Access Arrangement Information

for the
Queensland Distribution Network

21 December 2001

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DISCLAIMER

This document has been prepared solely for the purpose of compliance with the *Gas Pipelines Access (Queensland) Act 1998* and the *National Third Party Access Code for Natural Gas Pipeline Systems*, ("the Code").

It is designed solely to enable Network Users and Prospective Network Users to understand the derivation of elements in the accompanying Access Arrangement and to form an opinion as to the compliance of that Access Arrangement with the provisions of the Code.

This document is not intended for any other purpose and should not be relied upon as the basis for any decision to transport or retail gas through the Network or to buy or sell, or otherwise deal in, Envestra's securities or for any other purpose.

1 INTRODUCTION

1.1 Purpose of this Document

This document is the revised Access Arrangement Information in relation to the Access Arrangement for the Queensland Distribution Network ('the Network') submitted by Envestra Limited ('Envestra') (ABN 19 078 551 685) to the Queensland Competition Authority ('the Regulator') in accordance with section 2 of the *National Third Party Access Code for Natural Gas Pipeline Systems* ('the Code'). The Code forms Schedule 2 to the *Gas Pipelines Access (Queensland) Act 1998*. This document incorporates changes resulting from the Regulator's Final Decision of 3 October 2001.

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 with the provisions of the Code.

1.2 Background

Envestra commenced operations on 1 July 1997. It is the owner of the Queensland Network and other natural gas distribution infrastructure assets in South Australia, Victoria, New South Wales (Albury) and the Northern Territory (Alice Springs). Envestra is also the owner of the Riverland and Mildura natural gas transmission pipelines in South Australia and Victoria, and the Palm Valley to Alice Springs transmission pipeline in the Northern Territory.

Envestra has contracted various aspects of the operation and management of the Network (and its other gas distribution and transmission assets) to Origin Energy Asset Management Limited (OEAM) under an Operating and Management Agreement, including:

- design and construction of networks;
- operation and maintenance of networks;
- network marketing; and
- management of the haulage of gas through each network.

Envestra reimburses OEAM for its costs and expenses in relation to the provision of these services and pays OEAM a management fee. The Agreement is structured so that OEAM has the incentive to reduce its operating and capital costs in a prudent and efficient manner.

In carrying out its obligations under the Operating and Management Agreement in relation to the Network, OEAM is required to comply with Envestra's Access Arrangement for the Network.

1.3 The Network

The Network is defined to mean the distribution mains, inlets, regulators, meters and ancillary equipment that are the subject of the Access Arrangement from time to time. The Network serves the Brisbane Region (including Ipswich and suburbs north of the Brisbane River), and the Northern Region (serving Rockhampton and Gladstone). A map providing an overview of the Network in metropolitan Brisbane (where almost 90% of the Network exists) is included as Annexure A of the Access Arrangement. Other maps showing the distribution system in more detail have been submitted to the Regulator. A map depicting the Regions is included as Annexure B of the Access Arrangement. Additional details in relation to the Network are included in this Access Arrangement Information.

Envestra also provides services in Queensland through a small number of non-Covered Pipelines, as well as several network extensions ('significant' extensions) that Envestra has elected to treat as non-Covered Pipelines. Haulage services in relation to these significant extensions (Excluded Assets) make use of a portion of the Covered Network. In those instances, the Regulator has determined an allocation of costs for those sites. These costs are not recovered from Services provided via the Covered Network.

1.4 Interpretation

Unless otherwise defined in the Access Arrangement (see section 10 of the Access Arrangement), terms used in the Access Arrangement and this document have the same meaning as they have in the Code. Terms that are defined in the Code or in section 10 of the Access Arrangement commence with capital letters.

1.5 Commencement Date

The Access Arrangement will come into effect on the date on which its approval takes effect under section 2 of the Code.

1.6 Contact Details

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

Mr Andrew Staniford
National Manager Regulatory Affairs
Envestra Limited
Level 10, 81 Flinders Street
ADELAIDE SA 5000
Phone: (08) 8227 1500
Fax: (08) 8227 1511

2. CONTENTS OF THE ACCESS ARRANGEMENT

2.1 Code Requirements

Section 2.5 of the Code states that the Access Arrangement may include any relevant matter, but must include at least the elements described in sections 3.1 to 3.20 of the Code. Sections 3.1 to 3.20 of the Code require the Access Arrangement to include the following elements:

- a Services Policy (sections 3.1 and 3.2);
- a Reference Tariff for at least one Service that is likely to be sought by a significant part of the market (a Reference Service) and for each other Service that is likely to be sought by a significant part of the market and for which the Regulator considers a Reference Tariff should be included (sections 3.3 and 3.4);
- a Reference Tariff Policy which describes the principles to be used to determine Reference Tariffs (section 3.5);
- the terms and conditions on which the Service Provider will supply each Reference Service (section 3.6);
- a Capacity Management Policy – a statement of whether the Pipeline is a Contract Carriage Pipeline or a Market Carriage Pipeline (sections 3.7 and 3.8);
- a Trading Policy which, in the case of Contract Carriage Pipelines, describes the rights of a User to trade its right to a Service to another person (sections 3.9 to 3.11).;
- a Queuing Policy – a policy for determining the priority a Prospective User has to obtain access to Spare Capacity and Developable Capacity (sections 3.12 to 3.15).;
- an Extensions/Expansions Policy – a policy which sets out, among other things, whether any extension or expansion will be treated as part of the Covered Pipeline under the Code and how the extension or expansion will affect Reference Tariffs (section 3.16); and
- a Revisions Submission Date and a Revisions Commencement Date (sections 3.17 to 3.20). These are the dates by which the Service Provider must submit revisions to the Access Arrangement and upon which these revisions are intended to take effect.

Sections 2.2 and 2.6 of the Code provide that Access Arrangement Information must be submitted with an Access Arrangement and must 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 Access Arrangement; and
- form an opinion as to the compliance of the Access Arrangement with the provisions of the Code.

Section 2.7 of the Code provides that the Access Arrangement Information may include any relevant information, but must include at least the categories of information described in Attachment A to the Code.

Section 2.8 of the Code provides that information included in the Access Arrangement Information, including information of the type described in Attachment A, may be

categorised or aggregated to the extent necessary to ensure the disclosure of the information is, in the opinion of the Regulator, not unduly harmful to the legitimate business interests of the Service Provider or a User or Prospective User.

2.2 Compliance

The Access Arrangement for the Network includes each of the elements that are required to be included in an Access Arrangement. This document addresses the compliance of each element of the Access Arrangement with the requirements of the Code.

This Access Arrangement Information also addresses the categories of information described in Attachment A of the Code (see section 2.3 below). In accordance with the Code this information has been categorised and/or aggregated where necessary to prevent undue harm to the legitimate business interests of Network Users, Prospective Network Users and Envestra.

2.3 'Attachment A' Requirements

The information requirements are listed below, together with a reference to where the information can be found in this document.

Category 1: Information Regarding Access & Pricing Principles – sections 5 and 6

Category 2: Information Regarding Capital Costs – section 4

Category 3: Information Regarding Operations & Maintenance – sections 3,4 and 5

Category 4: Information Regarding Overheads & Marketing Costs – section 4

Category 5: Information Regarding System Capacity & Volume Assumptions – section 13

Category 6: Information Regarding Key Performance Indicators – section 4

3. SERVICES POLICY

3.1 Code Requirements

Section 3.1 of the Code states that an Access Arrangement for a Covered Pipeline must include a policy on the Service or Services to be offered. The Code refers to this policy as a Services Policy.

Section 3.2 of the Code states that the Services Policy must comply with certain principles. These principles are as follows:

- 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:
  - one or more Services that are likely to be sought by a significant part of the market; and
  - any Service or Services which in the Regulator's opinion should be included in the Services Policy (section 3.2(a) of the Code);
- to the extent practicable and reasonable, a User or Prospective User must be able to obtain a Service which includes only those elements that the User or Prospective User wishes to be included in the Service (section 3.2(b) of the Code); and
- to the extent practicable and reasonable, a Service Provider must provide a separate Tariff for an element of a Service if this is requested by a User or Prospective User (section 3.2(c) of the Code).

3.2 Compliance

Section 2 of the Access Arrangement sets out the Services Policy for the Network. It includes a description of the Network Services available to Network Users and Prospective Network Users. The Network Services fall into three categories:

- Haulage Reference Services;
- Utility Reference Services; and
- Negotiated Services.

Section 2.1 of the Access Arrangement states that, to the extent practicable and reasonable, a Network User or Prospective Network User may obtain a Network Service that includes only those elements that the Network User or Prospective Network User wishes to be included in the Network Service. This complies with section 3.2 (b) of the Code.

Section 2.1 of the Access Arrangement also states that, to the extent practicable and reasonable, Envestra will provide a separate Tariff for an element of a (Network) Service if this is requested by a Network User or Prospective Network User. This complies with section 3.2 (c) of the Code.

3.2.1 Haulage Reference Services

Section 2.2 of the Access Arrangement provides for two Haulage Reference Services. They are as follows:

- haulage of Gas to a Volume Delivery Point (Volume Haulage Reference Service);and
- haulage of Gas to a Demand Delivery Point (Demand Haulage Reference Service).

The Haulage Reference Services include:

- odorisation of Gas;
- provision and maintenance of Metering Equipment (as defined in the Access Arrangement);
- provision of Unaccounted for Gas (UAG); and
- meter reading on a quarterly basis for Volume Delivery Points and on a monthly basis for Demand Delivery Points.

Each Haulage Reference Service consists of accepting Gas into the Network at a Receipt Point and delivering an equivalent quantity of Gas to a Delivery Point in the Network.

In accordance with section 2.2 of the Access Arrangement, a Delivery Point at a given time is a Demand Delivery Point where any of the following apply:

- the Quantity of Gas delivered through that Delivery Point during the then most recent Metering Year was equal to or greater than 10TJ; or
- the Quantity of Gas delivered or deemed to have been delivered through that Delivery Point on any Network Day during the then most recent Cycle was equal to or greater than 50GJ.

Any other Delivery Point is a Volume Delivery Point.

Where past metering information is not available (for example, in the case of a new Delivery Point), the terms and conditions in Annexure E of the Access Arrangement provide that a User may nominate a Delivery Point to be a Demand Delivery Point if there are reasonable grounds for doing so. This nomination will apply until metering information shows it to be incorrect. Where no nomination is made, the default position is that it is a Volume Delivery Point. The terms and conditions provide for adjustments to be made to an invoice where a Delivery Point is initially mis-classified.

Invoices will be issued to Network Users on a monthly basis. The terms and conditions provide for prepayments to be made at the commencement of an Agreement and in each subsequent month. Invoices will be issued following the end of each month and will reconcile payments owing to Envestra with the amount of the prepayment.

Before the commencement of the provision of a Service in respect of a Demand Delivery Point, the User is required to nominate and agree with Envestra a MDQ and a MHQ for that Delivery Point.

Based on the current Services provided by the Network, the Haulage Reference Services are the haulage Services that are likely to be sought by a significant part of the market during the Access Arrangement Period. Envestra is unaware of any changes in circumstances or future developments that are likely to materially affect this situation during the Access Arrangement Period.

The Reference Tariffs applicable to each of the Haulage Reference Services are set out in section 3 and Annexure C of the Access Arrangement. Envestra will provide each Haulage Reference Service in accordance with, and subject to, the terms and conditions referred to in section 4 of the Access Arrangement. These are discussed further in section 7 of this Access Arrangement Information.

The Access Arrangement provides for Negotiated Services as outlined in section 2.4 of the Access Arrangement.

3.2.2 Unaccounted for Gas (UAG)

3.2.2.1 General

UAG is Gas that is 'lost' or unaccounted for in the Network, predominantly due to leakage and metering tolerances. There are no compressors used in the Network and therefore there is no compressor fuel use. The amount of UAG in a gas distribution system is generally related to its age and materials of construction, as it is the older cast iron pipes and components that have the highest incidence of leakage. Envestra endeavours to minimise UAG through its asset management and replacement programs. It is recognised, however, that there is a level at which the cost of reducing UAG outweighs the cost of Gas lost. Envestra has taken into account this cost-benefit relationship and other factors (such as safety) in determining a program to manage and reduce UAG in the Network.

3.2.2.2 UAG Forecast

The cost of UAG allowed for each year of the Access Arrangement Period has been determined by the Regulator in the Final Decision (p 271) and is as shown in the following table. The Regulator determined allowable UAG by application of a 0.1% target (by volume) for large customers and 12% for small customers, which equates to a system wide UAG allowance of 4.8%.

UAG ($m)	**01/02**	**02/03**	**03/04**	**04/05**	**05/06**
	1.1	1.1	1.2	1.3	1.3

Table 1: Network UAG

3.2.3 Utility Reference Services

In addition to the Haulage Reference Services, Envestra recognises that additional Network Services may be requested by a significant part of the market. These ancillary Network Services are described as Utility Reference Services. At present, Envestra has identified a need for one Utility Reference Service, a Special Meter Reading Service, as set out in section 2.3 of the Access Arrangement. This Service is required where there is a change of consumer at a Network User's Delivery Point (eg change of

tenancy). The Reference Tariff applicable to the Special Meter Reading Service is set out in Annexure D to the Access Arrangement. The methodology adopted by Envestra in developing the Reference Tariff is set out in section 5 of this Access Arrangement Information. Envestra will provide the Reference Service in accordance with, and subject to, the terms and conditions referred to in section 4 of the Access Arrangement.

With the onset of contestability, additional services are likely to be required, eg services associated with customer churn. No costs or revenue associated with such services have been included in the Access Arrangement.

3.2.4 Service Standards and Quality

In addition to the terms and conditions applicable to the provision of a Network Service (ie those referred to in section 4 of the Access Arrangement), Envestra will provide Network Services in accordance with certain minimum service standards and quality levels.

Section 2.5 of the Access Arrangement provides that Envestra will provide each Network Service in accordance with the provisions in any Distribution Licence or applicable law and in accordance with good engineering and industry practice. For example, the Queensland *Gas Act 1965* and associated regulations govern various aspects of gas distribution (eg metering standards, minimum gas supply pressure, etc).

4 TOTAL REVENUE

4.1 Code Requirements

Section 8.4 of the Code provides that the Total Revenue can be calculated according to one of three approaches:

- a Cost of Service approach whereby Total Revenue is equal to the sum of
  - a Rate of Return on the value of the Capital Base; plus
  - depreciation of the Capital Base; plus
  - the operating, maintenance and other Non-Capital Costs incurred in providing all Services provided by the Pipeline;
- an Internal Rate of Return (IRR) approach where the Total Revenue will produce a forecast IRR consistent with the principles in sections 8.30 and 8.31 of the Code; and
- a Net Present Value (NPV) approach whereby the Total Revenue will produce a forecast NPV of zero. The NPV approach should use a discount rate that provides the Service Provider with a return consistent with the principles in sections 8.30 and 8.31 of the Code.

Section 8.4 also provides that the methodology used to calculate the Cost of Service, IRR or NPV should be in accordance with generally accepted industry practice. Section 8.6 provides that a range of values may be attributed to the Total Revenue and that the Regulator may have regard to performance indicators to determine a level of costs within this range.

4.2 Compliance

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 Haulage Reference Services. This revenue comprises a return on the Network assets attributable to the provision of Haulage Reference Services, depreciation on those assets, plus Non-Capital Costs; and
- revenue from the provision of Utility Reference Services. This revenue represents a recovery of costs for the provision of these services. The only Utility Reference Service for which provision has been made is the Special Meter Reading Service.

The Total Revenue to be derived from the provision of Reference Services is based on:

- a post-tax nominal rate of return of 9.27% (section 4.2.2.2 of this document) as per the Final Decision;
- an initial Capital Base (calculated according to the DORC methodology) of $180.2m at 1 July 2001 as per the Final Decision, adjusted each year for:
  - forecast New Facilities Investment (section 4.2.5);
  - depreciation calculated on a straight-line basis (section 4.2.3);
  - forecast Redundant Capital;
  - inflation

- depreciation; and
- forecast Non-Capital Costs (section 4.2.4).

Each of these matters is discussed in the referenced sections.

As outlined in section 1.3, Envestra provides 'unregulated' services to a small number of sites. Costs associated with the provision of these services are not included in the Total Revenue requirement for the Network.

4.2.1 Determination of Initial Capital Base

4.2.1.1 Code Requirements

The Code requires that an initial Capital Base be established for the first Access Arrangement for a Covered Pipeline. Sections 8.10 and 8.11 of the Code address the valuation of Covered Pipeline assets that were in existence when the Code became operative. The Network is such an asset. Section 8.10 states that when a Reference Tariff is first proposed for such a Pipeline the following factors should be considered when establishing the initial Capital Base for that Pipeline:

- the value that would result from taking the actual capital cost of the Covered Pipeline and subtracting the accumulated depreciation for those assets charged to Users (or thought to have been charged to Users) prior to the commencement of the Code;
- the value that would result from applying the DORC methodology;
- the value that would result from applying other well recognised asset valuation methodologies;
- the advantages and disadvantages of each asset valuation methodology applied;
- international best practice of Pipelines in comparable situations and the impact on the international competitiveness of energy consuming industries;
- the basis on which Tariffs have been (or appear to have been) set in the past, the economic depreciation of the Covered Pipeline, and the historical returns to the Service Provider from the Covered Pipeline;
- the reasonable expectations of persons under the regulatory regime that applied to the Pipeline prior to the commencement of the Code;
- the impact on the economically efficient utilisation of gas resources;
- the comparability with the cost structure of new Pipelines that may compete with the Covered Pipeline;
- the price paid for any asset recently purchased by the Service Provider and the circumstances of that purchase; and
- any other factors the Regulator considers relevant.

Section 8.11 provides that the Capital Base for Covered Pipelines in existence at the commencement of the Code should normally not be outside the range of values determined through the application of the asset valuation methodologies in section 8.10(a) and 8.10(b) of the Code.

4.2.1.2 Valuation of the System Assets

A number of different approaches to the valuation of system assets is possible. These are discussed below.

Depreciated Optimised Replacement Cost (DORC)

A DORC asset valuation essentially involves establishing the cost of a new modern equivalent asset (using current technology) that is optimally sized and configured to deliver existing levels of service (ie to replace the existing system and supply existing customers at existing locations), less an allowance for depreciation to reflect the remaining economic life of the asset.

In practice this involves:

- 'optimising' assets by scaling them down in size (eg. to take advantage of optimum distribution pressures) or removing them from the asset base and reducing its value accordingly where there is significant excess capacity or redundant assets;
- assessing the replacement cost of each asset, based on what each asset would be replaced with at the time of the valuation; and
- depreciating assets to reflect the proportion of their estimated useful life that remains.

Other Considerations Required by the Code

International Best Practice

There are considerable differences in regulatory practice between countries, implying that it is difficult to define international best practice. For example, North American regulators tend to use historic costs and nominal returns. UK values are based on float values or DORC values. In Australia, regulators have tended to use the DORC method for determining asset base.

Historic Tariffs, Economic Depreciation and Returns and the Reasonable Expectations of Persons under the Existing Regulatory Regime

Section 8.10 of the Code provides for the Regulator to take into account the basis on which Tariffs have been (or appear to have been) set in the past, the economic depreciation of the Covered Pipeline, the historical returns to the Service Provider from the Covered Pipeline and the reasonable expectations of persons under the existing regulatory regime.

While the Queensland Government has capped the retail price of gas under the Queensland *Gas Act 1965*, no separate price has been determined for haulage services provided by the distribution business. Therefore there are no historic Tariffs available that are directly comparable with the Reference Tariffs in this Access Arrangement.

Moreover, in relation to retail gas Tariffs, Envestra has been advised that the Queensland Government has only approved a Tariff increase on two occasions over the last 10 years. It is therefore highly unlikely that existing regulated retail Tariffs are cost reflective.

The reasonable expectations of persons under the existing regulatory regime would be that Reference Tariffs included in the Access Arrangement:

- will not produce significant price shocks to consumers; or
- will not increase beyond that necessary to provide a fair rate of return on assets for the Service Provider plus recovery of efficient Non-Capital Costs.

Envestra has set Reference Tariffs, and determined a price path in this Access Arrangement, that will meet both of these expectations. The price path is based on providing a fair rate of return on the depreciated optimised replacement cost of assets and achieving cost reflective prices over a ten year period (section 3.3.6 in the Access Arrangement).

Impact on Economically Efficient Utilisation of Gas Resources

Gas resources will be used efficiently if prices reflect the cost of providing services. A return based on a DORC valuation is consistent with the outcome that a competitive market would deliver and the actual costs likely to be incurred in the future in renewing or replacing the Network. For these reasons, DORC is considered the best valuation measure for ensuring that Tariffs are set at levels which will facilitate the efficient use of gas resources.

Compatibility of Cost Structures with New Pipelines

A DORC valuation is consistent with the cost of a new pipeline (network) that may compete with any existing networks. Use of the DORC approach will also assist in avoiding bypass. It is therefore considered to be the valuation method that is most compatible with the cost structure that would be incurred for new assets.

Price Paid for the Asset

Envestra purchased the company that owned the Network, as well as other pipeline assets in South Australia and the Northern Territory, for a total of $910 million on 30 June 1997. This purchase effectively involved only distribution network assets. It did not include any retail assets (which have, in recent times in Australia, been included as part of assets which have been purchased at premiums above regulatory asset values).

Summary of Approach to Asset Valuation

The DORC valuation approach is regarded as the most appropriate basis for valuing the initial Capital Base for the Network, for a number of reasons:

- it meets the requirements of the Code, including:
  - it is explicitly recognised in section 8 of the Code and has been widely used in recent regulatory decisions;
  - it reflects the economic cost of providing Network Services and hence will ensure that Tariffs are set at efficient levels and will reflect long-term market equilibria;

- it is consistent with the valuation methodology that would apply to any efficient new entrant; and

▪ it has a number of practical advantages, including:

- it allows the benefits of technological improvements to be transferred to Users;
- it ensures redundant or oversized assets are not included in the asset base and are not paid for by Users;
- it values all assets on a consistent basis, regardless of the operating and accounting policies applying at the time they were constructed;
- it provides a fair and appropriate basis on which to allocate costs amongst Users and avoids Tariff shocks when assets are replaced; and
- it provides the appropriate base upon which to add New Facilities Investment and subsequently depreciate it.

The Regulator has decided that the initial Capital Base will be based on a DORC valuation.

4.2.2 Weighted Average Cost of Capital

4.2.2.1 Code Requirements

Section 8.30 of the Code requires that the Rate of Return used in determining a Reference Tariff provide a return that is commensurate with market conditions for funds and the risk of delivering the Reference Service.

Section 8.31 provides that the Rate of Return may be based on a weighted average of the return applicable to each separate funding source (for example, debt and equity) and that the returns may be determined using a well-accepted financial model such as the Capital Asset Pricing Model (CAPM). This section also provides that, in general, the weighted average return on funds should be calculated by reference to a financing structure that reflects standard industry structures, but that other approaches may be adopted where the Regulator is satisfied that to do so would be consistent with the objectives of section 8.1 of the Code.

4.2.2.2 Rate of Return Applied

The Regulator has determined that a post-tax nominal rate of return of 9.27% is to apply, based on the following parameters:

- Risk-free rate 5.96%
- Market risk premium 6.0%
- Asset beta 0.55
- Equity beta 0.99
- Cost of debt margin 1.55%
- Cost of debt 7.51%
- Capital structure 60% debt
- Gamma 0.5
- Tax rate 30%
- Inflation rate 2.5%

4.2.3 Depreciation

4.2.3.1 Code Requirements

Section 8.33 of the Code requires that the Depreciation Schedule should be designed:

- so as to result in the Reference Tariff changing over time in a manner consistent with the growth of the market for the Services provided by the Pipeline;
- so that each asset or group of assets is depreciated over the economic life of that asset or group of assets;
- so that, to the maximum extent reasonable, the depreciation schedule is adjusted over the life of an asset or group of assets to reflect changes in the expected economic life of that asset or group of assets; and
- so that an asset is depreciated only once.

4.2.3.2 Compliance

Envestra has used a straight-line approach to depreciation based on the asset lives adopted in the DORC asset valuation in establishing its Depreciation Schedule for Network system assets. 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.

At the commencement of each Access Arrangement Period, Envestra will review asset lives and depreciation rates to reflect changes in technology and/or new information about the condition of Network assets. Envestra notes that the straight-line approach to depreciation has also been adopted by other regulated gas businesses and has been accepted by regulators in Australia.

The Network asset lives by category and the applicable depreciation rates used in the derivation of the Reference Tariffs are summarised in the following table.

Asset Type	Life (years)	Annual Depreciation Rate %
Mains		
Cast Iron	75	1.3
Cathodically Protected Steel	115	0.9
Cathodically Unprotected Steel	40	2.5
Galvanised Steel	25	4.0
Polyethylene	75	1.3
Nylon 1982	50	2.0
Nylon 1990	70	1.4
Meters		
Domestic	31	3.2
Non-domestic	27	3.7
Gate Stations	25	4.0
Regulator Stations	50	2.0
Telemetry		
Systems/software	10	10.0
PCs	4	25.0

Table 2: Asset Lives and Depreciation Schedule for Network Assets

4.2.4 Non-Capital Costs

4.2.4.1 Code Requirements

Section 8.36 of the Code defines Non-Capital Costs as being the operating, maintenance and other costs incurred in the delivery of a Reference Service.

Section 8.37 of the Code provides that Reference Tariffs may provide for the recovery of all Non-Capital Costs (or forecast Non-Capital Costs) except for those 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 Reference Services.

Pursuant to section 8.2(e) of the Code, any forecasts for Non-Capital Costs must represent best estimates arrived at on a reasonable basis.

4.2.4.2 Compliance

Forecasts

The Non-Capital Cost forecast for the Network has been determined by the Regulator and is summarised in Table 3. Real reductions in Non-Capital Costs between 2001/2002 and 2005/2006 are forecast, reflecting forecast increases in labour productivity and cost reductions. Non-Capital Costs are expressed in nominal dollars and have been grouped into the following categories:

- Administration and General

  These costs include overhead costs (insurances, directors' fees etc.) and administration costs. They include costs directly expended by Envestra, as well as OEAM administration expenditure under the Operating and Management Agreement outlined in section 1.2 of this document.

- Network Marketing Costs

  Network Marketing costs are those costs that are incurred to maintain and grow the use of the Network. They include expenditure on the following activities:

  - advertising to promote Gas as safe, efficient and environmentally beneficial;
  - advertising to promote awareness of Gas applications and appliances;
  - provision of direct advice on the utilisation and application of Gas to key Customer influencers such as builders, consulting engineers and plumbers;
  - the establishment and ongoing support of Gas appliance penetration into homes and businesses; and
  - the development of new applications for gas (eg for cooling, as a vehicular fuel, micro-generation, etc).

- Operational Costs

  Operational costs are the costs of operating and maintaining the Network and include wages and salaries, materials and supplies, contractor services and taxes. Activities undertaken include leak repairs, odorising, technical regulatory activities, billing, metering and the monitoring of contaminated sites. Operational costs also include the cost of providing UAG for the purpose of delivering haulage Services.

As outlined in section 1.3, Envestra provides 'unregulated' services to a small number of sites, including Excluded Assets. Operating costs associated with the provision of these services are not included in Non-Capital Costs. The operating costs for these sites have been based on an analysis of the cost drivers and activities associated with serving the respective sites, and allocated amounts as determined by the Regulator in the Final Decision. Total Non-Capital Costs for the Access Arrangement Period, exclusive of UAG and in accordance with the Regulator's Final Decision, are shown in the following table.

All Reference Services	**01/02**	**02/03**	**03/04**	**04/05**	**05/06**
Admin and General	1.43	1.43	1.43	1.43	1.43
O&M	8.50	8.71	8.92	9.14	9.35
Network Marketing	0.50	0.50	0.50	0.50	0.50
Total Non-Capital ($m)	**10.42**	**10.63**	**10.84**	**11.06**	**11.27**

NB: Numbers may not add due to rounding

Table 3: Non-Capital Costs (exc UAG), All Reference Services ($m)

Performance Indicators

Various key performance indicators were taken into account by the Regulator in determining Envestra's allowable operating costs. This information is available in the Regulator's Final Decision.

4.2.5 New Facilities Investment

4.2.5.1 Code Requirements

Section 8.20 of the Code provides that Reference Tariffs may reflect the value of New Facilities Investment forecast to occur within the Access Arrangement Period. In order to do so, this investment must reasonably be expected to pass the requirements of section 8.16(a) and (b) of the Code when it is forecast to occur.

Section 8.16 requires New Facilities Investment:

- not to 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
- to meet one of the following criteria:
  - the Anticipated Incremental Revenue generated by the New Facility exceeds the New Facilities Investment; or
  - the New Facility has system-wide benefits that justify a higher Reference Tariff; or
  - the New Facility is necessary to maintain the safety, integrity or Contracted Capacity of Services.

In accordance with section 8.2(e) of the Code, forecasts of New Facilities Investment must also represent best estimates arrived at on a reasonable basis.

4.2.5.2 Compliance

New Facilities Investment forecast during the Access Arrangement Period is based on the forecast level of capital expenditure required to allow Envestra to meet the forecast growth in demand for haulage Services and to meet system augmentation and replacement requirements.

New Facilities Investment forecast for the Access Arrangement Period falls into two categories:

- Growth Capital – capital required to extend the Network into new areas (eg new subdivisions).
- Replacement Capital – capital required to maintain the integrity of the Network (eg replace pipes, meters etc) including the mains replacement programme.

The New Facilities Investment forecast is provided in the following table (expressed in nominal dollars).

$m	**01/02**	**02/03**	**03/04**	**04/05**	**05/06**
Growth Capital	6.2	6.0	5.8	6.2	6.3
Replacement Capital	6.9	7.0	6.8	7.0	6.6
Total	**13.1**	**13.0**	**12.6**	**13.2**	**12.9**

Table 4: New Facilities Investment ($ m)

The forecast New Facilities Investment will facilitate the delivery of Network Services at sustainable lower prices over the medium to longer term, satisfying section 8.16(b)(i) of the Code.

4.2.6 Total Revenue Requirement

The key elements of the Total Revenue equation for the Network result in a revenue requirement of $29.7 million for all Reference Services in 2001/02, the first year of the Access Arrangement Period. This revenue requirement reflects the initial Capital Base of $180.2 million as at 1 July 2001.A breakdown of the Total Revenue requirement for each year of the Access Arrangement is shown in Table 18.6 of the Final Decision and in Table 5a. The calculation for rolling forward the Capital Base is shown in Table 5b. The cost of tax for each year of the Access Arrangement has been included in the cash flows.

Revenue Requirement ($m)	**00/01**	**01/02**	**02/03**	**03/04**	**04/05**	**05/06**
Return on capital	11.9	12.7	13.6	14.4	15.3	16.1
Depreciation	4.4	4.8	5.2	5.6	6.0	6.4
Non-Capital costs	10.2	10.5	10.7	11.0	11.2	11.5
UAG	1.0	1.1	1.1	1.2	1.3	1.3
Tax (net of franking credits)	0.8	0.8	1.0	1.1	1.3	1.5
Total	**28.3**	**29.7**	**31.4**	**33.2**	**34.9**	**36.7**

NB: Numbers may not add due to rounding

Table 5a: Total Revenue Requirement

		2000-01	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2005-06**
	Opening assets	171.5	180.2	193.1	205.8	218.0	230.8
Less	depreciation	4.4	4.8	5.2	5.6	6.0	6.4
Less	disposals						
Plus	revaluation	4.3	4.6	4.9	5.2	5.5	5.9
Plus	capex	8.9	13.0	12.9	12.6	13.3	12.9
	Closing assets	180.2	193.1	205.8	218.0	230.8	243.1

Table 5b: Rolling Forward the Capital Base

5 REFERENCE TARIFFS

5.1 Code Requirements

Sections 3.3 to 3.5 and section 8 of the Code set out various requirements in relation to Reference Tariffs and the Reference Tariff Policy. Section 3.3 of the Code states that an Access Arrangement must include a Reference Tariff for:

- at least one Service that is likely to be sought by a significant part of the market; and
- each Service that is likely to be sought by a significant part of the market and for which the Regulator considers a Reference Tariff should be included.

Section 3.4 of the Code states that, unless a Reference Tariff has been determined through a competitive tender process (as outlined in sections 3.21 to 3.26 of the Code), an Access Arrangement and any Reference Tariff included in an Access Arrangement must, in the Regulator's opinion, comply with the Reference Tariff Principles set out in section 8 of the Code. Section 3.5 of the Code states that an Access Arrangement must also include a policy describing the principles that are to be used to determine a Reference Tariff (a Reference Tariff Policy) and it must, in the Regulator's opinion, comply with the Reference Tariff Principles in section 8 of the Code.

Section 8 of the Code sets out the principles with which Reference Tariffs (other than those determined through a competitive tender process under section 3 of the Code) and the Reference Tariff Policy must comply in order to be approved. Overarching principles and factors to be observed in applying the Reference Tariff Principles in section 8 of the Code are set out in sections 8.1 and 8.2.

Section 8.1 states that a Reference Tariff and Reference Tariff Policy should be designed with a view to achieving the following objectives:

- providing the Service Provider with the opportunity to earn a stream of revenue that recovers the efficient costs of delivering the Reference Service over the expected life of the assets used in delivering the Service;
- replicating the outcome of a competitive market;
- ensuring the safe and reliable operation of the Pipeline;
- not distorting investment decisions in Pipeline transportation systems or in upstream and downstream industries;
- efficiency in the level and structure of the Reference Tariff; and
- providing an incentive to the Service Provider to reduce costs and to develop the market for Reference and other Services.

Section 8.2 provides that the Regulator must, in approving a Reference Tariff and Reference Tariff Policy, be satisfied that:

- the revenue to be generated from the sales (or forecast sales) of all Services over the Access Arrangement Period (the Total Revenue) should be established

consistently with the principles and according to one of the methodologies contained in section 8 of the Code;

- to the extent that the Covered Pipeline is used to provide a number of Services, that portion of Total Revenue that a Reference Tariff is designed to recover (which may be based upon forecasts) is calculated consistently with the principles contained in section 8 of the Code;
- a Reference Tariff (which may be based upon forecasts) is designed so that the portion of Total Revenue to be recovered from a Reference Service is recovered from the Users of that Reference Service consistently with the principles contained in section 8 of the Code;
- Incentive Mechanisms are incorporated into the Reference Tariff Policy wherever the Regulator considers appropriate and such Incentive Mechanisms are consistent with the principles contained in section 8 of the Code; and
- any forecasts required in setting the Reference Tariff represent best estimates arrived at on a reasonable basis.

Other specific provisions in section 8 of the Code will, where relevant, be referred to throughout the remainder of this Access Arrangement Information in discussing the compliance of the Access Arrangement with the Code.

5.2 Compliance

5.2.1 Revenue Targets

The Regulator has determined the following 'transitional' revenue targets (see also Table 18.13 of the Final Decision):

$m	00/01	01/02	02/03	03/04	04/05	05/06
Demand	7.6	7.7	7.8	7.9	7.9	8.0
Volume	20.7	22.1	23.6	25.2	26.9	28.7
Total	**28.3**	**29.7**	**31.4**	**33.2**	**34.9**	**36.7**

NB: Numbers may not add due to rounding

Table 6: Revenue Targets ($ m)

5.2.2 Demand Haulage Reference Tariffs

The Reference Tariffs for Demand Haulage Reference 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 a smooth transition across the threshold between Reference Tariffs for provision of the Demand and Volume Haulage Reference Services respectively; and
- achieve simplicity in the Tariff design, using the minimum number of rate blocks, while maintaining sufficient resolution to manage bypass risk.

Where the contracted capacity is exceeded four times in a month or eight times in a year the MDQ will automatically be adjusted upwards.

The Demand Haulage Reference Tariffs, including GST, are shown in the Tariff Schedule that is Annexure C of the Access Arrangement.

5.2.3 Volume Haulage Reference Tariffs

The Tariff structure for the Volume Haulage Reference Services comprise a daily supply charge and declining blocks based on the Quantity of Gas delivered. Taking into account the factors in section 8 of the Code and the Final Decision, Envestra has established Reference Tariffs for Volume Haulage Reference Services for each Region.

The Volume Haulage Reference Tariffs, including GST, are shown in the Tariff Schedule that is Annexure C of the Access Arrangement.

5.2.4 Reference Tariffs for Utility Reference Services

The Reference Tariff for the Special Meter Reading Service reflects the Non-Capital Costs involved in providing the Service. This Tariff, including GST, is set out in the Tariff Schedule that is Annexure D to the Access Arrangement.

5.2.5 Publishing of Tariffs

Tariffs for Haulage Reference Services and the Utility Reference Service are set out in the Tariff Schedules that are Annexure C and Annexure D to the Access Arrangement respectively. The Access Arrangement will be published on Envestra's internet website, "www.envestra.com.au".

Envestra will publish a revised Tariff Schedule on its website before 1 July in each year. The revised Tariff Schedule will set out the adjusted Reference Tariffs to apply for the forthcoming financial year.

6 REFERENCE TARIFF POLICY

6.1 Code Requirements

Section 3.5 of the Code states that an Access Arrangement must include a Reference Tariff Policy.

This Policy is designed to address all of the principles that govern any movement in Reference Tariffs during an Access Arrangement Period. These principles may also influence Reference Tariffs for subsequent Access Arrangement Periods.

Section 3.5 of the Code states that the Reference Tariff Policy must, in the Regulator's opinion, comply with the Reference Tariff Principles set out in section 8 of the Code.

Section 8 of the Code identifies some possible elements of a Reference Tariff Policy. They include:

- a mechanism for treating redundant capital (sections 8.27 – 8.29 of the Code);
- Fixed Principles (sections 8.47 and 8.48 of the Code); and
- Incentive Mechanisms.

6.2 Compliance

Section 3.3 of the Access Arrangement sets out the proposed Reference Tariff Policy. Each of the elements of the Reference Tariff Policy is discussed below.

6.2.1 New Facilities Investment

Section 3.3.1 of the Access Arrangement provides that Reference Tariffs will vary in accordance with the Extensions and Expansions Policy in section 8 of the Access Arrangement. Section 8.2 of the Access Arrangement addresses how Haulage Reference Tariffs are to be determined following any extension or expansion to the Network (that is included as part of the Network), that satisfies the requirements of section 8.16 of the Code. The Extensions and Expansions Policy is discussed in section 11 of this document.

Consistent with section 8 of the Code, section 3.3.1 of the Access Arrangement also provides that where only part of any New Facilities Investment (ie any extensions and/or expansions of the Capacity of the Network) that is included as part of the Network satisfies the requirements of section 8.16 of the Code, then:

- only that part of the New Facilities Investment that satisfies section 8.16 of the Code (the Recoverable Portion) will be included in the Capital Base; and
- Reference Tariffs for Haulage Reference Services for that part of the New Facilities Investment included in the Capital Base are to be determined in accordance with the provisions of section 8.2 of the Extensions/Expansions Policy in the Access Arrangement.

Where any New Facilities Investment that forms part of the Network (ie for the purposes of being a Covered Pipeline under the Code) does not satisfy the requirements of section 8.16 of the Code, section 3.3.1 of the Access Arrangement allows for the application of surcharges subject to the requirements of section 8 of the Code being met. This is consistent with the Reference Tariff Principles in section 8 of the Code.

6.2.2 Pass Through of Imposts

Envestra recognises that changes to Government-imposed taxes and charges may occur during an Access Arrangement Period, or impositions may be placed upon Envestra as a result of directions given by a government or statutory authority. The Reference Tariffs in section 3 of the Access Arrangement have been developed on the basis of existing Government taxes, charges, etc, continuing to apply throughout the Access Arrangement Period. Should this not be the case, Envestra will apply to the Regulator to amend Reference Tariffs accordingly.

Section 3.3.2 of the Access Arrangement therefore provides for the pass-through of any new Imposts or changes to Imposts as they occur.

The pass-through of changes in Imposts will be symmetrical, with decreases as well as increases passed through to Network Users. Any amendment to a Reference Tariff as a result of the introduction of a New Impost or a change in an Impost is to be treated as being effective from the date of the introduction of the New Impost or change in the Impost.

6.2.3 Asset Base and Rate of Return

6.2.3.1 Capital Base Adjustments for Inflation and Depreciation

Section 3.3.3.1 of the Access Arrangement provides that the Capital Base for the Network will be adjusted annually on 1 July each year by the percentage change in CPI and for depreciation (using a straight-line approach to depreciation, as provided for in section 3.3.5 of the Access Arrangement). The Capital Base and the approach to depreciation are discussed in section 4.2 of this document.

In addition, section 3.3.3.2 of the Access Arrangement provides that the Capital Base, when reviewed, will be adjusted for New Facilities Investment and Redundant Capital. This is consistent with section 8.14 of the Code.

6.2.3.2 Rate of Return Methodology

The Regulator has determined in the Final Decision that the Rate of Return will be a post-tax nominal rate of 9.27%. The methodology employed by the Regulator in setting the Rate of Return is detailed in the Final Decision.

6.2.4 Removal of Redundant Capital

Section 3.3.4 of the Access Arrangement provides that, when reviewed, the Capital Base shall be reduced in the following circumstances and in accordance with the following approach:

- where assets dedicated to providing Network Services to a specific Delivery Point cease to contribute in any way to the delivery of the Network Services, the value attributable to those assets shall be removed;
- where any other assets in the Capital Base cease to contribute in any way to the delivery of Network Services, the value attributable to those assets shall be removed; and
- the value attributable to assets that are sold shall be removed.

This mechanism complies with sections 8.27 to 8.29 of the Code in that it provides for:

- the removal of specific assets that cease to contribute in anyway to the delivery of Network Services;
- the removal of any other assets that cease to contribute in any way to the delivery of Network Services; and
- the removal of any assets that are sold.

Section 3.3.4 of the Access Arrangement also describes the mechanism for rolling back redundant assets into the Capital Base. The mechanism is identical to that described in section 8.28 of the Code.

6.2.5 Depreciation

Section 3.3.5 of the Access Arrangement provides that assets which comprise the Capital Base will be depreciated on a straight-line basis. The use of straight-line depreciation is discussed in section 4.2 of this document.

6.3 Reference Tariff Adjustments

6.3.1 Haulage Reference Services

The Reference Tariff principles of section 8 of the Code permit the setting of Reference Tariffs for the first year of the Access Arrangement, and adjustment of those Tariffs in subsequent years. The approach to future Tariff adjustment is referred to as the form of regulation. The form of regulation may be:

- Tariff adjustment in accordance with a pre-determined price path; or
- Tariff adjustment on the basis of actual outcomes (such as sales volumes and actual cost) in subsequent years; or
- Tariff adjustment in accordance with a variation or combination of these two approaches.

The Reference Tariff Policy set out in the Access Arrangement provides for Tariff adjustment in accordance with a pre-determined price path. The Reference Tariff Policy is consistent with the Regulator's Final Decision.

The price paths for Haulage Reference Tariffs have been established on a "CPI plus/minus X" basis for this Access Arrangement Period. The price path applies to the average price per GJ of MDQ for Demand Delivery Points and the average price per GJ of throughput for Volume Delivery Points (and not each individual Tariff component). Using this methodology enables Envestra to adjust the components of the

Reference Tariff to respond to the needs of Network Users or to changing market conditions (for example, competition from alternative fuels).

6.3.2 Utility Reference Services

Tariffs for Utility Reference Services will be adjusted with changes in the CPI on 1 July in each year of the Access Arrangement Period (as described in section 3.3.6 of the Access Arrangement).

6.4 Incentive Mechanisms and Related Principles

6.4.1 Code Requirements

Section 8.44 of the Code specifies that the Reference Tariff Policy should, wherever the 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 (an Incentive Mechanism), particularly where the additional returns are attributed (at least in part) to the efforts of the Service Provider. Such additional returns may result from, amongst other things, lower Non-Capital Costs or greater sales of Services than forecast.

Section 8.46 of the Code specifies that an Incentive Mechanism should be designed to achieve the following objectives:

- to provide the Service Provider with an incentive to increase the volume of sales of all Services, but to avoid providing an artificial incentive to favour the sale of one Service over another;
- to provide the Service Provider with an incentive to minimise the overall costs attributable to providing those Services, consistent with the safe and reliable provision of such Services;
- to provide the Service Provider with an incentive to develop new Services in response to the needs of the market for Services;
- to provide the Service Provider with an incentive to undertake only prudent New Facilities Investment and incur only prudent Non-Capital Costs, and for this incentive to be taken into account when determining the prudence of New Facilities Investment and Non-Capital Costs for the purposes of sections 8.16 and 8.37; and
- to ensure that Users and Prospective Users gain from increased efficiency, innovation and volume of sales (but not necessarily in the Access Arrangement Period during which such increased efficiency, innovation or volume of sales occur).

In addition, section 8.2(f) of the Code specifies that Reference Tariffs and the Reference Tariff Policy should provide an incentive to the Service Provider to reduce costs and to develop the market for Reference Tariffs and other Services.

6.4.2 Compliance

Envestra understands that the objective is to find the appropriate balance between providing an incentive to reduce costs and ensuring Network Users (and ultimately Customers) eventually benefit from any cost reductions.

Section 3.3.7 of the Access Arrangement sets out the incentive-related element of the Reference Tariff Policy. It states that, subject to the review triggers, within an Access Arrangement Period there will be no adjustment to Total Revenue or Tariffs to reflect any differences between actual and forecast levels of New Facilities Investment, Non-Capital Costs and gas throughput. This principle of 'no adjustments' applies both to differences that arise because of matters that are within and outside the control of Envestra.

This principle does not apply to changes in Non-Capital Costs that occur as a result of a change in, or the introduction of, any Imposts. Section 3.3.2 of the Access Arrangement provides for Reference Tariffs to be adjusted in such circumstances.

Section 3.3.7 of the Access Arrangement also establishes that, subject to the review triggers, the amount of any gains or losses accruing to Envestra as a result of this principle will not be used to adjust the Total Revenue requirement for any future Access Arrangement Period.

This principle of 'no retrospectivity' is symmetrical. It provides Envestra with the appropriate incentives to reduce costs and maximise gas delivery within an Access Arrangement Period.

In order to ensure the legitimate interests of Network Users are protected, the mechanism is subject to Envestra operating and managing the Network in accordance with accepted industry practice.

6.5 Trigger Mechanism

6.5.1 Code Requirements

In approving Access Arrangement revision dates, Section 3.17 of the Code requires the Regulator to have regard to the objectives of section 8.1 of the Code. In particular, the Regulator may require that specific major events be defined that trigger an obligation on the Service Provider to submit revisions prior to the Revisions Submissions Date.

6.5.2 Compliance

The Regulator has determined that a trigger mechanism will apply if actual gas demand varies from forecast demand by more than pre-determined amounts, as set out in 3.3.8 of the Access Arrangement.

7 TERMS AND CONDITIONS

7.1 Code Requirements

Section 3.6 of the Code states that an Access Arrangement must include the terms and conditions on which the Service Provider will supply each Reference Service. It also provides that the terms and conditions included must, in the Regulator's opinion, be reasonable.

7.2 Compliance

The terms and conditions applicable to the provision of Reference Services are dealt with in section 4 and Annexure E of the Access Arrangement. In summary:

- pursuant to section 4 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 entering into 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 E of the Access Arrangement sets out the terms and conditions which are to apply, as a minimum, to the provision of each Reference Service. Annexure E describes terms and conditions which are applicable to both Haulage and Utility 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 – Utility Reference Services); and
- the terms and conditions provide for Specific Terms and Conditions to be agreed between the Network User and Envestra in relation to the provision of a Reference Service.

The terms and conditions are structured so that:

- Part II applies only to the Haulage Reference Services. This part addresses 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;
- Part III applies only to the Utility Reference Services. This part describes the extent of the Services to be provided and the procedures to be followed when requesting a Service;
- Part IV applies both to Haulage Reference Services and Utility Reference Services. This part addresses 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 Annexure E are in addition to those established in law or by any relevant regulatory documents.

Where the terms and conditions described in Annexure E 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 E. Both parties are therefore free to agree to arrangements that reflect their preferred risk profile at any time.

The terms and conditions applying to provision of the Haulage Reference Services and the Utility 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.

8 CAPACITY MANAGEMENT POLICY

8.1 Code Requirements

Section 3.7 of the Code requires that the Access Arrangement must include a statement of whether system capacity is managed on a Contract Carriage or a Market Carriage basis.

8.2 Compliance

Section 5 of the Access Arrangement provides that the Network is to be a Contract Carriage Pipeline.

While the difference between Contract Carriage and Market Carriage is not always distinct, the attributes usually associated with Contract Carriage (based on the definition contained in section 10 of the Code) are:

- Users enter into a legally enforceable contract that entitles them to a specified quantity of Pipeline capacity;
- capacity is managed by requiring that Users not exceed this capacity;
- prices are set primarily on the basis of Contracted Capacity; and
- Users have the right to trade Contracted Capacity with others.

In contrast, under the Market Carriage approach (as defined in section 10 of the Code) Users usually have no contractual rights to capacity and prices are based on actual deliveries.

Envestra has classified the Network as a Contract Carriage Pipeline. In accordance with the terms and conditions set out in Annexure E of the Access Arrangement, which apply to the provision of each Haulage Reference Service, Network Users' estimated system deliveries in respect of Demand Delivery Points (which account for the majority of annual demand) will be determined on an MDQ basis. Envestra will ensure sufficient capacity is available to meet MDQ requirements (subject, among other things, to technical and practical limitations).

Network Users have the right to trade their Contracted Capacity in accordance with the Trading Policy set out in section 6 of the Access Arrangement. The Trading Policy is further discussed in section 9 of this Access Arrangement Information.

9 TRADING POLICY

9.1 Code Requirements

Section 3.9 of the Code states that the Access Arrangement for a Contract Carriage Pipeline must include a policy that explains the rights of a User to trade its right to obtain a Service to another person. The Code refers to this policy as a Trading Policy.

Section 3.10 of the Code states that the Trading Policy must comply with the following principles:

- A User must be permitted to transfer or assign all or part of its Contracted Capacity without the consent of the Service Provider concerned if:
  - the User's obligations under the contract with the Service Provider remain in full force and effect after the transfer or assignment; and
  - the terms of the contract with the Service Provider are not altered as a result of the transfer or assignment (section 3.10(a) of the Code).

  A transfer or assignment of this type is described as a Bare Transfer. Section 3.10 provides that the Trading Policy may require that the transferee notify the Service Provider prior to utilising the portion of the Contracted Capacity subject to the Bare Transfer and of the nature of the Contracted Capacity subject to the Bare Transfer, but the Trading Policy must not require any other details regarding the transaction to be provided to the Service Provider.

- Where commercially and technically reasonable, a User must be permitted to transfer or assign all or part of its Contracted Capacity, other than by way of a Bare Transfer, with the prior written consent of the Service Provider. The Service Provider may withhold its consent only on reasonable commercial or technical grounds and may make its consent subject to conditions, but only if they are reasonable on commercial and technical grounds. The Trading Policy may specify conditions in advance under which consent will or will not be given, and conditions that must be adhered to as a condition of consent being given (section 3.10(b) of the Code).
- Where commercially and technically reasonable, a User must be permitted to change the Delivery Point or Receipt Point from that specified in any contract for the relevant Service with the prior written consent of the Service Provider. The Service Provider may withhold its consent only on reasonable commercial or technical grounds and may make its consent subject to conditions, but only if they are reasonable on commercial and technical grounds. The Trading Policy may specify conditions in advance under which consent will or will not be given and conditions that must be adhered to as a condition of consent being given (section 3.10(c) of the Code).

9.2 Compliance

Section 5 of the Access Arrangement provides that the Network is a Contract Carriage Pipeline. Under this approach to the management of capacity, Network Users have legally enforceable rights to certain amounts of Contracted Capacity in the Network.

Network Users have the right to trade their Contracted Capacity in relation to the Network, in accordance with the Trading Policy set out in section 6 of the Access Arrangement.

9.2.1 Bare Transfers

Section 6.1 of the Access Arrangement deals with Bare Transfers. In practice, it provides for a Network User to transfer or assign all or part of its Contracted Capacity without the consent of Envestra if:

- the Network User's obligations under the contract with Envestra remain in full force and effect after the transfer; and
- the terms of the contract with Envestra are not altered as a result of the transfer or assignment.

A Bare Transfer will therefore only be possible where the trade involves the use of the same Delivery Points and Receipt Points. Network User's rights so far as changes to Delivery and/or Receipt Points are concerned are set out in section 6.3 of the Access Arrangement and are discussed in section 9.2.3 below.

9.2.2 Other Transfers

Section 6.2 of the Access Arrangement deals with transfers or assignments other than by way of a Bare Transfer. Pursuant to section 6.2, a Network User is permitted to transfer or assign all or part of its Contracted Capacity (other than by way of a Bare Transfer) with the prior written consent of Envestra where the transfer or assignment is commercially and technically reasonable.

Section 6.2 of the Access Arrangement also provides that Envestra will not withhold its consent, other than on reasonable commercial and technical grounds. In addition, section 6.2 provides that Envestra may make its consent subject to conditions, but only if those conditions are reasonable on commercial and technical grounds.

This is consistent with section 3.10 of the Code.

9.2.3 Delivery and Receipt Point Changes

Section 6.3 of the Access Arrangement deals with changes in Delivery Points and Receipt Points. It provides that a Network User is permitted to change the Delivery Point and/or Receipt Point from that specified in a contract for a Network Service with the prior written consent of Envestra, where the change is commercially and technically reasonable.

Section 6.3 of the Access Arrangement also states that Envestra will not withhold its consent, other than on reasonable commercial and technical grounds, and that Envestra may make its consent subject to conditions, but only if those conditions are reasonable on commercial and technical grounds.

This is consistent with section 3.10 of the Code.

9.2.4 Procedure

Section 6.4 of the Access Arrangement specifies a procedure that needs to be followed in order to obtain Envestra's consent for a transfer/assignment of contracted Capacity (other than a Bare Transfer) or change of Delivery Point and/or Receipt Point. The procedure is:

- any party requesting a transfer/assignment of Contracted Capacity or a change to a Receipt and/or Delivery Point must submit a request to Envestra in writing, setting out the applicable details of the proposal; and
- Envestra will undertake the necessary analysis to determine whether the request is both feasible and reasonable on commercial and technical grounds. Envestra will charge a fee, based on a fixed charge of $75 plus $75 per hour per person to carry out the assessment. These fees will be escalated by CPI. Costs will be agreed in advance with the party making the request and will be borne by the party making the request.

10 QUEUING POLICY

10.1 Code Requirements

Section 3.12 of the Code states than an Access Arrangement must include a policy for determining the priority that a Prospective User has, as against any other Prospective User, to obtain access to Spare Capacity and Developable Capacity (and to seek dispute resolution under section 6 of the Code), where the provision of the Service sought by that Prospective User may impede the ability of the Service Provider to provide a Service that is sought by, or which may be sought by, another Prospective User. The Code refers to this policy as a Queuing Policy.

Section 3.13 of the Code states that the Queuing Policy must set out sufficient detail to enable Users and Prospective Users to understand in advance how the Queuing Policy will operate. Section 3.13 also states that the Queuing Policy must accommodate, to the extent reasonably possible, the legitimate business interests of the Service Provider, Users and Prospective Users and generate, to the extent reasonably possible, economically efficient outcomes.

10.2 Compliance

Section 7 of the Access Arrangement sets out the Queuing Policy for the Network.

Queuing is more relevant to transmission pipelines than distribution networks. In relation to transmission pipelines, all Users essentially use the same pipeline and the development of incremental capacity typically requires significant investment that cannot be supported by a single User. It is therefore appropriate to consider Users' requests for extra capacity in aggregate and develop a queuing policy to determine the priority for allocating the additional capacity.

In distribution networks, Spare Capacity is location-dependent and may vary daily or seasonally, depending on the demand profile of different Customers and the resultant flow paths. Additional capacity can usually be provided in small increments to specific locations and at relatively low cost. As a result, queuing within a distribution network is much less of an issue than with transmission pipelines.

Notwithstanding the above, the potential for capacity constraints within any particular part of the Network to impact on multiple Prospective Network Users is recognised and a Queuing Policy has been developed accordingly.

The Access Arrangement provides for Prospective Network Users' requests to be considered in the order in which they are received. This principle will be observed in all circumstances, unless there is a need to investigate Developable Capacity options.

In the event that Envestra undertakes investigation into Developable Capacity alternatives, all requests from Prospective Users affected by planned augmentation will be considered in aggregate, to facilitate optimum design and achieve an economically efficient outcome. Under such circumstances, it may be necessary to elevate the status of all requests affected to the top of the queue, without altering the relative ranking of other requests not affected by the augmentation. This approach will result in lower

charges to Network Users over time, thereby satisfying the requirement for economically efficient outcomes in section 3.13 of the Code.

In order to meet the legitimate business interests of Prospective Network Users, the policy also provides that where a request cannot be fully met, but can be partially satisfied, Envestra will offer any Spare Capacity available to the Prospective Network User to partially satisfy its request. The Prospective Network User's position in the queue will remain unaltered as a result.

11 EXTENSIONS AND EXPANSIONS POLICY

11.1 Code Requirements

Section 3.16 of the Code states that an Access Arrangement must include a policy (Extensions and Expansions Policy) that sets out:

- the method to be applied to determine whether any extension to, or expansion of the Capacity of, the Covered Pipeline:
  - should be treated as part of the Covered Pipeline for all purposes under the Code; or
  - should not be treated as part of the Covered Pipeline for any purpose under the Code;
- how any extension or expansion which is to be treated as part of the Covered Pipeline will affect Reference Tariffs; and
- if the Service Provider agrees to fund New Facilities if certain conditions are met, a description of those New Facilities and the conditions on which the Service Provider will fund the New Facilities.

11.2 Compliance

Section 8 of the Access Arrangement sets out the Extensions and Expansions Policy for the Network, in accordance with the Final Decision. It identifies the circumstances under which any extensions to or expansions of the Network will be treated as part of the Network (ie as the one Covered Pipeline under the Code) and the Tariff arrangements to apply to any extension or expansion.

In the Access Arrangement, references to extensions or expansions are references to extensions or expansions to the Network as it existed on 30 June 2001.

12 REVIEW OF ACCESS ARRANGEMENT

12.1 Code Requirements

Section 3.17 of the Code states that an Access Arrangement must include a date upon which the Service Provider must submit revisions to the Access Arrangement and a date upon which the next revisions to the Access Arrangement are intended to commence.

If an Access Arrangement Period is more than five years, section 3.18 of the Code requires the Regulator to consider whether mechanisms should be included to address the risk of forecasts proving incorrect.

12.2 Compliance

Section 9.1 of the Access Arrangement provides for Envestra to submit revisions nine months before the Revisions Commencement Date. Section 9.2 of the Access Arrangement states that these revisions will commence on the later of 1 July 2006 and the date on which their approval takes effect under the Code.

13 SYSTEM CAPACITY AND FORECAST DEMAND

13.1 System Capacity

The Network has been constructed over a period of more than 100 years and consequently consists of a variety of pipe materials. Cast iron and galvanised steel pipes were used until the advent of more modern materials such as nylon, polyethylene and polyethylene-coated steel.

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 increasing with time in many areas. However, the increase in capacity in those areas that are upgraded is also dependent upon the capacity of pipework upstream (ie in the 'trunk' sections of the Network).

System capacity and operating conditions are monitored via a telemetry system, which records pressures at various locations in the Network. This information is an important element in regular reviews of system capacity, which leads to identifying system improvements and long term planning decisions.

The following table specifies the length of the Network by Region. As indicated, the assets used to serve the Brisbane Region constitute the major part (almost 90%) of the Network.

Region	Kilometres	%
Brisbane Region	1,802	89
Northern Region	224	11
Total	2,026	100

Table 7: Summary of Network Length by Region as at 30 June 1999

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 at pressures above 1,050 kPa.

The following table describes the Network by pressure tier.

Length (m)					
Size* (mm)	**Low Pressure**	**Medium Pressure**	**High Pressure**	**Transmission Pressure**	**Total**
up to 40	32,190	627,530	90	0	659810
50	103,570	88,080	6,550	-	198,200
80	263,825	90,307	3,730	-	357,860
100	204,826	93,001	25,710	-	323,540
125	10,400	178,725	15,134	-	204,260
150	54,197	42,192	37,798	1,132	135,320
200	12,398	10,028	40,194	-	62,620
250	6,588	23,314	17,704	-	47,610
300	2,881	15,799	15,375	398	34,450
400	40	1,919	-	-	1,960
500	-	90	-	-	90
Total	**690,900**	**1,171,000**	**162,300**	**1,500**	**2,025,700**

*including any pipe sizes larger than shown in previous line

Table 8: Summary of Network Length by Pressure Tier (m) at 30 June 1999

An overview map of the Network in metropolitan north Brisbane is provided as Annexure A to the Access Arrangement. Other more detailed maps have been provided to the Regulator.

In respect of system capacity, it is not possible to determine a maximum delivery capability of a distribution system, as this would vary at different points within the system.

13.2 Gate Station and System Load Profiles

Table 19 below shows load profiles by Region for the 1999/2000 financial year. The figure for each month is the ratio of that month's load to the year's minimum monthly load for that Region.

Month	Brisbane Region	Northern Region
July	1.44	1.63
August	1.38	1.67
September	1.31	1.61
October	1.25	1.50
November	1.28	1.37
December	1.09	1.15
January	1.00	1.09
February	1.11	1.26
March	1.26	1.38
April	1.32	1.36
May	1.41	1.63
June	1.71	1.58
Max Supply Pressure (kPa)	1,050	700
99/00 Ave Daily (GJ)	12,780	580
99/00 Peak Day (GJ)	15,760	880

Table 9: Load Ratio Profiles and Flow Data for 1999/2000 by Region

13.3 Forecasts of Demand

The Regulator has determined the demand forecast for Envestra's network, as shown in the following table.

ANNUAL GAS LOAD (TJ)							
	ACTUAL	*FORECAST*					
	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Demand	2544	2666	2793	2926	3065	3211	3348
Volume	1712	1777	1843	1910	1979	2048	2130
Network Total	**4257**	**4442**	**4636**	**4836**	**5044**	**5259**	**5477**

Table 10: Gas Demand by Service 1999/2000 to 2005/2006