Access Arrangement Information

for Envestra's South Australian Network

September 2005

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1. INTRODUCTION

1.1. Purpose of this Document

This document is the Access Arrangement Information in relation to the Access Arrangement revision for the Envestra Limited ('Envestra') South Australian Network ('the Network') and is submitted by Envestra (ABN 19 078 551 685) to the Essential Services Commission of South Australia (ESCOSA)('the Regulator') in accordance with section 2.28 of the Code.

The purpose of this document is to set out such information as is necessary to enable Users and Prospective Users to understand the derivation of the elements of the Access Arrangement and to form an opinion as to the compliance of the Access Arrangement revisions with the provisions of the Code.

In the Access Arrangement Information, unless the context otherwise requires, where a word or meaning is capitalised it has:

- The meaning given to that word or phrase in the Code; or
- The meaning given to that word or phrase in the glossary contained in the Access Arrangement.

1.2. Background

The current Access Arrangement was approved by SAIPAR (the South Australian Independent Pricing and Access Regulator) in April 2003. By Act number 9 of 2003, *The Statutes Amendment (Gas and Electricity) Act 2003*, ESCOSA became the Relevant Regulator for South Australia under the Code on 1 July 2003.

Unlike SAIPAR, ESCOSA has a specific statutory scheme regulating its activities, being the *Essential Services Commission Act 2002*. Section 6 of that Act sets out objectives that ESCOSA is to have regard to, in performing its functions, Part 3 of the Act outlines how ESCOSA is to carry out certain price regulation functions and Part 5 of the Act deals with collection and use of information[1]. However none of these parts of the *Essential Services Commission Act 2002* apply to ESCOSA when it is acting as the Relevant Regulator.

The application of section 6 and Part 5 of the *Essential Services Commission Act 2002* is excluded by section 32 of the *Gas Pipelines Access (South Australia) Act 1997* which provides:

"*Section 6 and Part 5 of the Essential Services Commission Act 2002 do not apply to the Essential Services Commission when acting as the Relevant Regulator*."

Nor does Part 3 of the *Essential Services Commission Act 2002* apply. Part 3 only applies where the Commission is making a price determination as authorized by a relevant industry regulation Act (or where authorized by a regulation under the *Essential Services Commission Act 2002*).

A relevant industry regulation Act is defined as "*another Act by which a regulated industry is declared for the purposes of this Act*." There is no such declaration in the *Gas Pipelines Access (South Australia) Act 1997*. It is therefore not a relevant industry regulation Act.

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[1] Other parts of the Act deal with administration matters, development of industry codes and rules, appeals and public inquiries. These parts of the Act are clearly not relevant to the exercise of ESCOSA's powers under the Access Code.

Consequently, the powers and functions of ESCOSA in performing its statutory obligations under the Code are identical to those formerly possessed by SAIPAR.

1.3. The Network

The main centres served by the Network are Adelaide, Mt Gambier, Whyalla, Pt Pirie, Barossa Valley, Murray Bridge and Berri. Maps outlining the areas covered by the Network are available from Envestra's website "www.envestra.com.au". Statistics and further information relating to the Network are included in sections 16 and 17 of this Access Arrangement Information.

1.4. Interpretation

Terms used in this Access Arrangement Information have the same meaning as they have in the Access Arrangement (see clause 2 of the Access Arrangement).

Monetary values shown in tables are in nominal dollars unless indicated otherwise.

It should be noted that numerical values in tables may not add due to arithmetic rounding.

1.5. Contact Details

The contact person for further details in relation to this Access Arrangement Information and the Access Arrangement to which it relates is:

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2. SUMMARY AND OVERVIEW

2.1. Summary

Envestra submits this Access Arrangement Information under section 2.28 of the Code and believes that it meets the requirements of sections 2.6 and 2.7 of the Code.

Section 2.6 requires the Access Arrangement Information to contain such information as in the opinion of the Regulator would enable Users and Prospective Users to understand the derivation of the elements in the proposed Access Arrangement and to form an opinion as to the compliance of the Access Arrangement with the provisions of the Code.

Envestra believes it has provided sufficient information to allow Users and Prospective Users to understand both the derivation of elements of the Access Arrangement and how it complies with the Code. Envestra therefore believes that it meets section 2.6 of the Code.

The revisions to Envestra's Access Arrangement reflect an examination of the experience gained by Envestra of the way in which the Code applies to Envestra's assets and reflect consultation with Users.

Key features of this revision include:

- An expansionary operating and capital plan to provide South Australian consumers with increased access to natural gas and improved security of supply throughout the network. A consequence of this plan is that there will be material increases in both operating and capital expenditure in the Second Access Arrangement Period relative to 2004/05 expenditure. Notwithstanding these increases in expenditure, benchmarking indicates that this higher level of expenditure is prudent and necessary to upgrade and extend the South Australian network. A significant part of the additional expenditure will result in gas consumers having a more secure network that is better able to withstand isolated instances of network damage or failure.
- A real pre-tax WACC of 7.3%. This is slightly higher than the 7.1% ESCOSA approved for ETSA but consistent with the greater risk profile of natural gas relative to electricity. The proposed WACC is lower than that currently applying (7.6%).
- Revised demand forecasts that take into account the decline in average consumption per customer that has been observed since 1997/98. Despite the increased challenges in the market, Envestra is not proposing to increase its Network Development expenditure from current levels.
- Annual real increases in reference tariffs for haulage services that equate to approximately 46 cents per week for the average domestic consumer.
- No change to the number or structure of Haulage Reference Tariffs.
- A revised tariff control mechanism, being a tariff basket approach rather than a price path approach;
- Maintenance of the current strong commitment to service quality by Envestra;
- Proposals to progress the extension of the gas network to townships with growth potential. Townships identified in preliminary studies include Tanunda, McLaren Vale and the Monarto Industrial Estate;
- Revised Terms and Conditions that reflect the outcomes of contractual negotiations with Retailers over the First Access Arrangement Period.

Envestra engaged WorleyParsons to conduct a benchmarking study examining the performance of the business relative to other natural gas distribution businesses (see Attachment 2). The results concluded that Envestra's current Non-Capital Costs are within a reasonable range, while New Facilities Investment is currently below a

reasonable range, with a degree of catch-up required in this area. WorleyParsons conclude that the forecasts provided in this submission are those that would be incurred by a prudent Service Provider, acting efficiently, in accordance with accepted and good industry practice, to achieve the lowest sustainable cost of delivering Reference Services.

2.2. Outcome of First Access Arrangement Period

There are two important points to be drawn from Envestra's revenue and expenditure over the First Access Arrangement Period:

- Envestra's actual revenue over the first Access Arrangement period has been less than that envisaged by SAIPAR; and
- Envestra has spent what it needed to spend, despite the building block approvals it received from SAIPAR in 2002. This has been demonstrated by actual capital and non-capital costs exceeding the Access Arrangement forecast amounts by around $22m over the period. It is noted, however, that this position is not indefinitely sustainable.

The Access Arrangement approved by SAIPAR in April 2003 set out the tariffs, policies and terms and conditions to apply to third party access to the Network for the period 2001/02 to 2005/06. However, the proposed Access Arrangement originally submitted by Envestra in February 1999, was only intended to cover the 5-year period from 1999/00 to 2003/04. Due to the Access Arrangement approval process being much longer than originally anticipated, it became necessary to extrapolate the forecasts (during the approval process) to cover the period up to 2005/06.

SAIPAR's determination of target revenue to be recovered in the First Access Arrangement Period (adjusted for actual inflation) together with actual revenue received (and forecast to be received) by Envestra is set out in the following table.

Revenue Variance $m (nominal)	2001/02	2002/03	2003/04	2004/05	2005/06f	TOTAL
SAIPAR Approved Revenue	na	110.3	113.8	117.0	120.3	461.4
Actual Revenue	na	106.4	111.2	111.3	114.1	443.0
Variance from Target Revenue $m (nominal)	na	(3.9)	(2.7)	(5.7)	(6.2)	(18.4)
Variance from target revenue (%)	na	(3.5)%	(2.3)%	(4.9)%	(5.2)%	(4.0)%
Variance from target revenue $m (31 Dec 2004)	na	*(4.1)*	*(2.7)*	*(5.7)*	*(6.1)*	*(18.6)*

Table 1 Actual versus SAIPAR forecast revenue

Envestra is unable to provide actual revenue for the 2001/02 financial year because revenue in that year was determined according to commercial arrangements negotiated between Envestra and Boral Energy on the formation of Envestra in 1997. The negotiated arrangements applied to Envestra's combined South Australia and Queensland networks. Those arrangements were viewed at that time as interim arrangements, pending formal approval by SAIPAR of access prices pursuant to the Code. The interim arrangements were included in a haulage agreement that terminated on 30 June 2002.

Total revenue since 2002/03 is expected to be $18.4m less than that forecast by SAIPAR. Thus Envestra will under-recover the cost reflective revenue proposed by SAIPAR in the Final Approval for the 2002/03 to 2005/06 period.

A significant factor contributing to the lower revenue has been the fact that the gas demand forecasts set by SAIPAR[2] did not materialise. As shown in the following table, gas delivery to the Domestic and Commercial market segment has been consistently below the forecast each year. (Revenue from the Demand market is not directly related to the volume of gas consumed as tariffs for that market sector are set on a MDQ basis).

< 10 TJ Gas Demand (TJ)	2001/02	2002/03	2003/04	2004/05	2005/06f	TOTAL
SAIPAR Forecast	11,225	11,350	11,476	11,598	11,718	57,367
Actual	10,582	10,433	10,969	10,656	10,911	53,551
Variance from forecast (TJ)	(643)	(917)	(507)	(942)	(807)	(3,816)
% Variance from forecast	(5.7)%	(8.1)%	(4.4)%	(8.1)%	(6.9)%	(6.7)%

Table 2 Actual versus SAIPAR forecast gas delivery - Volume Customers

The lower than forecast gas delivery has resulted from lower gas consumption per consumer and the number of gas consumers being less than forecast.

The impact of achieving a lower than forecast growth in customer numbers was most acute in the first half of the Access Arrangement period (Table 3). Over the entire period, marketing efforts by Envestra have succeeded in increasing customer numbers almost to the number originally forecast.

< 10 TJ/a Customer Numbers ('000)	2001/02	2002/03	2003/04	2004/05	2005/06f
SAIPAR Forecast	342.8	348.1	353.4	358.8	364.1
Actual	339.3	345.6	351.4	357.4	363.6
Variance from forecast ('000)	(3.5)	(2.5)	(2.0)	(1.4)	(0.5)
% Variance from forecast	(1.0)%	(0.7)%	(0.6)%	(0.4)%	(0.1)%

Table 3 Actual versus SAIPAR forecast - Volume Customers

However, despite the increase in customer numbers, the average gas consumption per customer continues to decline. This is due to factors such as general climatic warming and the use of higher efficiency appliances in new dwellings coupled with higher energy efficiency dwellings. For example, Envestra has calculated that the average consumption of a typical residential gas consumer in Adelaide adjusted for weather has declined from 25.2GJ per year in 1997/98 to 22.2 GJ per year in 2004/05 (see the report titled "Average Residential Gas Consumption in SA" that is incorporated into Attachment 6).

New Facilities Investment over the period is expected to exceed the forecast by $9.6m. The main factor contributing to the higher expenditure was additional capital required to meet expenditure associated with the higher than forecast gross connections. SAIPAR's 2001 Final Decision failed to take into account disconnections in estimating New Facilities Investment, instead focussing only on net connections. Envestra forecasts that the number of disconnections over the period will be approximately 4,500.

[2] In the Final Decision, SAIPAR required that the gas demand forecasts proposed by Envestra be increased.

New Facilities Investment $m (nominal)	2001/02	2002/03	2003/04	2004/05	2005/06f	TOTAL
SAIPAR Forecast	26.7	20.2	17.9	16.8	16.8	98.5
Actual	19.7	20.4	20.4	20.6	27.1	108.1
Variance from forecast $m (nominal)	(7.0)	0.1	2.5	3.8	10.3	9.6
% Difference	(26.4)%	0.7%	13.7%	22.6%	61.3%	9.8%
Variance from forecast $m (31 Dec 2004)	(7.7)	0.1	2.5	3.8	10.1	8.9

Table 4 Actual versus forecast - New Facilities Investment

Envestra's actual expenditure on Non-Capital Costs is expected to exceed the SAIPAR forecast by around $12.9m over the First Access Arrangement Period, due to the forecasts generally allowing insufficient costs to operate and maintain the Network. The main factors contributing to the higher operating expenditure were higher leak repair costs and higher UAFG costs. General operating costs were also higher than anticipated.

Non-Capital Cost $m (nominal)	2001/02	2002/03	2003/04	2004/05	2005/06f	TOTAL
SAIPAR Forecast	37.3	39.1	39.5	40.8	42.0	198.7
Actual	41.9	38.4	42.8	43.8	44.7	211.6
Variance from forecast $m (nominal)	4.6	(0.7)	3.3	3.0	2.7	12.9
% Difference	12.4%	(1.8)%	8.4%	7.3%	6.3%	6.5%
Variance from forecast $m (31 Dec 2004)	5.0	(0.7)	3.4	3.0	2.6	13.3

Table 5 Actual versus SAIPAR forecast - Non-Capital Costs

Non-Capital Costs and New Facilities Investment costs are now subjected to external audit by Deloitte Touche Tohmatsu on an annual basis. The audit confirms that costs are fairly represented in accordance with relevant regulatory requirements.

Envestra has sought advice from WorleyParsons, engineering consultants with expertise in the gas industry, to provide an assessment of Envestra's current costs. Following an extensive review of Envestra's operations associated with the Network, WorleyParsons concluded that Envestra's capital costs are low compared with other gas distribution businesses. WorleyParsons has also concluded that Envestra has been operating the Network in an efficient and prudent manner.

Envestra's operations are also subject to annual auditing by the Office of the Technical Regulator, with a view to ensuring that the Network is appropriately maintained, and that Envestra adheres to internal and external standards. Those audits also confirm that Envestra has been operating the Network appropriately and in accordance with the numerous regulatory and industry standards.

2.3. Proposed Tariffs for Second Access Arrangement Period

Envestra is proposing:

- to retain the number and structure of its Reference Tariffs for the Second Access Arrangement period;
- to reduce the number of tariff Zones in the Adelaide Region from four to three, as one of the Zones has only one customer;
- annual real increases in Reference Tariffs for each year of the Second Access Arrangement Period. The X

factor (to be used in the CPI-X formula) is"-0.059";

- that Reference Tariffs in 2005/06 be rolled forward at (1+CPI) * (1-X) in order to obtain the starting value for 2006/07 Reference Tariffs.

The increases in network tariffs are required to recover the prudent costs of operating the Network. Several factors are contributing to the increase, a major one being the need to correct for differences between the forecasts approved by SAIPAR and actual demand and New Facilities Investment during the First Access Arrangement Period.

2.4. Maintaining Past Service Levels

Envestra:

- provides a high quality distribution service, with:
  - less than 15 complaints referred to Envestra by the Ombudsman in 2004/05 where there were issues with quality of service. Furthermore, the issues were generally of a minor nature (dirt left behind after a job, damaged storm water pipe, etc) and in many cases the customer had not first made contact with Envestra to rectify the issue; and
  - a very low number of gas outages – network operations resulted in only 5 incidents of unplanned loss of gas supply to consumers in 2004/05. The rapid response to network problems that is required for safety reasons also ensures that impacts on consumers are minimised.
- reports to the Regulator on service quality in relation to gas outages and promptness of customer connections on a quarterly basis, and other parameters (including customer complaints) on an annual basis to the Regulator and to the Office of the Technical Regulator;
- joined the ombudsman scheme operated by the Energy Industry Ombudsman of South Australia in November 2003. This additional and independent avenue for the lodgement of complaints by consumers provides a valuable source of information concerning service levels and the performance of Envestra and energy retailers with respect to customer service; and
- intends to maintain its current service levels to customers over the Second Access Arrangement Period.

Envestra arranges an independent technical audit of various aspects of its operations on an annual basis, the results of which are provided to the Office of the Technical Regulator. In addition, the Office of the Technical Regulator also conducts a thorough technical audit of Envestra's operations annually. Those audits confirm that the Network is operated and managed safely, appropriately and in accordance with relevant standards and good industry practice.

3. REGULATORY FRAMEWORK

3.1. Introduction

This section provides a brief overview of the regulatory environment in which Envestra is submitting revisions to its Access Arrangement, in particular the provisions of the Code and the accept/reject model that the Code implies, in order to provide Users and Prospective Users with an understanding of the Access Arrangement revisions process under the Code and recent relevant policy and legal decisions.

This is important because there have been a number of disputes in recent times concerning interpretation of various provisions of the Code. Some of these disputes have resulted in Service Providers appealing decisions handed down by the Relevant Regulator.

Recent regulatory decisions give guidance to the Regulator and to Users on how the Code should be applied when approving revisions to an Access Arrangement. This section provides a summary of those appeals where relevant, including:

- the GasNet Appeals decision;
- the Epic Energy (WA) court case;
- the EAPL appeal decision; and
- the Epic Energy (SA) decision.

Envestra believes that while regulatory decisions and appeals are important, there are also a number of recent developments which have significant implications for the application of the Code to Access Arrangements. These are detailed in this section and include:

- the Productivity Commission Review of the Gas Code, as outlined in section 3.6. The conclusions and recommendations of that review are pertinent to the Access Arrangement review process; and
- the current and proposed amendments to the national access regime and national regulatory arrangements being overseen by the Ministerial Council of Energy (MCE). The uncertainties and changes resulting from this process comprise an element of regulatory uncertainty which Envestra must take into account in its revisions to its Access Arrangement.

3.2. Revisions Process under the Gas Code

Code Provisions

The revisions to Envestra's Access Arrangement are submitted pursuant to section 2.28 of the Code. That section provides that by the date provided for in the Access Arrangement, the Service Provider must "*submit to the Relevant Regulator proposed revisions to the Access Arrangement together with the applicable Access Arrangement Information*."

Under section 2.29 of the Code, the Access Arrangement as revised by the proposed revisions may "*include any relevant matter but must include at least the elements described in sections 3.1 to 3.20*."

Under section 2.46 of the Code, the Relevant Regulator:

(a) is only entitled to approve revisions to an Access Arrangement if satisfied the revised Access Arrangement will contain the elements and satisfy the principles set out in sections 3.1 to 3.20; and

(b) must not refuse to approve proposed revisions "*solely for the reason that the Access Arrangement as revised would not address a matter that sections 3.1 to 3.20 do not require an Access Arrangement to address*."

Section 2.46 then provides that in assessing proposed revisions to an Access Arrangement, "*the Relevant Regulator:*

(a) must take into account the factors described in section 2.24; and

(b) must take into account the provisions of the Access Arrangement."

That is, three fundamental principles emerge from clause 2.46:

(i) a revised Access Arrangement must contain the elements and satisfy the principles set out in sections 3.1 to 3.20 but that failure to address additional matters is not grounds for rejection of a revised Access Arrangement;

(ii) the Regulator's discretion to accept or reject revisions to an Access Arrangement is to be exercised taking into account the factors in section 2.24; and

(iii) in assessing the revisions to an Access Arrangement, the Regulator must take into account the provisions of the existing Access Arrangement.

In respect of the third principle, the intent of this principle is to maintain congruity between Access Arrangements. The third principle is not merely stating the obvious – that is, in considering revisions to an Access Arrangement regard must be had to the existing arrangement so a determination may be made as to what is being revised.

Rather the intent is that in considering revisions to an Access Arrangement regard should be had to the fact that an existing structure is already in place, on the basis of which structure a Service Provider will have managed its business and made investment decisions. The third principle suggests that the Code contemplates that there will be a degree of consistency between Access Arrangements and not fundamental overhauls at the time of submission of revisions.

Accept / Reject Model

As is clear from the sections cited above, the Code works on the basis of an accept/reject model. That is, it is the Service Provider's right and obligation to submit the revisions to an Access Arrangement (section 2.28). The Regulator's role is then to review those revisions and accept the Access Arrangement if it complies with the requirements of the Access Code and require modification to the Access Arrangement if it does not.

In certain circumstances, the Code gives the Regulator limited or no discretion in carrying out the review of whether an Access Arrangement complies with the Code. For example, the Regulator cannot reject the use of the Capital Asset Pricing Model as a basis to determine the return on debt and equity funds (section 8.31). In contrast, section 8.44 confers a wider discretion, providing "*The Reference Tariff Policy should, wherever the Relevant Regulator considers appropriate, contain a mechanism that permits the Service Provider to retain all, or a share of, any returns to the Service Provider from the sale of a Reference Service during an Access Arrangement Period that exceeds the level of returns expected at the beginning of the Access Arrangement Period*."

However even where a wider discretion is conferred, it is not a discretion at large. The discretion is to be exercised having regard to the factors in section 2.24 and the provisions of the existing Access Arrangement (section 2.46). Nor do the discretions cut across the fundamental principle that it is for the Service Provider to

design and submit the Access Arrangement. The Code is not a mechanism for a Regulator to design what they consider the ideal form of Access Arrangement. It is a mechanism for ensuring that the terms upon which a Service Provider offers to provide access to its pipeline system contain specific elements and satisfy certain principles.

3.3. Recent Appeals and Regulatory Decisions

While there is not yet a comprehensive body of case law on the application of the Access Code, decisions of the Australian Competition Tribunal and the Supreme Court of Western Australia have provided guidance on the manner in which the Access Code is to be applied.

These decisions, which are discussed below, relate to functions carried out by the ACCC and the Economic Regulation Authority. The powers and functions of ESCOSA in performing its statutory obligations under the Access Code are identical to those of the ACCC and the Economic Regulation Authority and, therefore, the decisions outlined below which address the manner in which the Regulator should exercise its functions under the Access Code are directly relevant to ESCOSA.

GasNet Decision

In *Application by GasNet Australia (Operations) Pty Ltd* the Australian Competition Tribunal considered whether the ACCC had acted correctly in requiring GasNet to use a modified form of the Capital Asset Pricing Model. The Tribunal held that the ACCC made an error of law in seeking to apply the Capital Asset Pricing Model in a manner different to its conventional manner of application. If GasNet choose to adopt the Capital Asset Pricing Model, then the ACCC did not have a discretion to require GasNet to use another model, or a modified form of the Capital Asset Pricing Model.
In its decision, the Tribunal made the following observations in relation to the Access Code:

(a) "*The task which confronted the ACCC, as the Relevant Regulator under the Code, was to determine whether, in its opinion, the Revised AA (and the Reference Tariff and the Reference Tariff Policy included in it) proposed by GasNet complied with the Reference Tariff Principles described in s8 of the Code*."

(b) "*It is important to recall that the preparation of a proposed AA together with the proposed AAI, begins with the Service Provider of a Covered Pipeline. It is the obligation of the Service Provider to design a proposed AA with AAI which is consistent with the provisions of the Code and to lodge it with the Relevant Regulator*."

(c) "*The choices available under the Code are for the Service Provider to make, subject only to the limitation that the implementation of the choice must be consistent with the principles contained in s 8 of the Code*."

(d) "*Where the Reference Tariff Principles produce tension, the Relevant Regulator has an overriding discretion to resolve the tensions in a way which best reflects the statutory objectives of the Law. However, where there are no conflicts or tensions in the application of the Reference Tariff Principles, and where the AA proposed by the Service Provider falls within the range of choice reasonably open and consistent with the Reference Tariff Principles, it is beyond the power of the Relevant Regulator not to approve the proposed AA simply because it prefers a different AA which it believes would better achieve the Relevant Regulator's understanding of the statutory objectives of the Law.*

This follows because the power of the Relevant Regulator to require amendments, or to itself draft and approve its own AA, does not arise until it is of the opinion that the AA proposed by the Service Provider

does not comply with the Code, and in determining the question of compliance, it must act in accordance with s2.24 of the Code."

(e) "*Contrary to the submission of the ACCC, it is not the task of the Relevant Regulator under s8.30 and s8.31 of the Code to determine a 'return which is commensurate with prevailing conditions in the market for funds and the risk involved in delivering the Reference Service'. The task of the ACCC is to determine whether the proposed AA in its treatment of Rate of Return is consistent with the provisions of s8.30 and s8.31 and that the rate determined falls within the range of rates commensurate with the prevailing market conditions and the relevant risk*."

What is made clear from the decision is that it is the role of the Service Provider to design an Access Arrangement and it is the role of the Regulator to determine whether that Access Arrangement complies with the Access Code. It is not the role of the Regulator to seek to redesign the submitted Access Arrangement to endeavour to give effect to the Regulator's view as to the Access Arrangement which will best give effect to the principles of the Access Code.

EAPL Decision

In a similar manner to the GasNet decision, in *Application by East Australian Pipeline Limited*, the Tribunal considered that the ACCC had made an error of law in modifying the conventional application of a valuation methodology (in this case, the ORC methodology).

The Tribunal made the following comments:

(a) "*It was contended that it was a fundamental error in principle for the ACCC to put aside known valuation methodologies and devise a methodology of its own which adjusted ORC in a novel fashion. It was submitted that this had no support in the Code or the material on the subject received by the ACCC and is properly described as idiosyncratic. In our opinion that submission is correct*."

(b) "*It was incorrect and unreasonable to adopt a methodology which does not reflect the terms of the Code and which is not supportable in principle*."

(c) "*Counsel for EAPL submitted that it can be concluded from the various decisions that the ACCC has consistently reasoned to produce a predetermined result as to the ICB, namely that which would reflect the price paid for the MSP by EAPL in 1994, on the basis that to allow a greater ICB would be to give a 'windfall' to the purchaser of the privatized asset….It was also submitted that the conclusion of predetermination is supported by the reasoning of the ACCC on other aspects of the Final Decision, which was arbitrary and not in accordance with principle. It will be apparent from these reasons that there is some substance in that submission*."

(d) "*A regulator in the position of the ACCC has a delicate task. It must be conscious of the interests of parties other than the proponent of the access arrangement and is bound to scrutinize carefully the information provided in support of it. On the other hand, it must have regard to the legitimate business interests of the proponent and should not put itself in an adversary position in relation to the proponent so that it may be perceived as a champion of other interests such as those of consumers*."

(e) "*As our earlier discussion of the Code shows, the primary quest is for a proper contemporaneous value from which to deduce a tariff that will replicate a hypothetical competitive market. It is not to provide*

subsidies to customers. Pricing below a tariff based upon true value would not replicate a competitive market."

The EAPL Decision is an example of the dangers of attempting to reason to a pre-determined result. This is not the role of the Regulator. The Regulator's role is to apply the tests set out in the Access Code and not to modify those tests to produce a result that the Regulator considers more desirable. Consequently it is not appropriate for the Regulator to purport to modify accepted valuation methodologies to produce a particular result. Nor is it the role of the Regulator to act to further the interests of one group affected by the Access Arrangement at the expense of the Service Provider. The Regulator must take account of the legitimate interests of the Service Provider.

A second issue which arose in the EAPL Decision was whether a 10% contingency allowance should be included in the calculation of ORC.

The ACCC had rejected use of a contingency allowance on the basis that to make allowance for all contingencies and which allowance produced a cost estimation at the high end of the feasible range was contrary to the objectives of sections 8.1(a) and (b).[3]

In response to this the Tribunal stated:

"*The reference to s 8.1(a) and s 8.1(b) is misconceived in this factual context. The task is to fix an estimate of the cost of an optimized pipeline. The only issue in question was whether or not to include the contingency*."

That is, the criteria in s 8.1(a) and (b) are not a basis for refusing to include an amount in determining the cost of a pipeline when proper estimation and valuation techniques require that such an amount should be included.

The Tribunal held that the ACCC was "wrong and unreasonable" in excluding an allowance for contingencies. "*A prudent potential new entrant would allow for contingencies and include them in its calculation of its ORC to arrive at its 'buy or build' DORC value.*"

Epic SA Decision

The case of *Application by Epic Energy South Australia Pty Ltd* concerned an appeal by Epic against the ACCC's determination of the initial capital base for the Moomba-Adelaide Pipeline.

The principal issue in the case was whether the determination by the ACCC of the cost of the line pipe of the Moomba-Adelaide Pipeline was appropriate. Epic also successfully appealed against the ACCC's decision to require inclusion within the Access Arrangement of an expansion of the capacity of the Moomba-Adelaide Pipeline to provide capacity to Pelican Point Power Limited.

The issue between the ACCC and Epic was that in determining the cost of line pipe the ACCC had selected the lowest price in a range of observed prices provided to the ACCC by its consultants.

The Tribunal held that in doing so the ACCC had acted unreasonably. Where a pipeline operator had received

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[3] Efficient costs and replicating the outcomes of a competitive market.

responses to a specific, actual, tender then it was reasonable to assume that the pipeline operator would choose the lowest quotation (provided that it satisfied other criteria, such as being of appropriate quality and being provided on commercially acceptable terms). However, for planning purposes, a Service Provider would not plan on the basis that the lowest prices quoted in the market place are those that would be obtained by the Service Provider.

The Tribunal stated:

> "*The Tribunal does not accept, as the ACCC asks it to do, that s 8.1(a) and s 8.1(b) of the Code require the ACCC to adopt the lowest stated figure in the Microalloying Report*.[4] *Epic must be allowed the opportunity to earn a revenue stream that recovers the efficient costs of operating the Reference Service, and the need to replicate the outcomes of a competitive market does not demand the use of the lowest indicative price based on general, albeit informed, inquiries."*

The Tribunal found the ACCC's decision unreasonable in all the circumstances.

The decision demonstrates that the Access Code does not direct the Relevant Regulator to strive to minimise the costs that are to be taken into account in determining the Reference Tariff. What is required is a commercially realistic assessment of the efficient costs of operating a pipeline system and "efficient costs" does not automatically translate into lowest costs.
In appropriate circumstances and with all other factors being equal, an efficient Service Provider will select the lowest cost option available to it. In other circumstances, commercial prudence and reality dictates that a Service Provider should not assume that the lowest cost option will necessarily be available.

Epic (WA) Decision

Re: Dr Ken Michael AM; ex parte EPIC Energy (WA) Nominees Pty Ltd & Anor concerned the successful appeal by Epic against the determination of the initial capital base for the Dampier to Bunbury Natural Gas Pipeline ("DBNGP") by the WA Regulator.

The Full Court of the Supreme Court of Western Australia considered that the WA Regulator had made a number of errors of law in his determination of the appropriate valuation methodology for the DBNGP.

In the course of its judgment, the court made the following observations:

(a) the Regulator is required by section 2.24 of the Access Code to take the factors set out in that section into account and "*give them weight as fundamental elements in assessing a proposed Access Arrangement with a view to reaching a decision whether or not to approve it*"; and

(b) in determining how to reconcile the competing considerations in section 8.1, the Regulator is required to have regard to the considerations set out in section 2.24.

The court also emphasized that the determination of the initial capital base was not to be determined solely by reference to abstract economic principle. It was open to the Regulator to take into account, and necessary for the Regulator to consider, the actual investment made by Epic in the DBNGP. There is no inconsistency between

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[4] The consultant's report setting out the observed line pipe prices.

these statements and the GasNet Decision and the EAPL Decision. The effect of those two decisions was that a Regulator cannot take accepted valuation methodologies and adjust them to derive a result the Regulator considers more appropriate. The effect of the Epic (WA) Decision was that the Regulator was required to have regard to the purchase price paid by Epic in determining whether DAC and DORC valuation methodologies were appropriate or whether another alternative recognized valuation methodology should be used.

3.4. National Policy Developments

Productivity Commission Review

The Productivity Commission *Review of the National Access Regime*, completed in September 2001, provided the first comprehensive examination of Australia's third party access framework contained in Part IIIA of the *Trade Practices Act*. This review re-examined Part IIIA and its operation since the original Hilmer reforms of a decade ago. It found that Part IIIA was deficient in some respects, but that retention of an overarching framework for third party access was justified.

The flaws the Commission found in the structure and operation of Part IIIA were a lack of guidance on the objectives of the national regime and what pricing principles should be used by regulatory authorities in decision-making. The Commission also found that regulatory risk under the regime was higher than it needed to be, and that existing regulatory approaches created a substantive risk of under-investment in the medium term which would lower overall community welfare.

In February 2004 the Commonwealth Government released a national response to the final report of the *Review of the National Access Regime*. This response endorsed the broad thrust of the Commission's report, and largely adopted the recommendations proposed by the Commission.

After the review of the national access framework, the Commonwealth Government initiated a review of the industry-specific gas access regime embodied in the National Gas Code. In August 2004 the Productivity Commission's final report on the *Review of the Gas Access Regime* was released. The report found significant shortcomings in the gas access regime, including:

- a lack of effective guidance for establishing regulated access prices;
- the potential for distorted investment outcomes, including under-investment; and
- an inadequate recognition in the framework of the risk of regulatory error.

The report made 54 recommendations to improve the regime. These will not be detailed here but suffice to say that the outcomes of the review are relevant to Envestra's Access Arrangement review in that many of the findings provide independent guidance on Code interpretations and application.

For example, the Productivity Commission highlights, in relation to WACC, that there is "inevitable imprecision and subjectivity that occurs when regulators are required to approve reference tariffs"[5] and that "the Relevant Regulator must take account of the fact that there is no single correct method to determine a Rate of Return and that there is often a range of plausible estimates that could be used in applying a Rate of Return method"[6].

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[5] Finding 7.5, pLIII, Review of the Gas Access Regime, Productivity Commission , June 2004

[6] Recommendation 7.9, pLII, ibid

Such findings underpin the view concerning the risk of regulatory error and its potential to result in less than efficient outcomes. A consistent theme of the Productivity Commission reviews and other reviews[7] has been the need for cautious and balanced regulatory outcomes on access pricing issues which protect the medium-term interests of the community by ensuring the avoidance of costly under-investment in essential infrastructure.

It is therefore incumbent upon ESCOSA to recognise the risk of regulatory error and to err on the side of higher, rather than lower, reference tariffs. This would ensure that community interests are maintained over the medium and long term.

Ministerial Council on Energy

In December 2003, the MCE agreed to a package of reforms to Australia's energy markets as part of its forward program of national oversight and coordination of energy sector policy development.

A significant reform deliverable for the MCE is the development of a national framework for distribution and retailing (D&R Framework) - with the stated goals of streamlining and improving the quality of economic regulation across energy markets, lowering the cost and complexity of regulation facing investors, enhancing regulatory certainty and lowering barriers to competition. At the time the original reform package was developed, the issue of transferring responsibility for retail pricing to the Australian Energy Regulator (AER) was expressly excluded at the insistence of the Queensland government, and ongoing political sensitivity regarding this issue is anticipated.

In August 2004, the MCE initiated consultation on the D&R Framework through the release of an Issues Paper. The Issues Paper was widely criticised for focusing on the harmonisation of existing regulatory instruments (and their content) without strategic context. In recognition of this criticism, focus turned to the development of a preferred economic and legal architecture for distribution and retail regulation, with the detailed content of the resulting regulatory instruments largely left for future consideration by the market institution and in some instances, the jurisdictions.

The MCE's Options Paper was intended to be released for consultation in July 2005, with the aim of the AER assuming responsibility of the D&R Framework from late 2006. This has not yet occurred and, as it stands, neither Envestra, nor any other owner of monopoly infrastructure in Australia, is able to accurately forecast or predict the nature of the regime that will determine the revenues it may earn in the future.

Ongoing pressure from the MCE to meet self-imposed time constraints – being the commencement of the rule creation process in January 2006 and the full commencement of the Australian Energy Regulator in January 2007 creates risks for infrastructure owners. There is a real risk, at the date of submission of this Access Arrangement revision, that the regulatory framework will be endorsed by the MCE in late 2005 in the absence of a full appreciation of the implications and risks of the D&R Framework for Governments and energy market participants.

3.5. Implications for Assessment of the Revision by the Regulator

The collective impact of the Code requirements, recent regulatory precedent through the appeals processes and the national policy developments, must be taken into account by the Regulator in assessing Envestra's revisions, in that:

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[7] the Independent Panel *Report on Electricity Distribution and Service Delivery for the 21st Century* (Somerville Report)

- The function of the Regulator is not to determine the precise level of efficient costs for a regulated business. Rather it is to determine whether Access Arrangements proposals made by a Service Provider are consistent with the Code and whether costs fall within a plausible range;
- Regulators need to recognise the inherent uncertainty in replicating competitive markets, and aim to achieve a balance between the costs of prescription and the benefits; and
- The costs and benefits of a poor regulatory decision are asymmetric. The Productivity Commission, the 2004 Queensland 'Somerville' Report, and the recent decision by the Queensland Competition Authority in relation to the Dalrymple Bay Port all recognised the long terms costs of under-investment in infrastructure and the impacts that the regulatory regime can have on incentives to invest.

4. TOTAL REVENUE FORMULA

In accordance with section 8.4 of the Code, Envestra has adopted a Cost of Service approach in the calculation of the Total Revenue requirement. The Total Revenue requirement is made up of revenue from the provision of Reference Services and Non-Reference Services.

Reference Services revenue consists of:

- Haulage Reference Services revenue – this revenue requirement comprises a return on Network assets attributable to the provision of Demand, Commercial and Domestic Haulage Reference Services, depreciation on those assets, plus associated Non-Capital Costs;
- Ancillary Reference Services revenue – this revenue comprised the forecast revenue for each of the Ancillary Reference Services, based on
    - the forecast demand for each Service; and
    - the proposed tariff for each Service. The tariff for each service is based on the cost of providing the service. (It is proposed that the current tariffs roll forward.)

The Total Revenue Requirement (TR) is established using the formula below:

$$TR = (AV*WACC) + D + NC + E$$

where

AV = average Capital Base value

WACC = weighted average cost of capital

D = depreciation

NC = Non-Capital costs

E = efficiency carry-over

The revenue attributable to Ancillary Reference Services is then deducted from the Total Revenue Requirement in order to derive the revenue to be obtained from haulage Services.

The Total Revenue Requirement is calculated using:

- a Capital Base of $839.4m as at 1 July 2006, adjusted each year for:
    - forecast New Facilities Investment (see section 7 of this Access Arrangement Information)
    - depreciation calculated on a straight-line basis (section 6)
    - forecast disposals (section 5.5)
    - inflation (Section 8.1)
- a real pre-tax rate of return of 7.30% (section 8.1)
- Non-Capital Costs (section 9)
- efficiency carryover (section 10).

Each of these matters is discussed in more detail in the referenced sections.

5. CAPITAL BASE

The approach for rolling forward the Capital Base from 1 July 2001 to 1 July 2006 is based on the following formula:

$$\begin{aligned}&\text{Opening Asset Value}_i\\ &+ \text{Escalation}_i\\ &+ \text{New Facilities Investment}_i\\ &- \text{Customer Contributions}_i\\ &- \text{Asset Disposals}_i\\ &- \text{Depreciation}_i\\ &= \text{Closing Asset Value}_i;\end{aligned}$$

where:

All values are expressed in nominal terms

$\text{Escalation}_i = \text{inflation}_i \times \text{Opening Asset Value}_i$;

Depreciation is expressed in current cost terms and calculated on a straight-line basis over the economic useful life of the asset.

The inputs used by Envestra to roll forward the Capital Base are described below.

5.1. Initial Capital Base

SAIPAR determined that the Initial Capital Base as at 30 June 1998 was $617m[8]. The RAB as at 1 July 2001 is $711m, as shown in the following table.

Capital Base $m (nominal)	1998/99	1999/00	2000/01
Opening Asset Value	617.0	634.4	663.0
+ Inflation of opening asset base	7.7	17.7	39.7
+ Capital Expenditure	22.1	23.9	21.6
- Customer Contributions	(0.6)	(0.4)	(0.3)
- Regulatory Depreciation	(11.8)	(12.5)	(13.2)
= Closing Asset Value	634.4	663.0	710.9
Average Asset Value ($m nominal)	625.7	648.7	686.9
Average Asset Value ($m 31 Dec 2004)	749.5	767.5	790.6

Table 6 Opening Asset Base

5.2. New Facilities Investment over the First Access Arrangement Period

Gross New Facilities Investment over the First Access Arrangement Period is set out in the following table. Actual expenditure is provided for 2001/02 to 2004/05. New Facilities Investment for 2005/06 is set at the latest forecast prepared by Envestra. This represents the best estimate of New Facilities Investment that will be undertaken by

[8] p12, SAIPAR Final Approval of Access Arrangement for Envestra Limited's SA Natural Gas Distribution System, April 2003

Envestra in 2005/06. Also shown is the value of customer contributions, with the forecast for 2005/06 being based on Envestra's latest information. Envestra believes that the forecast is reasonable and that it meets the requirements of the Code, i.e. that the forecast represents best estimates arrived at on a reasonable basis.

The net New Facilities Investment is derived by subtracting the customer contributions from the Gross New Facilities Investment.

Net New Facilities Investment $m (nominal)	2001/02	2002/03	2003/04	2004/05	2005/06
Gross New Facilities Investment	19.8	20.9	20.9	209	27.5
Less: Customer Contributions	(0.2)	(0.5)	(0.5)	(0.3)	(0.4)
Net New Facilities Investment $m (nominal)	19.7	20.4	20.4	20.6	27.1
Net New Facilities Investment $m (31 Dec 2004)	21.4	21.5	20.8	20.6	26.5

Table 7 Net New Facilities Investment 2001/02- 2005/06

It is proposed that any difference between actual expenditure and forecast expenditure in 2005/06 be taken into consideration in setting the Capital Base at the commencement of the Third Access Arrangement Period.

For example, if actual expenditure in 2005/06 exceeds forecast expenditure by $1m, then the equivalent of $1m inflated annually would be added to the Capital Base on 30 June 2011.

A breakdown of the New Facilities Investment over the First Access Arrangement Period is shown in the following table.

New Facilities Investment $m (nominal) (excluding FRC)	2001/02	2002/03	2003/04	2004/05	2005/06f
Mains	7.9	5.5	6.3	8.1	12.4
Inlets	4.7	5.8	6.0	6.8	7.0
Meters	3.8	3.8	4.4	4.0	7.5
SCADA	0.2	0.0	0.0	0.2	0.0
IT Systems	0.6	0.5	0.1	0.7	0.0
Other Distribution System Equipment	0.1	0.2	0.1	0.1	0.0
Other	2.5	4.4	3.6	0.7	0.3
New Facilities Investment $m (nominal)	19.7	20.4	20.4	20.6	27.1
New Facilities Investment $m (31 Dec 2004)	21.4	21.5	20.8	20.6	26.5

Table 8 Net New Facilities Investment 2001/02- 2005/06

In the latter half of the First Access Arrangement Period, Envestra spent considerable New Facilities Investment (and Non-Capital Costs) implementing FRC. Envestra subsequently received compensation for this cost from the South Australian government in the form of a lump sum payment in lieu of the revenue that Envestra would otherwise have had to recover from Users. Because Envestra was not required to adjust its revenue base in the First Access Arrangement Period for FRC, the New Facilities Investment associated with the government contribution has been excluded from the Regulatory Asset Base. The depreciated FRC New Facilities Investment

not associated with the government contribution (i.e. FRC telemetry) has been added to the Regulatory Asset Base as at the start of the Second Access Arrangement Period.

Envestra submits that all of the New Facilities Investment undertaken or proposed to be undertaken during the First Access Arrangement Period meets the requirements of the Code. Envestra has commercial incentives to ensure that expenditure it undertakes is prudent, and more particularly has clear incentives to:

- minimise expenditure – under a price cap regime, lower expenditure implies higher returns, which means that a Service Provider is discouraged from "gold plating" or unnecessary expenditure;
- require a customer contribution where a project would be uneconomic –as a Service Provider is permitted to require a customer contribution for that part of capital expenditure that does not pass the Economic Feasibility Test, it is possible to infer that the remaining expenditure passes the Economic Feasibility Test, and can be included in the Capital Base. Envestra has been rigorous in its application of the Economic Feasibility Test, individually assessing each investment.

Accordingly, Envestra submits that the New Facilities Investment in the First Access Arrangement Period has satisfied the requirements of the Access Code (section 8.16) and should therefore be rolled in to the Asset Base. This is consistent with the approach adopted by the Essential Services Commission of Victoria, which stated in its 2002 Final Decision for Victorian gas distributors:

> *"Regarding capital expenditure, the Commission noted that it remained of the view that the most effective means of ensuring that the distributors' capital expenditure meets the requirements of the Gas Code is to provide the distributors with the commercial incentives to achieve this outcome, which existed over the first regulatory period. Accordingly, the Commission concluded that it was appropriate for the distributors to include in their regulatory asset bases their actual capital expenditure*"[9].

It is also noted that the ACCC endorses the inclusion of actual capital expenditure in the regulatory asset base in its Statement of Principles for the Regulation of Transmission Revenues.

The above supports Envestra's view that New Facilities Investment undertaken in the First Access Arrangement Period should be rolled in to the Capital Base. Where New Facilities Investment is yet to be undertaken (i.e. in 2005/06), Envestra has used best estimates arrived at on a reasonable basis.

5.3. Regulatory Depreciation over the First Access Arrangement Period

Regulatory depreciation over the First Access Arrangement Period has been set equal to the depreciation approved by SAIPAR in 2003 and is as shown in the following table.

Depreciation $m (nominal)	2001/02	2002/03	2003/04	2004/05	2005/06	TOTAL
SAIPAR Depreciation	14.3	15.2	16.1	16.7	17.4	79.7

Table 9 Regulatory Depreciation 2001/02- 2005/06

5.4. Redundant Capital

Detailed consideration was given to the issue of redundant assets during the 2002 review of gas distributors'

[9] p133, ESC Final Decision for the Review of Gas Access Arrangements (2002)

access arrangements in Victoria. It was concluded by the ESCV in that instance that "there are likely to be substantial benefits to both customers and distributors from a policy of minimising the risk to distributors associated with recovering the regulatory value of their assets" (p153 Final Decision) and consequently the ESCV undertook not to identify or remove redundant assets.

It is also noted that the above approach has been supported by the Western Australian regulator in the recent Final Decision for Alinta Gas Networks[10].

As for the First Access Arrangement Period, Envestra is not forecasting any Redundant Capital for the Second Access Arrangement Period.

5.5. Disposals

Envestra has few assets that do not form part of the gas distribution system. No disposals of assets have taken place to-date during the First Access Arrangement Period and no disposal of any material value is planned for the remainder of the First Access Arrangement Period, or for the Second Access Arrangement Period.

5.6. Inflation

For the purposes of rolling forward the regulatory asset base, Envestra has used the “actual percentage change in the CPI” as required under section 3.3.3.2 of the approved Access Arrangement. The Consumer Price Index is defined in the Access Arrangement as the “All Groups Weighted Average for the Eight Capital Cities, as published by the Australian Bureau of Statistics or its successor”.

ESCOSA has put forward the view that it may be appropriate to make an adjustment for the GST-related spike in the Consumer Price Index in 2000/01. Envestra believes there is no basis for making an adjustment to the CPI as to do so would be inconsistent with:

(a) the approved Access Arrangement ;

(b) the principle of financial capital maintenance; and

(c) Envestra’s legitimate business interests under the Code.

Envestra notes that there is significant support by regulators for the incorporation of the ‘GST spike’ in inflation and recognition of the rights of asset owners to roll forward of assets to a new regulatory period without the need to make an adjustment to inflation. Regulatory precedents (in Victorian and NSW decisions by the ESC, IPART and ACCC) use an unadjusted CPI in the asset roll forward.
In particular, it is noted that under the Gas Access Code, the ACCC did not require GasNet to remove the GST spike from inflation when rolling forward its asset base:

> “To remove the impact of the GST from the adjustment to the capital base, as recommended by some interested parties, would result in an erosion of the real (inflation adjusted) value of GasNet’s assets. This would be inconsistent with its legitimate business interests (pursuant to section 2.24(a) of the Code).”[11]

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[10] paragraph 270, p51, Final Decision on the Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems, Economic Regulation Authority, 12 July 2005

[11] ACCC Final Decision, GasNet Australia Access Arrangement Revisions for the Principal Transmission System, 13 November 2002

Also under the Gas Access Code, the Victorian ESC did not adjust inflation for the GST spike in rolling forward the gas distributors' asset bases in the 2003 Gas Access Arrangements Review:

> "… on balance, the Commission proposed not to adjust measured inflation over the previous regulatory period to attempt to remove the impact of the GST-related spike in prices. In reaching this conclusion, the Commission noted that it placed significant weight on the implications of the financial capital maintenance concept, as well as the desirability of adopting a simple approach wherever possible. In addition, the Commission noted the complexity associated with the matter and accordingly proposed that a more a conservative approach was warranted."[12]

In the Final Decision relating to AGL Gas Networks (July 2000), IPART also determined that the GST inclusive CPI be used to escalate the regulatory asset base:

> "AGLGN is allowed to index the capital base over the period 2000-2004 by the CPI, inclusive of the Goods and Services Tax (GST). This is consistent with the concept of financial capital maintenance…" [13]

Even outside of the Gas Access Code, In the 2001 Electricity Distribution Price Review the Victorian ESC used the All Groups CPI - Average of the Eight Capital Cities to escalate the regulatory asset base:

> "The purpose of indexing asset values with inflation is to preserve the real value of the asset owner's investment, thereby minimising inflation risk to the asset owner. It follows that the measure of inflation adopted should be that which provides the best measure of changes in the purchasing power of money in Australia. In its Draft Decision the Office concluded that the All Groups CPI - Average of the Eight Capital Cities is the best measure for this purpose, and no comments were received on this proposal subsequent to the Draft Decision.
>
> Accordingly, the Office has used the All Groups CPI - Average of the Eight Capital Cities as the measure of inflation to establish the distributors 'regulatory asset bases as at 1 January 2001…"[14]

There is clearly sufficient regulatory precedent to support the position that no adjustment to inflation is required for the GST-related spike.

Envestra submits that the 'financial capital maintenance' concept, as endorsed by ESCOSA, requires that the opening regulatory asset base (i.e. the financial investment in the firm) provide a market-based return for investors. Regulators normally allow investors to receive this return on assets through annual revenue calculated as a real return (real WACC) on assets and an annual inflation adjustment to the asset base.

Therefore, to maintain the real financial value of the regulatory asset base it must be adjusted by the actual inflation rate as measured by the CPI. Any discount to actual CPI, such as for the impact of GST, will lead to a loss of financial value to shareholders and hence is inconsistent with the rule of financial capital maintenance as it leads to an erosion of the real value of the asset base.

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[12] ESCV, Review of Gas Access Arrangements – Final Decision, October 2002

[13] IPART Final Decision Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW, July 2000, pp 119

[14] Office of the Regulator-General, Electricity Distribution Price Determination 2001-05, Volume I Statement of Purpose and Reasons, September 2000 pp112.

From a theoretical perspective there are many factors (both positive and negative) that influence the measured CPI, which are not adjusted for by Regulators. Adjustment of CPI for the GST spike would create a precedent whereby ESCOSA would also need to ensure that adjustments take place for other events that affect the CPI. This significantly increases regulatory complexity and results in increased regulatory risk. As the effect of many events on CPI is difficult to measure, it is considered that the most pragmatic and transparent approach is to strictly apply the unadjusted CPI to the asset base.

Envestra considers, in light of the above arguments and ESCOSA's desire to promote consistency in regulatory outcomes, it is not only contrary to the approved Access Arrangement but also inappropriate to adjust inflation for the GST-related spike.

5.7. Opening Asset Values as at 1 July 2006

Using the inputs outlined above, the Initial Capital Base has been rolled forward to I July 2006 as follows:

Capital Base $m (nominal)	2001/02	2002/03	2003/04	2004/05	2005/06
Opening Asset Value	710.9	737.1	767.6	787.2	809.6
+Inflation of opening asset base	20.9	25.4	15.2	18.6	20.2
+Capital Expenditure	19.8	20.9	20.9	20.9	27.5
-Customer Contributions	(0.2)	(0.5)	(0.5)	(0.3)	(0.4)
-Regulatory Depreciation	(14.3)	(15.2)	(16.1)	(16.7)	(17.4)
=Closing Asset Value	737.1	767.6	787.2	809.6	839.4
Average Asset Value ($m nominal)	724.0	752.3	777.4	798.4	824.6
Average Asset Value ($m 31 Dec 2004)	786.2	793.7	792.8	798.4	805.6

Table 10 Roll forward of the Capital Base 2001/02- 2005/06

6. FORECAST DEPRECIATION

Envestra has used a straight-line approach to depreciation based on the asset lives adopted in deriving the Initial Capital Base. This is consistent with the requirements of the Code.

In particular, the straight-line approach ensures that:

- depreciation is allocated over the entire useful lives of the Network assets; and
- depreciation is consistent with the stable growth in demand that is forecast to occur over the Access Arrangement Period.

The straight-line approach also has the advantage of being:

- readily understandable;
- transparent; and
- easily capable of being replicated on an ongoing basis.

Envestra notes that the straight-line approach to depreciation has also been adopted by other regulated gas businesses and has been accepted by regulators throughout Australia.

The economic useful life (EUL) of each asset type is shown in the following table. For purposes of consistency, Envestra is using the asset lives as approved by SAIPAR for the First Access Arrangement Period.

Asset Categories	EUL (years)
Mains and Inlets	83
Meters	29
SCADA	50
Other Distribution Equipment	50
IT Systems	5
Other	10
FRC Telemetry	5
Equipment, Vehicle & Other	10

Table 11 Asset Lives (years) for Network Assets

6.1. Forecast Depreciation by Category

The following table shows the calculated depreciation over the Second Access Arrangement Period for each category of asset.

Total Depreciation $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11
Mains & Inlets	8.2	8.9	9.5	10.2	11.0
Meters	3.2	3.6	3.9	4.4	4.8
SCADA	0.0	0.1	0.1	0.1	0.1
Other Distribution Equipment	6.5	6.7	6.9	7.0	7.2
IT Systems	0.8	1.7	3.1	3.9	4.3
Equipment, Vehicle & Other	1.4	1.5	1.6	1.7	1.8
FRC Telemetry	0.4	0.4	0.4	0.1	0.1
TOTAL $m (nominal)	20.5	22.8	25.5	27.4	29.3
Total Depreciation $m (31 Dec 2004)	19.5	21.2	23.1	24.2	25.3

Table 12 Forecast Depreciation

6.2. Code Compliance

Envestra's use of a straight-line approach to depreciation is consistent with the requirements of the Access Code. The asset lives adopted in deriving the Initial Capital Base are consistent with those used for the First Access Arrangement Period and were approved by SAIPAR.

7. NEW FACILITIES INVESTMENT

7.1. Summary

New Facilities Investment forecast to occur within the Second Access Arrangement Period is based on the forecast level of capital expenditure necessary to allow Envestra to meet the forecast growth in demand for Services, to meet system augmentation and replacement requirements and to generally deliver the Services.

Envestra's Asset Management Plan (Attachment 1) describes how Envestra maintains and operates the gas distribution system, and how it plans for future growth and expansion. This comprehensive document has been reviewed by WorleyParsons who have confirmed that the way Envestra operates and plans to operate its assets is of an appropriate standard, in keeping with good industry practice. The Asset Management Plan has also been submitted to the Office of the Technical Regulator.

New Facilities Investment for the Second Access Arrangement Period has been forecast according to the categories set out in the table below. Further detail on the categories is provided in sections 7.2 and 7.3.

New Facilities Investment $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11
Stay in Business					
Mains replacement	9.2	9.2	8.8	9.3	10.5
Periodic meter changes	4.7	4.7	5.1	5.1	4.5
Security of Supply	4.0	8.0	6.5	13.9	15.1
SCADA	1.3	1.3	0.7	1.2	0.8
Regulators	1.5	1.5	0.9	0.9	0.9
IT Projects	4.6	5.6	7.6	0.3	3.9
Other	0.6	1.0	0.6	0.6	0.6
Total replacement	26.0	31.3	30.3	31.3	36.4
Growth					
Mains/inlets/meters	19.7	19.9	18.5	20.0	22.6
Extensions to Towns	1.9	4.3	1.5	1.4	0.4
Other	0.1	0.1	0.2	0.2	0.2
Total Growth	21.7	24.3	20.1	21.5	23.2
Total New Facilities $m (nominal)	47.6	55.6	50.4	52.8	59.6
Total New Facilities $m (31 Dec 2004)	45.4	51.7	45.7	46.8	51.5

Table 13 Forecast New Facilities Investment

Where the above forecasts are dependent upon forecasts of gas demand and number of customers, the forecast expenditure is based on Envestra's demand forecasts for the Access Arrangement Period as contained in section 17 of this document.

As explained in the following sections, New Facilities Investment in the Second Access Arrangement Period is materially higher than in the First Access Arrangement Period. This is predominantly due to:

- Increased replacement of aging cast iron and unprotected steel mains;
- Security of supply projects that will provide consumers with a much higher degree of reliability of gas supply;
- Increased meter replacements, which will peak at about 36,000 per year in the next period, compared with about 24,000 in 2004/05; and
- Increased IT expenditure that will provide Envestra with a robust, long-term IT capability for the business.

7.2. Stay in Business Capital Expenditure

Mains Replacement

This category provides for the replacement of gas mains and inlet services on a planned basis. In the absence of mains replacement, the annual volume of UAFG will trend upwards as a result of deterioration in the condition of cast iron and unprotected steel mains.

A certain critical length of cast iron and unprotected steel must be replaced annually in order to offset the effect of this deterioration. If this critical length is not replaced the annual volume of UAFG will rise. If a greater length is replaced, the annual volume of UAFG will fall. It is difficult to assess this critical length because it depends upon many factors including the total length and overall condition of cast iron and unprotected steel mains within the Network. Further, UAFG volume cannot be measured directly, but is assessed in arrears, and is also affected by other factors.

Prior to the First Access Arrangement Period, Envestra had been replacing up to 200km/year under its Accelerated Mains Replacement Program. This established a downward trend in UAFG volume. As a result, Envestra reduced the length of mains replaced to around 50km in 02/03. Subsequently, UAFG volumes began to rise. Envestra then increased the length of mains replaced to around 60 km/year in 04/05. Envestra anticipates that replacement of about 75km per year is required to maintain existing UAFG volumes. However, it would prudent to increase the length of mains replaced to 100 km/yr through the Second Access Arrangement Period, in the expectation that this will reduce rather than maintain UAFG volumes.

The prudence of undertaking the proposed level of replacement is underpinned by economic analysis. Before Envestra undertakes a mains replacement programme, it assesses a number of factors pertinent to the ability of the gas mains to continue to provide adequate service. Such factors include leak history and the age, condition and material type of the main concerned. Economic analysis is then used to compare the cost of replacing mains with the forecast cost of

(a) continuing to repair leaks as they arise;

(b) gas lost from leakage; and

(c) ancillary tasks, such as attending to water ingress problems.

Where economic analysis indicates it is more prudent to replace a main, it is prioritised and scheduled for replacement, taking into account manpower/contractor resources and network planning considerations. All of the mains replacement forecast for the Second Access Arrangement Period passes Envestra's economic test for replacement.

The Network has one of the highest percentages of cast iron and unprotected steel mains in comparison to other networks in Australia. If the proposed rate of replacement is maintained, all cast iron pipe in the Network would be eliminated by the year 2023.

As explained above, the level of mains replacement is materially higher than the level undertaken in the First Access Arrangement Period, meaning that the associated cost for this activity is materially higher.

Meter Changes

Envestra is required to periodically change gas meters in order to test them for metering accuracy. These periodical meter changes (PMCs) take place at intervals approved by the Technical Regulator. A continuous changeover and testing programme is in place to ensure that each gas meter continues to operate within prescribed tolerances.

About 24,000 meters were changed over in 2004/05. As set out in Envestra Asset Management Plan, this figure will reach 36,000/yr in the forecast period. The numbers are reflective of the age and types of meters in service. Due to the higher number of PMCs in the Second Access Arrangement Period, PMCs account for a correspondingly higher cost compared to the PMC cost for the First Access Arrangement Period.

In accordance with its Gas Measurement Management Plan, Envestra re-uses meters to the extent possible. Where meters cannot be repaired, they are replaced with new meters. The Office of the Technical Regulator undertakes audits of Envestra's activities, including its meter testing and refurbishment activities and processes.

Security of Supply

Gas networks are continually reviewed to ensure that the risk of gas outages are minimised, and that in the event a gas outage occurs, that the impact of any outage is minimised. The forecasts allow for reinforcement of those sections of the Network that are vulnerable to gas supply problems, as well as improvements to reduce the likelihood of outages occurring. A comprehensive plan has been compiled that will deliver a high level of reliability, consistent with good industry practice and with the expectations of consumers.

Envestra's Asset Management Plan provides details of the process undertaken that underpins the security of supply projects. A significant part of this plan entails the completion of the Eastern Ring Main ($14.2m), reinforcement of supply to the northern Gawler region ($7.4m) and completion of the Southern Loop ($7.3m) that will ensure security of supply to the growing southern suburbs.

The Adelaide network is elongated in nature due to its geography, with four gate stations clustered at the northern end of the network. This means that the network is unusually susceptible to supply problems in the central and southern areas of the network in the event of unforeseen damage to key transmission mains. The above projects will assist in minimising the possibility of interruptions to gas supply by providing looping of key mains, consistent with good industry practice.

Envestra has undertaken relatively little expenditure on such projects in recent years, and while the Network has been fortunate in not enduring significant incidents of disruption to supply, good industry practice dictates that risks of outages be minimised. These security of supply projects therefore represent a material variation in expenditure when compared to similar expenditure over the First Access Arrangement Period.

SCADA

Gas distributors rely on SCADA (Supervisory Control and Data Acquisition) systems for real-time monitoring of

network conditions and for the remote control of gas flow and pressures to optimise system performance and maximise safety. Envestra's SCADA system has relatively few features of a modern SCADA system, with a limited number of real-time pressure monitoring installations.

In addition, unlike its counterparts in other jurisdictions, Envestra's network has no remote control capability. In order to comply with good industry practice in this regard, Envestra's New Facility Investment forecast provides for the installation of

- remote control devices on key valves and installations, such that the emergency isolation of network sections is possible should the need arise; and
- pressure monitoring at key points throughout the network, so that routine and emergency planning capability is enhanced.

Regulator Stations and Valves

This category provides for on-going replacement and improvement of regulator stations and valve pits across the Network. There are over 350 district regulators and approximately 80 transmission regulator stations. Deterioration of underground pits over the years, coupled with current OH&S requirements, means that the physical nature of some installations is not consistent with current standards. In addition, the design configuration of some installations is outdated. The expenditure includes allowances for such stations to be upgraded in accordance with current design standards, such as twin stream active-monitor setups with over-pressure protection.

Information Technology

The introduction of FRC has seen Envestra expend considerable resources in the development and installation of IT systems to satisfy FRC requirements. Envestra has now turned its attention to developing a strategy to drive increased business performance from its suite of IT investments and to ensure that its IT program provides a robust, cost effective and service-oriented capability into the long term.

Due to the critical nature of IT and the significant costs involved in this area of the business, Envestra engaged IBM to develop and cost such a strategy. IBM identified a number of issues that needed to be addressed for Envestra to close key capability gaps. These issues and the associated IT programmes to address them are detailed in a report to Envestra titled "Envestra IT Strategy Planning (1 April 2005)" (see Attachment 3, provided to ESCOSA in confidence). In developing the strategy, IBM conducted a thorough review of Envestra's IT requirements and took into consideration industry standards and practice (both in Australia and New Zealand) to ensure that the outcomes were prudent and efficient and in accordance with what would be expected of a utility business like Envestra's.

The IT forecasts in this section, which are as recommended by IBM, allow for the replacement and upgrade of current IT systems to enable continuation of the current service delivery of those systems.

While some aspects of the forecast expenditure represent a continuation of IT programmes undertaken during the First Access Arrangement Period, other aspects as described above relate to initiatives that will address capability gaps.

Other

This category includes:

- Odorising stations

Envestra ensures that natural gas entering the network is adequately odorised for safety reasons. Envestra operates 14 odorising stations, which vary in design and capability. It is essential that odorising stations continue to operate safely and effectively on a 24/7 basis. The capital expenditure over the Second Access Arrangement Period will ensure that adequate spare parts and back-up systems are available should a malfunction occur at any of the odorising stations.

- Heating value measurement

  Envestra has a responsibility to ensure that the heating value of natural gas (that is the basis on which customers are charged for gas consumption) is accurate and in accordance with regulatory requirements. The connection of the SEAGas pipeline to the Network has complicated the measurement of heating value, and the installation of additional monitoring equipment in the Second Access Arrangement Period will allow for a greater degree of confidence in consumer billing accuracy.

- Cathodic protection systems

  Cathodic protection is an integral element of any network that utilises steel pipework. The forecast allows for replacement of cathodic protection transformer rectifier units that are necessary for the on-going operation of the cathodic protection system.

7.3. Growth Capital Expenditure

Mains/Inlets/Meters

This category provides for:

- growth of the network (mains) for the provision of Services to new Delivery Points. New mains (or mains extensions) range from large projects undertaken in order to provide gas to new housing estates, to small mains extensions in existing gas areas in order to connect a new customer. New large (Demand) customers sometimes also require significant mains extensions. Such extensions are evaluated on a case-by-case basis and in accordance with the Code, taking into consideration the forecast load demand for the customer.

- Inlets associated with growth of the network - the inlet service is the pipework that runs from the gas main to the gas meter. These can vary in length and size depending on the gas demand of the customer. The cost per service is also affected by the terrain and environmental characteristics of the site being connected, e.g. it is easier and cheaper to connect gas to a new home than to an existing home or to an existing building in the CBD;

- Meters associated with growth of the network - the cost associated with gas meters includes the cost of installation of the meter box, meter and gas regulator, and the subsequent commissioning that ensures that gas is supplied in a safe manner in accordance with Envestra's obligations as a gas distributor;

- Mains and associated facilities that are constructed on a routine basis to improve security of supply to consumers.

Extensions to Towns

The last major extension of the gas distribution infrastructure occurred in 1994 when gas was delivered to Murray Bridge and Berri. In preparing this Access Arrangement revision, Envestra reviewed population and development trends in areas adjacent to the Network to determine if there were any new extensions that would satisfy the

criteria set out in section 8.16 of the Code. Envestra identified seven towns that it believed may be suitable for network extensions. These included Mt Barker (one of the fastest growing towns in Australia), McLaren Vale, Monarto, Tanunda, Renmark, Loxton and Waikerie.

Based on detailed economic analysis, Envestra determined that extensions to McLaren Vale, Tanunda and the Monarto Industrial Estate would pass the economic feasibility test in the Code. Envestra therefore has allowed for an extension of its network to these three towns in the Second Access Arrangement Period. Over the next 20 years, Envestra expects to connect around 2,250 new customers in these three towns to its network. Total capital is estimated to be about $12m. The gas demand forecast and New Facilities Investment forecast for these towns have been included in this submission.

No such extensions were undertaken during the First Access Arrangement Period. Consequently, the forecast expenditure in this category represents a material change to the New Facilities Investment undertaken during the First Access Arrangement Period.

Other

A small amount of expenditure is required to enable Envestra to remove sub-meters from domestic premises. Such meters were historically installed as an economical means of connecting additional consumers. This practice is no longer undertaken and the expenditure allows for rectification of those connections.

An allowance has also been made for the additional cost that is expected to be incurred from increased use of high flow capacity meters on new connections, which are becoming increasingly necessary due to the needs of modern gas appliances.

7.4. Expert Review of New Facilities Investment

Envestra engaged WorleyParsons to review current and forecast New Facilities Investment (see Attachment 2). WorleyParsons conducted a benchmarking study that examined the expenditure of the business relative to other natural gas distribution businesses (see Attachment 2). The results showed that Envestra's New Facilities Investment is below a reasonable range, implying that Envestra may find itself in a "catch-up" position relative to other distributors. This was reinforced by WorleyParsons benchmarking work which found that, of all the Australian networks, Envestra's SA network has the highest percentage of cast iron mains. In other words, while other distributors have renewed their mains, Envestra may still have a significant capital programme ahead.

WorleyParsons then examined the trends and changes pertaining to Envestra's Non-Capital Cost forecast for the Second Access Arrangement Period. This included analysis of the various categories of expenditure and underlying assumptions and parameters. In addition, WorleyParsons examined Envestra's forecast expenditure, in terms of KPIs, in the context of what WorleyParsons considered to be an efficient range of KPIs. WorleyParsons consequently concluded that Envestra's Non-Capital Cost forecast is within a range of values that WorleyParsons considers to be efficient for Envestra's SA network.

As a result of that analysis, WorleyParsons endorses the Non-Capital Cost forecast for the purposes of the Code.

7.5. Code Compliance

In respect of New Facilities Investment, section 8.20 of the Access Code provides:

> "*Consistent with the methodologies described in section 8.4, Reference Tariffs may be determined on the basis of New Facilities Investment that is forecast to occur within the Access Arrangement Period provided*

that the New Facilities Investment is reasonably expected to pass the requirements in section 8.16 when the New Facilities Investment is forecast to occur."

Section 8.16 provides:

"*The amount by which the Capital Base may be increased is the amount of the actual capital cost incurred (New Facilities Investment) provided that:*

(a) that amount does not exceed the amount that would be invested by a prudent Service Provider acting efficiently, in accordance with accepted good industry practice, and to achieve the lowest sustainable cost of delivering Services; and

(b) one of the following conditions is satisfied:

(i) the Anticipated Incremental Revenue generated by the New Facility exceeds the New Facilities Investment; or

(ii) the Service Provider and/or Users satisfy the Relevant Regulator that the New Facility has system-wide benefits that, in the Relevant Regulator's opinion, justify the approval of a higher Reference Tariff for all Users; or

(iii) the New Facility is necessary to maintain the safety, integrity or Contracted Capacity of Services."

The New Facilities Investment described in this Chapter 7 satisfies the requirements of section 8.16. As confirmed by the WorleyParsons report, the investment is consistent with that which would be invested by a prudent Service Provider acting efficiently, in accordance with accepted good industry practice, and to achieve the lowest sustainable cost of delivering Services.

Various aspects of clause 8.16(b) are satisfied depending on the nature of the New Facilities Investment. For example, where the forecast relates to mains extensions required for servicing new customers, clause 8.16(b)(i) is applicable. Where the forecast relates to items such as security of supply projects and SCADA system improvements, aspects of clause 8.16(b)(ii) and 8.16(b)(iii) are satisfied.

All of the New Facilities Investment satisfies clause 8.16 of the Code.

8. COST OF CAPITAL

8.1. Envestra Approach

The regulatory rate of return, cost of capital or weighted average cost of capital ('WACC'), is a key input to the revenue determination. Envestra has used the CAPM formula as a basis for estimating WACC.

Envestra has elected to use a real pre-tax WACC formulation for regulatory rate of return. Envestra notes that the real pre-tax WACC methodology was also used by SAIPAR in the 2003 Final Decision and by ESOCSA in the 2005-2010 Electricity Price Determination. This methodology is therefore consistent with generally accepted industry practice. Envestra also believes that it is important for consistent practice to be applied throughout the energy industry in South Australia, i.e. the methodology applied in relation to electricity should also apply to gas.

Envestra has calculated the real pre-tax rate WACC from the nominal post-tax WACC formula below:

$$\text{WACC (nominal, post-tax)} = R_e \bullet \frac{E}{V} \bullet \frac{1 - t_c}{(1 - t_c(1-\gamma))} + R_d \bullet \frac{D}{V} \bullet (1 - t_c)$$

Where:

R_e	Risk adjusted post-tax cost of equity required by investors derived from the CAPM
E	The benchmark level of equity expressed as a percentage
D	The benchmark level of debt expressed as a percentage
V	Sum of assumed debt level plus assumed equity level (V = D + E)
γ	Value of imputation credits
t_c	Statutory corporate tax rate
R_f	The nominal risk-free rate of return
D_m	Debt risk margin
R_d	Cost of debt ($R_f + D_m$)

The forward transformation methodology has been used to convert the post-tax nominal WACC to a pre-tax real WACC as set out below.

Step 1: convert the nominal post-tax rate of return ($WACC_{\text{nominal post-tax}}$) into a nominal pre-tax rate by dividing by the tax rate to get:

$$WACC_{nominal\ pre-tax} = \frac{WACC_{nominal\ post-tax}}{(1 - t_c)}$$

Step 2: convert the nominal pre-tax rate of return ($WACC_{\text{nominal pre-tax}}$) into a real pre-tax rate ($WACC_{\text{real pre-tax}}$) by dividing by the inflation rate (π) using the Fisher equation to get:

$$WACC_{real\ pre-tax} = \left(\frac{1 + WACC_{nominal\ pre-tax}}{(1+\pi)} \right) - 1$$

This approach is consistent with that used previously by SAIPAR.

Implementation of Envestra's approach to forecasting WACC requires definition of ranges for the following critical parameters

- risk free rate;
- capital structure;
- cost of equity, calculated by the Capital Asset Pricing Model;
- cost of debt;
- gamma; and
- equity beta.

These ranges were defined having regard to extensive research that exists pertaining to the estimation of WACC parameters. The range of values for each WACC parameter is summarised in the following table. Details concerning the approach and assumptions used in deriving these ranges of parameters are provided in Attachment 4 to this document.

WACC Parameters	Value Range	
Nominal Risk Free Rate	5.43%	6.25%
Expected Inflation	2.50%	3.00%
Debt Margin	1.38%	1.48%
Debt to Assets	60%	60%
Market Risk Premium	6.00%	7.00%
Gamma	0.35	0.00
Equity Beta	1.00	1.10
Real Pre-Tax WACC	6.70%	9.99%
Real Pre-Tax WACC point estimate	7.30%	

Table 14 WACC Parameters

On the basis of this analysis Envestra proposes a real pre-tax WACC of 7.30% for the Network. The analysis indicates a range for real pre-tax WACC of between 6.7% and 9.99%. Envestra has elected to use a point estimate of WACC of 7.3% as the rate of return for determining revenue. This estimate falls within the plausible range of estimates of WACC identified above. It is slightly higher than the 7.1% approved by ESCOSA for ETSA Utilities earlier this year. The additional premium is in line with the higher risk profile of a gas distribution business compared to an electricity business. A return of 7.3% is therefore consistent with the prevailing conditions for funds in the South Australian energy market, and the risk involved in delivering the Reference Service. Envestra

believes this rate of return is sufficient to enable Envestra to continue to invest in the Covered Pipeline.

8.2. Code Compliance

In respect of Rate of Return clauses 8.30 and 8.31 of the Access Code provide:

"*8.30 The Rate of Return used in determining a Reference Tariff should provide a return which is commensurate with prevailing conditions in the market for funds and the risk involved in delivering the Reference Service (as reflected in the terms and conditions on which the Reference Service is offered and any other risk associated with delivering the Reference Service).*

8.31 By way of example, the Rate of Return may be set on the basis of a weighted average of the return applicable to each source of funds (equity, debt and any other relevant source of funds). Such returns may be determined on the basis of a well-accepted financial model, such as the Capital Asset Pricing Model. In general, the weighted average of the return on funds should be calculated by reference to a financing structure that reflects standard industry structures for a going concern and best practice. However, other approaches may be adopted where the Relevant Regulator is satisfied that to do so would be consistent with the objectives contained in section 8.1."

Envestra has calculated its cost of capital using the Capital Asset Pricing Model, being a model which is permitted by clause 8.31 of the Access Code. As noted in the *GasNet Australia (Operations) Pty Ltd* decision, this election must be given effect to by the Regulator. That is, provided Envestra employs a method of determining its cost of capital that meets the requirements of clauses 8.30 and 8.31, the Regulator cannot refuse to accept the methodology employed by Envestra.

Clause 8.30 requires the rate of return to be commensurate with prevailing conditions in the market for funds and the risks involved in delivering the reference service. The parameters set out in section 8.1 have been determined so as to meet this requirement.

9. NON-CAPITAL COSTS

9.1. Summary of Non-Capital Costs

Envestra's forecasts of efficient non-capital costs for the Second Access Arrangement Period are shown in the following table.

Non Capital Costs Summary $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11
Operating & Maintenance	30.3	35.7	30.3	30.7	31.3
Administration and General	7.5	7.5	8.3	8.4	8.7
FRC	6.4	6.9	7.0	7.5	7.6
Network Development	6.6	6.8	7.0	7.3	7.5
IT Projects	0.7	1.3	1.8	1.8	1.9
TOTAL $m (nominal)	51.5	58.2	54.4	55.7	57.0
TOTAL $m (31 Dec 2004)	49.1	54.1	49.4	49.3	49.3

Table 15 Non-Capital Cost Forecast

Envestra considers that its 2004/05 expenditure on network operating costs represents a reasonable basis for forecasting for the Second Access Arrangement Period because:

- The cost drivers in 2004/05 were reflective of an average year in terms of service standards and general asset management costs; and
- 2004/05 included operating efficiencies which Envestra considers are maintainable.

In forecasting the network operating costs over the Second Access Arrangement Period, Envestra has used its actual 2004/05 costs as a baseline. The costs for the covered pipeline have been derived in accordance with the cost allocation principles set out in Envestra's annual ring fencing report to ESCOSA.

Envestra considers these costs are the most recent indicator of the prudent costs necessary to operate the Network. These costs have then been increased to allow for anticipated movements in labour, material and contract costs in the Second Access Arrangement Period. In relation to wages costs, BIS Shrapnel was engaged by Envestra to provide an expert opinion regarding the level of wages growth that Envestra should incorporate into its forecasts of costs over the period. For the purposes of estimating wage cost changes in Envestra's operating expenses, BIS Shrapnel recommended that movements in average weekly ordinary time earnings (AWOTE) for the electricity, gas and water sector should be used.

AWOTE forecasts provided by BIS Shrapnel are about 1.2 per cent higher than the national AWOTE average of 4.8 per cent per annum over the next six years to 2010/11. The faster wages growth in the electricity, gas and water sector of the market has been evident for the past 15 years. The expected wages growth in this sector is above the national average because of the relatively high levels of job vacancies in the sector and the current skills shortages. BIS Shrapnel's recommended AWOTE forecasts have been applied to the wages costs in the

forecasts.

The resultant costs represent the 'base costs' to which variances are then applied. These variances account for:

- changes to expenditure to account for increases in the size of the network (number of customers as well as physical size) compared to 2004/05; and
- changes to the scope of work undertaken. Envestra has conducted a thorough analysis of its operations with a view to identifying material changes to its baseline expenditure over the next six years. In relation to network operating costs, Envestra has adjusted its forecasts to account for several material changes to the operating and commercial environment and which pose additional costs. Other increases reflect the need for additional expenditure in areas where Envestra has been constrained in its expenditure due to the benchmarks set by SAIPAR over the First Access Arrangement Period.

Details concerning the increased costs are set out in section 9.7.

Envestra believes that its forecast network operating costs over the Second Access Arrangement Period are efficient because it has a continuous improvement philosophy whereby costs are rigorously assessed, not only when budgets are formulated, but as opportunities arise. For example, where positions become vacant, recruitment is not undertaken if alternative and more efficient options are available. As a consequence of this and other prudent management measures, Envestra has been able to generate labour savings over the First Access Arrangement Period. Such prudent management is expected to continue to result in labour savings over the Second Access Arrangement Period, and it has been assumed that productivity gains resulting from additional IT infrastructure, the mains replacement programme and other initiatives proposed by Envestra for the Second Access Arrangement Period will result in productivity improvements increasing over the period to approximately $1.7m per year by year 5 of the period.

A discussion of each component of Non-Capital Costs is set out below.

9.2. Operating & Maintenance Costs

Network operating costs are the costs of operating and maintaining the gas distribution system. These costs cover the following functions:

- Network management;
- Network maintenance;
- Meter reading and billing;
- Network planning;
- Facilities management; and
- ESCOSA licence fees.

9.3. Administration and General Costs

Envestra's administration and general costs include:

- Accounting and finance costs;
- Human Resource Management and Administration;
- Information Technology costs;

- Regulatory functions; and
- Insurance costs.

9.4. Network Development Costs

Network Development costs are those costs that are incurred to maintain and grow gas demand throughout the network and comprise:

- Gas Connection processing costs, such as processing connection orders and mains extension requests, site visits to determine gas meter locations, coordinating inlet and meter installation with customers and/or inlet contractors and delivering meter boxes to builders; and
- Market Development costs, as discussed in Attachment 6 (supplied to ESCOSA in confidence). This expenditure relates to activities and schemes that are necessary to maintain and improve gas penetration, such as:
    - Performance based incentives to encourage consumers to increase natural gas consumption. Envestra has developed programs under which it provides a financial incentive to consumers if they choose to connect to natural gas or increase gas load. The incentive payments are set at a level such that the cost of making the payments is less than the benefit consumers on the network receive through lower prices as a result of the additional load. In this way, these programs are performance based, where every dollar spent generates a benefit to all customers.
    - Representation to identify, build and maintain channels to market through customers and key influencers (e.g. working with appliance retailers to ensure that gas appliances are available for sale).
    - Strategic partnerships to optimise outcomes from key influencers over which Envestra has no direct control (e.g. with builders and housing developers to ensure that gas appliances are specified in their developments).
    - Targeted marketing campaigns, aimed at specific segments.
    - Generic marketing activity, to promote and position natural gas, which is essential because all houses and businesses are connected to electricity, whereas the decision to connect to natural gas is discretionary.

The gas connection operating costs account for approximately 25% of Network Development costs. The activities associated with this expenditure are essential to connect new customer to the Network.

Detailed supporting information and costs on Network Development are contained in the report in Attachment 6. In summary, the report details:

- each key activity and why it is undertaken, i.e. a description of the qualitative benefits and why it is prudent for Envestra to undertake such activities;
- the forecasts costs for each key activity; and
- the financial/quantitative benefits forecast for each activity

In deriving the cost benefits of Market Development activities, Envestra has set out clearly the assumptions and factors underpinning the additional customers and loads anticipated as a result of the programmes it will be undertaking. The increased customer numbers and consumption has been factored into Envestra's forecasts for the Second Access Arrangement Period.

Envestra believes the Market Development costs are efficient because:

- it has been demonstrated that each of the relevant activities provides a benefit to all customers, by lowering unit transportation costs. This is consistent with section 8.37 of the Code in that the expenditure is necessary in order to obtain the "lowest sustainable cost of providing the Reference Service"; and
- a review of Envestra's Network Development programme by CRA International has concluded that Envestra's programme and expenditure is reasonable (see Attachment 6).

It is noted that, as detailed in Attachment 6, average consumption of gas is reducing for a number of reasons, including climatic warming and increasing appliance efficiency. If this was to continue, and Envestra were not to actively embark on programs designed to efficiently increase average consumption, customers would experience gradual increases in reference tariffs over time as load reduced. Envestra has consequently considered the implementation of a market development program that would see a significant increase in expenditure in Network Development, which in turn would represent a considerable increase in Non Capital Costs over the Second Access Arrangement Period. These additional programmes are described in Attachment 6. However, for the purposes of this submission Envestra has opted for a conservative approach, i.e. lower Network Development expenditure and hence lower increases in reference tariffs. The lower than justified level of Network Development expenditure is proposed after taking into account the need to balance long term needs of customers in terms of pricing impact, access to natural gas services, security of supply considerations and the operational needs of the Network. However, should ESCOSA reject the operational plans proposed by Envestra, or should it be apparent during the Second Access Arrangement Period that the Network Development expenditure is insufficient to ensure the continued long-term penetration of gas, then Envestra may seek to revise its Access Arrangement accordingly.

9.5. FRC Operating Costs

The introduction of FRC has been a significant project over the latter half of the First Access Arrangement Period, and has been the subject of intense scrutiny by the Regulator due to the significant costs that have been incurred in rolling out contestability to all consumers in South Australia. In addition, the State government has been actively involved in ensuring that the cost impact to consumers is minimised. As discussed in section 5.2, the government made a contribution to Envestra to off-set the cost of introduction of FRC, including the Non-Capital costs associated with FRC up to June 2009.

Given the importance of this portion of Non-Capital Costs and to provide transparency, Envestra has identified FRC Non-Capital Costs as a separate item. The government contribution is then deducted from these costs in the revenue derivation calculation (as set out in section 11.2).

9.6. Unaccounted For Gas Costs

The level of UAFG in the Network is impacted mostly by leakage arising from aging cast iron and unprotected steel mains. As discussed in section 7.2, the rate of replacement of old mains has varied over the First Access Arrangement Period in response to changes in the level of UAFG. The current rate of mains replacement is expected to keep the level of UAFG at the current level of about 1600 TJ/yr. However, with the higher rate of mains replacement over the Second Access Arrangement Period, the level of UAFG is expected to decrease, with an expected level of about 1545 TJ by the end of the period. The forecast level has been calculated according to an average rate of gas leakage per km of cast iron and unprotected steel main. This rate is applied to determine the reduction in UAFG volume for each year of the Access Arrangement Period. Based on the proposed mains replacement of 100 km/yr, this results in an annual reduction in UAFG volume of 15 TJ.

Given that the higher rate of mains replacement will not commence until 06/07, the full reduction in UAFG volume

will not be realised until 2007/08. The following table sets out the current and forecast UAFG volume.

Year	04/05	05/06	06/07	07/08	08/09	09/10	10/11
UAFG (TJ)	1606	1606	1606	1591	1575	1560	1545

Table 16 UAFG level

As discussed with ESCOSA and Users in the period leading to this Access Arrangement revision, Envestra is proposing to change the way that UAFG is dealt with in South Australia. In essence, it is planned to adopt the Victorian approach, whereby retailers supply their own UAFG requirements. The main advantage of this approach is that Users are in a better position to source and manage gas supply arrangements and deal with the risks associated with gas procurement. Consequently Envestra will no longer be required to enter into the gas supply market and compete with or contract with retailers for the purchase of gas.

As per the Victorian UAFG process, the benchmark level of UAFG will be set as a percentage, with a low percentage applying to very large customers and a higher percentage to all others. This is due to the fact that large customers tend to be serviced by steel high pressure mains that do not exhibit any material leakage compared to general network mains that service the majority of customers. Consistent with SAIPAR's decision that larger customers should have an allocation of 20% of UAFG[15], Envestra has allocated that percentage of UAFG to large customers in calculating the percentages set out in the Access Arrangement.

Using this approach, at the end of each year all Users apart from the incumbent retailer will be deemed to have supplied the benchmark level of UAFG in order to service their customers. The effect of this is that where the actual UAFG is over or under the benchmark, this will only affect the incumbent retailer. Where the actual UAFG is less than the benchmark UAFG, the incumbent retailer will pay Envestra the difference (in value of gas). Where the actual UAFG is more than the benchmark UAFG, Envestra will pay the incumbent retailer the difference. The net effect is that, like other retailers, the incumbent retailer will end up having paid for the benchmark quantity of UAFG.

The actual UAFG figure will be based on the daily UAFG calculations performed by REMCo in accordance with the Retail Market Rules, while the price of gas for reconciliation purposes will be determined by ESCOSA. The proposed process in relation to UAFG is set out in section 2.5 of the Access Arrangement.

Envestra has not included any costs for UAFG in its Access Arrangement, in anticipation that ESCOSA will accept this new approach.

9.7. Cost Increases

As described in section 9.1, there are a number of areas where costs identified for the Second Access Arrangement Period are materially higher than incurred in those areas during the First Access Arrangement Period:

(1) Information Technology New Projects – as discussed in section 7.2, Envestra engaged IBM to develop and cost a strategy that would enable Envestra to keep pace with good industry practice for the duration of the Second Access Arrangement Period (see Attachment 3 - provided to ESCOSA in confidence). . The operating cost associated with the implementation of the projects identified in the plan (which averages

[15] P120, SAIPAR Final Decision, Dec 2001

approximately $1340k/yr) represents a material new cost relative to 2004/05 Non-Capital Costs.

(2) Regulatory governance and service requirements - Envestra considers that there are elements of its regulatory, governance and service requirements which will differ significantly from the base 2004/05 year. These are:

- The introduction of new national pipeline standards which will increase ongoing operational costs, which impact on the forecast costs for network operations;
- New national and jurisdictional regulatory costs due to the new national regulatory regime, as well as increased KPI, workplace safety and environmental planning obligations which impact on Envestra's forecast corporate and administration costs;
- Increased costs for disposals of soil and quarry materials, which impact on the forecast costs for network operations;
- Increased governance and risk management requirements, which impact on Envestra's forecast corporate and administration costs;
- Corporate Governance review and auditing, which impact on Envestra's forecast corporate and administration costs;
- Notification to customers of periodic meter changeover gas supply interruptions, which impact on the forecast costs for network operations;
- Increased community expectations of service response, which impact on the forecast costs for network operations;
- Costs of responding to increased external enquiries due to increased customer churn throughout the second Access Arrangement Period, which impact on the forecast costs for network operations.

These respective costs amount to an additional $1180k/yr on average for the period.

(3) Ageing Workforce - The South Australian gas industry has undergone fundamental changes over the last ten years in terms of both service delivery method and the skill sets required from employees. A decade ago, over 200 field and supervisory workers were involved in operating the Network with steady intakes of new employees being used to offset the impacts of retirement and natural attrition. Prior to the current Access Arrangement Period, significant restructuring occurred and this, together with downsizing, has resulted in there being less than 100 employees in field operations. With the retention of the more experienced staff and the low rate of employment of new staff, the average age of operational staff has increased materially. Consequently, a strategy needs to be implemented that will provide an age profile that is sustainable in the medium to long term. Costs associated with the implementation of this strategy (which average $925k/yr) include:

- recruitment and training of new/younger field staff;
- implementation of a graduate training programme; and
- productivity losses and OHS costs due to age-related factors.

(4) Other

- Environmental Management - Environmental monitoring, investigation and remediation of former gas manufacturing sites contaminated by past practices (prior to the introduction of natural gas) is required to deal with the health and environmental risks at these sites. One of these sites will require extensive remediation, while others will require increased monitoring in accordance with

EPA requirements. Detailed expenditure forecasts for these sites are contained in Attachment 5.

- Risk Management Activity Costs - Ensuring the safety of the community and the continuity of gas supply are two paramount objectives of the gas distribution business. The most frequent cause of interruption to consumers' gas supply arises from damage to gas mains from other service suppliers and excavation activity. To reduce the incidence of gas supply interruptions additional resources in the form of promotion and field staff support will be required for the Dial Before You Dig service. In the current global political environment, gas distribution networks are more vulnerable to malicious attack. Terrorist management systems will be further strengthened with periodic security reviews, in addition to existing annual emergency exercises. Another source of risk to consumers' gas supply is the current uncertainty regarding the location of gas supply pipes in many industrial and commercial consumers' premises. Where location is uncertain, maintenance and access may be unsatisfactory, increasing the risk of gas supply interruption. Resolution of these uncertainties and enhanced risk management practices is required.
- Miscellaneous costs - In recent years significant downward pressure on costs in all areas of operations has been applied and substantial productivity gains have been achieved. In addition, there has been some deferral of expenditure. Over the next few years, additional costs will be incurred in several areas of the business, and include:
    - upward movement in (real terms) in contractor charge rates after many years of below CPI charge rate increases;
    - relocation of depot facilities; and
    - a likely increase in the Superannuation Guarantee Levy.

These Other costs average approximately $2630k/yr over the period.

9.8. Fixed versus Variable Costs

Envestra has examined the cost drivers of the business at a departmental activity level. The results indicate that in the short-term the majority of Non-Capital Costs are fixed and do not vary with incremental usage or throughput. However, some costs (meter reading, maintenance, etc) vary with incremental network expansion and increasing number of customers.

In order to adjust its cost base to account for forecast growth, Envestra has used an estimate of $11/customer. Based on experience, this may be a conservative estimate.

9.9. Expert Review of Non-Capital Costs

Envestra engaged WorleyParsons to review current and forecast Non-Capital Costs (see Attachment 2). WorleyParsons conducted a benchmarking study that examined the performance of the business relative to other natural gas distribution businesses. The results confirmed that Envestra's operating costs are well below the average for the sample included in the analysis, i.e. the forecasts provided in this submission are those that would be incurred by a prudent Service Provider, acting efficiently, in accordance with accepted and good industry practice, to achieve the lowest sustainable cost of delivering Reference Services.

WorleyParsons then examined the trends and changes pertaining to Envestra's Non-Capital Cost forecast for the Second Access Arrangement Period. This included analysis of the various categories of expenditure and underlying assumptions and parameters. In addition, WorleyParsons examined Envestra's forecast expenditure, in terms of KPIs, in the context of what WorleyParsons considered to be an efficient range of KPIs.

WorleyParsons consequently concluded that Envestra's Non-Capital Cost forecast is within a range of values that WorleyParsons considers to be efficient for Envestra's SA network.

As a result of that analysis, WorleyParsons endorses the Non-Capital Cost forecast for the purposes of the Code.

9.10. Code Compliance

Envestra notes that, under the Access Code, provided that a Non Capital Cost meets the criteria in clause 8.37, Envestra is entitled to recover that cost. Clause 8.37 of the Code provides:

"*A Reference Tariff may provide for the recovery of all Non Capital Costs (or forecast Non Capital Costs, as relevant) except for any such costs that would not be incurred by a prudent Service Provider, acting efficiently, in accordance with accepted and good industry practice, and to achieve the lowest sustainable cost of delivering the Reference Service*."

As permitted by clause 8.37, Envestra has designed its Reference Tariff to recover all Non Capital Costs. As confirmed by the WorleyParsons report and for the reasons set out in this section 9, Envestra's Non-Capital Costs comply with the requirements that such costs be consistent with those which would be incurred by a prudent Service Provider acting efficiently and in accordance with accepted good industry practice.

10. EFFICIENCY CARRYOVER – FIRST ACCESS ARRANGEMENT PERIOD

The incentive mechanism approved by SAIPAR in the first Access Arrangement allowed Envestra to retain the full value of any efficiency gains, including reductions in the costs of providing Reference Services and any revenue from the sale of Reference Services greater than forecast, for two Access Arrangement Periods. As discussed in section 2.1, Envestra's actual expenditure on Non-Capital Costs and New Facilities Investment exceeded the benchmarks set by SAIPAR. Therefore, under the incentive mechanism approved by SAIPAR, no incentive payment is payable.

Furthermore gas volumes transported have been lower than forecast by SAIPAR (section 2.1). Envestra has therefore not qualified for an incentive payment arising from the sale of Reference Services being greater than forecast.

11. TOTAL REVENUE REQUIREMENT

11.1. Derivation of Total Revenue Requirement

The derivation of the RAB element required for the Total Revenue calculation is shown in the following table.

Capital Base $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11
Opening Asset Value	839.5	889.3	944.5	993.0	1043.3
+ FRC Telemetry	1.6	0.0	0.0	0.0	0.0
+ Inflation of opening asset base	21.0	22.2	23.6	24.8	26.1
+ Capital Expenditure	48.0	56.0	50.8	53.2	60.0
- Customer Contributions	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
- Regulatory Depreciation ICB & Capex	(20.1)	(22.4)	(25.1)	(27.2)	(29.2)
- Regulatory Depreciation FRC Telemetry	(0.4)	(0.4)	(0.4)	(0.1)	(0.1)
= Closing Asset Value	889.3	944.5	993.0	1043.3	1099.7
Average Asset Value ($m nominal)	865.3	916.9	968.7	1018.2	1071.5
Average Asset Value ($m 31 Dec 2004)	824.7	852.6	878.8	901.1	925.2

Table 17 RAB roll forward – Second Period

The revenue requirement for each year of the Second Access Arrangement Period is shown in the following table.

Cost Reflective Revenue Derivation $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11	TOTAL
Average Regulatory Asset Base	865.3	916.9	968.7	1,018.2	1,071.5	
WACC	7.30%	7.30%	7.30%	7.30%	7.30%	
Return on Assets	63.2	66.9	70.7	74.3	78.2	353.4
Regulatory Depreciation	20.5	22.8	25.5	27.4	29.3	125.4
Non-Capital Costs	51.5	58.2	54.4	55.7	57.0	276.8
Efficiency Carry-Over	-	-	-	-	-	0.0
Tariff Revenue Requirement ($m)	135.2	147.9	150.6	157.4	164.6	755.6
Revenue $m (31 Dec 2004)	128.8	137.5	136.6	139.3	142.1	684.3

NB: rounded to nearest $0.1m

Table 18 Derivation of Total Revenue Requirement

11.2. Components of Total Revenue Requirement

The Total Revenue Requirement will be sourced from:

- Haulage Reference Services; and
- Ancillary Reference Services.

As the revenue from Ancillary Reference Services is easily forecast, the forecast revenue for those Services is first established in order to determine the revenue to be sourced from the provision of Haulage Reference Services.

Ancillary Reference Service Revenue

The forecast revenue from the provision of Ancillary Reference Services is determined from the forecast demand for those Services and the cost for the provision of each of those Services.

Forecast Revenue from Ancillary Reference Services $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11
Special Meter Reads					
Number forecast	61,800	61,800	61,800	61,800	61,800
Unit rate	$8.00	$8.19	$8.40	$8.61	$8.82
$m per annum	$0.49	$0.51	$0.52	$0.53	$0.55
Disconnection Service					
Number forecast	4,000	4,000	4,000	4,000	4,000
Unit rate	$55.00	$56.38	$57.78	$59.23	$60.71
$m per annum	$0.22	$0.23	$0.23	$0.24	$0.24
ɔconnection Service					
Number forecast	4,000	4,000	4,000	4,000	4,000
Unit rate	$55.00	$56.38	$57.78	$59.23	$60.71
$m per annum	$0.22	$0.23	$0.23	$0.24	$0.24

Table 19 Forecast Ancillary Reference Service Revenue

Haulage Reference Services Revenue

The revenue to be obtained from the provision of Haulage Reference Services is derived by subtracting from the Total Revenue Requirement, the revenue forecast for the provision of Ancillary Reference Services, as set out in the following table.

In addition, it is necessary to subtract the amount that Envestra is not required to recover due to the contribution made from the State government to Envestra for the purposes of FRC. (In June 2004 the government made a one-off contribution to Envestra to off-set what it determined to be historical FRC costs and forecast FRC costs up to the period ending June 2009). The amounts that equate to the government's contribution are subtracted as shown in the following table.

Derivation of Haulage Reference Services Revenue $m (nominal)	2006/07	2007/08	2008/09	2009/10	2010/11
Total Revenue Requirement	135.2	147.9	150.6	157.4	164.6
Less Ancillary Reference Services Revenue	(0.9)	(1.0)	(1.0)	(1.0)	(1.0)
Less FRC Opex offset	(5.2)	(5.3)	(5.4)	(0.0)	(0.0)
= Haulage Reference Services Revenue	129.1	141.6	144.2	156.3	163.5
Revenue $m (31 Dec 2004)	123.0	131.7	130.8	138.4	141.2

NB: rounded to nearest $0.1m

Table 20 Haulage Reference Services Cost Reflective Revenue Requirement

11.3. Haulage Revenue Requirement Price Path

The haulage revenue requirement calculated above was then adjusted to provide a smooth price path over the period. The price path for the haulage revenue requirement takes into account forecasts of demand. The price path equates the net present value of the cost reflective revenue stream and the forecast tariff revenue stream.

Smoothing of revenue provides customers with constant price adjustments throughout the Access Arrangement Period rather than varying prices according to the specific operating programs undertaken by Envestra. Envestra believes that a smooth price path would be preferred by most Users and customers.

There are a number of different price paths that Envestra could have proposed. Envestra has elected to use a price path that gives constant tariff changes in each year of the Access Arrangement Period, however Envestra is willing to consider alternative price paths during the consultation period.

Price Path Haulage Revenue	2006/07	2007/08	2008/09	2009/10	2010/11
$m nominal	124.1	134.8	146.6	159.4	173.6
$m 31 Dec 2004	118.3	125.3	133.0	141.1	149.9

Table 21 Price Path Revenue

12. SERVICES

12.1. Haulage Reference Services

Envestra is proposing to continue to provide three Haulage Reference Services:

- Demand Haulage Reference Service – this service provides for the forward haulage of Gas to Delivery Points (DPs) with an annual consumption that exceeds 10TJ per year;
- Commercial Haulage Reference Service – this service applies to all DPs that are not Demand DPs or Domestic DPs; and
- Domestic Haulage Reference Service – this service provides for the haulage of Gas to DPs where Gas is used primarily for domestic purposes.

The Haulage Reference Services will continue to include:

- receiving Gas injected at a Receipt Point;
- odorisation of Gas;
- haulage of Gas from a Receipt Point to a DP;
- allowing the withdrawal of Gas at a DP;
- provision and maintenance of Metering Equipment;
- meter reading on a quarterly basis for Domestic and Commercial DPs, and on a monthly basis for Demand DPs; and
- provision of metering data and other information in accordance with the Retail Market Rules (RMR).

Envestra believes that the proposed Haulage Reference Services are the haulage Services that are likely to be sought by a significant part of the market during the Second Access Arrangement Period. These Services are essentially identical to those currently being provided to Users.

Envestra has consulted with Users to determine if there is a need for other Reference Services, and Users have not indicated any such requirement. Envestra is unaware of any changes in circumstances or future developments that are likely to materially affect this situation during the Second Access Arrangement Period.

12.2. Ancillary Reference Services

In addition to the Haulage Reference Services, Envestra recognises that additional services may be requested by a significant part of the market. There are also a small number of services which a User may request at some point in time. However, some of these services, e.g. disconnection in the street (at the junction of the gas main and gas service) are not frequently requested (Envestra receives less than 50 requests for this service per year) and therefore do not qualify as Reference Services, despite such a service being classified as a Reference Service for the first Access Arrangement Period.

Following a review of Ancillary Reference Services, Envestra is proposing to continue with the Special Meter Read Service as an Ancillary Reference Service, as it is commonly demanded by Users, but will discontinue providing (as Reference Services) the two Ancillary Reference Services relating to disconnection in the street for non-payment and the associated reconnection service, due to their low demand.

Envestra is proposing to replace the above services with the service of disconnection at the meter and reconnection at the meter, as these services are commonly requested by Users.

Accordingly, the proposed Ancillary Reference Services are:

- Special Meter Reading Service – meter reading of a DP that is in addition to scheduled meter readings that form part of the Haulage Reference Service;
- Disconnection Service and Reconnection Service in relation to Domestic DPs – these services are required by Retailers as part of their debt management process. Disconnection involves taking whatever action is necessary at the location of the Metering Equipment to prevent the flow of Gas. This includes one or more of the following:
  - turning off the service valve at the Metering Equipment, with or without a locking device;
  - inserting a wad in pipework downstream of the isolation valve;
  - removal of the Meter.

  The Reconnection service involves reversing the actions taken to perform a Disconnection plus actions necessary to restore supply safely to the Customer. This involves purging of the outlet service and relighting appliances where applicable.

12.3. Non-Reference Services

Users may require services that are different from the Reference Services and Envestra will negotiate such services on a case-by-case basis.

The tariff for a Reference Service takes into account the corresponding service levels and business risks associated with providing the service in accordance with the agreed terms and conditions. Users are able to negotiate different service levels or different terms and conditions, and the delivery of such a service will be priced accordingly (as a Negotiated Service).

12.4. Service Standards and Quality

In addition to the terms and conditions applicable to the provision of a Service (Part D of the Access Arrangement), Envestra will provide Services in accordance with certain service standards and quality levels.

Envestra supplies the Regulator and the Office of the Technical Regulator with a number of performance indicators and data, including:

- The number of connections not completed within regulatory timeframes;
- Number of planned and unplanned interruptions to consumers' supply;
- Number of major supply interruptions;
- Number of over-pressurisations;
- Data on gas leakage;
- Data on accuracy of gas meters;
- Number of requested meter tests not performed within the specified timeframe; and
- Number and type of complaints made to Envestra.

In addition, Envestra must comply with a host of service standards set out in relevant regulatory instruments, these being predominantly:

- The Gas Distribution System Code;
- The Gas Metering Code; and
- The Retail Market Rules

Many of the service standards relate to timeframes within which Envestra must deliver a service, respond to User requests or provide notification to consumers. For example, for planned maintenance activities, Envestra must provide consumers with 5 business days notification before interrupting their gas supply (Gas Distribution Code section 6.2).

Apart from those areas where Envestra interacts with consumers and Users, Envestra must comply with numerous standards that pertain to the operation and maintenance of the Network. Such standards ensure that gas consumers receive a high level of service and reliability. The safety issues associated with the distribution of a gaseous and flammable hydrocarbon mean that maintenance practices and response times to maintenance issues must be of a high standard.

For example, Envestra is required to:

- odorise gas to prescribed levels;
- maintain gas pressure within the Network above a set level;
- survey the Network regularly for gas leakage; and
- respond to reports of gas leakage within certain timeframes, and repair gas leaks within certain timeframes.

All of the above standards contribute to a safe and uninterrupted gas transportation service to consumers. As reported in section 2.3 of this Access Arrangement Information, the number of gas outages is low, as is the number of complaints from consumers.

As outlined above, the applicable service standards result in an inherent high level of reliability and high level of service. Envestra is aware that in some jurisdictions, notably in relation to electricity distribution, that sophisticated reporting systems have been implemented to record and report on detailed aspects of service delivery. Envestra is of the view that, given the current high levels of service, the introduction of more onerous reporting systems is not warranted.

Should Envestra be required, for example through licence requirements or other Regulatory Instruments (such as the Gas Distribution Code), to implement systems to collect and monitor information for a more rigorous set of reliability indicators or to provide a higher level of service, it is expected that such costs will be 'passed through' in accordance with section 8 of Part B of the Access Arrangement.

12.5. Code Compliance

Clauses 3.1 and 3.2 of the Access Code set out the requirements that must be met by a Services Policy.

Those clauses provide:

"3.1 *An Access Arrangement must include a policy on the Service or Services to be offered (a Services Policy).*

3.2 *The Services Policy must comply with the following principles:*

(a) The Access Arrangement must include a description of one or more Services that the Service Provider will make available to Users or Prospective Users, including:

(i) one or more Services that are likely to be sought by a significant part of the market; and

(ii) any Service or Services which in the Relevant Regulator's opinion should be

included in the Services Policy."

For the reasons set out above in this section 12, the Services set out in Envestra's Services Policy meet the requirements of clause 3.2

Envestra notes the suggestion by ESCOSA that the definition of a Reference Service could outline service standards. Envestra does not consider this is supported by the terms of the Access Code.

Service is defined in the Access Code as:

"*Service means a service provided by means of a Covered Pipeline (or when used in section 1 a service provided by means of a Pipeline) including (without limitation):*

(a) haulage services (such as firm haulage, interruptible haulage, spot haulage and backhaul);

(b) the right to interconnect with the Covered Pipeline; and

(c) services ancillary to the provisions of such services,

but does not include the production, sale or purchasing of Natural Gas."

There is nothing in this definition which suggest that a Service is defined by reference to service standards. Rather "Service" is defined by reference to the type of service – firm, interruptible, spot or backhaul. The fact that "Service" is not defined by reference to service standards is highlighted by paragraph (b) of the definition of "Service". That paragraph refers to "*the right to interconnect with the Covered Pipeline*". Clearly service standards are irrelevant to such a right.

A service standard is not a part of the definition/description of a Service but is a term/condition upon which a Service is provided. Such terms and conditions are regulated by section 3.6 of the Access Code. That section provides:

"*An Access Arrangement must include the terms and conditions on which the Service Provider will supply each Reference Service. The terms and conditions included must, in the Relevant Regulator's opinion, be reasonable.*"

As determined in the *GasNet Australia (Operations) Pty Ltd* decision, the terms and conditions of an Access Arrangement are those developed by the Service Provider. The role for the Relevant Regulator is to determine whether those terms are reasonable. If the terms are reasonable they must be approved, irrespective of whether the Regulator may have preferred the terms to be designed in an alternative manner.

13. REFERENCE TARIFFS

13.1. Derivation of Haulage Reference Tariffs

Envestra has adopted a CPI-X approach to determining Haulage Reference Tariffs, adopting a tariff basket approach to price control. Tariffs, and the Po and X factors that underlie them have been derived using the principles set out below.

Tariff Structure

Envestra has elected to essentially maintain the same structure of Haulage Reference Service Tariffs as in the First Access Arrangement Period.

Therefore, the Domestic Tariff will be the same for all Regions and will continue to be charged on the basis of:

- a daily fixed charge; and
- two separate volumetric bands with declining block tariffs.

The Commercial Tariff will be the same for all Regions and will continue to be charged on the basis of:

- a daily fixed charge; and
- four separate volumetric bands with declining block tariffs.

The Demand Tariffs will continue to be based on the same regional and a modified zonal structure, and on a Maximum Daily Quantity (MDQ) basis. A minimum charge plus three declining block tariffs for the Adelaide Region and four declining block tariffs for other Regions will continue to apply.

Envestra believes there is support from Users for continuation of the existing tariff structure. However, Envestra is proposing to change the zonal structure such that the number of zones is reduced from four to three.

The zonal approach was adopted for the First Access Arrangement Period because of the elongated nature of the network in Adelaide. Because the city is constrained on the west by the coast and to the east by the Mount Lofty Ranges, development has taken place along a north-south axis. The two transmission pipelines that provide gas to the Adelaide Region terminate at the northern suburbs. Consequently the distance over which gas is transported to Delivery Points varies considerably, with Delivery Points at the southern end of the Network situated up to 40 kilometres from the Receipt Points. As a result, applying a postage-stamp approach to pricing for Demand Delivery Points within the Region was not considered to be cost-reflective in the circumstances.

A zonal approach was therefore selected as providing an appropriate balance, with price increments between Zones determined on the basis of the average length of mains required to transport gas from the Receipt Points. However, the North Western Zone only contains one customer. Envestra proposes to eliminate that Zone and continue to levy the same tariff to that customer, with the tariff representing a negotiated tariff (for a Negotiated Service). As the North Western Zone was established purely to serve this one customer, the purpose for the existence of the North Western Zone can be effectively eliminated. While this change will have a neutral effect on revenue, the elimination of the North Western Zone will simplify administration and the tariff structure.

A map showing the Zone boundaries is contained in Annexure D of the Access Arrangement.

The Reference Tariffs for Demand Haulage Services are established on a '$/GJ of MDQ' declining block basis. This approach supports the concept of efficient pricing signals by providing the incentive for Network Users to flatten load profiles, thereby promoting more cost-effective utilisation of the Network. Reference Tariffs for the

Demand Haulage Service have also been designed to achieve simplicity in the Tariff design, using the minimum number of rate blocks, while maintaining sufficient resolution to manage bypass risk.

In order to promote an efficient use of the Network, daily overrun charges apply to Demand Delivery Points. The daily overrun charge applies where a Network User's MDQ is exceeded. In cases where the MDQ is exceeded on more than four days in a month or eight times in a year, the MDQ will be adjusted upwards to the highest MDQ on any of those days.

The current Access Arrangement has provisions for hourly overrun charges and misclassification charges. As there has been no need to levy such charges to-date, Envestra has decided to abolish these charges for the Second Access Arrangement Period.

Tariff Basket Approach

In this Access Arrangement revision, Envestra has proposed a tariff basket form of price control, consistent with the requirements of the Code.

Under a tariff basket, the limit on allowed price increases is expressed in terms of a ratio of 'notional revenues', taking into account all of the components of a service providers tariffs:

- The first notional revenue is the revenue implied by the quantities of each tariff component sold in the previous year and the service provider's current tariffs. This becomes the denominator in the price control formula;
- The second notional revenue is the revenue that would result if the same Quantity was sold at the Service Provider's proposed (new) prices. This becomes the numerator in the price control formula.

The cap is (1+CPI) x (1-X)

Where:

- CPI is as defined in the Access Arrangement; and
- X is the 'X' factor.

Envestra has adopted a tariff basket price-cap approach to Reference Tariff variation on the grounds of economic efficiency and compliance with the Code.

Section 8 of the Code sets out the principles to be followed in Tariff variation and section 8.3 provides that as long as a variation policy is consistent with the objectives contained in section 8.1, then this falls within 'the discretion of the service provider'. Envestra believes that a tariff basket approach is consistent with section 8.1 and notes that such an approach has been accepted by Regulators and applied in other jurisdictions including Victoria and Western Australia.

13.2. Haulage Reference Tariffs

The resultant X factor in the (1+CPI)*(1-X) price path that results from implementing the above approach is shown in the following table.

Price Path for Haulage Reference Tariffs	2006/07	2007/08	2008/09	2009/10	2010/11
X factor	-0.059	-0.059	-0.059	-0.059	-0.059

Table 22 Price Path X-Factor

14. REFERENCE TARIFF POLICY

14.1. General

Part B of the Access Arrangement contains the Reference Tariff Policy and includes details of how Reference Tariffs are amended from year to year and procedures for withdrawing or introducing new Tariffs. The Reference Tariff Policy generally reflects provisions from the First Access Arrangement Period.

The structure of tariffs for the Haulage Reference services is the same as that applying in the First Access Arrangement Period, i.e. fixed and variable charges, with decreasing tariff bands. The relative prices of the bands and relative zonal charges are unchanged (except in relation to the reduced number of Zones), thus reflecting the basis on which costs were originally allocated. A tariff basket approach to price control has been adopted.

The above provides for continuity of existing practice, with which Users are familiar, and therefore a smooth transition to the Second Access Arrangement Period.

14.2. Proposed Fixed Principles

Envestra has proposed a number of fixed principles which will apply in the Second and subsequent Access Arrangement Periods. These are:

- Incentive based regulation – use of a CPI – X methodology. It is important that this be a fixed principle because:
  - The National Gas Code will be amended in line with the outcomes of the formation of the national regulatory regime;
  - There is a possibility that a commitment to incentive based regulation will not be a feature of this new regime, even though Regulators currently (generally) support the concept of incentive based regulation; and
  - Envestra believes that a fixed principle would provide the necessary certainty for itself and network users in relation to the commitment to incentive based regulation in the face of uncertainty.
- Form of regulation, being a weighted average price cap approach. It is important that this be a fixed principle because:
  - Envestra understands that a Rule in relation to the form of regulation will be made by the Australian Energy Market Commission;
  - There is currently no certainty in relation to what that Rule will contain, and it is likely to be the outcome of a debate over the appropriate form of regulation for both electricity and gas across Australia; and
  - Envestra believes that a fixed principle would provide the necessary certainty for itself and network users in relation to retaining the proposed form of regulation for the third access arrangement period in the face of such uncertainty.
- Roll forward of the capital base. It is important that this be a fixed principle because:
  - Methods of rolling forward the asset base differ across Regulators, jurisdictions and industries;
  - There is no certainty in relation to how the AEMC will set rules for the roll-forward of asset values in 2006; and
  - Envestra believes that a fixed principle would provide the necessary certainty for itself and network users in relation to retaining the roll-forward of the asset base for the third Access Arrangement Period.

14.3. Efficiency Sharing Mechanism – Second Access Arrangement Period

Envestra's incentive mechanism must comply with section 8.44 of the Code, which states:

> *The Reference Tariff Policy should, where the Relevant Regulator considers appropriate, contain a mechanism that permits the Service Provider to retain all, or any share of, any returns to the Service Provider from the sale of the Reference Service:*
>
> *(a) during an Access Arrangement Period, that exceed the level of returns expected for that Access Arrangement Period; or*
>
> *(b) during a period (commencing at the start of an Access Arrangement and including two or more Access Arrangement Periods) approved by the Relevant Regulator, that exceed the level of returns expected for that period,*
>
> *particularly where the Relevant Regulator is of the view that the additional returns are attributable (at least in part), to the efforts of the Service Provider. Such additional returns may result, amongst other things, from lower Non Capital Costs or greater sales of Services than forecast.*

The Code also provides (section 8.46) a number of objectives which the Incentive Mechanism should achieve. It is noted, however, that the Code is not prescriptive in how the objectives should be achieved. It is also noted that, once the Relevant Regulator has considered it appropriate for the Access Arrangement to contain an Incentive Mechanism, it is not up to the Regulator to determine a mechanism that it deems compliant with the Code, but to assess whether the Service Provider's mechanism meets the objectives set out in the Code.

Envestra is cognisant of incentive mechanisms adopted by regulators in Victorian and Western Australia, and by the Commission in South Australia in relation to electricity, whereby service providers are provided with incentives to outperform benchmarks, no matter in which year of the regulatory period the incentive is achieved. This "rolling carryover" aspect is supported by Envestra, as it is important that the incentive for efficiency gains is not diminished towards the end of a regulatory period. However, those mechanisms also restrict the sharing of efficiency gains such that the Service Provider only receives an estimated 30% of the benefits of any gains, while consumers receive 70% of the benefits (on a net present value basis). This is as a result of restricting the term over which benefits are retained by the Service Provider to 5 years.

Envestra believes that such an incentive is insufficient in that it does not comply with section 8.46 of the Code, which requires that an Incentive Mechanism should be designed with a view to providing an incentive to the Service Provider to increase sales and minimise costs. Envestra believes that a mechanism that provides a 50:50 sharing of gains achieves the objectives of the Code. This is achieved by the Service Provider's retention of efficiency gains for a period of 10 years (consistent with section 8.44(b) of the Code) rather than 5 years.

In addition to the aspects described above, Envestra proposes an Incentive Mechanism that is based on the following properties:

(a) No retrospective claw back - Total Revenue requirement for any future Access Arrangement Period will not be adjusted to recover the amount of any gains or provide compensation for any losses achieved by Envestra as a result of any differences between actual and forecast amounts for New Facilities Investment, Non-Capital Cost of Gas Delivery in the Access Arrangement Period

(b) Efficiency gains to be accrued where:

   i. a reduction in Non-Capital Cost is achieved;

   ii. capex savings are made relative to regulator approved benchmarks - to be measured based on annual changes in expenditure relevant to the benchmark multiplied by real pre-tax WACC; and

(c) No carryover of negative gains from one Access Arrangement period to the next. (The Code does not allow for carryover of negative gains (section 8.44)).

(d) Recognition of one-off efficiency gains - Code incentive mechanism relates to efficiency gains only (not losses). This implies that the evaluation of gains/losses should be asymmetrical. ESCOSA has previously pointed out that if gains/losses are not treated symmetrically, there is an incentive for the business to defer expenditure from one year to the next in a 2-year pattern. Envestra acknowledges this but notes that if one-off efficiency gains are realised, the service provided should benefit. Envestra proposes that where there is a negative efficiency gain within an Access Arrangement Period, Envestra is able to put a case to ESCOSA at the next price review that demonstrates why the overspend was justified and why it should be excluded from the efficiency calculations.

(e) Envestra will have an opportunity at the next review to propose a case to the regulator demonstrating why it might be necessary for the Regulator to adjust actual costs/sales to account for changes in external drivers when calculating efficiency gains, e.g. changes in demand forecasts (connections), changes in business scope, etc.

(f) Non-Capital Costs and New Facilities Investment in the last year of the access arrangement will be assumed to be equal to Non-Capital Costs and New Facilities Investment in the penultimate year of the access arrangement.

Envestra believes that:

(a) the proposed incentive mechanism is consistent with the Code and provides the required incentive for the Service Provider to maximise efficiency to the highest extent possible, thereby providing maximum benefits to Users in the long term; and

(b) it is incumbent upon the Regulator to ensure that, in addition to meeting the requirements of the Code generally, that the incentive mechanism facilitates a result that is in the long term interest of Users and consumers.

15. TERMS AND CONDITIONS

15.1. Overview of Terms and Conditions

The terms and conditions (T&C) applicable to the provision of Reference Services are dealt with in Parts C and D of the Access Arrangement.

Due to the recent introduction of FRC (mid 2004), most Users have only recently entered into haulage agreements with Envestra. In that process, Envestra took into consideration a number of requests from Users and amended the terms and conditions accordingly. Those refinements to the terms and conditions are reflected in the T&C that are proposed for the Second Access Arrangement Period.

As expected, the terms and conditions applying to the First Access Arrangement Period have been updated to account for changes that have occurred since those terms and conditions were first developed. Examples of such changes are:

- introduction of FRC and the Retail Market Rules;
- new regulatory instruments (Gas Distribution System Code and Gas Metering Code);
- injection of gas from the SEAGas pipeline; and
- installation of telemetry on all Demand DPs.

Attachment 7 sets out how the T&C for the second Access Arrangement Period differ from those for the First Access Arrangement Period.

The terms and conditions applicable to the provision of Reference Services are dealt with in section 6 and Annexure G of the Access Arrangement. In summary:

- pursuant to section 6 of the Access Arrangement, it is a condition that a Prospective Network User enter into an Agreement with Envestra for the provision of any Network Service. The term 'Agreement' is defined in the Access Arrangement and means the entering into of a binding contractual arrangement between Envestra and a Network User. Prior to entering into an Agreement, a Prospective Network User must satisfy Envestra that it:
  - has the necessary financial capacity to meet its obligations to Envestra; and
  - has adequate arrangements in place to ensure it can keep Gas deliveries into and out of the Network in balance.
- Annexure F allows for the details pertaining to the specific circumstances of the parties entering into the agreement;
- Annexure G sets out the terms and conditions that are to apply, as a minimum, to the provision of each Reference Service. It describes terms and conditions which are applicable to both Haulage and Ancillary Reference Services (Part IV of the terms and conditions), as well as those terms and conditions which apply specifically to each type of Reference Service (Part II – Haulage Reference Services; and Part III – Ancillary Reference Services).

The terms and conditions are structured so that:

- [clauses 2 to 16 (Part II) apply only to the Haulage Reference Services. These clauses address matters including:]
  - procedures for classifying Delivery Points;
  - meter accuracy and reading;

- minimum Gas quality and delivery pressures;
- possession of Gas and responsibility;
- warranties and title to Gas; and
- supply curtailment;

- clauses 17 and 18 (Part III) apply only to the Ancillary Reference Services. These clauses describe the extent of the Services to be provided and the procedures to be followed when requesting a Service;
- clauses 19 to 39 (Part IV) apply both to Haulage Reference Services and Ancillary Reference Services. These clauses address matters including:
  - invoices and payment arrangements;
  - procedures for determining delivered quantities;
  - termination;
  - liability and indemnities;
  - relationship to the *Trade Practices Act 1974*;
  - Force Majeure;
  - assistance;
  - access to premises;
  - confidentiality;
  - notices;
  - assignment by the Network User;
  - amendment of the Agreement; and
  - other miscellaneous provisions.

The obligations, duties and responsibilities of Envestra and any Network User described in the T&C are in addition to those established in law or by any relevant regulatory documents.

Where the terms and conditions described in Annexure G are amended, the default position is that the terms and conditions applying to an existing Agreement will also change accordingly.

However, a Network User and Envestra may agree that all or some of the terms and conditions applicable to their Agreement will not change during the Term of an Agreement, regardless of any amendments to Annexure G. Both parties are therefore free to agree to arrangements that reflect their preferred risk profile at a point in time.

The terms and conditions applying to provision of the Haulage Reference Services and the Ancillary Reference Services are consistent with good industry practice and are 'reasonable' in that they:

- are sufficiently well defined, so that the likelihood of a dispute over the terms and conditions of access is minimised; and
- are designed to protect the legitimate business interests of Envestra, as well as Network Users and Prospective Network Users.

15.2. Code Compliance

Clause 3.6 of the Code provides:

"*An Access Arrangement must include the terms and conditions on which the Service Provider will supply each Reference Service. The terms and conditions included must, in the Relevant Regulator's opinion, be reasonable.*"

As determined in the *GasNet Australia (Operations) Pty Ltd* decision, the terms and conditions of an Access Arrangement are those developed by the Service Provider. The role for the Relevant Regulator is to determine whether those terms are reasonable. If the terms are reasonable they must be approved, irrespective of whether the Regulator may have preferred the terms to be designed in an alternative manner.

The T&C applying to provision of the Haulage Reference Services and the Ancillary Reference Services are consistent with good industry practice and are 'reasonable' in that they:

- are essentially the same as those currently applying to Users (which terms have previously been approved as reasonable);
- are sufficiently well defined, so that the likelihood of a dispute over the terms and conditions of access is minimised; and
- are designed to protect and balance the legitimate business interests of Envestra, as well as Users and Prospective Users.

Envestra believes that the proposed T&C meet the criteria of reasonableness and that they therefore should be approved.

16. SYSTEM DESCRIPTION & CAPACITY

The Network has been constructed over a period of more than 100 years and consequently consists of a variety of pipe materials. Up until the 1970s, cast iron was predominantly used for gas mains, with unprotected steel also being used for a period of time. Subsequent to this, polyethylene has been used as the predominant pipe material, with polyethylene pipes up to 100mm diameter being commonly used. With recent advances in polyethylene technology, it is now also being used in sizes above 100mm diameter and in higher pressure applications.

The type of pipe material dictates the maximum operating pressure of the constituent parts of the Network. Since cast iron can only be operated at relatively low pressures compared to polyethylene, the continual replacement of cast iron pipe with polyethylene pipe means that the capacity of the Network is improving with time in many areas.

System capacity and operating conditions are monitored via a telemetry system, which records pressures at various locations in the Network and relays information back to a central station. This information is used in an annual review of the capacity of the Adelaide trunk system. This review is an important tool in identifying system improvements and facilitating long term planning.

The table below describes the composition of the Network by Region with respect to length of mains. As indicated below, the assets used to service metropolitan Adelaide constitute the major part of the Network.

Region	Kilometres	%
Adelaide	6,739	93.6
South East	180	2.5
Whyalla	86	1.2
Port Pirie	121	1.7
Riverland	73	1.0
Peterborough	4	0.1
Total	7,203	100

Table 23 Summary of Network Composition by Region as at 30 June 2005

The Network is characterised by four pressure tiers - low, medium, high and transmission. It should be noted that the term 'transmission' in this context refers to distribution mains operating in the pressure range of 1,050 kPa to 1,750 kPa.

The following table sets out the Network length by pressure tier.

	Length (km)				
	Low Pressure	Medium Pressure	High Pressure	Transmission Pressure	Total
Total	2,334	2,003	2,665	201	7,203

Table 24 Summary of Network Composition by Pressure Tier at 30 June 2005

The capacity of the Network is analysed on annual basis through computerised network analysis programmes. Pressures and flows are simulated in order to ensure that all sections of the Network are able to provide adequate pressures and flows for consumer needs. Where modelling or field data (e.g. telemetry or pressure recorders) indicate that potential capacity or pressure problems exist, mains reinforcement projects or other required actions

are instigated to address the issue.

The capacity of the Network is continually being increased through the replacement of low pressure cast iron mains with high pressure polyethylene mains. In addition, the ability of the Network to maintain supply in instances of failure is being enhanced through security of supply projects (see section 7.2). These typically ensure that redundant supply options exist for all major parts of the network.

17. FORECASTS OF DEMAND

17.1. Envestra Approach

The forecasting of gas demand from a network perspective is a specialised field, with a number of drivers coming into play. As experts in the field of forecasting, and also in recognition of their recent experience in the preparation of forecasts used in relation to the Gas Standing Contract Price Path, Envestra requested NIEIR (National Institute of Economic and Industry Research) to provide details concerning demand drivers that would underpin the gas demand forecasts.

Consequently, NIEIR provided information relating to:

(a) the medium term outlook for the Australian economy, which included an examination of consumption, personal income, interest rates, consumer debt, Gross Domestic Product, dwelling investment, etc;

(b) the outlook for the South Australian economy, which included an examination of Gross State Product, population, employment, dwelling investment, etc; and

(c) the economic outlook for the regions served by the Network, which examined population growth, dwelling stock growth and gross product growth by region.

In addition to the NIEIR work, Envestra undertook some work in analysing trends in gas consumption in the domestic sector (see "Falling Residential Gas Consumption in SA", contained in Attachment 6). Due to the extensive work Envestra undertakes in the marketing and penetration of gas, Envestra (and the gas industry generally) has been aware of a trend in declining average domestic gas consumption. This trend is due to a number of factors, but predominantly due to the increasing penetration of reverse cycle air conditioning, higher efficiency gas appliances and the climatic warming trend. This trend is also now being exacerbated by the increasing penetration of solar hot water appliances.

Using all of the above information, Envestra compiled a gas demand forecast by Region and market segment for the period 2005/6 to 2010/11. The forecast was based on normal weather parameters, which removes any bias resulting from current weather being different from the long-term average.

The final forecasts are set out in the following tables, except in relation to the forecasts for 2005/06, these being reflected in the tables in section 2.2 (Outcome of the First Access Arrangement Period) of this document.

It should be noted that tariffs for Demand DPs are based on MDQ. Hence the gas demand/throughput for this sector is of little relevance from a billing perspective. Due to the relatively small number of Demand DPs, the MDQ forecast for this sector has been developed at an individual DP level.

The forecasts assume that Network Development activities will take place in accordance with the Non-Capital Cost forecasts outlined in section 10 of this document. Accordingly, the gas demand forecasts allow for assumed outcomes (increased customer numbers and gas throughput) resulting from the proposed Network Development activities.

The following tables[16] summarise the gas demand forecast derived as explained above.

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[16] in the tables, references to Users should be interpreted as references to customers.

Forecasts of Demand: < 10 TJ p.a. Users	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Consumption by Category (TJ)						
Domestic	8,037	8,068	7,987	7,918	7,846	7,793
Commercial	999	1,012	1,013	1,012	1,007	1,014
Small Industrial	1,875	1,882	1,893	1,897	1,901	1,908
TOTAL - TJ	10,911	10,963	10,892	10,827	10,755	10,715
Number of Users by Region						
Domestic	355,005	361,742	368,678	374,974	381,841	388,924
Commercial	7,644	7,880	8,018	8,149	8,258	8,459
Small Industrial	946	949	955	957	959	962
TOTAL - USERS	363,596	370,570	377,651	384,080	391,058	398,346

Table 25 Gas Demand Forecast for Volume Market

Forecasts of Demand: Large Industrial Users	30 June 2005	2006/07	2007/08	2008/09	2009/10	2010/11
Maximum Daily Quantity (TJ)						
Adelaide	67	64	64	64	64	64
Peterborough	0.1	0.1	0.1	0.1	0.1	0.1
Port Pirie	4	4	4	4	4	4
Riverland/Murray Bridge	1	1	1	1	1	1
South East	1	1	1	1	1	1
Whyalla	0.1	0.1	0.1	0.1	0.1	0.1
TOTAL MDQ - TJ	73	70	70	70	70	70
Number of Users by Region						
Adelaide	140	138	138	138	138	138
Peterborough	1	1	1	1	1	1
Port Pirie	2	2	2	2	2	2
Riverland/Murray Bridge	2	2	2	2	2	2
South East	5	5	5	5	5	5
Whyalla	1	1	1	1	1	1
TOTAL - USERS	151	149	149	149	149	149

Table 26 Gas Demand Forecast for Demand Market

17.2. Code Compliance

Forecasts have been prepared in accordance with the Code, which requires that they represent "best estimates arrived at on a reasonable basis". The methodology used to generate the demand forecast:

- has been applied in an unbiased manner (i.e. due weight was given to all the relevant factors);
- is appropriate to the situation and the nature of the gas market;
- recognises and reflects key drivers of demand;
- is based on reasonable assumptions using the best available information;

- has been assessed against existing forecasts and methodologies;
- has used the most recent data available and historic data that can identify trends in growth; and
- has taken account of current demand and economic conditions and reasonable prospects for future market development.

Envestra therefore believes that the forecasts represent "best estimates arrived at on a reasonable basis".

Clause 8.2(e) of the Access Code provides:

"*The factors about which the Relevant Regulator must be satisfied in determining to approve a Reference Tariff and Reference Tariff Policy are that… (e) any forecasts required in setting the Reference Tariff represent best estimates arrived at on a reasonable basis.*"

Consistent with the *GasNet Australia (Operations) Pty Ltd* decision, the determination which the Regulator must make is whether the forecasts made by Envestra are arrived at on a reasonable basis and are best estimates. If the forecasts meet this requirement, the Regulator must accept them and may not substitute its own forecasts. For the reasons set out above, Envestra's forecasts meet the requirements of clause 8.2(e).

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ATTACHMENT 1

ASSET MANAGEMENT PLAN

[supplied as a separate confidential document]

ATTACHMENT 2

WORLEYPARSONS REPORT

[supplied as a separate document]

ATTACHMENT 3

IBM REPORT

[supplied as a separate confidential document]

ATTACHMENT 4

WACC REPORT

[supplied as a separate document]

ATTACHMENT 5

GAS SITE MONITORING & REMDIATION

[supplied as a separate confidential document]

ATTACHMENT 6

NETWORK DEVELOPMENT REPORT

[supplied as a separate confidential document]

ATTACHMENT 7

SUMMARY OF CHANGES TO TERMS & CONDITIONS FROM FIRST ACCESS ARRANGEMENT PERIOD

Change Code

U = Updated for current market/conditions

A = Agreed amendment resulting from negotiations with retailers – shaded light grey

C = Change (for business reasons)

I = Improved wording

Clause Number	Change Code	Comment
1.2	U	The second paragraph has been deleted because there are no terms and conditions that are inconsistent with the Distribution Licence.
2.1	A	Recognises for example, that gas delivered at the Taperoo Gate Station cannot physically be delivered at Murray Bridge.
2.2	I	Eliminates the unnecessary artificial concept that a Network User authorises the delivery of Gas.
2.5	A	Recognises that balancing takes place pursuant to the Retail Market Rules.
3.2, 3.3 and 3.4	I	These clauses have been simplified.
4	C	Deletion of misclassification charge – no charge applied to date.
5.4	A	Recognises the obligation on Network Users to remain in balance within each zone
5.5	A	Recognises the relevance of the Retail Market Rules for gas allocations.
6.1, 6.2, 6.4 and 6.5	I	Corrections due to outdated term: “Telemetered User Delivery Point”.
6.6 and 6.7	U	Deleted because Envestra does not propose to charge overruns in relation to Demand DPs that are not telemetered.
7	C	Deletion of hourly overrun charge – no charge applied to date.
7A.4 and 7A.5	I	Deleted as they are no longer necessary because overruns only apply to Telemetered DPs.
8.1	C	Amended to make it clear that Network Users are responsible to provide a power source for Metering Equipment (if required).
8.2	U	Amended to reflect the requirements of the Gas Metering Code.
8.4 to 8.8 9.1 to 9.6, 9.9, 9.10	A	Deals with Metering Equipment at Receipt Points.
9.7	A	Recognises relevant of Retail Market Rules to meter corrections.
9.8	U	Obsolete reference to Customer Service Code.
10.5 and 10.6	U	Amended to reflect the requirements of the Gas Metering Code.
10.7	A	Recognises relevant of Retail Market Rules to estimates.
11.1	A	Amended to recognise that gas specifications are set by law.

11.2	A	Sets out a temperature specification for gas
11.4	A	Requirement to notify Envestra in cases where gas is off-specification.
13.1	U	Recognises the law (Gas Distribution Code) re delivery pressure.
15.4	U	Reflects new UAFG requirements.
17 and 18	C	Reflects the new disconnection and reconnection services.
19.4	U	Amended to recognise that Envestra might be required by law to include other information within an invoice.
19.5	A	Makes payment conditional on receipt of a tax invoice.
20	A	Requires Envestra to assess errors in invoices within 28 days and then to correct the error in the next invoice issued after determination of the error.
20A	A	Allows Network Users to only pay the undisputed portion of an invoice, pending resolution of the dispute.
21.2	U	This clause has been amended to recognise that gas within different Gas Delivery Zones may have its own heating value.
21.4	A	Estimates of gas volumes are determined in accordance with law/Retail Market Rules.
21.5	A	Allocate gas in accordance with law/Retail Market Rules.
22.2	A	Permits Network Users to withhold amounts on accounts of taxes where that is required by law.
24.1	A	Reflects the evergreen nature of haulage agreements.
24.2(f)	C	Added because the terms and conditions are drafted on the assumption that the network is covered under the Code (and, in particular, that the Code continues in place). This clause allows Envestra to terminate the agreement in the event that the Code ceases to apply to the South Australian network.
25.1	C	Deleted because it is unnecessary. It requires Envestra to indemnify the Network user for negligence, which Envestra is required to do at common law.
25.2	I	Clarified to ensure that Envestra is notified of any type of claim.
25.3	I	Clarified to ensure that pure economic loss is excluded.
25.4	C	New clause to align Envestra's liability with the scope of public and products liability insurance. Envestra's insurance is limited to $100 million for death, personal injury and property damage – this limit has been incorporated into clause 25.4.
30.1, 30.2 and 30.3	A	Relaxes the insurance requirements applicable to Network Users.
31.2	U	Deletes the reference to the superseded Customer Service Code.
31.4	A	Agreed change re access to premises.
32.1	U	Takes account of the Network User's other confidentiality obligations (eg under the Gas Metering Code).
39	A	GST clause refinement.

ATTACHMENT 8

DEMAND FORECAST REPORT

[supplied as a separate document]