability, not just where the contribution was wrongful or negligent. Alternatively, Origin submitted that the Network User's liabilities should be limited to exclude acts that are neither wrongful or negligent.</p>	<p>The AER considers that this term is consistent with the NGO because it provides an incentive for Envestra to avoid negligent or wrongful acts or omissions. The AER considers that it is appropriate to qualify indemnities to incentivise the indemnified party to take steps to avoid or mitigate the loss that the indemnity covers. This is likely to reduce costs, which is in the long term interests of consumers with respect to price, an aspect of the NGO.</p> <p>To the extent that Origin and AGL consider that the indemnities it provides should be further qualified, the AER considers this a commercial matter</p>



		<p>Envestra was not amenable to the proposed revision.</p> <p>AGL queries why these clauses are not reciprocal.</p>	<p>most appropriately negotiated between the parties.</p>
36	Confidentiality	<p>Origin submitted that the confidentiality requirements in clause 36 should be reciprocal on both parties.</p> <p>Envestra was not amenable to the proposed revision. Envestra stated that obligations on it are contained in the NGL.</p>	<p>The NGL imposes obligations on Envestra with respect to confidentiality. Accordingly, the AER considers that it is not necessary to repeat them in the Agreement.</p>
		<p>AGL submitted that the dispute resolution clauses in the Rules are adequate.</p> <p>Origin submits that clause 37.1 involves an independent expert in a dispute, whereas the Multinet/SP AusNet terms involve the Chief Executive Officers (CEOs) of the two entities. Origin notes that dispute resolution is covered under NECF. Origin propose that in the interim the CEOs be substituted for independent experts in the interests of reducing costs and consistency.</p> <p>Envestra was not amenable to the proposed revision.</p>	<p>The AER considers that appointing an independent expert for dispute resolution is consistent with the NGO because it provides for the resolution of disputes and avoidance of litigation. This is likely to reduce costs which would be in the long term interest of consumers with respect to price, an aspect of the NGO.</p> <p>Further, the AER notes that sub-clause 37.3 requires the parties to meet and endeavour to resolve the dispute through negotiation. The parties may only refer a dispute to resolution by an independent expert if they have been unable to resolve it by negotiation within 10 business days. Accordingly, the AER considers that there is scope for the parties to negotiate prior to referring a dispute to resolution by an independent expert.</p> <p>To the extent that Origin considers this clause should refer to the negotiation being conducted by the respective CEOs, the AER considers this a commercial matter best negotiated between the parties.</p>
38.1(b)	Notice	<p>AGL submitted that the reference to fax should be deleted. This is an out-dated means of communication and not as reliable as the other suggested methods.</p> <p>Envestra was amenable to the proposed revision.</p>	<p>The AER considers this a commercial matter most appropriately negotiated between the parties.</p>
43.2(c)		<p>Origin would like to make it explicit in clause 43.2(c) that payment of GST is required on taxable supply subject to the receipt of a valid tax invoice. This aligns with the requirements of relevant GST legislation. The words "Subject to the receipt of a valid tax invoice..." could be added to the beginning of this clause to make this explicit.</p>	<p>The AER considers this a commercial matter most appropriately negotiated between the parties</p>

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Envestra was amenable in principal to the proposed revision.

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## E Outsourcing

Envestra outsources its network operating and maintenance activities to the APA Group for both Envestra Victoria and Envestra Albury. As a result, much of Envestra's forecast costs are based on fees paid to the APA Group. These include fees for the actual direct and indirect costs incurred by the APA Group in providing the outsourced services, a margin and incentive payments.

This appendix sets out the AER's assessment of Envestra's proposed expenditure via its outsourcing arrangements with the APA Group.

The AER has considered Envestra's outsourcing arrangement in detail to assess whether the forecast expenditure incurred under the arrangement meets the relevant criteria under the NGR.<sup>349</sup>

### E.1 Network Management Fee

The AER considers there is sufficient evidence to suggest that a forecast of opex inclusive of the Network Management Fee (NMF) under Envestra's operating and management agreement with the APA Group is consistent with the criteria governing operating expenditure under the NGR.<sup>350</sup> In particular, that:

- Envestra is acting prudently and efficiently by outsourcing the operation and maintenance of Envestra Victoria and Envestra Albury to the APA Group. This is demonstrated by Envestra's reasonable performance against various benchmarks.
- industry practice is to outsource the operation of networks to take advantage of economies of scope and scale available to asset management companies. Envestra is acting in accordance with good industry practice by outsourcing the operation and maintenance of Envestra Victoria and Envestra Albury to a large asset management company to access these economies of scale and scope.
- the AER considers an indicator of achieving the lowest sustainable cost is efficiency. Envestra's total opex has been relatively efficient in the 2008–12 access arrangement period. Therefore, as Envestra's forecast opex is based on historical opex, the AER considers the forecast opex of Envestra Victoria and Envestra Albury inclusive of the NMF is reflective of the lowest sustainable cost of providing reference services.

### E.2 Incentive payments

The AER's draft decision is not to include forecast opex and capex incentive payments in Envestra's total revenue forecasts for Envestra Victoria as it does not consider Envestra's forecast opex and capex inclusive of incentive payments is a forecast that satisfies r. 74 of the NGR.

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<sup>349</sup> NGR, rr. 74, 91 and 100.

<sup>350</sup> NGR, r. 91,

## E.3 Envestra proposal

Envestra outsources its network operating activities to the APA Group under the 2007 operating and management agreement (2007 OMA).<sup>351</sup> The 2007 OMA applies to Envestra Victoria and Envestra Albury and is on similar terms to the 2007 OMA for Envestra's South Australian, Queensland and Northern Territory networks and the 2011 OMA for its Wagga Wagga network.<sup>352</sup> Under the 2007 OMA for Victoria and Albury, Envestra makes a number of payments to the APA Group, including:<sup>353</sup>

- reimbursement of reasonable costs (direct and indirect) incurred by the APA Group in the performance of its obligations
- a NMF equal to 3% of network revenue
- incentive payments payable for achieving reductions in costs of new connections and controllable costs per GJ.

Envestra incorporated the NMF and estimated incentive payments in its proposed opex and capex forecasts for the 2013–17 access arrangement period.<sup>354</sup>

Envestra submitted the costs incurred under the 2007 OMA are consistent with the NGR because:

- the relevant consideration under the NGR is whether the expenditure is likely to result in lower overall costs compared to alternative arrangements, that is, in-house service provision. Having regard to r. 91 of the NGR, Envestra submitted that it does not need to show that expenditure is in fact the lowest sustainable cost achievable.
- outsourcing via the 2007 OMA enables Envestra to obtain significant scale and scope efficiencies. Were it not to pay the NMF, Envestra submitted it would not be able to access these efficiencies, with the alternative being to undertake all operating activities in-house at greater cost.
- Envestra's outsourcing arrangement has been subject to extensive regulatory scrutiny and it has been determined that the costs incurred under the outsourcing arrangements have satisfied the relevant criteria under the NGL and NGR.<sup>355</sup>

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<sup>351</sup> Envestra, *Victoria Access arrangement information, March 30 2012*, p. 55; Envestra, *Albury Access arrangement information, March 30 2012*, p. 51.

<sup>352</sup> Envestra, *Victoria Access arrangement information, March 30 2012*, pp. 57–58; Envestra Limited, *Albury Access arrangement information, March 30 2012*, pp. 53–54.

<sup>353</sup> Envestra, *Victoria Access arrangement information, March 30 2012*, pp. 68–39; Envestra Limited, *Albury Access arrangement information, March 30 2012*, pp. 64–65.

<sup>354</sup> Envestra included a NMF equal to 3% of the total revenue of Envestra Victoria and Envestra Albury in its proposal, allocated equally to the proposed opex and capex forecasts. Incentive payments were only included for Envestra Victoria.

<sup>355</sup> Envestra, *Victoria Access arrangement information, March 30 2012*, p. 91; Envestra, *Albury Access arrangement information, March 30 2012*, p. 86.

## E.4 Assessment approach

The AER must have regard to whether the proposed expenditure incurred via outsourcing arrangements is consistent with the NGR and NGL. In particular, whether the proposed expenditure is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice to achieve the lowest sustainable costs of delivering pipeline services.<sup>356</sup> The proposed expenditure must also be consistent with r. 100 of the NGR which specifies that the provisions of an access arrangement must be consistent with the National Gas Objective (NGO) and the Revenue and Pricing Principles (RPP).<sup>357</sup>

To assess the consistency of Envestra's proposed NMF and incentive payments with the NGR, the AER has applied a two stage approach that can be summarised as follows:

5. Can the contract be presumed to be efficient and prudent? (presumption threshold)
6. Further assessment of contracts that fail the presumption threshold – is the contractual cost consistent with the NGR (i.e. is it prudent and efficient)?

Where an outsourcing arrangement is obtained through a competitive market process, the AER considers it reasonable to presume that the contract price reflects efficient costs and is consistent with the NGR.<sup>358</sup> However, where this is not the case, particularly in situations where services are accessed via non-arms length transactions or are part of a broader transaction, the AER does not consider it reasonable to assume that costs within such agreements are efficient. Such circumstances might influence a service provider to artificially inflate expenditures, particularly via the addition of profits or margins in addition to expenditures for direct and indirect cost recovery.<sup>359</sup>

Given these concerns with contracts sourced on a non-competitive basis, the AER considers it necessary to investigate outsourcing arrangements that fail the presumption threshold in more detail. When undertaking a further assessment of outsourcing arrangements, the AER considers whether:

- the total contractual cost is prudent, efficient and the lowest sustainable cost of providing pipeline services
- outsourcing is in accordance with good industry practice
- the costs within the contract relate wholly to the provision of the regulated service
- there is any double counting of costs within the contract.

The AER considers an indicator of a service provider achieving the lowest sustainable cost of providing pipeline services is when its costs are efficient. Efficient costs are those expected

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<sup>356</sup> NGR, r. 91,

<sup>357</sup> NGR, r. 100.

<sup>358</sup> The AER's reasons for presuming certain outsourcing arrangements obtained through a competitive market process are efficient and prudent are discussed in AER, *Final decision – Victorian electricity distribution network service providers' distribution determination 2011–2015*, October 2010, pp. 163–168.

<sup>359</sup> AER, *Final decision – Victorian electricity distribution network service providers' distribution determination 2011–2015*, October 2010, p. 150.

costs that would be based on outcomes in a workably competitive market. The AER has undertaken benchmarking analysis as an indicator of whether the costs are consistent with outcomes expected in a workably competitive market.

## E.5 Reasons for decision

The AER's assessment of the APA Group's costs and expenses that form part of Envestra's proposed opex and capex forecasts is in attachment 3 and 6. The analysis in this section focuses on whether the AER can presume the contract is prudent and efficient, and whether the NMF and incentive payments (i.e. payments in addition to direct and indirect costs of the APA Group) are consistent with the NGR.

### E.5.1 NMF

#### Presumption threshold

The presumption threshold test involves consideration of whether Envestra had an incentive to agree to non-arm's length terms at the time the contract was negotiated or at the most recent contract re-negotiation. An indicator of potential incentives to agree to non-arms length terms include situations where the contract was entered into (or renegotiated) as part of a broader transaction.

Envestra has outsourced the operation and maintenance of Envestra Albury and Envestra Victoria to the APA Group since 2007. The terms of the agreement are set out in the 2007 OMA for these networks.<sup>360</sup> The 2007 OMA is a novation (with minor amendments) of a 1999 OMA between Envestra and Boral Energy Asset Management (BEAM) for Envestra's network operating activities relating to the Victorian and Albury gas distribution networks.

The AER notes that the 1999 OMA obligated Envestra not to unreasonably withhold its consent to a novation. As a result, when APA Group took over the contract in 2007, Envestra appears not to have been at large to renegotiate the contract. Therefore, it appears that the 2007 OMA was not as much a new contract, as it was largely the continuation of a contract originally struck in 1999. As such, it seems appropriate that the AER examine the 1999 OMA to determine compliance with r. 91 of the NGR.

The 1999 OMA was entered into as part of a joint bid between Boral and Envestra for the Stratus gas distribution and retail businesses in Victoria.<sup>361</sup> Table E.1 sets out a summary of the history of the outsourcing arrangements between Envestra, Boral and the APA Group.

**Table E.1 History of Envestra's outsourcing arrangements**

Date	Event
June 1997	Envestra and Boral entered into a series of transactions concerning the sale by Boral to Envestra

<sup>360</sup> Note this agreement is separate to the 2007 OMA for the South Australian, Queensland and the Northern Territory networks (Envestra, *Victoria Access arrangement information March 30 2012*, p. 57; Envestra, *Albury Access arrangement information March 30 2012*, p. 53).

<sup>361</sup> Envestra, *Victoria Access arrangement information March 2012*, p. 59; Envestra, *Albury Access arrangement information March 2012*, p. 55.

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	of the SA gas distribution network. Envestra was a wholly owned subsidiary of Boral. BEAM (100% subsidiary of Boral) and Envestra entered into agreement (1997 OMA) for the operation and maintenance of the South Australian and Queensland Networks.
August 1997	Envestra was floated on the stock exchange. Boral purchased 19.97% of Envestra in the public offering.
1999	Envestra and BEAM formed a consortium to bid for the Stratus distribution and retail businesses in Victoria. The joint bid consisted of various components, including an amount for the retail component (contributed by Boral) and an amount for the distribution component (contributed by Envestra). As part of this joint bid, Envestra and BEAM entered into the 1999 OMA for BEAM to manage the operation and maintenance of the Stratus distribution network if the bid was successful. The terms of the 1999 OMA were similar to the terms of the 1997 OMA.
February 2000	Boral underwent a demerger. The effect of this was that Origin became the owner of Boral's shares in Envestra and Origin Energy Asset Management (OEAM – 100% owned by Origin) became the renamed operator under the 1997 and 1999 OMAs.
July 2007	Origin Energy decided to sell various assets and operations, including its operating functions under the 1997 and 1999 OMA. The APA Group acquired the assets, which included Origin's 17% shareholding in Envestra and Origin's 100% interest in OEAM. The 1997 and 1999 OMAs were novated so that the APA Group replaced OEAM as the operator. The 2007 OMAs are in substantially the same terms as the original agreements.
2011	Envestra entered into an OMA with the APA Group for the network operation of its recently acquired Wagga Wagga gas distribution network. The terms of the 2011 OMA are similar to the 2007 OMA for the Victorian and Albury networks.
2012	The APA Group now holds an equity interest of around 33% and is the largest shareholder in Envestra. Envestra's board has eight members: two are appointed by the APA Group, two by CKI (Envestra's other major shareholder) and four are independently appointed.

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Source: Envestra Limited, *Victoria Access arrangement information March 2012*, pp. 53–60.

Given the 1999 OMA was entered into as part of a broader transaction, and Envestra appears not to have been at large to renegotiate in full the terms of the 2007 OMA at the time of the novation, the AER has concerns that Envestra may have had incentives to agree to non-arms length terms. Therefore the AER cannot presume that the costs incurred under the 2007 OMA are efficient and prudent.

### **Further assessment of contracts that fail the presumption threshold**

The AER considers the forecast costs incurred via the outsourcing arrangement with the APA Group require further assessment for it to be satisfied that Envestra's forecast costs are consistent with the NGR.

#### **Is the margin efficient?**

One consideration of whether the forecast costs incurred via the outsourcing arrangement with the APA Group are efficient is whether earning the margin above costs is efficient. The AER considers a margin is efficient if it is comparable to margins earned by similar providers in competitive markets.

Envestra provided a consultant report comparing the margins paid by Envestra to the APA Group to margins earned by comparable entities.<sup>362</sup> Businesses in the sample included infrastructure contractors and network infrastructure contractors. The margin calculated by NERA was an earnings margin, calculated as Earnings Before Interest and Tax (EBIT) divided by revenue.

The EBIT margin provides a measure of the funds available to the contractor to pay taxes and pay a return on physical and intangible assets. It may also incorporate the allowance paid to the contractor to align its interests with those of the asset owner.<sup>363</sup> NERA found that the estimated margin paid by Envestra to the APA Group in the form of the NMF and incentive payments was within the 95% confidence interval for all benchmark comparisons undertaken.

The AER agrees that, based on the report's findings, the estimated margin paid by Envestra is comparable to the estimated margin of the businesses sampled in the report. This would suggest that the margin received by Envestra is not inconsistent with industry practice.

However, while the AER notes that an EBIT margin is a standardised measure that assists with comparisons between different businesses, it also notes that margins are used in business contracts for a number of different purposes, including recovery of the cost of overheads and returns on assets. Given the variances between terms and price structures of individual contracts, the AER considers the comparison of EBIT margins may not be undertaken on a like-for-like basis. The large volatility in the range of margins observed in NERA's sample is an indication that the margins included in the sample may be for different purposes.

Given these limitations, the AER has placed less weight on the results of the NERA benchmarking report in its consideration of whether the costs incurred via the 2007 OMA are consistent with the NGR. Further, the AER considers this evidence cannot be relied on as the sole determinant of whether the outsourcing arrangement is consistent with the NGR.

### **Performance of Envestra**

The AER also considered Envestra's performance by considering benchmarking of Envestra against other gas distribution service providers. The AER considers the results of this analysis provide an indication of whether Envestra's historical costs are efficient and prudent.

Envestra provided two reports from Economic Insights as part of its proposal which consider the relative productivity of the Victorian DBs using total factor productivity (TFP), partial factor productivity (PFP) and partial productivity indicator (PPI) measures.<sup>364</sup> The AER has also calculated PPIs to further assess Envestra's historical performance.

While Envestra's performance appears to have slowed since the mid 2000s the AER considers that, in relation to many different benchmarks, the relative productivity of Envestra Victoria and Envestra Albury is reasonable when compared to other similar providers.

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<sup>362</sup> NERA, *Benchmarking study of contractor profit margins (2002–2011)*, March 2012.

<sup>363</sup> NERA, *Benchmarking study of contractor profit margins (2002–2011)*, March 2012, p. 8.

<sup>364</sup> Economic Insights, *The Total Factor Productivity Performance of Victoria's Gas Distribution Industry*, 26 March 2012; Economic Insights, *Benchmarking the Victorian Gas Distribution Businesses' Operating and Capital Costs Using Partial Productivity Indicators*, 26 March 2012.



As Envestra's forecast opex for Envestra Victoria and Envestra Albury is based on its actual opex in 2011, based on the benchmarking results the AER considers Envestra's proposed base year opex (inclusive of the NMF) is relatively efficient.

A summary of the benchmarking results for Envestra is provided below.

#### *TFP and PFP benchmarking*

Economic Insights' TFP and PFP benchmarking compared the performance of each of the Victorian gas distribution businesses against the New South Wales gas distribution business, Jemena Gas Networks (JGN), Envestra's South Australian network (Envestra SA) and Envestra's Queensland network (Envestra Qld) from 1999 to 2011.

These reports found that Envestra Victoria overall, had experienced a productivity growth 'spurt' since 1999 which had flattened off from 2006 onwards. For instance:

- the average annual growth rate of Envestra's TFP index was 2.2 per cent for the last ten years but had slowed to 0.5 per cent for the last five years.<sup>365</sup>
- the average annual growth rate of Envestra's opex partial PFP was 5.3 per cent for the last ten years but had slowed to 0.8 per cent for the last five years.<sup>366</sup>

Figure E.1 shows the multilateral TFP indexes formulated by Economic Insights. The indexes are presented relative to a value of 1 for Envestra Victoria in 1999 which illustrates its higher productivity performance in 1999 compared to the other businesses in the sample.

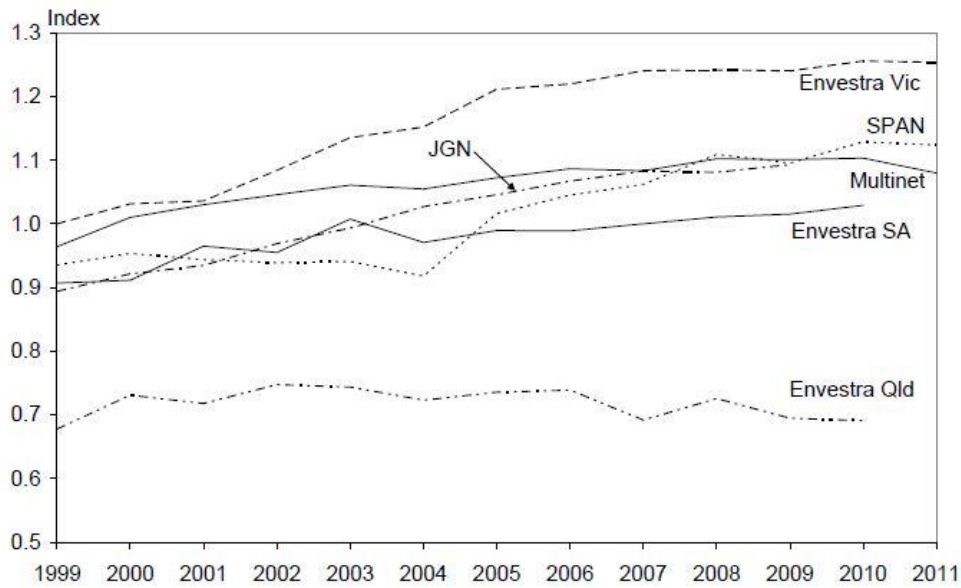
Over the period of the study, Envestra's multilateral TFP was the highest of all businesses considered in the sample.

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<sup>365</sup> Economic Insights, *The Total Factor Productivity Performance of Victoria's Gas Distribution Industry*, 26 March 2012, p. ii.

<sup>366</sup> Economic Insights, *The Total Factor Productivity Performance of Victoria's Gas Distribution Industry*, 26 March 2012, p. ii.

**Figure E.1 Australian gas distribution businesses multilateral TFP indexes, 1999–2011**

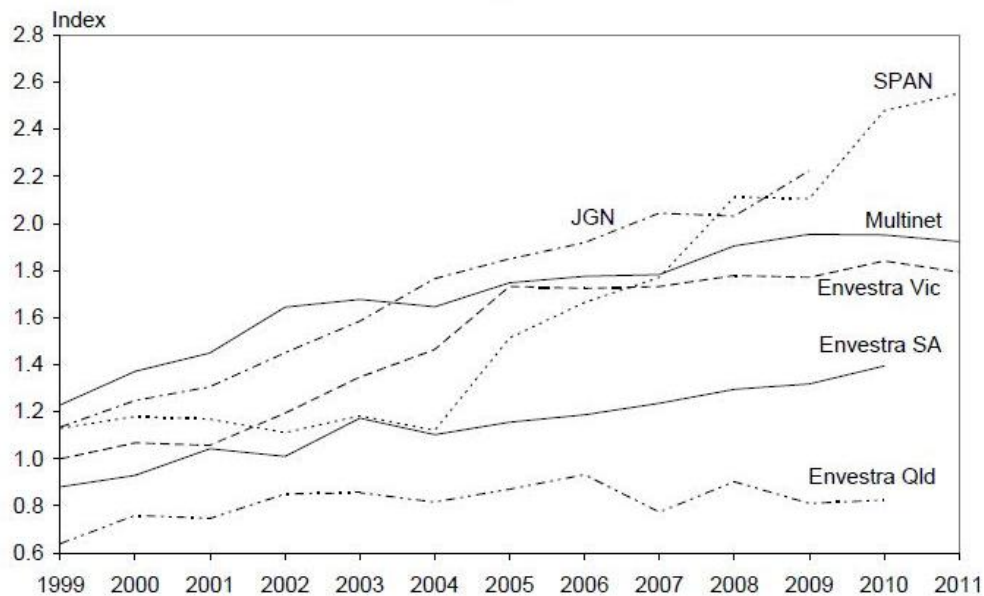


Source: Economic Insights, *The Total Factor Productivity Performance of Victoria's Gas Distribution Industry*, 26 March 2012, p. 44.

Figure E.2 shows the multilateral opex PFP indexes formulated by Economic Insights. The indexes are also presented relative to a value of 1 for Envestra Victoria in 1999.

On this measure Envestra Victoria's performance is not as strong compared to SP AusNet and JGN but is higher than Envestra SA and Envestra Qld. From 2005 Envestra Victoria has demonstrated similar performance to Multinet.

**Figure E.2 Australian gas distribution businesses multilateral opex PFP indexes, 1999–2011**



Source: Economic Insights, *The Total Factor Productivity Performance of Victoria's Gas Distribution Industry*, 26 March 2012, p. 45.

### *Economic Insights PPI study*

Economic Insights also carried out PPI analysis which included all the Victorian gas distribution businesses in a study assessing the performance of fourteen gas distribution businesses in Australia and New Zealand over 1999–2010 in relation to sixteen operating and performance indicators. The opex PPIs considered by Economic Insights were:

- opex per TJ;
- opex per customer; and
- opex per kilometre; and
- opex per unit output;

Economic Insights concluded that all the Victorian gas distribution businesses (including Envestra Victoria and Envestra Albury) had performed strongly compared to the other gas distribution businesses in the sample.<sup>367</sup> Envestra Victoria and Envestra Albury's performance against the opex PPIs in 2010 in a sample of fourteen gas distribution businesses is summarised as follows.

**Table E.2 Relative performance of Envestra Victoria and Envestra Albury in Economic Insights' PPI study**

Partial productivity measure	Envestra Victoria rank	Envestra Albury rank
Opex per TJ	fourth lowest	lowest
Opex per customer	fifth lowest	second lowest
Opex per km	ninth lowest	third lowest
Opex per unit output	fourth lowest	lowest

However, while Envestra Victoria and Envestra Albury have both performed relatively well against the opex PPIs compared to the other gas distribution providers considered in the study—similar to the findings in the TFP study—the AER notes that Envestra's performance against the opex PPIs has also stagnated since 2005.

### *AER PPI analysis*

To further assess the performance of Envestra Victoria and Envestra Albury the AER also undertook PPI analysis of the opex performance of the Victorian distribution service providers over the 2004–10 period. The AER calculated the following PPIs for the Victorian distribution service providers:

- opex per customer
- opex per TJ

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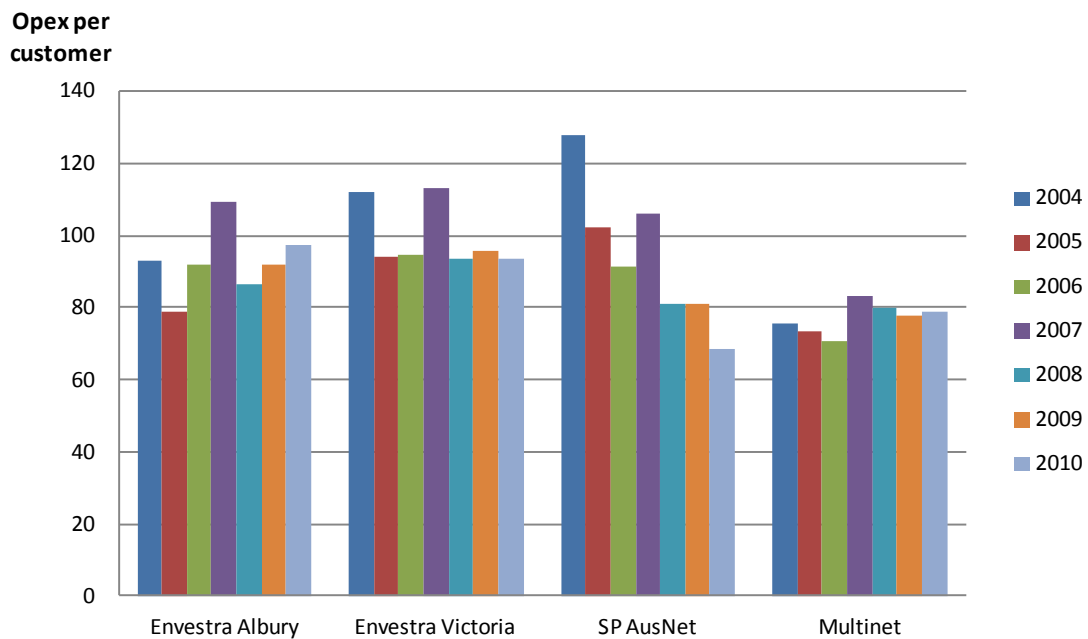
<sup>367</sup> Economic Insights, *Benchmarking the Victorian Gas Distribution Businesses' Operating and Capital Costs Using Partial Productivity Indicators*, 26 March 2012, pp. 18–22.

- opex per km
- opex per unit output<sup>368</sup>

The AER's PPIs are similar to the PPIs estimated by Economic Insights over the 2004–10 period. The AER considers that results also show that Envestra's recent performance on opex PPIs is similar to the other Victorian gas distribution businesses but also demonstrates relatively stagnant performance in the period of the sample.

The AER's analysis is presented below in figure 1.3 to figure 1.6.

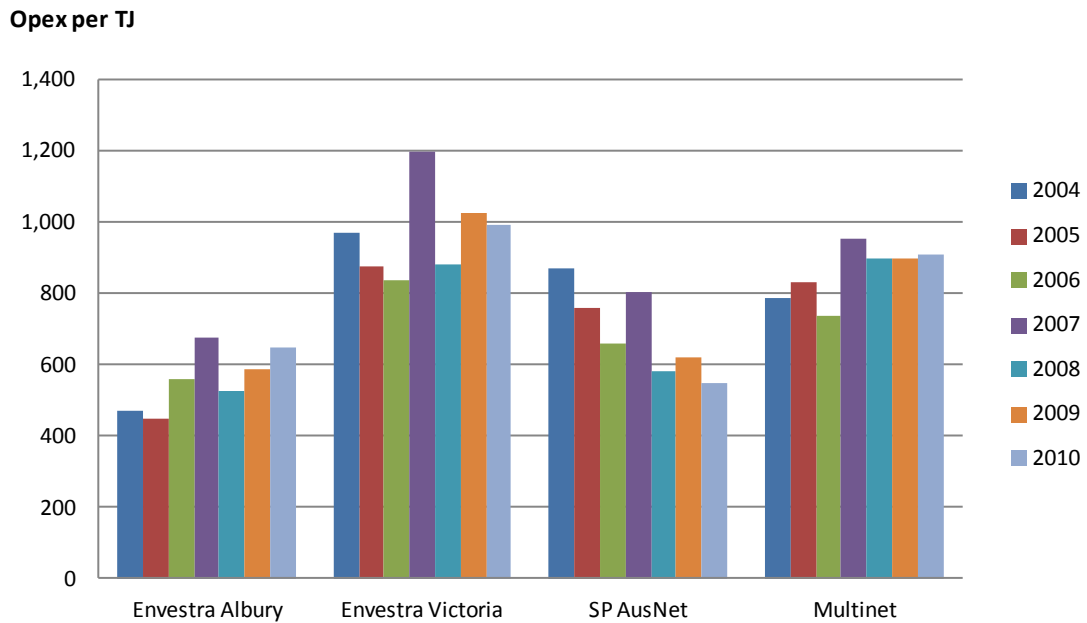
**Figure E.3 Benchmark of Victorian gas distribution service providers by opex per customer (2004–10) (\$2011)**



Source: AER analysis.

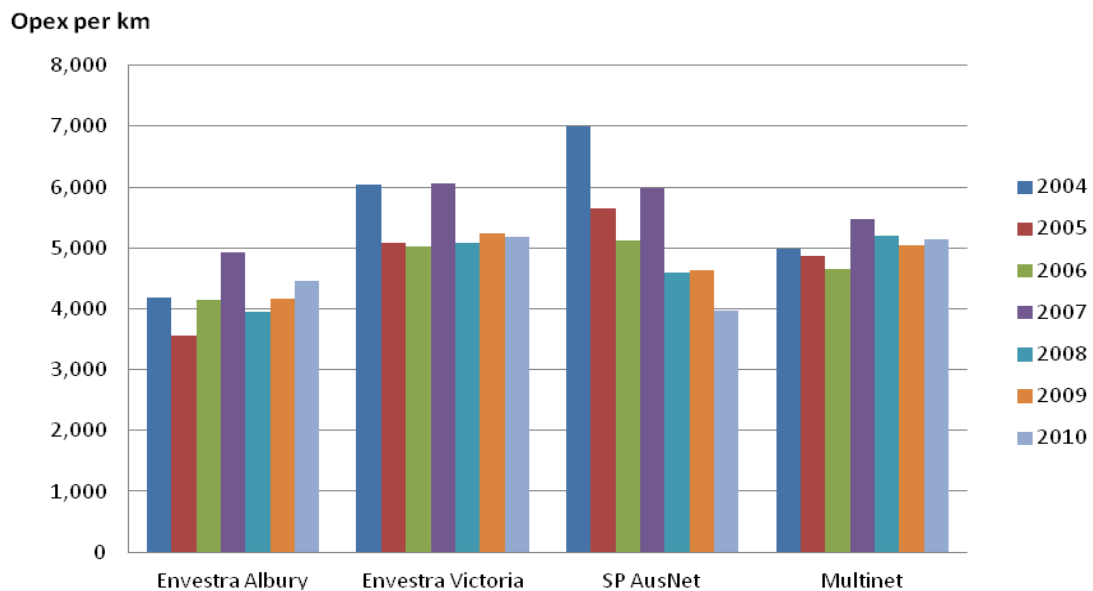
<sup>368</sup> Opex per unit output is a comprehensive output measure that combines various output measures (throughput, customer numbers and km of mains) into a multilateral opex index. It provides a more comprehensive efficiency indicator as it takes into account the differences between the network characteristics by balancing the different measures.

**Figure E.4 Benchmark of Victorian gas distribution service providers by opex per TJ (2004–10)**



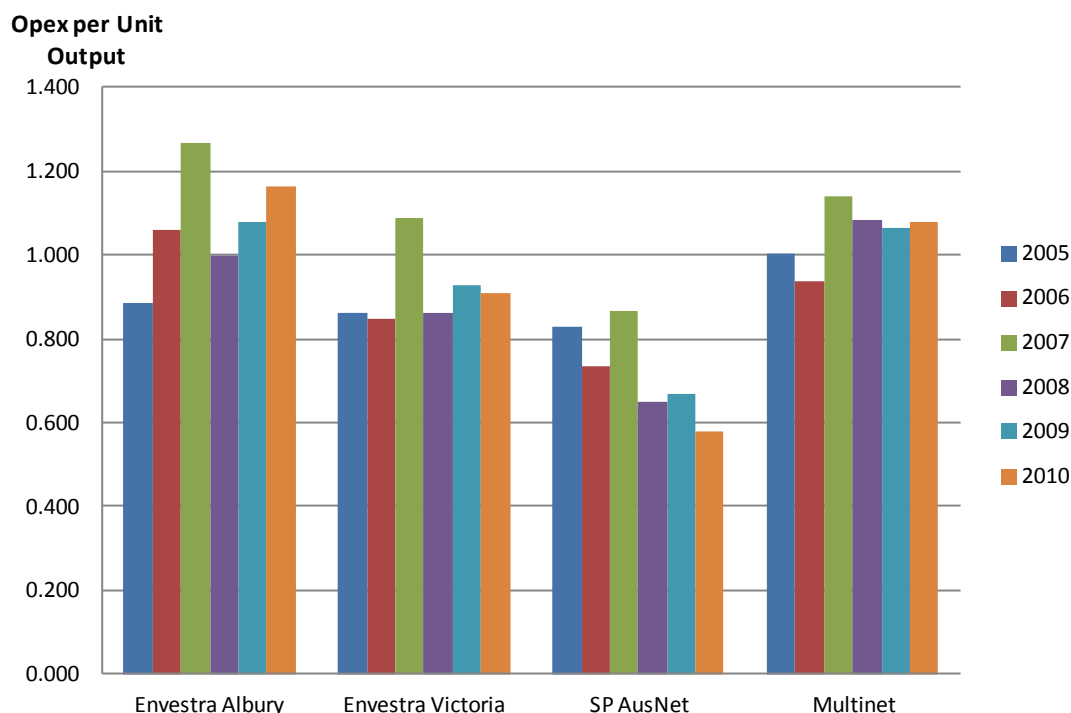
Source: AER analysis.

**Figure E.5 Benchmark of Victorian gas distribution service providers by opex per km (2004–10)**



Source: AER analysis.

**Figure E.6 Benchmark of Victorian gas distribution service providers by opex per unit output (2005–10)**



Source: AER analysis.

### Conclusion on NMF

Neither the 1999 or 2007 OMAs were entered into as a consequence of a competitive tender process. The AER also has concerns as to whether Envestra had an incentive to agree to non-arms length terms. Therefore, the AER cannot presume the outsourcing arrangement is efficient and prudent.

However, further analysis of the costs incurred via the outsourcing arrangement suggests that, in the present circumstances, the outsourcing arrangement with the APA Group is relatively efficient. This is based on the following observations:

- While noting the limitations of the benchmarking study submitted by Envestra about the benchmarking of margins, it suggests the margin is not inconsistent with industry practice.
- Benchmarking studies using TFP, PFP and PPI suggests that Envestra's performance, while it has not improved substantially since the mid 2000s, appears reasonable when compared to other gas distribution service providers.

Therefore on the basis of all evidence the AER considers, on balance, there is sufficient evidence to suggest that the contract price (including the NMF) is consistent with the opex criteria.

## E.5.2 Incentive payments

### Summary of Envestra's proposal

Envestra's proposed opex and capex forecasts for Envestra Victoria included incentive payments to the APA Group for achieving reductions in the cost of new connections and controllable opex per GJ. Envestra is required to make incentive payments where the average cost achieved by the APA Group in a financial year is less than the cost in the previous financial year. The payments are equal to:

- one third of the reduction in average capital costs for new customer connections, and
- one third of the reduction in controllable operating costs per GJ.

If the APA Group does not achieve a reduction in the average capital cost of new customer connections or a reduction in controllable operating costs per GJ, then Envestra would not make incentive payments. In this case the APA Group would only receive the NMF and would be reimbursed for the actual costs it incurs.

Envestra's forecast incentive payments for the 2013–17 access arrangement period are based on the average of the actual incentive payments it made to the APA Group between 2008 and 2011.<sup>369</sup>

### Draft decision on incentive payments

The AER's draft decision is not to include the incentive payments in Envestra's total revenue forecast in its access arrangement proposal for Envestra Victoria. Including forecast incentive payments in the 2013–17 access arrangement period forecast of opex and capex, would not reflect a forecast of total opex or capex that has been arrived at on a reasonable basis or would be the best estimate of opex or capex possible in the circumstances.<sup>370</sup>

There are two reasons for this conclusion.

First, the AER considers that a forecast of incentive payments based on the average incentive payments Envestra made to the APA Group between 2008 and 2011 is not the best forecasting methodology available. The AER considers a more robust methodology is to forecast incentive payments based on the AER's forecasts of opex and capex in the 2013–17 access arrangement period. The AER's best forecast of the controllable opex per GJ and capex for new customer connections over the 2013–17 access arrangement period is that opex or capex incentive payments are not likely to be made.

Second and more fundamentally, Envestra is likely to have sufficient revenue to fund the incentive payments. In the case of opex, the payments will fund themselves. Envestra keeps any savings for five years where it can deliver opex lower than the AER's forecast. In the case of capex, Envestra retains the benefits of the additional return on capital of any over-forecasting of capex for the balance of the access arrangement period and has an opportunity to recover the cost of the capex incentive payments by rolling the capex incentive payments

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<sup>369</sup> Envestra, *Victoria Access arrangement information March 30 2012*, p. 97.

<sup>370</sup> NGR, r. 74(2).

into the capital base at the next reset. The gains to Envestra will be likely to outweigh the cost of any incentive payments agreed to with the APA Group. Again an increase in opex and capex for forecast incentive payments would not be required.

The AER's draft decision is discussed in further detail below.

### **Opex incentive payments**

Unlike Envestra's payment of the NMF which must be paid to the APA Group each year regardless of performance, incentive payments made to the APA Group are conditional on the actual performance of the APA Group. To forecast whether incentive payments are likely to be paid, the AER considers that a forecast of the incentive payments should be consistent with the forecast performance of the APA Group in the 2013–17 access arrangement period in providing services for Envestra.

Envestra has forecast incentive payments based on the average payments it made to the APA Group between 2008 and 2011. A forecast based on an average of the incentive payments made in the past is unlikely to be consistent with the forecast performance of the APA Group.

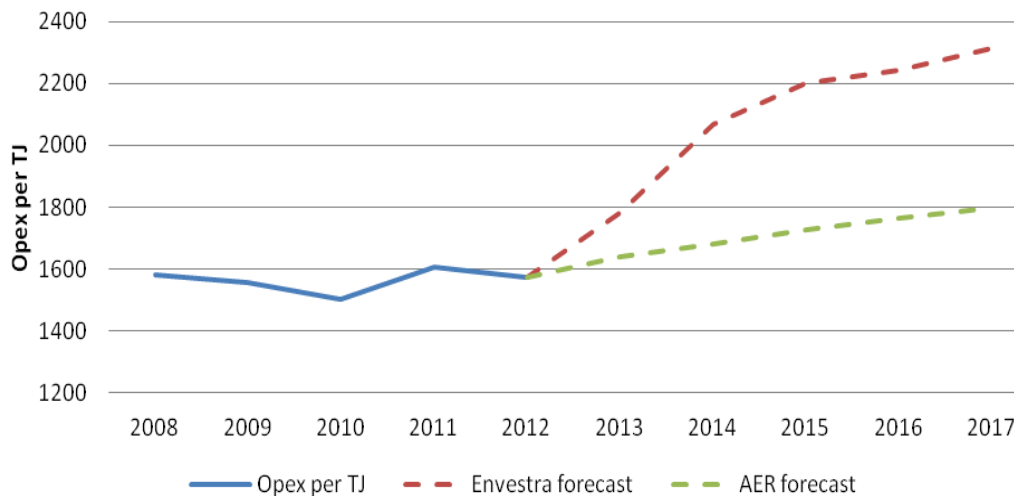
Controllable opex incurred by the APA Group makes up the majority of Envestra's historical opex. The AER considers forecast opex incentive payments are best estimated by considering the AER's forecast of Envestra's opex per GJ over the 2013–17 access arrangement period and then forecasting the likely payments that would be made to the APA Group given these forecasts.

Figure E.7 illustrates that the AER forecasts opex per TJ in the 2013–17 access arrangement period to increase. The AER's forecast of opex is based on the AER's draft decision on opex as discussed in attachment 6 and its forecast of Tariff V consumption. The AER's forecast of opex per TJ is lower than a forecast of opex per TJ based on Envestra's proposed opex for the 2013–17 access arrangement period.

Envestra only makes incentive payments to the APA Group when actual controllable opex per GJ in a financial year is less than in the previous financial year. As the AER forecasts increasing opex per TJ in each year of the 2013–17 access arrangement period, its best forecast at this time is that no opex incentive payments will be paid to the APA Group in the 2013–17 access arrangement period.



**Figure E.7 Actual opex per TJ 2008–11, forecast opex per TJ 2012–17**



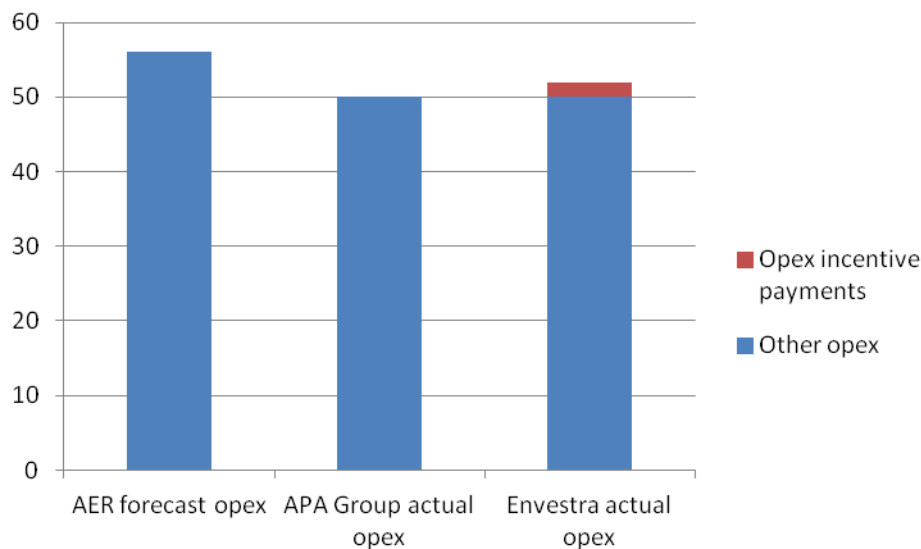
Source: AER analysis.

The AER notes that its draft decision to reject the incentive payments is based on the AER's best forecast at this time about whether Envestra would be likely to pay incentive payments.

However, if Envestra's actual performance is better than the AER's forecast of its performance, and incentive payments need to be paid to the APA Group, Envestra is very likely to have sufficient funding in order to make the incentive payments.

For instance, consider the simple example below that is intended to closely resemble the conditions when Envestra makes opex incentive payments to the APA Group in one year. To simplify the example it is assumed that payments are equivalent to one third of the total reduction in opex from the previous year and the AER's best forecast of opex is equal to opex in the previous year.

**Figure E.8 Example illustrating impact of incentive payments on Envestra's total opex**



Source: AER analysis.

If the APA Group delivers opex at \$50m, the difference between regulated opex and actual opex is \$6m. As Envestra makes incentive payments equal to one third of the reduction in costs in that year, the incentive payments would be equivalent to \$2m.

However, as illustrated in Figure E.8 the total amount Envestra would pay the APA Group (\$52m) in this situation would still be less than Envestra's regulatory allowance (\$56m). Therefore, Envestra's regulatory allowance, without forecasting an incentive payment, would be sufficient to cover the APA Group's costs, and any incentive payments Envestra is required to make under its contract with the APA Group.

### Capex incentive payments

Similarly to the AER's approach to forecasting opex incentive payments, the AER also considers that forecast capex incentive payments would be best estimated at this time by considering the likely payments that would be made given the AER's best forecast of the capital costs of new customer connections.

Envestra would not be forecast to make capex incentive payments in the 2013–17 access arrangement period when this methodology is used.

The AER's has estimated the unit costs of most new customer connections in the 2013–17 access arrangement period using a weighted average of Envestra's actual unit rates in 2008–11 (see attachment 3 and appendix A).<sup>371</sup> When this methodology is used, unit rates are forecast to be stable over the 2013–17 access arrangement period. As capex incentive payments to the APA Group are only made when the average capital costs are lower than average capital costs in the previous financial year, the AER considers that, given a forecast of stable unit costs, the best estimate possible in the circumstances is to not assume any capex incentive payments will be made in the 2013–17 access arrangement period.

The AER notes that if Envestra is able to deliver capex at less than the AER's forecast, Envestra earns a return on the capex that was not forecast accurately prior to the start of the 2013–17 access arrangement period. Envestra will also receive revenue from any capex incentive payments made in the 2013–17 access arrangement period included in the future capital base. These sources of revenue are likely to be sufficient to fund any capex incentive payments Envestra is required to make in the 2013–17 access arrangement period.

## E.6 Proposed amendments

### E.6.1 Envestra Victoria

The AER requires Envestra Victoria make the following revisions to its access arrangement proposal consistent with the NGR and NGL:

**Revision E.1:** Amend the proposed access arrangement and access arrangement information to the extent necessary to remove forecast incentive payments.

<sup>371</sup> A weighted average of 2008–10 has been used for connections for multi-user inlets.