



**Final Decision**

**Revised Access Arrangement for Gas  
Distribution Networks:  
Envestra**

*May 2006*

Level 19, 12 Creek Street Brisbane Queensland 4000  
GPO Box 2257 Brisbane Qld 4001  
Telephone (07) 3222 0555  
Facsimile (07) 3222 0599

[general.enquiries@qca.org.au](mailto:general.enquiries@qca.org.au)  
[www.qca.org.au](http://www.qca.org.au)

© Queensland Competition Authority 2006

The Queensland Competition Authority supports and encourages the dissemination and exchange of information. However, copyright protects this document. The Queensland Competition Authority has no objection to this material being reproduced, made available online or electronically but only if it is recognised as the owner of the copyright and this material remains unaltered.

## **PREAMBLE**

### **Background to Final Decision**

#### *Code Requirements*

Envestra's current access arrangement expires on 30 June 2006. In accordance with the Gas Code, Envestra submitted a revised access arrangement on 30 September 2005 for approval by the Authority.

The Code sets out the process by which the revised access arrangement is to be approved. The Authority released its Draft Decision in December 2005. The period for submissions on the Draft Decision closed on 27 February 2006. The Authority received five submissions.

#### *Authority's Approach*

The Authority re-engaged consultants to provide advice on key issues raised in submissions from stakeholders. The Authority received final reports from its consultants in April and May 2006.

In assessing Envestra's revised access arrangement and preparing this Final Decision, the Authority has considered the submissions from stakeholders, the advice from the consultants and the public interest.

The Authority's Final Decision is to not approve Envestra's revised access arrangement in its current form. In order for Envestra's revised access arrangement to be approved, Envestra is required to make a number of amendments as detailed in this Final Decision.

In accordance with sections 2.38(a) and 2.40 of the Code, Envestra is required to resubmit its revised access arrangement and access arrangement information, amended in accordance with this Final Decision, by 5 June 2006. Before deciding whether or not to approve them, the Authority will assess the revised access arrangement and access-arrangement information against the amendments required in this Final Decision.

### **Final Decision**

#### *Asset Base*

The Authority has determined the value of the opening capital base, as at 1 July 2006, for Envestra to be \$228.4 million. In doing so, the Authority has included almost all capital expenditure undertaken by Envestra during the current regulatory period.

For the next regulatory period, the Authority has accepted \$73.3 million in capital expenditure for Envestra.

This compares with an opening asset base, as at 1 July 2006, proposed by Envestra of \$236.0 million and forecast capital expenditure of \$102.4 million.

#### *Operating Costs*

The Authority has accepted \$82.7 million of operating costs for Envestra over the next regulatory period. This compares with the \$93.9 million of operating costs proposed by Envestra.

#### *Rate of Return*

The Authority's decision on the rate of return remains unchanged from its Draft Decision. In its Draft Decision, the Authority estimated the WACC for Envestra to be 8.75 per cent. That result was very close to the rate proposed by Envestra (8.80 per cent). While the Authority did not endorse the

---

methodology used by Envestra to arrive at its proposed WACC, the Authority decided to accept the rate of return proposed by Envestra. Consequently, Envestra will receive a return of 8.80 per cent on its capital base.

### *Summary*

Overall, the Authority has forecast Envestra will require total revenue of \$206.7 million over the five years to 2010-11.

Based on this revenue requirement, prices for Envestra's volume customers are likely to change by CPI+1.1% each year, while for Envestra's demand customers prices are likely to vary by CPI+1.6% each year.

The price paths apply to the weighted averages of tariffs within customer groups. As a result, price changes to individual customers may vary somewhat about those marks. The Authority has required that prices to individual volume customers not increase by more than CPI+3% in any year. However, in recognition of the ongoing problem of a lack of cost reflectivity in prices to some customers, particularly in relation to small volume customers (typically domestic consumers), the Authority will consider price increases above this side constraint where Envestra can demonstrate that such an increase will assist in moving tariffs to more cost reflective levels.

---

## TABLE OF CONTENTS

	PAGE
<b>PREAMBLE</b>	<b>I</b>
<b>GLOSSARY</b>	<b>VI</b>
<b>1. INTRODUCTION</b>	<b>1</b>
1.1 QCA Responsibilities	1
1.2 Implications of Possible Changes to the Gas Law and its Administration	2
1.3 Process for Approval of Revised Access Arrangement	2
<b>2. NATURAL GAS PIPELINES IN QUEENSLAND</b>	<b>6</b>
<b>3. SERVICES POLICY</b>	<b>8</b>
3.1 Introduction	8
3.2 Code Requirements	8
3.3 Proposed Reference and Non-Reference Services	9
<b>4. TERMS AND CONDITIONS</b>	<b>11</b>
4.1 Introduction	11
4.2 Code Requirements	12
4.3 The Discretion of the Service Provider	12
4.4 Haulage Reference Services	13
4.5 Payment of Network Charges	13
4.6 Quality of Gas	18
4.7 Invoicing	19
4.8 Capacity Management – Network Limitations	21
4.9 Overruns	22
4.10 Meter Accuracy	23
4.11 Delivery Pressures	24
4.12 Supply Curtailment – Order of Priority	24
4.13 Failure to Pay	26
4.14 Method of Payment	28
4.15 Termination	28
4.16 Force Majeure	29
4.17 Other Issues	30
<b>5. CAPACITY MANAGEMENT POLICY</b>	<b>33</b>
5.1 Introduction	33
5.2 Code Requirements	33

---

5.3	Issues Concerning the Capacity Management Policy	33
<b>6.</b>	<b>TRADING POLICY</b>	<b>35</b>
6.1	Introduction	35
6.2	Code Requirements	35
6.3	Issues Concerning the Trading Policy	35
<b>7.</b>	<b>QUEUING POLICY</b>	<b>38</b>
7.1	Introduction	38
7.2	Code Requirements	38
7.3	Issues Concerning the Removal of a Queuing Policy	38
<b>8.</b>	<b>EXTENSIONS/EXPANSIONS POLICY</b>	<b>40</b>
8.1	Introduction	40
8.2	Code Requirements	40
8.3	Coverage of Extensions and Expansions	41
8.4	The Effect of Coverage on Reference Tariffs	43
<b>9.</b>	<b>REVIEW DATE</b>	<b>45</b>
9.1	Introduction	45
9.2	Code Requirements	45
9.3	Dates for Submitting and Commencing Revisions	46
9.4	Trigger Events for a Review of Access Arrangement	46
<b>10.</b>	<b>GENERAL PRINCIPLES FOR DETERMINING REVENUE AND TARIFFS</b>	<b>47</b>
10.1	Introduction	48
10.2	Code Requirements	48
10.3	Reference Tariff Policy	50
10.4	Determining Total Revenue	51
10.5	Tariff Variation	52
10.6	Incentive Mechanisms	58
<b>11.</b>	<b>ROLLING FORWARD THE CAPITAL BASE</b>	<b>63</b>
11.1	Introduction	63
11.2	Determining the Opening Capital Base at 1 July 2006	64
11.3	Rolling Forward the Capital Base to 30 June 2011	73
11.4	Redundant Capital	86
11.5	Forecast depreciation	87
11.6	Expected Inflation	90
11.7	Roll-forward of the Capital Base from 2006-07 to 2010-11	90
<b>12.</b>	<b>RATE OF RETURN</b>	<b>92</b>
12.1	Introduction	92
12.2	Code Requirements	93

---

---

12.3	Determining the Rate of Return Framework	93
12.4	Quantifying the Risk-Free Rate	94
12.5	Determining the Capital Structure	96
12.6	Determining the Cost of Debt	97
12.7	Debt Raising Costs	100
12.8	Quantifying the Market Risk Premium	101
12.9	Determining the Equity Beta	102
12.10	Determining the Dividend Imputation Rate	107
12.11	Expected Inflation	112
12.12	Conclusion	113
<b>13.</b>	<b>NON-CAPITAL COSTS</b>	<b>114</b>
13.1	Introduction	114
13.2	Code Requirements	114
13.3	Determining Non-Capital Costs	115
13.4	Unaccounted for Gas	126
13.5	Taxation	129
<b>14.</b>	<b>GAS DEMAND FORECASTS</b>	<b>133</b>
14.1	Introduction	133
14.2	Code Requirements	133
14.3	Determining Gas Demand Forecasts	133
<b>15.</b>	<b>REFERENCE TARIFFS AND TARIFF PATHS</b>	<b>140</b>
15.1	Introduction	140
15.2	Determination of Total Revenue	141
15.3	Determination of Tariffs	145
15.4	Tariff Paths for Demand and Volume Customers	146
15.5	Cost Reflectivity	148
15.6	Tariff Structure	153
	<b>LIST OF SUBMISSIONS</b>	<b>158</b>
	<b>REFERENCES</b>	<b>159</b>

---



## GLOSSARY

<b>Access Arrangement</b>	an arrangement for access to a Covered Pipeline that has been approved by the Relevant Regulator
<b>Access Arrangement Information</b>	information provided by a Service Provider to the Relevant Regulator pursuant to section 2.2, 2.3, 2.9, 2.28 or 2.30 of the Code
<b>Access Arrangement Period</b>	the period from when an Access Arrangement or revisions to an Access Arrangement take effect (by virtue of a decision pursuant to section 2 of the Code) until the next Revisions Commencement Date
<b>Additional Staff</b>	servants, consultants, independent consultants and agents of a Service Provider who are not Marketing Staff and who the Regulator regards as indirectly involved in the sale or advertising of Services
<b>Additional Revenue Policy</b>	has the meaning given in section 3.28(d) of the Code (that is, in relation to approval by the Relevant Regulator of a Tender Approval Request for a new pipeline, certain tenders may be excluded if they do not include a policy on whether additional revenue resulting from transportation of gas exceeding a certain volume is to be retained by the Service Provider or returned in whole or in part to Users in the form of lower charges or some other form)
<b>Anticipated Incremental Revenue</b>	the present value (calculated at the Rate of Return) of the reasonably anticipated future revenue from the sale of Services at the Prevailing Tariffs which would not have been generated without the Incremental Capacity, minus the present value (calculated at the Rate of Return) of the best reasonable forecast of the increase in Non-capital Costs directly attributable to the sale of those Services
<b>Arbitrator</b>	has the meaning given in the Gas Pipelines Access Law (that is, the Relevant Regulator or a person appointed by the Relevant Regulator to conduct an arbitration relating to an access dispute)
<b>Bare Transfer</b>	has the meaning given in section 3.10 of the Code (that is, a Trading Policy provided as part of an Access Arrangement must comply with a number of principles, including that the terms of a contract with a service provider must not be altered as a result of a transfer or assignment to another party)
<b>Bypass</b>	the construction of a pipeline to avoid the existing Transmission or Distribution system (or part thereof)
<b>Capacity</b>	the measure of the potential of a Covered Pipeline as currently configured to deliver a particular Service between a Receipt Point and a Delivery Point at a point in time
<b>Capacity Management Policy</b>	has the meaning given in section 3.7 of the Code (that is, a statement in an Access Arrangement that a Covered Pipeline is either a Contract Carriage Pipeline or a Market Carriage Pipeline)
<b>Capital Base</b>	has the meaning given in section 8.4 of the Code (that is, the value of the capital assets that form the Covered Pipeline)
<b>Capital Contribution</b>	has the meaning given in section 8.23 of the Code (that is, a Charge which exceeds the Charge that would apply under a Reference Tariff for a Reference Service (or, in relation to another Service, under the Equivalent Tariff) in respect of the funding of a new facility)

---

<b>Charge</b>	for a Service, means the amount that is payable by a User to the Service Provider for that Service
<b>City Gate</b>	transition point from high pressure transmission pipelines to distribution network
<b>Code</b>	National Third Party Access Code for Natural Gas Pipeline Systems as changed from time to time in accordance with the Gas Pipelines Access Law
<b>Code Registrar</b>	has the meaning given in the Gas Pipelines Access Law (that is, a person appointed to or acting in the position of Code Registrar appointed under the <i>Gas Pipelines Access (South Australia) Act 1997</i> of South Australia)
<b>Confidential Information</b>	information that is by its nature confidential or is known by the Service Provider to be confidential and includes: <ul style="list-style-type: none"> <li>(a) any information relating to the financial position of a User or Prospective User and, in particular, includes information relating to the assets or liabilities of the User or Prospective User and any other matter that affects or may affect the financial position or reputation of the User or Prospective User;</li> <li>(b) information relating to the internal management and structure of the User or Prospective User or the personnel, policies and strategies of a User or Prospective User;</li> <li>(c) information of a User or Prospective User to which the Service Provider has access, other than information referred to in paragraphs (a) and (b), that has any actual or potential commercial value to the User or Prospective User or to the person or corporation which supplied that information; and</li> <li>(d) any information in the Service Provider's possession relating to the User's or Prospective User's customers or suppliers and like information</li> </ul>
<b>Contracted Capacity</b>	that part of the Capacity which has been reserved by a User or Users pursuant to a contract entered into with the Service Provider
<b>Contract Carriage</b>	is a system of managing third party access whereby: <ul style="list-style-type: none"> <li>(a) the Service Provider normally manages its ability to provide Services primarily by requiring Users to use no more than the quantity of Service specified in a contract;</li> <li>(b) Users normally are required to enter into a contract that specifies a quantity of Service;</li> <li>(c) charges for use of a Service normally are based at least in part upon the quantity of Service specified in a contract; and</li> <li>(d) a User normally has the right to trade its right to obtain a Service to another User</li> </ul>
<b>Core Provisions</b>	in the Code, sections 2.24, 3.1 to 3.4 (inclusive), 3.28, 3.33, 3.34, 4.1 to 4.4 (inclusive), 6.15, 6.18, 8.1 and 9.1 to 9.4 (inclusive) and this definition of Core Provisions
<b>Coverage/ Covered</b>	in relation to a Pipeline or part of a Pipeline, that that Pipeline or part of a Pipeline is subject to the provisions of the Code pursuant to sections 1.1, 1.13, 1.20 or 1.21 of the Code

---

---

<b>Covered Pipeline</b>	subject to sections 2.3 and 2.4 of the Code, the whole or a particular part of a Pipeline which is Covered and any extension to, or expansion of the Capacity of, that Covered Pipeline which is to be treated as part of the Covered Pipeline in accordance with the Extensions/Expansions Policy contained in the Access Arrangement for that Covered Pipeline and any expansion of that Covered Pipeline required to be installed under section 6.22 of the Code
<b>Delivery Point</b>	the point or points within the Covered Pipeline at which the custody of Natural Gas is transferred from a Service Provider to a User
<b>Depreciated Actual Cost</b>	the value that would result from taking the actual capital cost of a Covered Pipeline and subtracting the accumulated depreciation for those assets charged to Users
<b>Depreciated Optimised Replacement Cost (DORC)</b>	the minimum cost of replacing or replicating the service potential embodied in a pipeline with modern equipment and in the most efficient way practicable, from an engineering perspective, given service requirements, and the age and condition of existing assets
<b>Depreciation</b>	in any year and on any asset or group of assets, the amount calculated according to the Depreciation Schedule for that year and for that asset or group of assets
<b>Depreciation Schedule</b>	has the meaning given in section 8.32 of the Code (that is, the set of depreciation schedules (one of which may correspond to each asset or group of assets that form part of the Covered Pipeline) that is the basis upon which the assets that form part of the Capital Base are to be depreciated for the purposes of determining a Reference Tariff)
<b>Developable Capacity</b>	the difference between (actual) Capacity and the Capacity which would be available if additions of plant and/or pipeline were made, but does not include any extension of the geographic range of a Covered Pipeline
<b>Distribution</b>	the transportation of gas over a combination of high pressure and low pressure pipelines from a City Gate to various customers' usage points
<b>End User</b>	means a person who: <ul style="list-style-type: none"> <li>(a) acquires or proposes to acquire Natural Gas from a User; or</li> <li>(b) proposes to acquire Natural Gas from a Prospective User</li> </ul>
<b>End User Information</b>	in relation to an End User, information obtained by a Service Provider, or by its servants, consultants, independent contractors or agents, in the course of conducting its business that relates to the actual Natural Gas usage and usage patterns of that End User, but does not include any such information provided by a User or Prospective User to the Service Provider
<b>Equivalent Tariff</b>	in relation to a Service that is not a Reference Service, the Tariff that it is reasonably likely would have been set as the Reference Tariff had the Service been a Reference Service
<b>Exclusivity Right</b>	a contractual right that by its terms either: <ul style="list-style-type: none"> <li>(a) expressly prevents a Service Provider supplying Services to persons who are not parties to the contract; or</li> <li>(b) expressly places a limitation on the Service Provider's ability to supply Services to persons who are not parties to the contract,</li> </ul> but does not include a User's contractual right to obtain a certain volume of Services

---

---

<b>Extensions/ Expansions Policy</b>	a policy that is required to be in an Access Arrangement which sets out a method for determining whether extension or expansion to a Covered Pipeline is or is not to be treated as part of the Covered Pipeline for the purposes of the Code
<b>Final Approval Request</b>	has the meaning given in section 3.29 of the Code (that is, in relation to the Relevant Regulator approving a Tender Approval Request, the person who conducted the tender process may apply in writing to the Relevant Regulator for final approval)
<b>Fixed Period</b>	has the meaning given in section 8.47 of the Code (that is, the period during which a Fixed Principle may not be changed)
<b>Fixed Principle</b>	has the meaning given in section 8.47 of the Code (that is, a Reference Tariff Policy may provide that certain principles are fixed for a specified period and not subject to change without the agreement of the Service Provider when a Service Provider submits reviews to an Access Arrangement)
<b>Gas Pipelines Access Law</b>	in relation to Queensland, means: <ul style="list-style-type: none"> <li>(a) the provisions referred to in paragraph (a) of the definition of “Gas Pipelines Access Law” in section 3(1) of the South Australian Act, as applying as a law of that Scheme Participant; and</li> <li>(b) Regulations in force under Part 3 of the South Australian Act, as applying as a law of that Scheme Participant</li> </ul>
<b>Incentive Mechanism</b>	has the meaning given in section 8.44 of the Code (that is, 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 from the sale of a Reference Service during an Access Arrangement Period or 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 exceeds the level of returns expected at the beginning of the Access Arrangement Period, particularly where the additional returns are attributable, at least in part, to the efforts of the Service Provider)
<b>Incremental Capacity</b>	the increase in Capacity attributable to a New Facility
<b>Incremental Revenue</b>	revenue generated by sales of Incremental Capacity
<b>Incremental User</b>	a User that could not have been serviced without the addition of the Incremental Capacity
<b>Information Package</b>	the Information Package described in section 5.1 of the Code (that is, which includes the Access Arrangement, Access Arrangement Information, details of available capacity, information regarding the layout of the pipelines, and how to make an access request)
<b>Interruptible Supply</b>	a Service which does not guarantee to supply gas at requested levels
<b>Jurisdictional Area</b>	has the meaning given in the Gas Pipelines Access Law
<b>Load Factor</b>	the ratio between average yearly load and peak daily load
<b>Local Appeals Body</b>	in the case of Queensland, the Queensland Gas Appeals Tribunal
<b>Local Minister</b>	the local Minister within the legislation for that scheme participant (in the case of Queensland, the Minister for Mines and Energy)

---

---

<b>Local Regulator</b>	in the case of Queensland, the Queensland Competition Authority
<b>Market Carriage</b>	<p>a system of managing third party access whereby:</p> <ul style="list-style-type: none"> <li>(a) the Service Provider does not normally manage its ability to provide Services primarily by requiring Users to use no more than the quantity of Service specified in a contract;</li> <li>(b) Users are normally not required to enter a contract that specifies a quantity of Service;</li> <li>(c) charges for use of Services are normally based on actual usage of Services; and</li> <li>(d) a User normally does not have a right to trade its right to obtain a Service to another User</li> </ul>
<b>Market Variable Element</b>	a factor that has a value assumed in the calculation of a Reference Tariff, where the value of that factor will vary with changing market conditions during the Access Arrangement Period or in future Access Arrangement Periods, and includes the sales or forecast sales of Services, any index used to estimate the general price level, real interest rates, Non-capital Cost and any costs in the nature of capital costs
<b>Marketable Parcel</b>	<p>all or part of a User's Contracted Capacity which the User reasonably expects:</p> <ul style="list-style-type: none"> <li>(a) that the User will not utilise and does not require for technical or safety reasons;</li> <li>(b) to be of a size and type capable of being sold to another User or to a Prospective User; and</li> <li>(c) to be able to sell without incurring transaction costs which exceed the price which that User would receive from another User or Prospective User</li> </ul>
<b>Marketing Staff</b>	<p>servants, consultants, independent contractors or agents directly involved in sales, sale provision or advertising (whether or not they are also involved in other functions) but does not include servants, consultants, independent contractors or agents involved only in:</p> <ul style="list-style-type: none"> <li>(a) strategic decision making, including the executive officer or officers to whom Marketing Staff report either directly or indirectly;</li> <li>(b) technical, administrative, accounting or service functions</li> </ul>
<b>Natural Gas</b>	has the meaning given in the Gas Pipelines Access Law (that is, a substance which is in a gaseous state at standard temperature and pressure and which consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane, and which has been processed to be suitable for consumption)
<b>New Facilities Investment</b>	has the meaning given in section 8.15 of the Code (that is, the Capital Base may be increased to recognise additional capital costs incurred in constructing, developing or acquiring New Facilities for the purpose of providing services)

---

---

<b>New Facility</b>	means: <ul style="list-style-type: none"> <li>(a) any extension to, or expansion of the Capacity of, a Covered Pipeline which is to be treated as part of the Covered Pipeline in accordance with the Extensions/Expansions Policy contained in the Access Arrangement for that Covered Pipeline;</li> <li>(b) any expansion of the Capacity of a Covered Pipeline required to be installed under 6.22 of the Code (that is, where an Arbitrator requires such an expansion); and</li> <li>(c) any capital asset constructed, developed or acquired to enable the Service Provider to provide Services including, but not limited to, assets required for the purposes of facilitating competition in retail markets for Natural Gas</li> </ul>
<b>Non-capital Costs</b>	has the meaning given in section 8.4 of the Code (that is, the operating, maintenance and other non-capital costs incurred in providing all Services provided by the Covered Pipeline)
<b>Non Reference Service</b>	a service other than a Reference Service
<b>Optimised Deprival Value</b>	an asset valuation concept based on the cost that would be incurred by the owner of the asset if deprived of that asset, generally defined as the lesser of DORC and NPV/NRV
<b>Pipeline</b>	has the meaning given in the Gas Pipelines Access Law (that is, in summary, a pipe, system of pipes, or part of a pipe, for transporting natural gas, and any tanks, reservoirs, machinery or equipment directly attached to the pipe or system of pipes, but does not include anything upstream of an exit flange, a gathering system, any equipment used to remove or add components to or change natural gas, or anything downstream of a connection point to a customer)
<b>Prevailing Tariff</b>	for a Reference Service means the applicable Reference Tariff, and for any other Service, means the Equivalent Tariff
<b>Prospective Incremental User</b>	a person who may become an Incremental User
<b>Prospective User</b>	a person who seeks or who is reasonably likely to seek to enter into a contract for a Service and includes a User who seeks or may seek to enter into a contract for an additional Service
<b>Public Register</b>	the public register to be kept by the Code Registrar pursuant to section 7.10 of the Code
<b>Queensland Gas Appeals Tribunal</b>	the relevant local appeals body in Queensland
<b>Queuing Policy</b>	has the meaning given in section 3.12 of the Code (that is, 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)
<b>Rate of Return</b>	has the meaning given in section 8.4 of the Code (that is, a return on the value of the capital assets that form the Covered Pipeline)

---

---

<b>Rebatable Service</b>	is a Service where: <ul style="list-style-type: none"> <li>(a) there is substantial uncertainty regarding expected future revenue from sales of that Service due to the nature of the Service and/or the market for that Service; and</li> <li>(b) the nature of the Service and the market for that Service is substantially different to any Reference Service and the market for that Reference Service</li> </ul>
<b>Receipt Point</b>	the point or points within the Covered Pipeline at which the custody of Natural Gas is transferred from a User to a Service Provider
<b>Recoverable Portion</b>	has the meaning given in section 8.18 of the Code (that is, that part of a New Facilities Investment which meets the efficient investment test outline in section 8.16 of the Code, and which may therefore be included in the Capital Base)
<b>Redundant Capital</b>	has the meaning given in section 8.27 of the Code (that is, a Reference Tariff Policy may be required to have included a mechanism that will, with effect from the commencement of the next Access Arrangement Period, remove an amount from the Capital Base to ensure that assets which cease to contribute in any way to the delivery of Services are not reflected in the Capital Base, and to share costs associated with a decline in sales volume between the Service Provider and Users)
<b>Reference Service</b>	a Service which is specified in an Access Arrangement and in respect of which a Reference Tariff has been specified in that Access Arrangement
<b>Reference Tariff</b>	a Tariff specified in an Access Arrangement as corresponding to a Reference Service and which has the operation that is described in sections 6.13 and 6.18 of the Code
<b>Reference Tariff Policy</b>	has the meaning given in section 3.5 of the Code (that is, a policy describing the principles that are to be used to determine a Reference Tariff)
<b>Related Business</b>	the business of producing, purchasing or selling Natural Gas, but does not include purchasing or selling of Natural Gas to the extent necessary: <ul style="list-style-type: none"> <li>(a) for the safe and reliable operation of a Covered Pipeline; or</li> <li>(b) to enable a Service Provider to provide balancing services in connection with a Covered Pipeline</li> </ul>
<b>Relevant Appeals Body</b>	has the meaning given in the Gas Pipelines Access Law (that is, in relation to a decision of the local Regulator, the local appeals body. In the case of Queensland, the Queensland Gas Appeals Tribunal)
<b>Relevant Minister</b>	has the meaning given in the Gas Pipelines Access Law (that is, in relation to a scheme participant, the local Minister within the legislation for that scheme participant – for Queensland, this is the Treasurer)
<b>Relevant Regulator</b>	has the meaning given in the Gas Pipelines Access Law (that is, in relation to a transmission pipeline, the ACCC, and in relation to a distribution pipeline, the local Regulator. In the case of Queensland, the QCA is the Relevant Regulator)
<b>Revisions Commencement Date</b>	has the meaning given in section 3.17 of the Code (that is, the date upon which the next revisions to the Access Arrangement are intended to commence, to be approved by the Relevant Regulator)

---

---

<b>Revisions Submission Date</b>	has the meaning given in section 3.17 of the Code (that is, the date upon which the Service Provider must submit revisions to the Access Arrangement, to be approved by the Relevant Regulator)
<b>Ring-fencing</b>	the requirement under section 4 of the Code for a Service Provider to establish arrangements to segregate its business of providing Services using a Covered Pipeline from other business activities
<b>Scheme Participant</b>	has the meaning given in the Gas Pipelines Access Law (that is, the Commonwealth, New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, the Australian Capital Territory and the Northern Territory)
<b>Service</b>	<p>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):</p> <ul style="list-style-type: none"> <li>(a) haulage services (such as firm haulage, interruptible haulage, spot haulage and backhaul);</li> <li>(b) the right to interconnect with the Covered Pipeline; and</li> <li>(c) services ancillary to the provisions of such services,</li> </ul> <p>but does not include the production, sale or purchasing of Natural Gas</p>
<b>Services Policy</b>	has the meaning given in section 3.1 of the Code (that is, a policy on the Service or Services to be offered, including Services that are likely to be sought by a significant part of the market, or which the Relevant Regulator believes should be in the Services Policy)
<b>Service Provider</b>	has the meaning given in the Gas Pipelines Access Law (that is, the person who is, or is to be, the owner or operator or the whole or any part of the pipeline or proposed pipeline)
<b>Spare Capacity</b>	<p>means:</p> <ul style="list-style-type: none"> <li>(a) in relation to a Covered Pipeline described in the Access Arrangement as a Contract Carriage Pipeline: <ul style="list-style-type: none"> <li>(i) the difference between the Capacity and the Contracted Capacity; plus</li> <li>(ii) the difference between the Contracted Capacity and the Contracted Capacity which is being used; and</li> </ul> </li> <li>(b) in relation to a Covered Pipeline described in the Access Arrangement as a Market Carriage Pipeline, the capacity to provide a Service without impeding the provision of the Service to any other User</li> </ul>
<b>Speculative Investment</b>	has the meaning given in section 8.19 of the Code (that is, the difference between New Facilities Investment and the Recoverable Portion, less any amount the Service provider notifies the Relevant Regulator that it has elected to recover through a Surcharge. An amount determined as Speculative Investment may be subsequently added to the Capital Base if it satisfies the efficient investment test of section 8.16 of the Code)
<b>Speculative Investment Fund</b>	has the meaning given in section 8.19 of the Code (that is, the amount determined as Speculative Investment plus an annual increase in that amount at a rate of return approved by the Relevant Regulator, less any part of the Speculative Investment Fund previously added to the Capital Base)

---

---

<b>Structural Element</b>	any principle or methodology that is used in the calculation of a Reference Tariff where that principle or methodology is not a Market Variable Element and has been structured for Reference Tariff making purposes over a longer period than a single Access Arrangement Period, and includes the Depreciation Schedule, the financing structure that is assumed for the purposes of section 8.30, and that part of the Rate of Return (calculated pursuant to section 8.30) that exceeds the return that could be earned on an asset that does not bear any market risk
<b>Surcharge</b>	has the meaning given in sections 8.25 and which has the effect defined in section 6.19 of the Code (that is, a Surcharge is a Charge in addition to the Charge that would apply under a Reference Tariff for a Reference Service that is levied on Users of Incremental Capacity in order for the Service Provider to recover some or all of the cost of New Facilities Investment that cannot be recovered at the Prevailing Tariffs)
<b>Take or Pay</b>	a contractual obligation on the part of the purchaser to pay for a certain quantity of gas at a minimum, irrespective of whether that quantity is used
<b>Tariff</b>	for a Service, means the criteria that, when applied to a User's characteristics and requirements, determine the Charge that is payable by that User to the Service Provider (this shall not provide any limitation on the Tariff that may apply to a Service)
<b>Tender Approval Request</b>	has the meaning given in section 3.21 of the Code (that is, any person who wishes to conduct a tender in relation to a Pipeline that has not been built may make an application to the Relevant Regulator requesting the Relevant Regulator to approve the use of a tender process to determine Reference Tariffs or other specified items required to be included in an Access Arrangement)
<b>Total Revenue</b>	has the meaning given in section 8.2 of the Code (that is, the revenue to be generated from the sales or forecast sales of all Services over the Access Arrangement Period)
<b>Trading Policy</b>	has the meaning given in section 3.9 of the Code (that is, a policy that explains the rights of a User to trade its right to obtain a Service to another person)
<b>User</b>	a person who has a current contract for a Service, or an entitlement to a Service as a result of an arbitration



## 1. INTRODUCTION

*The Queensland Competition Authority is the relevant regulator under the Gas Code (the Code) for approval of access arrangements for Queensland gas distribution networks. The Code provides guidance regarding the issues that must be considered before a revised access arrangement can be approved. The Authority has issued this Final Decision consistent with Code requirements, and proposes not to approve the revised access arrangement in the form submitted by Envestra. A number of amendments, as outlined in this Final Decision, are required before the revised access arrangement will be approved.*

### 1.1 QCA Responsibilities

The Queensland Competition Authority is a statutory body established under the *Queensland Competition Authority Act 1997*.

The Authority has responsibilities and functions with respect to natural gas distribution networks as outlined in the *Gas Pipelines Access (Queensland) Act 1998* (the Act). The Act gives effect to the National Third Party Access Code for Natural Gas Pipeline Systems (the Code). The Act and the Code are referred to in this decision as the Gas Law.

Access arrangements stipulate basic conditions under which third parties (generally retailers) can utilise the transmission and distribution networks in order to compete for the business of contestable customers. Access to gas transmission pipelines is regulated by the Australian Competition and Consumer Commission (ACCC).

Under the Code, an access arrangement must meet a number of requirements, including:

- non-pricing issues, namely:
  - (a) a services policy, which describes the services a provider will make available to users/prospective users;
  - (b) terms and conditions, outlining reasonable terms and conditions upon which each service is to be provided;
  - (c) a capacity management policy, incorporating a statement of whether the pipeline is to be operated on a contract carriage or a market carriage basis;
  - (d) a trading policy, which explains the rights of a user to trade or assign their right to obtain a service or contracted capacity to another person when the covered pipeline is a contract carriage pipeline;
  - (e) a queuing policy, which determines the priority prospective users have in gaining access to specific capacity, may be included for a distribution pipeline;
  - (f) an extensions/expansions policy, which describes the method for determining how an extension to or expansion of the pipeline is (or is not) to be treated for the purposes of applicability of the Code and how this will affect reference tariffs;
  - (g) a review date, which provides a date for submission of revisions to an access arrangement and a date upon which the revised access arrangement is to commence; and
- pricing issues, which relate to reference tariffs and a reference tariff policy. Reference tariffs are to correspond to each reference service provided while the reference tariff

policy is to describe the basis upon which tariffs are determined or are to change. Issues to be addressed include determining the capital base at the commencement of the regulatory period, a rate of return, depreciation, capital expenditure, revenue and the allocation of costs.

In assessing proposed revisions to an access arrangement, the Authority is required under section 2.46 of the Code to take the following matters into account:

- the service provider's legitimate business interests and investment in the covered pipeline;
- firm and binding contractual obligations of the service provider or other persons (or both) already using the covered pipeline;
- the operational and technical requirements necessary for the safe and reliable operation of the covered pipeline;
- the economically efficient operation of the covered pipeline;
- the public interest, including the public interest in having competition in markets (whether or not in Australia);
- the interests of users and prospective users;
- any other matters that the Authority considers relevant; and
- the provisions of the access arrangement.

## **1.2 Implications of Possible Changes to the Gas Law and its Administration**

The Authority is mindful of possible changes to the Gas Law currently being examined by the Ministerial Council for Energy. Under current proposals, administrative responsibilities of the Gas Law will shift from Queensland to the Australian Energy Regulator from 1 January 2007.

However, the Authority is also mindful of its current role and responsibilities as the relevant regulator in Queensland. The Authority is required to approach this revision of access arrangements for Envestra in terms of its responsibilities currently set out in the Gas Law. The possibility of future changes to the Gas Law and shifts in administrative responsibility are not relevant when considering the task now before the Authority.

The Gas Law and its administration are evolving. This evolution will recognise the legitimate interests of service providers, users and prospective users.

Therefore, the Authority is not inclined to accept any proposals by Envestra to 'lock-in' particular aspects of the access arrangement purely to insulate them from future changes. To do otherwise would not be consistent with the intention of section 8.48 of the Code, which requires that fixed principles are approved by regulators only when this is in the interests of service providers, users and prospective users.

## **1.3 Process for Approval of Revised Access Arrangement**

In reaching a Draft and Final Decision on a revised access arrangement, the Code requires a number of procedures to be followed. Broadly speaking, these procedures entail:

- submission by the service provider of both a revised access arrangement and accompanying access arrangement information to the Authority. The purpose of the latter is to provide interested parties with an understanding of how the various elements of the arrangement were determined and to enable them to form an opinion with regard to compliance with the Code;
- publication of a notice requesting submissions on the revised access arrangement;
- following consideration of submissions received on the revised access arrangement, the release of a Draft Decision by the Authority, along with a further call for submissions. This Draft Decision must, if it proposes not to approve the revised access arrangement, state the amendments (or nature of the amendments) which would have to be made to the access arrangement in order for the Authority to approve it; and
- after due consideration has been given to submissions on the Draft Decision, the release of a Final Decision by the Authority to either approve the access arrangement, or to approve it subject to revisions.

In accordance with the access arrangement approved in 2001, Envestra was required to submit its revised access arrangement, to apply from 1 July 2006 to 30 June 2011, to the Authority by 1 October 2005. A revised access arrangement was submitted on 30 September 2005 by Envestra.

The Authority released the revised access arrangement and access arrangement information provided by Envestra on 5 October 2005, along with a notice calling for submissions by 11 November 2005. Two submissions were received from interested parties; Origin Energy and Energex Retail (see Appendix A).

Having considered the revised access arrangement and submissions received, the Authority released its Draft Decision on Envestra's revised access arrangement on 21 December 2005. The Authority's Draft Decision was to not approve the revised access arrangement submitted by Envestra and outlined a number of amendments which would be required to be made in order for it to be approved. The Authority released a separate Draft Decision on Allgas' revised access arrangement at the same time.

In accordance with the provision of section 2.14 of the Code and consistent with the Authority's desire to facilitate an approval process which is transparent, rigorous, and provides for the involvement of all stakeholders, the Authority invited submissions on the Draft Decision from interested parties. Submissions were due to the Authority by 27 February 2006. Five submissions were received (see Appendix A).

In accordance with section 2.37A of the Code, Envestra elected not to provide an amended version of its revised access arrangement. Instead, Envestra provided a submission addressing the concerns raised by the Authority in its Draft Decision.

Having considered the submissions received in relation to the Draft Decision, the Authority is now issuing its Final Decision on Envestra's revised access arrangement. As was the case with the Draft Decision, the Authority has decided not to approve the revised access arrangement in its current form and has outlined a number of amendments which are required to be made in order for it to be approved. The Authority has released a separate Final Decision on the revised access arrangement submitted by Allgas.

In preparing the Draft Decision and this Final Decision, the Authority engaged consultants to provide expert advice in relation to certain aspects of the revised access arrangement. McLennan Magasanik Associates (MMA) was engaged to prepare independent gas demand

forecasts to assist the Authority in determining whether the forecasts provided by Envestra are in accordance with section 8.2(e) of the Code. Energy Consulting Group (ECG) was employed to review the capital and non-capital costs incurred by Envestra over the current regulatory period and forecast for the revised access arrangement. Allen Consulting Group (ACG) was engaged to provide advice on matters relevant to the rate of return to be earned by Envestra on its network assets over the next regulatory period, as well as on the Authority's proposed change to Envestra's prepayment clause as it relates to network charges. The Authority also engaged Associate Professor Martin Lally from Capital Finance Consulting to provide advice in relation to the value of imputation credits for regulated businesses.

Reports and submissions received by the Authority and used to prepare the Draft Decision and this Final Decision are outlined in Table 1.1 below.

**Table 1.1: 2006 Review of Access Arrangement - Timeline**

<i>Task</i>	<i>Date received/published</i>
Envestra's revised access arrangement received	September 2005
Closing date for submissions on revised access arrangement	November 2005
Demand Forecast Review	
MMA's Final Report released	December 2005
Capital and Operating Expenditure	
ECG's Final Report released	December 2005
Cost of Capital	
ACG's Final Report released	December 2005
Capital Finance Consulting (Martin Lally) report released	December 2005
Draft Decision released	December 2005
Closing date for submissions on Draft Decision	February 2006
ECG's Final Report on revised capex/opex released	May 2006
ACG's Final Report on Envestra's Network Charges	May 2006
MMA's Final Report on revised demand forecasts released	May 2006
Capital Finance Consulting report on gamma released	May 2006
<b>Final Decision released</b>	<b>May 2006</b>

### *Document Structure*

This Final Decision presents the Authority's views on all matters related to Envestra's revised access arrangement, which is to apply for the period 1 July 2006 to 30 June 2011. This document is split into three main sections.

Chapter 2 provides an overview of Queensland's gas market.

Chapters 3-10 discuss the non-pricing issues in the revised access arrangement, which include the services policy, terms and conditions, capacity management policy, trading policy, queuing policy, extensions and expansions policy and the review date and review triggers.

Chapters 11-15 discuss the pricing issues in the revised access arrangement, outlining the Authority's decision on each component and the underlying rationale for these decisions.

## 2. NATURAL GAS PIPELINES IN QUEENSLAND

Queensland's gas market is characterised by a number of large transmission pipelines and several relatively small distribution networks. Around 140,000 customers are serviced by gas distribution systems.

Natural gas is produced in Queensland from the Bowen/Surat, Cooper/Eromanga and Adavale Basins. Gas is carried to end users via transmission pipelines and distribution networks. Access to transmission pipelines is regulated by the ACCC. Major transmission pipelines (see figure 2.1) include:

- the Wallumbilla to Brisbane pipeline;
- the Ballera to Wallumbilla pipeline;
- the Wallumbilla to Rockhampton pipeline;
- the Ballera to Mt Isa pipeline; and
- the South West Queensland Pipeline to Gilmore/Barcaldine pipelines.

**Figure 2.1: Queensland gas transmission pipelines<sup>1</sup>**



<sup>1</sup> Source: Energy Networks Association website.

Around 15 per cent of the gas consumed in Queensland is distributed via the covered pipeline systems owned by Allgas and Envestra. Table 2.1 indicates that while Envestra has more natural gas customers, it sells only half the volume of gas of Allgas.

**Table 2.1: Details of covered gas distribution networks in Queensland, 2004-05<sup>2</sup>**

<i>Owner</i>		<i>Number of customers</i>	<i>Total gas sold (PJ)</i>	<i>Length of mains (km)</i>
Allgas	Volume (< 10 TJ per annum)	64,413	2.7	2,304
	Demand (≥ 10 TJ per annum)	111	7.3	
	Total	64,524	10.0	
Envestra	Volume (< 10 TJ per annum)	74,641	1.9	2,172
	Demand (≥ 10 TJ per annum)	65	3.2	
	Total	74,706	5.1	

The Allgas distribution system is separated into four operating regions. These are:

- the Brisbane region (south of the Brisbane river);
- the Western region (including the townships of Toowoomba and Oakey);
- the South Coast region (including Gold Coast); and
- the Tweed Heads region in north east New South Wales.

The network comprises approximately 2,300 kilometres of low, medium and high pressure mains.

The Envestra network can be divided into two regions:

- the Brisbane region (including Ipswich and suburbs north of the Brisbane river); and
- the Northern region (serving Rockhampton and Gladstone).

The network consists of about 2,200 kilometres of low, medium, high and transmission pressure mains.

Since 2000-01, Allgas has added a further 339 km of natural gas mains to its network while Envestra added a further 104 km of mains to its network. Over the same period, Allgas increased its gas sales by around 4 per cent while Envestra increased its gas sales by around 16 per cent. Allgas' growth was mainly due to an increased number of volume customers whereas Envestra's growth was predominantly due to growth in large industrial customers.

This Final Decision is concerned with the access arrangement that relates to pipelines owned by Envestra and which are covered under the Gas Law.

<sup>2</sup> Source: Allgas and Envestra 2004-05 annual service quality reports.

### 3. SERVICES POLICY

*The services policy of an access arrangement determines the type and nature of services to be provided, including those to be provided as reference services (requiring the approval of a reference tariff) and non-reference services.*

*The services policy contained in Envestra’s revised access arrangement retains the key elements of the services policy in the current approved access arrangement. Envestra has proposed haulage reference services for demand and volume customers, both of which include associated services. In addition, Envestra has made allowance for an ancillary reference service and negotiated services. Conditions associated with these services have not changed from those applying in the current access arrangement.*

*Envestra’s services policy meets the requirements of the Code.*

#### 3.1 Introduction

In determining the terms and conditions that surround access to a gas distribution network, it is first necessary to decide what constitutes access (that is, what bundle of services is purchased when gaining access to the network) and how many different types of services may be offered.

A distribution network provides a physical connection between the transmission pipeline and an end user. Services provided in relation to this connection can include transportation of gas, odourisation, metering, connection, and so on, and may be bundled together under the terms and conditions of an access contract.

#### 3.2 Code Requirements

The Code (sections 3.1 and 3.2) provides that an access arrangement must include a policy on the service or services to be offered (a services policy). The services policy must comply with the following principles:

- 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:
  - (a) one or more services that are likely to be sought by a significant part of the market; and
  - (b) any service or services which in the Authority’s opinion should be included in the services policy;
- 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; 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.

The Code (section 3.3) also provides that an access arrangement must include a reference tariff for each service that is likely to be sought by a significant part of the market, for which the relevant regulator considers a reference tariff should be included (a reference service).

### 3.3 Proposed Reference and Non-Reference Services

An access arrangement must define what services are to be provided. These services may be reference services or non-reference services. Reference services are those for which the regulator approves a reference tariff, while non-reference services are any other services listed in the access arrangement.

#### *Envestra's proposal*

Envestra (section 2 of the access arrangement) has proposed the following three network services:

- two haulage reference services (demand and volume);
- one ancillary reference service (special meter reading); and
- negotiated services.

Haulage reference services<sup>3</sup> are further defined as:

- a demand haulage service, which relates to situations where the annual quantity of gas delivered is equal to or greater than 10 TJ; and
- a volume haulage service, for any delivery point that is not a demand delivery point.

These services include the associated services of odourisation, provision and maintenance of metering equipment and meter reading.

The ancillary service proposed by Envestra is a special meter reading, in addition to scheduled meter readings that form part of the haulage service, for which a tariff is specified in the access arrangement.

Negotiated services, those that are different to haulage reference services and ancillary services, may be sought by users or prospective users. Tariffs and terms and conditions applicable to negotiated services are to be determined by Envestra.

#### *Other jurisdictions*

IPART (2005a) approved the services policy included in the revised access arrangement for the Country Energy Gas Network. The services policy included transport reference services, additional services and negotiated services that are similar to those set out by Envestra.

#### *Submissions from stakeholders*

No comments were made on this issue in submissions.

#### *QCA position*

The revised access arrangement for Envestra retains the key elements of the services policy set out in the current access arrangement. The reference and non-reference services as defined

---

<sup>3</sup> While Envestra's proposed customer classes have different names to those of Allgas, they are effectively the same.

appear to be those that most users or prospective users would seek from Envestra. Consequently, the services policy meets the requirements of the Code.

The Authority accepts the proposed services policy of Envestra.

## 4. TERMS AND CONDITIONS

*Section 3.6 of the Code requires the Authority to form an opinion as to whether the proposed terms and conditions are reasonable. Reasonableness must be determined having regard to the role to be played by the conditions of supply in the access arrangement. That is, the conditions represent standard contract terms on which the service provider is required to agree to supply the reference service. They are also taken into account in any arbitration to resolve a dispute concerning the terms of access.*

*In assessing the reasonableness of the terms and conditions, the Authority is also required by section 2.46 of the Code to take into account:*

- (a) the factors described in section 2.24 of the Code; and*
- (b) the provisions of the current access arrangement.*

*The Authority notes that, in most instances, the proposed terms and conditions are the same as those that were approved for the current access arrangement. Where the Authority has formed the view that these current terms and conditions are reasonable having regard to the matters in section 2.46, the terms have been accepted without setting out the Authority's reasoning separately in this Chapter.*

*However, where Envestra has revised an existing provision, the stakeholders have suggested changes or the Authority considers that existing terms and conditions are no longer consistent with the Code, this Chapter sets out the Authority's detailed reasons for its decision.*

*In its Draft Decision, the Authority required Envestra to make some changes to its proposed terms and conditions. In response, Envestra agreed to make some of these changes but provided further arguments in support of its proposed position in relation to a number of terms and conditions. The Authority has accepted Envestra's additional arguments in a number of areas and, as such, has removed the required amendments in these areas. However, the Authority still requires Envestra to make a number of amendments to its terms and conditions in order for its access arrangement to be approved.*

### 4.1 Introduction

The terms and conditions of a contract form the basis of the relationship between the service provider and the user. A monopoly provider of a good or service has the ability to adopt a 'take it or leave it' approach to the terms and conditions on which it operates, with the effect of shifting risk from the service provider to the user.

Most of the terms and conditions that have been submitted to the Authority are exactly the same as, or not materially dissimilar to, those which were approved in the previous review of access arrangements. These have generally been accepted to continue to apply without any comment in this Chapter. However, this Chapter does discuss those terms and conditions that Envestra has revised, that stakeholders have expressed concern about or that the Authority wishes to amend. In some instances, Envestra has reverted back to terms and conditions that were rejected by the Authority during the previous review. Unless there are good reasons to support such changes, the Authority has rejected these revisions and required that amendments be made.

Envestra has included its terms and conditions as Appendix G to its access arrangement. Unless otherwise stated, the references in the following sections are to the relevant terms and conditions.

## 4.2 Code Requirements

Section 3.5 of the Code states that 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 Authority's opinion, be reasonable.

## 4.3 The Discretion of the Service Provider

In a number of areas, a contract cannot be definitive about how a situation may be resolved. In these cases, the contract should set out a process for the parties to follow. Where discretion is required as to how this process would be applied, parties should have access to dispute resolution procedures.

### *Envestra's proposal*

On several matters (sections 5.5(c), 9.8(c), 10.7(c), 21.4(c), 21.5(c)), Envestra has proposed revisions that bestow the discretion on Envestra to make a judgement, which will be binding on the user. For example, where a meter is shown to be incorrect, Envestra proposed (section 9.8(c)) to adjust the volume of gas assessed at previous readings of that meter, on whatever basis Envestra considers reasonable in the circumstances.

### *Submissions from stakeholders*

TRUenergy (2006) agreed with the amendment required by the Authority in its Draft Decision and noted that it is important that discretionary powers included in the terms and conditions are restricted.

### *QCA position*

In its Draft Decision, the Authority noted that it was concerned that the wording proposed by Envestra may provide it with significant discretion in a situation where judgement is required, with the potential to shift risk from itself to users. The proposed wording permits Envestra to determine for itself what is reasonable under certain circumstances. Further, given the lack of an objective basis for Envestra's decision making, the proposed wording may restrict a user's access to dispute resolution, as it would make it difficult for the user to challenge Envestra's decision. The Authority required Envestra to make an amendment to its terms and conditions requiring it to replace the words "... on whatever basis Envestra considers reasonable ..." with "... on a reasonable basis ..." in various sections.

In its response to the Draft Decision, Envestra agreed that the proposed wording does give it some discretion but did not agree that this discretion was 'significant' and that, in the case of each section, the discretion was constrained by the requirements of law and the terms of any rules or agreement that bind Envestra and the network user. In addition, Envestra did not agree that the discretion had the potential to shift risk from Envestra to users or that the proposed wording in the relevant sections made it any more difficult for users to challenge an exercise of Envestra's discretion.

The Authority notes that the amendment required in the Draft Decision would bring Envestra's terms and conditions back into line with those that were approved during the previous review of access arrangements. In relation to other amendments required by the Authority, Envestra has argued that consistency with terms and conditions already approved is a key consideration.

The Authority has not been convinced by Envestra's further arguments to change its view on this matter and requires Envestra to make the amendment as specified in the Draft Decision.

**Amendment 4.1**

**In order for Envestra’s access arrangement to be approved, Envestra must replace the words in sections 5.5(c), 9.8(c), 10.7(c), 21.4(c) and 21.5(c) of the terms and conditions “...on whatever basis Envestra considers reasonable...” with “...on a reasonable basis...”.**

**4.4 Haulage Reference Services***Envestra’s proposal*

Envestra has not proposed any revisions to its existing terms and conditions relating to haulage reference services.

*Submissions from stakeholders*

Origin Energy (2005) argued that Envestra’s gas balancing clause (2.1) had the potential to relieve Envestra of its obligations to deliver to a user the full quantity of gas delivered into the network for that user in the event that Envestra has not built, operated and maintained the network in a prudent manner. Origin suggested that a clause be added to the effect that Envestra would be required to “Operate and manage the network in a manner consistent with a prudent operator”.

Origin Energy (2006) argued that the effect of clauses 2.5, 13.2 and 13.3 in Envestra’s revised access arrangement were to (unintentionally) relieve Envestra of its responsibilities to act as a prudent network operator and again argued that a new clause should be inserted into the terms and conditions requiring Envestra to “Operate and manage the network in a manner consistent with a prudent network operator”.

*QCA position*

In its Draft Decision, the Authority considered that clause 2.4 (Service Standards) in Envestra’s revised terms and conditions placed an obligation on Envestra to operate the network in accordance with the law and in accordance with good engineering and industry practice. The Authority did not see the need for Envestra to include a similar obligation under clause 2.1.

The Authority has not changed its view on this issue and would extend the same logic to clauses 13.2 and 13.3. As such, the Authority does not require Envestra to make any amendment to its terms and conditions relating to Haulage Reference Services.

**4.5 Payment of Network Charges***Envestra’s proposal*

Envestra has proposed (section 19) that users be required to pay in advance an amount equal to the estimated charges up to the end of the month following the month in which Envestra begins delivering services to that user. That is, if services begin in June, the payment will be equal to estimated use up to the end of July. For subsequent months, Envestra proposed the notional security deposit would be the estimated charge for the month in advance. This represents a continuance of the payment terms in the current access arrangement.

In its submission on the Draft Decision, Envestra argued that the prepayment provision is a form of security designed to protect Envestra against the risk of a user’s default and that it is reasonable in light of the risk Envestra faces.

Envestra also suggested that it is in the interests of users generally that Envestra's financial position be appropriately protected by the prepayment mechanism and that Envestra is not exposed to the failure of an individual user.

Envestra also argued that the prepayment clause is not unusual and that the prepayment of charges is common in commercial dealings, including in the utility sector. Furthermore, Envestra noted that it was not the role of the Authority to assess the terms and conditions proposed by Envestra in terms of their 'normality' or consistency with other access arrangements but rather the Authority's role was to determine whether or not a specific term or condition was in compliance with the Code.

Envestra indicated that, if the change was implemented, then Envestra would be deprived of revenue for a period of time and this would have a significant impact on Envestra's cash flow position. Envestra's cash flow would be significantly reduced at the time the prepayment terms were altered. Envestra claimed that it would be unable to fund any shortfall in revenue through working capital as it is prohibited from doing so through its financial covenants with financiers. Envestra suggested that any funds raised would need to be done so via an equity issue which could not occur in a practical sense before 1 July 2006. Given these considerations, Envestra argued that removal of the prepayment term would therefore be inconsistent with Envestra's legitimate business interests and investment in the covered pipeline.

#### *Submissions from stakeholders*

Origin Energy (2005) suggested that Envestra's advance payment arrangement and subsequent adjustment was inefficient and peculiar to Envestra's Queensland and South Australian access arrangements. Origin noted that the norm among gas and electricity distributors in Australia is for network charges to be invoiced monthly in arrears. Origin also suggested that the advance payment of charges shifts the cost of working capital from Envestra to the retailers.

Origin Energy (2006) indicated there were a number of reasons why the advance payment arrangement was inefficient and unreasonable. These included:

- advance payment of network charges represents working capital that is currently being carried by the users and that the overall cost to the market of carrying the working capital would be lower if carried by Envestra;
- Envestra can already protect itself adequately from bad debt with a robust credit policy which can seek credit support from users with poor credit ratings;
- advance payment followed by subsequent monthly adjustments is a complex arrangement involving the risk of errors accompanied by potential disputes between the distributor and the user;
- Allgas operates in a similar environment to Envestra in Queensland and does not obtain advanced payment; and
- advanced payment is a barrier to entry since users are required to set up unique settlement systems to cope with the arrangements that are peculiar to Envestra's access arrangement and because users are required to pay network charges around two months before they can expect to be paid by their customers.

Origin noted the Authority's approach in allowing Envestra to phase-in the change from advance payment to payment in arrears. Origin argued that both Envestra and users would be required to modify existing settlement systems and processes that would operate for a short time

before they needed to be modified again and that this may introduce further risk of errors and disputes.

Origin also suggested that it would be appropriate for Envestra to be entitled to recover the appropriate cost of carrying the working capital.

TRUenergy (2006) supported the amendment proposed by the Authority and noted that, in its view, it was normal custom and practice in other markets for network charges to be paid in arrears.

### *QCA position*

#### Draft Decision

In its Draft Decision, the Authority noted that, while Envestra had not changed the advanced payment provision in its current access arrangement, Envestra's practice with regards to the advance payment of network charges was not normal practice for gas or electricity distributors in Australia. The Authority was of the view that the terms and conditions of the Queensland service providers should be consistent where possible. As such, the Authority required Envestra to amend its access arrangement so that network charges would be invoiced in arrears.

However, the Authority accepted that this arrangement had been in place for quite some time and that, if the full adjustment were to occur from 1 July 2006, there could be a significant impact on Envestra's cash flows. Consequently, the Authority provided for the adjustment to be phased in, commencing on 1 July 2006 and being fully implemented on 1 July 2007. This would bring Allgas and Envestra into alignment from the date on which Full Retail Contestability is due to take effect.

#### Consultant's Assessment

In response to Envestra's submission on the Draft Decision on the prepayment clause, the Authority engaged The Allen Consulting Group (ACG) to consider the potential impact of changing Envestra's terms and conditions so that network charges are invoiced in arrears rather than in advance.

ACG considered the implications on Envestra's cash flows of a change in invoicing policy, any relationship between invoicing policy and risk and invoicing practices that are typical in other industries.

ACG indicated that the current regulatory arrangements create two sources of windfall benefits to Envestra. The first is that regulators typically assume that revenues and costs are incurred on the last day of the year and discount with an annual discount rate which has the effect of producing a favourable outcome to the service provider. The second is that Envestra receives a windfall benefit through the policy of invoicing in advance because working capital requirements are being funded by Envestra's customers. Further, ACG argue that the removal of this windfall, while not in the interests of Envestra's shareholders, does not constitute 'financial neutrality' as implied by the Code's requirement that target revenue should provide an opportunity to earn the cost of capital.

ACG have analysed the cash flow effect from a change in the invoicing policy and have found that, based on a benchmark monthly revenue of \$3 million, the cash flow deficit facing Envestra will be around \$9 million. Of this, \$6 million would constitute a pay-back of revenue that Envestra would have charged for a particular year before that year had commenced and the other \$3 million would represent a net investment by Envestra in working capital.

ACG noted that the \$6 million provided by customers has resulted in Envestra's shareholders earning a windfall gain due to the timing benefits associated with prepayment. ACG suggested that the removal of this windfall did not jeopardise the requirement that revenues should reflect the opportunity cost of capital. ACG also noted that Envestra may have to raise the funds through more expensive equity capital, if financial covenants restrict debt financing, but considered that, to the extent that this was required, it would merely reflect Envestra's current choice of a high level of gearing.

With regards to the working capital effect, ACG noted that the Authority's revenue formula assumes annual discounting when in fact revenues are earned more evenly over the year. This creates a benefit to Envestra because cash flows from sales are received relatively continuously. ACG found that, by applying a number of reasonable assumptions about the timing of cash receipts and disbursements, Envestra is, on balance, over-compensated under the revenue formula by at least \$600,000 per annum. As such, ACG argued that the Authority would be justified in disallowing a working capital allowance for Envestra's Queensland operations.

ACG argued that there was no case for a requirement that Envestra's rate of return be reviewed as a result of a shift in invoicing policy from two months in advance to one month in arrears as Envestra's retail counterparties are still required to have a BBB+ credit rating which provides a low probability of failure. In addition, ACG noted that the rate of return accepted in the Draft Decision compares with rates of return applied in other jurisdictions where invoicing occurs in arrears.

ACG found that the vast majority of regulated businesses in Australia invoice in arrears and that Envestra's Queensland and South Australian operations have been exceptional in maintaining a policy of invoicing two months in advance.

#### Final Decision

The Authority accepts Envestra's submission that sections 3.6 and 2.46 of the Code require it to assess the reasonableness of the prepayment terms having regard to the matters set out in section 2.46 of the Code. That is, the Authority must take into account the factors described in section 2.24 of the Code and the provisions of the current access arrangement.

Section 2.24(a) of the Code requires the Authority to take into account the service provider's legitimate business interests and investment in the covered pipeline. The Authority accepts Envestra's argument that this factor supports continuation of the existing prepayment term due to the negative impact on Envestra's cash flow, giving rise to a need for Envestra to fund the shortfall, in all likelihood through an equity issue.

However, sections 2.24 (e) and (f) require the Authority to also take into account the public interest, including the interest in having competition in markets and the interests of users and prospective users. In this regard, the Authority does not agree with Envestra's argument that it is in the interests of users generally that Envestra's financial position be protected by the prepayment mechanism. Rather, the Authority is of the view that the credit policy contained in the proposed revised access arrangement already provides users and prospective users (and Envestra) with adequate protection in relation to this risk.

Further, the Authority considers that the payment in advance is not in the interests of users or prospective users or the public interest as it:

- is administratively complex, and therefore inefficient. The current system of prepayment involves calculating and recalculating estimates of charges for two months in advance and then adjusting for actual usage after the actual consumption level is known. It would

be simpler, less likely to lead to invoicing errors and less costly if network charges were calculated and paid after actual consumption levels were known;

- results in a windfall gain to Envestra which is not in the interests of network users and prospective users. The Authority considers that the arguments made by ACG in terms of the financial impact of a change to prepayment are persuasive. The Authority notes that a large amount of the revenue impact is in reality the repayment of an interest free loan from users which has provided a windfall gain to Envestra's shareholders due to the timing benefits of this arrangement; and
- creates a potential barrier to entry for new retailers, particularly smaller retailers and is likely to hinder customer choice and the movement of customers between competing retailers.

The Authority also notes that section 2.24(g) provides that the relevant regulator must also take into account any other matters that it considers are relevant. In this regard, the Authority maintains that consistency of the terms and conditions between Queensland service providers and with the "usual practice" within the industry is an important objective given the role of the terms and conditions as standard contract terms on which the service provider is required to agree to supply the reference service.

The Authority accepts Envestra's submission that, in assessing the proposed revisions, it is required to take into account the terms of the current access arrangement. However, at the time that the prepayment arrangement was approved as part of the current access arrangement, full retail contestability (FRC) had not been considered in the Queensland market. Taking into consideration the impending introduction of FRC in Queensland, and exercising its discretion to give particular weight to the factors in sections 2.24(e) and (f) of the Code referred to above, the Authority considers that the prepayment arrangement is no longer reasonable and that its approval at the last review is not a sufficient basis for it to be approved in the current circumstances.

Notwithstanding the above conclusions, the Authority acknowledges that Envestra may not be able to raise its revenue shortfall through debt finance because it is limited from doing so by its financial covenants. In this regard, the Authority accepts Envestra's argument that it would not be practical, and would be contrary to its legitimate business interests, for it to raise equity prior to 1 July 2006. As such, the Authority will allow Envestra to decide the timing of the change from prepayment to payment in arrears, provided that the change occurs in one step and is fully implemented by 1 July 2007.

In addition, the Authority notes that, if Envestra were required to raise all the funds through equity then this would move Envestra closer to the assumed debt to asset ratio. As the WACC that has been accepted by the Authority assumes an industry average level of gearing, the Authority believes that Envestra is already adequately compensated in the WAAC for any change in gearing that might result from changing this arrangement. Moreover, the Authority has specifically recognised the likely impact of this decision in agreeing to accept the WACC proposed by Envestra. In this regard, the WACC accepted for Envestra is virtually the same as (in fact marginally higher than) that accepted by the Authority for Allgas which has similar payment terms to those proposed for Envestra in this Final Decision.

On the basis of the findings in the ACG report, the Authority is satisfied that the working capital component of the change in policy is more than offset by the revenue formula that the Authority uses and, as such, considers that additional compensation for working capital is not warranted.

As noted by ACG, the change in invoicing policy will still lead to Envestra recovering an amount of revenue equal to the revenue requirement for the next regulatory period, albeit with slightly different timing.

In conclusion, the Authority acknowledges that the removal of advance payment will mean that Envestra's legitimate business interests will be adversely affected and it will no longer benefit from an arrangement that has been extremely favourable to it over the current access arrangement period. However, the Authority maintains its view that, in balancing the factors in section 2.24 and the existing terms of the access arrangement, the interests of users and prospective users as well as the public interest in a competitive retail market should be given particular weight in considering the reasonableness of Envestra's payment terms. Having taken into account the matters in section 2.46, the Authority is of the view that the existing prepayment terms are not reasonable in the current circumstances and must be amended to 'one month in arrears'.

**Amendment 4.2**

**In order for Envestra's access arrangement to be approved, Envestra must amend section 19 of its terms and conditions to the effect that network charges will be invoiced one month in arrears. The Authority will allow Envestra to determine when to implement the change from prepayment to payment in arrears provided the change is fully implemented by 1 July 2007 and occurs in one step.**

#### 4.6 Quality of Gas

*Envestra's proposal*

Envestra (section 11.1) required the user to ensure that gas delivered to Envestra by or for account of the user meets the specifications imposed by law, and to the extent consistent with the law, the specifications reasonably specified from time to time by Envestra by notice given to the user.

In its response to the Draft Decision, Envestra noted that the quality of gas in the network is determined by the specifications of the gas injected by the retailers and that it is a matter over which Envestra has no control. Envestra also indicated that it does not have any influence over the quality of gas once it has entered the network. As such, Envestra argued that the amendment required by the Authority in its Draft Decision was unreasonable.

*Submissions from stakeholders*

Energex Retail (2005) stated that Allgas' and Envestra's gas quality standards should be consistent. Energex Retail proposed that a new clause be inserted into both service providers' terms and conditions which stated that the network operator will maintain the quality of gas injected into the network in accordance with the relevant legislation.

TRUenergy (2006) agreed with the Authority's proposed amendment and noted that consistent gas quality across both Envestra's and Allgas' networks is necessary and the network operator should be obliged to maintain this standard.

### *QCA position*

In its Draft Decision, the Authority was of the view that the comment by Energex Retail was reasonable and would be important in the more competitive environment likely to result from the introduction of full retail contestability on 1 July 2007. The Authority therefore required Envestra to make an adjustment to its terms and conditions to require the network operator to maintain the quality of gas injected into the network in accordance with the relevant legislation.

It is the Authority's understanding that the retailer is concerned that Envestra, through its actions once gas has been injected into the network, may adversely affect the quality of gas supplied. This would appear to be a reasonable concern. It is not reasonable for Envestra to have no obligation for the quality of gas that is being transported through its network if its actions can influence the quality of the gas.

At the same time, it is not the Authority's intention to require Envestra to be responsible for items that are outside of its control.

Therefore, the Authority maintains its position from the Draft Decision and requires Envestra to include a requirement to maintain the quality of gas injected into the network in accordance with relevant legislation.

#### **Amendment 4.3**

**In order for Envestra's access arrangement to be approved, Envestra must amend its terms and conditions to include a requirement on the network operator to maintain the quality of gas injected into the network in accordance with the relevant legislation.**

## **4.7 Invoicing**

### *Envestra's proposal*

Envestra (section 19.4) will ensure that each invoice sets out, or is accompanied by, information on the aggregate quantity of gas delivered, or estimated to have been delivered, at the user demand points to or for the account of the user during the relevant month and any other information which Envestra is required to include in the invoice.

In its response to the Draft Decision, Envestra agreed to amend its terms and conditions to require it to provide a valid tax invoice to the network user and to amend its terms and conditions so that both Envestra and the user may only make claims for adjustments to an invoice within 12 months of the date of the invoice. However, Envestra did not agree with the requirement to provide sufficient information to allow reconciliation of DUOS charges at an individual customer level. Envestra argued that, given the retail market rules for Queensland are yet to be formulated, it is inappropriate to endeavour to pre-empt in the access arrangement the type of information that retailers may require from Envestra in connection with those rules.

### *Submissions from stakeholders*

Energex Retail (2005) raised concerns regarding the proposed level of detail in Envestra's billing information. Energex Retail considered that the level of detail should be changed to allow for a reconciliation of distribution charges at an individual customer level. Energex Retail suggested that the minimum billing requirements should include the total number of customers supplied under the reference service based on market segment, the period of the meter reading, total supply charges, total volume and total DUOS charge. Energex Retail noted that an

additional level of detail for network billing will be necessary for the implementation of full retail competition.

Origin Energy (2005) suggested that GST Law requires a valid tax invoice to be provided in order for an entity to claim input tax and, as such, have suggested that Envestra amend clause 19.5 (which does not specify that the invoice must be a valid tax invoice).

Energex Retail (2005) argued that the recovery of any under-charging by the service providers should be restricted to the time period in which a retailer may recover this amount from its customer (the end-user). Energex Retail noted that Allgas provided 12 months for either party to rectify undercharges and suggested Envestra should do likewise.

Origin Energy (2006) supported all three points of the amendment required by the Authority and noted that it was important for the network provider to provide sufficient information to allow reconciliation of network charges at an individual customer level and for timeframes for the rectification of invoices to be limited to the same timeframes as the retailer.

TRUenergy (2006) agreed with the Authority's proposed amendment and noted that it was consistent with normal custom and practice in other markets.

#### *QCA position*

While Envestra did not propose any revisions to its existing terms and conditions relating to invoicing, stakeholders have raised issues in their submissions which suggest amendments may be warranted.

In its Draft Decision, the Authority agreed with Energex Retail that the introduction of full retail contestability would require the service providers to provide additional billing information, sufficient to allow the reconciliation of DUOS charges at an individual customer level. The Authority required Envestra to adjust its proposed terms and conditions to include a commitment to provide this information on its invoices.

Having reconsidered this issue, the Authority acknowledges that the market rules, which have yet to be determined, may place additional requirements on service providers and has revised its amendment accordingly to incorporate any change in rule that may require additional or different billing information to be provided to network users.

In its Draft Decision, the Authority was of the view that it would be appropriate for Envestra to amend clause 19.5 of its terms and conditions to the effect that Envestra will provide a valid tax invoice to the network user. The Authority notes that Envestra has agreed to make this change.

In its Draft Decision, the Authority was also of the view that there should be equity of treatment between the parties affected by the terms and conditions. The Authority, therefore, required that Envestra change the wording of its revised terms and conditions so that Envestra and users were subject to the same timeframe to identify errors in the case where customers have been undercharged. The Authority notes that Envestra has agreed to make this change.

**Amendment 4.4**

**In order for Envestra’s access arrangement to be approved, Envestra must adjust its invoicing policy so that:**

- **it is required to provide sufficient information to allow reconciliation of DUOS charges at an individual customer level, subject to applicable market rules at the time;**
- **it is required to provide a valid tax invoice to the network user; and**
- **both Envestra and users have the same timeframe to rectify undercharging, and that this should be the same timeframe as adopted by Allgas.**

#### **4.8 Capacity Management – Network Limitations**

Gas distribution networks require a certain pressure of gas to operate and maintaining this pressure requires management by the service provider. The service provider has an obligation to manage the network in a manner which satisfies the terms and conditions of the agreement.

##### *Envestra’s proposal*

Envestra did not initially propose any variation to its existing terms and conditions relating to capacity management.

In its response to the Draft Decision, Envestra agreed to make an amendment in the nature of that suggested by Origin Energy and the Authority. At the same time, Envestra indicated that regard must be had for the fact that Envestra does not undertake to deliver defined quantities of gas and that Envestra cannot physically prevent a user from exceeding MDQ. Envestra therefore proposed different wording for the amendment such that it would not consent to a user taking delivery of increased volumes of gas if it is apparent that, under ‘normal conditions’, this would result in a lack of capacity in the network to meet the anticipated demand for gas at any user delivery point.

##### *Submissions from stakeholders*

Origin Energy (2005) argued that Envestra need not necessarily add new delivery points in order to oversell capacity and that Envestra may simply undertake to deliver more additional gas from existing delivery points than the network can deliver. Origin suggested that Envestra amend clause 5.6 (which only refers to overselling capacity by adding a new delivery point).

TRUenergy (2006) agreed with the Authority’s proposed amendment and noted that restricting Envestra’s sale of pipeline capacity would appear to be a sensible and prudent prohibition on the service provider.

##### *QCA position*

In its Draft Decision, the Authority required Envestra to amend its terms and conditions so that Envestra will not undertake to deliver a quantity of gas if it is apparent that under ‘normal conditions’ there will be insufficient capacity to meet the demand for gas at any user delivery point.

The Authority accepts Envestra’s arguments that it does not undertake to deliver defined quantities of gas and that it cannot practically prevent a user from exceeding its MDQ. As such,

the Authority accepts that Envestra's proposed amendment is reasonable and should also address the concerns raised by Origin Energy. The Authority requires Envestra to make the change that it has proposed.

**Amendment 4.5**

**In order for Envestra's access arrangement to be approved, Envestra must amend clause 5.6 of the terms and conditions to reflect its submission on the Authority's Draft Decision.**

#### 4.9 Overruns

Overruns occur when the actual gas taken from a delivery point is greater than that specified in the contract. This may have important implications for the income of the service providers where users pay a charge based on the expected gas demand in order to reserve the appropriate capacity. Underestimating demand would lead to lower income from capacity charges to the service providers. It may also affect the ability to deliver gas to other users, as greater demand than that forecast may lead to capacity constraints on sections of the network.

*Envestra's proposal*

Envestra proposed (section 6) for delivery points connected by telemetry, that when the quantity of gas delivered exceeded the maximum daily quantity (MDQ) on four days within any period of 30 days (section 6.1), or on eight days during any period of one year (section 6.2), the MDQ would be increased so that it was equal to the highest quantity of gas delivered on any one of those days. The increase was to take effect from the end of the fourth and eighth days, respectively.

*Submissions from stakeholders*

Energex Retail (2005) noted that Envestra allow for revision of MDQ upwards when the user exceeds its MDQ and expressed the view that MDQ should also be revised downwards due to a consistent run below MDQ, subject to network user confirmation. Energex Retail questioned the fairness of these arrangements. Energex Retail also requested that the service providers be required to notify a network user of a change in MDQ within 14 days of the change coming into effect.

Origin Energy (2005) also noted that there is a mechanism which operates to automatically increase MDQ if over-runs occur, but that there is no corresponding mechanism to reduce MDQ if usage is consistently below the current MDQ.

Origin Energy (2006) suggested that a formalised process of applying for, and granting, MDQ reductions should be implemented. Origin also supported the suggestion that Envestra notify a network user if a change in MDQ up to 14 days before the change comes into effect.

*QCA position*

In its Draft Decision, the Authority noted that, while Envestra did not propose any revisions to its existing terms and conditions relating to overruns, two submissions had questioned the appropriateness of aspects of these terms and conditions. Envestra's existing policy on overruns involves increasing the amount of capacity the user has reserved, therefore increasing the charge to the user should the user repeatedly exceed its contracted MDQ.

The degree to which overruns are of concern to Envestra depends to some extent on whether the network, or areas of the network, are at, or are approaching, capacity. If the network is nearing capacity, one user increasing its use of the network could be at the expense of other users. In an efficiently managed network, emerging capacity constraints would be identified and dealt with, such as through network augmentation, where appropriate. Where adequate signals are not available as to likely gas demand, forward planning becomes more difficult. Because capacity would need to be kept available (but not used) in case overruns occurred, this would increase the cost of the network. The Authority therefore supports the principle of using maximum agreed quantities in the tariff structure, particularly for users whose gas consumption is of sufficient size that incorrect estimation of gas use could affect service delivery for other users.

However, with regard to MDQ being consistently lower than allowed, the Authority was not convinced that Envestra should be required to include a mechanism that automatically adjusts MDQ downwards. There is not the same incentive for users to overestimate MDQ and it is clearly open to them to seek to formally reduce MDQ.

The Authority has not changed its view from that expressed in the Draft Decision and therefore does not require Envestra to make any amendment to its terms and conditions relating to Overruns.

#### **4.10 Meter Accuracy**

##### *Envestra proposal*

Envestra has not proposed any revisions to its existing terms and conditions relating to meter accuracy.

In response to Origin Energy's (2006) submission, Envestra stated that it owns all metering installations in Queensland and that it supported the position taken by the Authority in its Draft Decision. Envestra was uncertain as to why Origin Energy had claimed that a number of Origin owned meter installations were already in place.

##### *Submissions from stakeholders*

Origin Energy (2005) argued that, since either party could be responsible for metering equipment, it would be appropriate to have reciprocal wording for metering request procedures. Origin suggested that Envestra amend clause 9.4 which currently only required the network user to provide appropriate forms, documents and information to Envestra whenever the network user requested Envestra to test the metering equipment.

Origin Energy (2006) suggested that a number of Origin owned meter installations are already in place and suggested that the Authority should reconsider its position on this matter. Origin also suggested that this amendment is simple and would not create a problem for Envestra.

##### *QCA position*

At present, Envestra is responsible for metering equipment, not the network user. Envestra's clause 9.4 is appropriate while ever this remains the case. Should circumstances change in the future, the reciprocation of these arrangement would appear to be a reasonable expectation.

The Authority does not require Envestra to make any amendment to its terms and conditions relating to Metering Accuracy.

## 4.11 Delivery Pressures

### *Envestra's proposal*

Envestra has not proposed any revisions to its terms and conditions relating to delivery pressures.

### *Submissions from stakeholders*

Origin Energy (2005) argued that the effect of clause 13.2 (which provides that Envestra will not breach its obligations under clause 13.1 in certain circumstances) was to negate Envestra's responsibility to maintain the network as a prudent operator. Origin suggested that Envestra amend clause 13.2.

Origin Energy also suggested that Envestra's clause 13.3 (which states that nothing in clauses 13.1 and 13.2 imposes any obligation on Envestra to modify the network or to cause or procure the delivery of gas into the network or to ensure that gas is delivered into the network at pressures within the limits specified by Envestra) be deleted as Envestra is best placed to determine the best operating configuration of its network and it is reasonable for Envestra to reconfigure its network to meet customer demand and maintain system pressure and integrity.

### *QCA position*

The Authority is not persuaded by either of Origin Energy's suggestions and believes that the effect of clause 13.2 does not negate Envestra's responsibilities with regards to maintaining the network and that clause 13.3 does not preclude Envestra from reconfiguring its network to meet customer demand and maintain system pressure and integrity.

The Authority does not require Envestra to make any amendment to its terms and conditions relating to Delivery Pressures.

## 4.12 Supply Curtailment – Order of Priority

On occasions, a service provider may need to curtail service to particular locations, to undertake necessary repairs or to protect the operational integrity and safe operation of the network. Where complete cessation of gas transportation is not required, an order of priority by which users will face curtailment of service is required.

### *Envestra's proposal*

Envestra proposed (section 16.3) that where two or more delivery points fall within a particular category, Envestra may interrupt or curtail deliveries to those delivery points in such order as Envestra determines having regard to the relevant circumstances. Envestra did include an order of priority for interruptions or curtailments to the delivery of gas. Envestra's proposal was the same as that included in the current access arrangement.

In its response to the Draft Decision, Envestra agreed with the Authority's position with regard to the provision of information, assuming that the point was intended to providing users with a right for an explanation as to why a delivery point has been placed in a particular category.

Envestra did not agree with the change requiring it to actively seek user's views when determining the order of priority. Envestra noted that the order of priority is set by clause 16.3 and will apply as far as is reasonably practicable. The decision for Envestra to make is not

setting the order of priority but the allocation of delivery points within that order. Envestra argued that it was required to do this on a reasonable basis and this would include taking into account any information provided to it by a user from time to time. Envestra argued that, where it did not possess sufficient information to make the relevant determination, Envestra would be required to seek further information from the user. As such, Envestra did not believe it was necessary for there to be a requirement to actively seek user's views.

#### *Submissions from stakeholders*

Energex Retail (2005) noted that Allgas and Envestra have proposed different approaches to handling curtailment and interruptions to the network. Energex Retail has sought clarification from the Authority on the ability of a service provider to curtail or interrupt supply for the purpose of safety and maintenance. Energex Retail suggested that it should be the responsibility of the retailers to determine how curtailment is accomplished as the retailer is the supplier of gas to end-users.

Origin Energy (2005) argued there may be a risk that Envestra will inappropriately categorise customers for determining the priority for curtailment. Origin Energy considered that the clause dealing with this matter should be amended to allow a customer the ability to request from Envestra an explanation as to Envestra's decision on the category to which the customer belongs.

The Queensland Government (2006) argued that it was more appropriate for the retailer to be responsible for determining the order of curtailment. This would enable the retailer to curtail customers in accordance with the agreed terms and conditions of its gas supply contracts. The Queensland Government argued that this position was consistent with the view expressed by the Ministerial Council on Energy in relation to major supply disruptions. The Queensland Government encourages retailers to develop curtailment strategies in consultation with the distributor.

TRUenergy (2006) agreed with the Authority's proposed amendment and noted that information disclosure is imperative in times of curtailment.

#### *QCA position*

In its Draft Decision, the Authority noted that while Envestra had not proposed any revisions to its existing terms and conditions relating to supply curtailment, some issues raised by stakeholders warranted amendments. The suggestion made by Origin Energy appeared reasonable and should apply to both service providers. The Authority therefore required Envestra to adjust its terms and conditions so that a customer can request an explanation as to why it was placed in a particular category.

In addition, while the Authority was not convinced that retailers should determine the order of curtailment, as suggested by Energex Retail, it did agree that a retailer should have access to information regarding the curtailment priority for its customers and that it would be reasonable for Envestra to provide an opportunity for retailers to comment on the proposed order of priority.

Notwithstanding the views expressed by the Queensland Government, the Authority considers that, as the network operator, rather than the retailer, will have to act to curtail supply in an emergency or other situations, the network operator must have the final say on the priority of curtailment. This is even more important if there are a large number of retailers, which could become the case under full retail contestability. In this regard, the Authority notes that the access arrangements of most service providers in Australia include an order of priority.

At the same time, it is appropriate that the service provider clearly outline the order of priority for curtailment in its terms and conditions.

It would be expected that the service provider would seek the views of retailers in establishing the order of priority. In addition, there is nothing to prevent a retailer from providing the service provider with information that supports the case for a delivery point to be classified at a certain priority level.

The Authority also notes that in certain instances the relevant Minister has over-riding powers which provide for the Minister to determine the order of curtailment.

**Amendment 4.6**

**In order for Envestra’s access arrangement to be approved, Envestra must include a clause in section 16 of its terms and conditions that provides customers with the right to request an explanation from Envestra as to why they have been placed in a particular category.**

#### 4.13 Failure to Pay

Service providers are entitled to be paid for services, in a timely manner. While security held by the service providers protects them to some degree, at some point, a service provider requires the ability to suspend services or terminate the agreement in the event of non-payment.

##### *Envestra’s proposal*

Envestra’s existing terms and conditions provide that, if a user does not pay any amount owing by the due date (14 days from the date of the invoice), that amount will accrue interest at a slight premium to commercial rates (section 23.1), that outstanding monies owed to Envestra by a user could be offset against monies owed by Envestra to that user (section 23.2) and Envestra will have the right to suspend services (section 23.3) or terminate the agreement (section 24.2a).

In its response to the Draft Decision, Envestra argued that the capitalisation of unpaid interest is appropriate compensation for the risk to which Envestra is exposed and that there is no legitimate basis for a user who is significantly in default to claim that it is unreasonable or unfair that their debt be subject to interest capitalisation. Envestra also argued that the capitalisation of interest on overdraft facilities is normal in the banking industry. Envestra noted that the reference tariff has been determined without making provision for bad debts and argued that, by including a bad debt allowance in the reference tariff, the cost of the risk of default is imposed on all users rather than the individual defaulting user.

With respect to the appropriate default interest rate, Envestra argued that there are several factors that need to be considered. These are the costs incurred by Envestra as a result of the late payment, that the interest rate should contain a punitive element to encourage a user to pay on time and that the interest rate should be set such that users do not have an incentive to use Envestra as their banker. Envestra argued that the interest rate submitted in the revised access arrangement was an appropriate rate having regard to these considerations.

With regards to the proposed amendment to clause 23.2, Envestra argued that it should not be required to pay a user a debt owed by it to the user if that user owes Envestra an amount of money. Envestra argued that the wording of clause 23.2 in the revised access arrangement is reasonable.

Envestra argued that a related haulage agreement is another contract under which a user is provided with services in the Queensland network. Envestra argued that, where a user has committed a payment default under one haulage agreement, it is appropriate for Envestra to be able to suspend services under all haulage agreements applying between Envestra and that user.

#### *Submissions from stakeholders*

Origin Energy (2005) argued that clause 23.1 of Envestra’s terms and conditions represented a penalty rather than a reasonable estimate of the loss due to the selection of the Corporate Overdraft Reference Rate as the basis for calculating interest. Origin suggested that Envestra amend its definition of interest rate to refer to a 30 Day Bank Bill rate and that Envestra delete “...interest not paid in the month in which it accrues will be capitalised and will itself bear interest in accordance with this clause” from clause 23.1 as capitalising interest is not common practice in the gas industry.

Origin Energy indicated that Envestra should amend clause 23.2 as the clause gives the appearance that set off could occur with reference to amounts owing on other agreements and that this was not appropriate commercial practice.

Origin Energy also suggested that Envestra delete the words “any Related Haulage Agreement” from clause 23.3 as the clause gives Envestra the right to suspend the agreement for events which occur that are unrelated to the agreement and relevant only to agreements between the network user and Envestra. Origin suggested that this was not normal commercial practice.

TRUenergy (2006) supported the Authority’s proposed amendment and noted that the suggested changes to Envestra’s access arrangement more closely reflects normal commercial practice.

#### *QCA position*

In its Draft Decision, the Authority noted that, while Envestra did not propose any revisions to its existing terms and conditions relating to failure to pay, Origin Energy questioned aspects of these provisions in relation to Envestra’s access arrangement.

The Authority was not convinced by Origin Energy’s suggestions in relation to clause 23.1 regarding the appropriate interest rate. While there is a difference between the corporate overdraft rate and the bank bill rate, the issue is which best matches the cost of funds to Envestra when payments are not received or delayed. The Authority required Envestra to provide further information on this matter. However, in relation to capitalising interest, the Authority did agree with Origin Energy that common industry practice is a sound basis for determining the appropriate calculation of interest and therefore the Authority required Envestra to amend its wording in this respect.

Envestra has maintained its view that the corporate overdraft reference rate reflects its likely cost of funds in the event of default and that it should be entitled to apply an additional amount in order to discourage late payments. The Authority accepts that the corporate overdraft reference rate is an appropriate rate to be applied, as there is little convincing argument that it is not an appropriate rate, the Authority also accepts that Envestra should be able to add a small additional charge to that rate in order to discourage late payments as this appears to be fairly common practice across many industries.

In its Draft Decision, the Authority agreed with Origin Energy that the terms and conditions under the agreement cannot extend to other agreements. The Authority therefore required Envestra to clarify this in clause 23.2 and remove the right from clause 23.3. The Authority

does not accept that offset as proposed by Envestra is normal practice and maintains its requirement that these clauses be amended.

**Amendment 4.7**

**In order for Envestra’s access arrangement to be approved, Envestra must:**

- **amend the wording in clause 23.2 to “...any amounts due or owing by Envestra under the Agreement to the network user against...”; and**
- **remove the words “or under any Related Haulage Agreement” from clause 23.3**

#### 4.14 Method of Payment

*Envestra’s proposal*

Envestra’s no set-off clause (22.2) is effectively the same as that which was contained in the current terms and conditions. It requires that payment by the network user will be made in full without set-off, counterclaim or deduction. However, Envestra have added a clause (20A(a)) in the revised terms and conditions regarding disputed invoices in which the network user will only be required to pay the amount of a bill that is not being genuinely disputed.

In its response to the Draft Decision, Envestra agreed to make the change required by the Authority. However, Envestra has not yet provided an amended revised version of its terms and conditions.

*Submissions from stakeholders*

Origin Energy (2005) suggested that Envestra delete clause 22.2 as this set-off clause is inconsistent with the withholding of payment of disputed amounts under clause 20A(a).

TRUenergy (2006) agreed with the Authority’s proposed amendment.

*QCA position*

It would appear to be the case that clause 22.2 is not consistent with clause 20A(a). The Authority is of the view that Envestra should amend clause 22.2 so that it recognises that clause 20A(a) may provide an exemption to this clause.

In its response to the Draft Decision, Envestra indicated that it will make the amendment required by the Authority.

**Amendment 4.8**

**In order for Envestra’s access arrangement to be approved, Envestra must amend clause 22.2 of its terms and conditions so that it recognises that this clause operates subject to clause 20A(a) which is an exemption to the operation of this clause.**

#### 4.15 Termination

A contract will be valid until it is terminated, whether at the expiry date or through some event or circumstance. The circumstances under which the contract may be terminated need to be detailed in the contract.

*Envestra's proposal*

Envestra proposed:

- in section 24.2, that Envestra may suspend services or terminate the agreement if a user defaults in the payment of money, breaches its obligations under the agreement and does not remedy this breach within 14 days to the satisfaction of Envestra, becomes an externally administered corporate body or becomes insolvent, ceases to meet the requirements of Envestra's credit policy; or if there is a material adverse change, in the reasonable opinion of Envestra, in the ability of the user to comply with its obligations under the agreement; and
- in section 24.3, that the user may terminate the agreement if Envestra defaults in the performance of its obligations under the agreement and does not remedy this default within 14 days.

*Submissions from stakeholders*

Origin Energy (2005) suggested that clause 24 gives Envestra the right to terminate the agreement for events which occur that are unrelated to the agreement and that this is not commercial practice. In addition, they argued that the clause provides a shorter notice period of time for remedy by the network user than by Envestra and that this is inequitable.

*QCA position*

The conditions specified in clause 24 relate to a change in circumstances affecting the user which suggest there is an increased risk of default on payments to Envestra. It does not appear unreasonable that Envestra should be able to limit its exposure to such increased financial risks.

The Authority does not require Envestra to make any amendment to its terms and conditions relating to Termination.

**4.16 Force Majeure***Envestra's proposal*

Envestra has not proposed any variation to its existing terms and conditions relating to force majeure provisions. Envestra's provision only identifies force majeure events as they apply to Envestra and does not recognise force majeure events for users as well.

In its response to the Draft Decision, Envestra argued that the force majeure provision in the access arrangement does not apply to the user because, when regard is had to the obligations of users under the terms and conditions, it is not appropriate to provide force majeure protection in respect of those obligations. Envestra argued that providing force majeure relief in respect of the user's obligations will potentially render these obligations unenforceable and that this will pose unacceptable risks to Envestra and leave Envestra with no contractual remedy to recover damages. Envestra argued that, because the obligations of Envestra and the user differ, the terms which regulate those obligations will differ and that it is reasonable that the force majeure clause not apply to the obligations of users.

### *Submissions from stakeholders*

Origin Energy (2005) argued that the force majeure provisions, as they stand, are only applicable to Envestra and suggested that clauses 27.1 and 27.2 be amended so that the provisions are applicable to both parties.

TRUenergy (2006) agreed with the Authority's proposed amendment and noted that recognition of mutual force majeure provisions is a fair basis for commercial operations.

### *QCA position*

In its Draft Decision, the Authority agreed with Origin Energy that Envestra's force majeure provisions should be recognised as being applicable to Envestra and the other party. This is the case with force majeure provisions in Allgas' terms and conditions. The Authority required that Envestra amend section 27 of its terms and conditions so that the force majeure provisions were available to both parties.

The Authority maintains its view that it would be appropriate for force majeure provisions to be applicable to both parties. The Authority has considered the comments provided by Envestra in response to the Draft Decision but has not found these sufficiently persuasive to support the proposed one-sided clause.

#### **Amendment 4.9**

**In order for Envestra's access arrangement to be approved, Envestra must amend the force majeure provisions in its terms and conditions so that they apply equally to both Envestra and any party that has obligations to Envestra.**

### **4.17 Other Issues**

In response to the Authority's Draft Decision, TRUenergy proposed a number of amendments to Envestra's terms and conditions. These issues had not previously been raised by other stakeholders, the service providers or the Authority. The issues raised by TRUenergy (2006) were as follows:

- the limitation of liability in the Envestra proposed terms and conditions should be removed so that it is consistent with standard terms and conditions in other markets. TRUenergy argued that the limit of \$100,000 currently proposed by Envestra is unreasonable. TRUenergy also argued that the distributor should indemnify the retailer against any damage that is caused to the property of the retailer or the customer of a retailer as a result of a negligent act by the distributor;
- the distributor had no need to require access to information on producers and TRUenergy objected to providing details of upstream gas contract arrangements as it saw this as highly unusual and may include confidential information;
- given the nascent state of market rules in Queensland, it would be appropriate for the terms and conditions to include a requirement for the parties to review and negotiate amendments in good faith in the event of regulatory change;
- the terms and conditions should include a provision for the distributor to indemnify the retailer for claims by customers relating to quality of, or interruptions to, the supply of gas;

- the provision for Envestra to terminate the agreement on 7 days notice if the network ceases to be a covered pipeline creates a risk for the retailer in respect of any upstream contracts with take or pay requirements, if a replacement contract is not entered into and the risk of such termination is not able to be passed through under that upstream contract. TRUenergy also argued that the retailer is at risk of significant changes to its tariff structure if the pipeline ceases to be covered under the Code; and
- proposed terms and conditions that indemnify the service provider against all loss or damage which Envestra incurs in maintaining or replacing metering equipment as a result of the actions of the retailer is inconsistent with Envestra’s terms and conditions in Victoria and South Australia and with those of Allgas. TRUenergy suggested that the indemnity was inappropriate because the retailer should not have any need to interfere with metering equipment.

#### *Envestra’s response*

The Authority sought a response from Envestra in relation to the specific issues raised by TRUenergy.

In regards to the indemnity provision, Envestra noted that it removed the clause from its current terms and conditions because it is liable for negligent acts and omissions at common law even without the clause. Furthermore, the clause creates a potential uninsured liability for Envestra because Envestra’s public liability insurance excludes Envestra’s insurer from liability in relation to contractual indemnities. Envestra have suggested that the \$100,000 limit on consequential losses was adopted from other access arrangements that had been approved at the time of the previous review and that this was considered adequate to compensate most consumers for the loss they were likely to suffer from a failure in gas supplies. Envestra noted that it was willing to increase the limit of liability to correspond with the limit of its public liability insurance, which currently stands at \$100 million.

With regards to the proposed obligation to provide details of upstream gas contract arrangements, Envestra suggested that TRUenergy has misconstrued the clause and that the obligation is rather to provide whatever information Envestra may reasonably require in connection with the Agreement or the Services. Envestra argued that it was appropriate that it have access to information that it reasonably requires to operate the network or provide the services and that, although the retailer may have to provide Envestra with confidential information, Envestra is itself subject to confidentiality requirements.

In response to the comment on the ability of Envestra to terminate the agreement with seven days notice, Envestra argued that it is necessary and reasonable to include a provision in the terms and conditions that allows the termination of the haulage agreement if the pipeline ceases to be covered. Envestra noted that the clause has been included so that, if the network ceases to be covered, it can terminate the haulage agreement after it has negotiated new terms and conditions with the network users that are appropriate to an uncovered distribution network. Envestra also argued it could not be held responsible for retailers failing to adequately cover their risks in upstream contracts.

Envestra argued that there is not much point in including a clause requiring a review of terms and conditions in the event of regulatory change as it would constitute an “agreement to agree” or an “agreement to negotiate” and these are unenforceable at law. Envestra also noted that, if there were regulatory changes that made the terms and conditions inappropriate for Envestra or the user, it would be open to both parties to seek to negotiate changes.

Envestra argued that the indemnity contained in clause 29.2 of its proposed terms and conditions (in relation to damage to metering equipment caused by the network user) is not

inappropriate. Envestra suggested that, if a network user damages metering equipment, it is reasonable and appropriate for the network user to compensate Envestra for the loss it suffers.

*QCA position*

The Authority has considered the issues raised by TRUenergy and the responses that it has received from Envestra. The Authority notes that the terms and conditions proposed by Envestra are consistent with those that were approved in the current access arrangement.

The Authority considers that TRUenergy has not made a strong enough case to convince it to require amendments to terms and conditions that are included in the current access arrangement. The responses received from Envestra in relation to each of the suggestions made by TRUenergy are reasonable. As such, the Authority does not require Envestra to make any amendments to its terms and conditions based on the comments received from TRUenergy.

## 5. CAPACITY MANAGEMENT POLICY

*Envestra has proposed that its covered pipeline be treated as a contract carriage pipeline.*

### 5.1 Introduction

The capacity management policy establishes how capacity in the pipeline will be allocated, either by way of set contracts or on a continuous, spot basis. These two approaches differ, among other things, in the way they apportion risk between market participants. A contract carriage pipeline will have most (if not all) available capacity contracted to specific users. The owner of the pipeline will thus have very little exposure to risks associated with future use of the pipeline. Conversely, with a market carriage pipeline, the majority of capacity is available for short-term use with the owner facing any risk associated with failure to sell available capacity.

### 5.2 Code Requirements

Under sections 3.7 and 3.8 of the Code, an access arrangement must include a statement (a capacity management policy) that the covered pipeline is either:

- (a) a contract carriage pipeline (that is, a pipeline where capacity is contracted to particular users); or
- (b) a market carriage pipeline (that is, a pipeline that relies on spot prices based on actual usage of services).

The relevant regulator must not accept an access arrangement which states that the covered pipeline is a market carriage pipeline unless the relevant minister of each scheme participant (state and territory) in whose jurisdictional area the pipeline is wholly or partly located has given a notice to the relevant regulator permitting the covered pipeline to be a market carriage pipeline.

### 5.3 Issues Concerning the Capacity Management Policy

#### *Envestra's proposal*

Envestra (section 7 of the access arrangement) has stated that its covered pipeline is a contract carriage pipeline.

#### *Other jurisdictions*

Distribution service providers in most other jurisdictions have proposed that their distribution networks be treated as contract carriage pipelines. These proposals have been accepted by the relevant regulator. In Victoria, Multinet, TXU and Envestra proposed a market carriage pipeline, which was a continuation of existing arrangements. The ESC (2002) accepted this, noting the differences between a contract carriage system and a market carriage system were not particularly marked for a distribution system.

#### *Submissions from stakeholders*

No comments were made on this issue in submissions.

*QCA position*

The Authority has not been notified that any Queensland pipelines covered by the Code are permitted to be market carriage pipelines. Accordingly, all covered pipelines are required to be contract carriage pipelines.

The Authority accepts the proposal by Envestra that its network be treated as a contract carriage pipeline.

## 6. TRADING POLICY

*As the distribution network is a contract carriage pipeline, the access arrangement for Envestra is required to include a trading policy to meet the minimum requirements of the Code.*

*The Authority is concerned that the policy proposed by Envestra does not address the issue of response times to a request from a user for a non-bare transfer. Accordingly, the Authority requires an amendment to the proposed access arrangement to include specific reference to this issue.*

### 6.1 Introduction

A trading policy allows a user to transfer contracted capacity to another user. A trading policy is an integral element of contract carriage systems, enabling a secondary market to determine efficient pricing signals and levels of capacity usage. However, because there is unlikely to be any direct gain (primarily in terms of revenue) to the service provider from trading, the Code protects the rights of users to have maximum flexibility to trade and limits the service provider's ability to deny this right.

### 6.2 Code Requirements

Where a pipeline is a contract carriage pipeline, section 3.9 of the Code states that the access arrangement must include a trading policy which explains the rights of a user to trade their right to obtain a service to another person. The trading policy must (section 3.10), amongst other things, allow a user to transfer their contracted capacity:

- without the service provider's consent, if the contract between the user and the service provider is unaltered by the transfer (a bare transfer); and
- with the service provider's consent, in any other case. Consent may be withheld by the service provider only on reasonable commercial or technical grounds and the trading policy may specify conditions under which such consent will be granted and any conditions attaching to that consent.

The trading policy must also permit a change to a delivery or receipt point, where commercially and technically reasonable, and with the prior written consent of the service provider. It may also specify conditions under which such consent will, or will not, be given and any conditions attaching to that consent.

### 6.3 Issues Concerning the Trading Policy

#### *Envestra's proposal*

Envestra's trading policy is identical to the current trading policy, except for the removal of the section on timelines.

The trading policy permits bare transfers without Envestra's consent provided the transferee, prior to utilising this right, gives notification of the nature of the contracted capacity that is subject to the bare transfer.

For any other form of transfer, the network user is required to seek Envestra's consent. Envestra may only withhold consent on reasonable commercial and technical grounds.

The proposed trading policy also permits changes to delivery and receipt points with the prior written consent of Envestra and where the change is commercially and technically reasonable.

The trading policy stipulates that administrative fees associated with investigating the technical and commercial feasibility of any application for transfer will be applied to the party requesting the transfer. The costs may vary depending on the complexity of analysing the request, but would be agreed in advance with the party making the request. Costs would be based on a fee of \$100 payable at the time of the request, plus \$100 per person per hour for each hour after the first hour.

#### *Other jurisdictions*

In regard to the discretion of the service provider to set reasonable grounds for non-bare transfers, IPART (2005) considered that AGLGN's proposal was acceptable. AGLGN proposed that it would respond to requests for non-bare transfers and to changes of a receipt or delivery point within 14 days of receiving the request and that it would endeavour to respond within 2 working days in cases of hardship.

ICRC (2004) required the same provision to be made for transfers (other than bare transfers), for the service provider in the Australian Capital Territory, Queanbeyan and Yarralumla region.

#### *Submissions from stakeholders*

TRUenergy (2006) agreed with the Authority that the proposal by Envestra did not meet the requirements of the Code because the policy is silent on the treatment of non-bare transfers.

#### *QCA position*

In its submission on the Draft Decision, Envestra argued that the only change from the current policy was the Authority's requirement that the timeline for Envestra to respond to a non-bare transfer was to be 10 business days, rather than 14 business days. Given Envestra did not receive any requests for transfers in the first access arrangement period, it did not see the need to change the existing policy.

The Authority retains its position from the Draft Decision, that the trading policy proposed by Envestra does not meet the requirements of the Code. Section 3.9 of the Code states that the trading policy must set out the rights of the user. These rights include those associated with a non-bare transfer. Envestra removed the section in its current access arrangement that covered the response times in respect of a non-bare transfer. Envestra's response to the Authority's Draft Decision does not appear to recognise this issue. Given there is little or no financial incentive for Envestra to respond to such requests, providing users with an undertaking that Envestra will analyse and respond to user requests within a reasonable timeframe is necessary.

The omission of such a commitment could result in protracted delays with non-bare transfers, which could have the effect of limiting their use. The Authority required that Envestra include such a provision in its current access arrangement and requires that a similar commitment be included in the revised access arrangement. However, the Authority accepts Envestra's submission to retain a timeline of 14 business days to respond to a request for a non-bare transfer, consistent with the current access arrangement.

Given no comments were received on the fees proposed by Envestra and that the fee scale was in line with the currently approved access arrangement, the Authority accepts the trading policy in this regard.

The Authority requires Envestra to amend its trading policy as indicated below.

**Amendment 6.1**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its trading policy to include words to the effect that:**

- **Envestra will reply to any request from a user for Envestra’s consent to a transfer (other than a bare transfer) or for a change in receipt point or delivery point, within 14 business days of receiving the request accompanied by information which is reasonably necessary to enable Envestra to consider the request; and**
- **If, at the time the request is made, the user informs Envestra that due to hardship the user requires an urgent reply to its request, Envestra will use reasonable endeavours to respond to the request within two business days of receiving the request.**

## 7. QUEUING POLICY

*Queuing provides a mechanism by which the right of access to a pipeline is determined where capacity is fully, or close to fully, utilised. For transmission pipelines, the Code requires an access arrangement to contain a queuing policy. However, for distribution networks the inclusion of a queuing policy is optional, with the approval of the relevant regulator.*

*Envestra has not included a queuing policy in its revised access arrangement. The Authority accepts that it is unlikely that queues would be required in order to accommodate prospective users of the distribution networks. Consequently, the Authority does not require a queuing policy to be included in the revised access arrangement.*

### 7.1 Introduction

Queuing for a good or service is one means of rationing access where that good or service is scarce (adjusting the price being another). Given the Code provides for reference tariffs to be approved by regulators, raising prices to ration demand is not available as an option to gas distribution service providers in the short term. Queuing therefore provides a mechanism by which the right of access to a pipeline can be determined where capacity is fully, or close to fully, utilised.

With respect to distribution networks, a queue is but one of several means by which new users can be accommodated. In general, new users will be able to be accommodated because, unlike transmission pipelines, distribution networks do not operate at full or near to full capacity. Rather, the networks typically have varying amounts of spare capacity at different points across the entire network. Where network capacity at one point on the network is reaching capacity, augmentation of the network will normally be undertaken to meet the needs of prospective users.

### 7.2 Code Requirements

Sections 3.12 to 3.15 of the Code outline the requirements for a Queuing Policy in relation to covered transmission and distribution pipelines. In 2003, the Code was varied to permit distribution network service providers to exclude a queuing policy from their access arrangement with the approval of the regulator. In particular, section 3.12(d) indicates the relevant regulator should consider the nature and service likely to be sought by prospective users before requiring the service provider to include a queuing policy.

### 7.3 Issues Concerning the Removal of a Queuing Policy

#### *Envestra's proposal*

Envestra has suggested that the capacity of a network will vary considerably depending on the precise location of the Delivery Point. Accommodating additional users on a distribution system is much simpler, and has a lower cost, than for a transmission pipeline. For example, Envestra noted that extensions to the network to accommodate new users occur on a daily basis.

#### *Other jurisdictions*

With respect to Envestra's South Australian distribution network, ESCOSA (2005b, 2006) indicated it does not require Envestra to include a queuing policy in the access arrangement for its South Australian network.

IPART (2005) required AGLGN to include a queuing policy because parts of the distribution network were technically transmission pipelines. However, in relation to Country Energy,

IPART (2005a) did not require a queuing policy because that distribution network is a contract carriage pipeline with spare capacity.

In general, other jurisdictional regulators appear to be adopting the view that, where a distribution network is not affected by congestion, a queuing policy will not be required.

*Submissions from stakeholders*

No comments were made on this issue in submissions.

*QCA position*

The Authority accepts Envestra's argument that queues are unlikely to form due to a lack of capacity on the network. On this basis, a queuing policy would not appear to be necessary. Therefore, the Authority accepts that the access arrangement does not include a queuing policy.

## 8. EXTENSIONS/EXPANSIONS POLICY

*An extensions/expansions policy needs to address whether or not any extension to, or expansion of, the capacity of the gas distribution system will be treated as part of the covered pipeline. Envestra is also required to specify the impact on reference tariffs of including an extension/expansion within the covered pipeline.*

*Where a service provider requests the exclusion of a significant extension that is connected directly to the covered network, and where the Authority provides written consent for this to occur, the Authority may require that some portion of the revenue generated by that extension be offset against the total revenue calculation for the covered pipeline, in recognition of the use of common or joint assets that form part of the covered pipeline.*

*The Authority considers that Envestra’s proposed mechanisms for determining whether a particular extension/expansion will be treated as part of the existing system are largely consistent with the Code.*

*The Authority considers that Envestra’s extensions/expansions policy is largely consistent with the Code in that all extensions and expansions will normally be treated as part of the covered pipeline. However, the Authority requires that Envestra make an amendment to its definition of a significant extension and to its pricing arrangements for extensions/expansions. The Authority understands that Envestra has decided to accept the Authority’s required amendment in this regard.*

### 8.1 Introduction

An access arrangement must include a policy setting out a method for determining whether an extension or expansion to the covered pipeline is to be treated as part of the covered pipeline.

An extension or expansion raises two particular issues:

- whether it should be treated as part of the existing system (and therefore ‘covered’ automatically) or treated as a stand-alone system; and
- if included as part of the existing system, how the use of that extension or expansion should be priced.

### 8.2 Code Requirements

Section 3.16 of the Code states that an access arrangement must include a policy (an extensions/expansions policy) which:

- (a) sets out the method to be applied to determine whether any extension to, or expansion of, the capacity of the covered pipeline:
  - (i) should be treated as part of the covered pipeline for all purposes under the Code; or
  - (ii) should not be treated as part of the covered pipeline for any purpose under the Code;

For example, the extensions/expansions policy could provide that the service provider may, with the relevant regulator’s consent, elect at some point in time whether or not an extension or expansion will be part of the covered pipeline.

- (b) specifies how any extension or expansion which is to be treated as part of the covered pipeline will affect reference tariffs. For example, the extensions/expansions policy could:
  - (i) provide that reference tariffs will remain unchanged but a surcharge may be levied on incremental users where permitted by sections 8.25 and 8.26; or
  - (ii) specify that a review will be triggered and that the service provider must submit revisions to the access arrangement pursuant to section 2.28; and
- (c) provides 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.

Sections 8.25 and 8.26 of the Code relate to surcharges, which may be levied on incremental users in order for a service provider to recover some or all of the cost of new facilities that cannot be recovered at the prevailing reference tariff. Surcharges are chargeable unless precluded by the extensions/expansions policy and upon written notice to, and approval by, the Authority.

### 8.3 Coverage of Extensions and Expansions

The Code firstly requires that the extensions/expansions policy outline if an extension to, or expansion of, a network is to be treated as part of the covered pipeline.

#### *Envestra's proposal*

Envestra's proposal (section 9 of the access arrangement) draws a distinction between an extension to the covered pipeline and an expansion of the covered pipeline.

Envestra has proposed that all expansions of the covered pipeline will be treated as part of the covered pipeline for all purposes of the Code. In the case of extensions to the covered pipeline, Envestra has proposed that all extensions that were included in the initial calculation of reference tariffs will be treated as part of the covered pipeline for all purposes under the Code.

However, extensions that were not included in the initial calculation of reference tariffs will be treated as part of the covered pipeline unless the extension is considered by Envestra to be a significant extension and Envestra informs the regulator in writing prior to the extension coming into service, or the regulator agrees otherwise.

Envestra has defined a significant extension is an extension to one or more delivery points, where the anticipated quantity of gas delivered exceeds 10 TJ per year. This is different to the definition which was approved under the current access arrangement which defined a significant extension as an extension to one or more delivery points, where the anticipated quantity of gas delivered exceeds 10 TJ per year and the anticipated capital expenditure for the extension exceeds \$200,000.

#### *Other jurisdictions*

IPART (2005) required AGL to include an extension or expansion as part of the covered pipeline unless AGL had obtained the Tribunal's consent to exclude it.

The ESCV (2002) required that all non-significant expansions must be covered by the existing access arrangements. Significant extensions can be excluded from the access arrangements and treated as stand-alone systems when the distributor provides prior written notification to the

regulator. A significant extension is defined as one that will service a minimum of 5,000 customers.

ICRC (2004) required that all extensions or expansions were treated as part of the covered pipeline unless the extension or expansion was significant. This would be determined on a case-by-case basis by the Commission.

The ACCC (2003) noted that in previous decisions the Commission had required that, where a pipeline is operating at or near capacity, expansions to the pipeline should be covered, unless the regulator considers otherwise.

#### *Submissions from stakeholders*

In its submission on the Draft Decision, TRUenergy (2006) supported the Authority's required amendment (Amendment 8.1) to Envestra's extensions/expansions policy.

#### *QCA position*

The Authority is of the view that the intention of the Code, in general, is that extensions to, and expansions of, covered pipelines should be covered by the access arrangement. However, at the time of the previous review of proposed access arrangements, the Authority recognised that, by requiring all extensions and expansions to be included in the covered network, it could potentially be reducing a service provider's degree of flexibility in terms of contractual arrangements with prospective customers. The Authority decided to allow significant extensions to be excluded from the covered pipeline, subject to the prior written approval of the Authority. In deciding whether to approve a request for an extension to be excluded, the Authority indicated it would have regard to, among other things, the number of customers connected (or likely to be connected) to the extension and the risk profile of the extension.

In its revised access arrangement, Envestra has changed the definition of a significant extension from one that has a capital expenditure component and a gas throughput component to one that only has a gas throughput component. The Authority is of the view that the definition of significant extension should include both a capital expenditure component and a gas throughput component (as is the case in the current access arrangement). The Authority requires that Envestra reinstate a capital expenditure component to its significant extension definition. As to the size of the capital expenditure component, the Authority has accepted the proposal by Allgas to increase the amount of the capital expenditure component in its definition of a significant extension from the \$200,000 contained in its current access arrangement to \$1 million in its revised access arrangement. On this basis, Envestra is required to include a capital expenditure component of \$1 million in its definition of a significant extension.

Envestra has also changed the process for determining whether a significant extension will be treated as part of the covered pipeline. In its current access arrangement, Envestra is required to both notify the Authority of its preference to exclude a significant extension and obtain the Authority's approval of this prior to the significant extension being excluded. In its revised access arrangement, Envestra has proposed that it will only be required to submit written notice to the Authority when deciding not to include a significant extension as part of the covered network. The Authority does not accept notification as being a sufficient or useful process and requires that Envestra amend its access arrangement so that it must also obtain written agreement from the Authority prior to excluding a significant extension from the covered pipeline.

In addition, while an extension may carry higher risks that may make it appropriate for it not to be covered by the access arrangement, where that extension is directly connected with the

covered pipeline, the issue of cost sharing for joint and common assets arises. The Authority considers it is appropriate that, for any extension which is excluded from the covered pipeline but which is directly connected to the covered pipeline, an arrangement would need to be put in place to recognise some contribution from that extension towards those shared assets. That contribution would then be recognised in the calculation of the total revenue in respect of the access arrangement for the covered network. The Authority notes that this requirement was included in Envestra's current access arrangement and requires that Envestra reinstate this provision in its revised access arrangement.

Envestra indicated in its submission on the Draft Decision that it would include the amendment required by the Authority. The Authority is of the view that, by adjusting its access arrangement to implement the Amendment, Envestra will be in compliance with its obligations under the Code. However, because Envestra has not provided an amended revised access arrangement, the Authority cannot accept that the Amendment has been made at this stage. For this reason, the Authority will continue to require Envestra to amend its revised access arrangement to include the provisions contained within Amendment 8.1.

#### **Amendment 8.1**

**In order for Envestra's access arrangement to be approved, Envestra must revise its extensions/expansions policy to the effect of the following.**

- 1. A significant extension means an extension to one or more delivery points, where the anticipated quantity of gas delivered exceeds 10 TJs per year and the anticipated capital expenditure for the extension exceeds \$1 million.**
- 2. An extension which is directly connected to an existing covered pipeline will not be treated as part of the covered pipeline through the operation of the extensions/expansion policy if:**
  - (a) the extension is a significant extension (or where Envestra can demonstrate the extension represents a special case); and**
  - (b) Envestra obtains the Authority's written approval to exclude the extension from the covered pipeline.**
- 3. In the case of a significant extension which is directly connected to an existing covered pipeline, and for which written consent has been provided by the Authority to treat the extension as an excluded extension, the Authority will determine what portion of the revenue generated from that extension will be offset against the total revenue calculation in respect of the covered pipeline in recognition of the use of common or joint assets that form part of the covered pipeline.**

#### **8.4 The Effect of Coverage on Reference Tariffs**

The second Code requirement in respect of the extensions/expansions policy is for the service provider to specify the impact on reference tariffs of including any extension/expansion within the covered pipeline.

*Envestra's proposal*

Envestra's proposed extensions/expansions policy (section 9.3 of the access arrangement) is essentially the same as that which was approved in the current access arrangement. It states that, to the extent that an extension or expansion meets the requirements of section 8.16 of the Code, incremental users will be charged at the prevailing reference tariffs.

The policy also states that, where new facilities investment does not satisfy the requirements of section 8.16 of the Code, Envestra may elect by written notice to the regulator to recover all or part of the amount that it would not recover at the prevailing tariffs through a surcharge that is levied on the users of incremental capacity.

The policy explicitly states that Envestra is under no obligation to fund any extension to the network or any expansion of the network.

*Other jurisdictions*

Other regulators have generally required reference tariffs to remain unchanged when an extension/expansion is covered, but have allowed the service provider to charge a surcharge in certain circumstances as is permitted in the Code.

*Submissions from stakeholders*

There were no submissions from stakeholders on this issue.

*QCA position*

Envestra's proposal to address the effect of an extension/expansion on reference tariffs is based on the prudency and economic feasibility tests contained in section 8.16 of the Code. This section allows the capital base to be increased for new facilities investment whenever this investment meets certain requirements. The amount must not exceed the amount invested by a prudent service provider acting efficiently, in accordance with good industry practice, and to achieve the lowest sustainable cost of providing services. In addition, the anticipated incremental revenue generated by the new facility must exceed the new facilities investment, or the service providers and/or users must satisfy the regulator that the new facility has system-wide benefits that justify the approval of higher reference tariffs, or the new facility is necessary to maintain the safety, integrity or contracted capacity of services.

The Authority is of the view that Envestra's proposed approach in respect of pricing for an extension/expansion is consistent with section 3.16(b) of the Code.

## 9. REVIEW DATE

*The Authority has accepted the proposal by Envestra that the access arrangement period will be from 1 July 2006 to 30 June 2011. The Authority also accepts that a revised access arrangement will be required to be submitted to the relevant regulator nine months prior to 1 July 2011.*

*The Authority has accepted that, unlike the current access arrangement, the next access arrangement not include a trigger mechanism that would allow a review of the access arrangement in the event that actual demand is sufficiently different from forecast demand. The Authority considers that demand forecasts should be more reliable in the next access arrangement period as they are based on more, and better, information.*

### 9.1 Introduction

A five year period between regulatory reviews provides service providers with significant regulatory certainty in terms of both the commercial parameters they operate within and the opportunity to accrue efficiency gains during that period.

### 9.2 Code Requirements

Under sections 3.17 to 3.20 of the Code, an access arrangement must include:

- (a) a date upon which the service provider must submit revisions to the access arrangement (a revisions submission date); and
- (b) a date upon which the next revisions to the access arrangement are intended to commence (a revisions commencement date).

In approving the revisions submission date and revisions commencement date, the relevant regulator must have regard to the objectives in section 8.1 of the Code. In making its decision on an access arrangement (or revisions to an access arrangement), the regulator may, if it considers it necessary, having had regard to the objectives in section 8.1:

- (c) require an earlier or later revisions submission date and revisions commencement date than proposed by the service provider in its proposed access arrangement; and
- (d) require that specific major events be defined that trigger an obligation on the service provider to submit revisions prior to the revisions submission date.

An access arrangement period accepted by the relevant regulator may be of any length. However, if the access arrangement period is more than five years, the relevant regulator must not approve the access arrangement without considering whether mechanisms should be included to address the risk of forecasts, on which the terms of the access arrangement were based and approved, proving incorrect. These mechanisms may include (section 3.18):

- (a) requiring the service provider to submit revisions to the access arrangement prior to the revisions submission date if certain events occur, for example:
  - (i) if a service provider's profits derived from a covered pipeline are outside a specified range or if the value of services reserved in contracts with users are outside a specified range;
  - (ii) if the type or mix of services provided by means of a covered pipeline changes in a certain way; or

- (b) a service provider returning some or all revenue or profits in excess of a certain amount to users, whether in the form of lower charges or some other form.

### 9.3 Dates for Submitting and Commencing Revisions

As noted above, the length of time the access arrangement is in effect is an important issue. Another issue is the length of time the service provider must allow for the regulator and other stakeholders to consider proposed revisions to the access arrangement before these come into effect.

#### *Envestra's proposal*

Envestra has proposed that the date for submission of the revised access arrangement will be 1 October 2010. The revised access arrangement will commence on the later of 1 July 2011 and the date on which their approval takes effect under the Code.

#### *Other jurisdictions*

A five year period of application for gas access arrangements has been universally adopted by Australian jurisdictional regulators.

#### *Submissions from stakeholders*

No comments were made on this issue in submissions.

#### *QCA position*

Envestra's proposed that the revisions and commencement dates for the revised access arrangement meet the Code requirements and are therefore approved.

### 9.4 Trigger Events for a Review of Access Arrangement

The Authority required that the current access arrangement include a review trigger which would be activated should the actual level of demand exceed the forecasts by a specific amount in any single year. At that time, the Authority was concerned that little information was available to establish whether the demand forecasts were sufficiently robust. Envestra has not proposed a review trigger that could lead to a review of access arrangement in their revised access arrangement (for changes in demand or any other reason). Given that improved information for the purpose of forecasting demand is now available, the Authority does not require a review trigger to be included in the revised access arrangement.

## 10. GENERAL PRINCIPLES FOR DETERMINING REVENUE AND TARIFFS

*The Code sets out a number of general principles against which the Authority is required to assess the reference tariffs proposed in an access arrangement. The Authority has referred to these principles in dealing with particular pricing issues that arise. Envestra did not include a reference tariff policy in its revised access arrangement, as the Code requires.*

*Envestra has proposed an approach to determining total revenue for services provided under the access arrangement which allows for a rate of return on assets used, depreciation of those assets, and operating and other non-capital costs of providing the service. This is defined in the Code as a ‘cost of service’ approach. The Authority accepts this approach for determining total revenue.*

*The Authority also accepts the proposal by Envestra to adopt an approach to price setting that uses a ‘cost of service’ approach to determine revenue and a ‘price path’ approach to determine future prices. However, with respect to cost pass-through adjustments to reference tariffs, the Authority requires Envestra to amend its definition of a cost pass-through event and include recognition of materiality as one matter to be considered.*

*The Authority accepts that some of the foreseeable costs associated with the introduction of full retail contestability (FRC) cannot be forecast on a reliable basis at this stage. In recognition that these costs may be significant and would have been considered for inclusion had more detail on the implications of FRC been available, the Authority has decided to pre-qualify these costs for pass-through, subject to an assessment of prudence at the time the costs are known and presented to the Authority. Because of the particular circumstances relating to these costs and the timing of this review and the Government’s announcement of the introduction of full retail contestability, materiality will not be an issue in considering these costs.*

*Envestra’s proposal to use a single weighted average price path raises several issues with respect to ensuring prices to different users are cost reflective, as is required by the Code. While a single weighted average price path is consistent with the Code, issues concerning the allocation of costs between individual users are of significant concern to the Authority (as discussed in Chapter 15). As a result, the Authority requires that the weighted average price path approach approved in the current access arrangement, with separate weighted average price paths for demand and volume customers, be retained.*

*Given the inherent incentives that result from the use of a price path mechanism, the Authority considers that additional incentives are not justified. In addition, there is the considerable difficulty of identifying out performance due to productivity improvements, as opposed to simply failing to spend. Consequently, the Authority does not accept Envestra’s proposed efficiency carry-over mechanism. The Authority considers that incentive mechanisms, such as that proposed by Envestra, can also encourage under-investment and deferment of maintenance expenditure and can impact adversely on service quality for users.*

*Envestra has also proposed a series of fixed principles that would apply through to the end of the third access arrangement period (10 years) or longer. The Authority does not accept the inclusion of fixed principles where there is a potential to disadvantage users and prospective users and where the only apparent advantage is accrued by the service provider. For Envestra’s revised access arrangement to be approved, the proposed fixed principles must be removed.*

## 10.1 Introduction

Section 8 of the Code sets out a number of general principles for determining total revenue and reference tariffs. In particular, section 8.1 of the Code sets out the principles by which the proposed treatment of total revenue, tariffs and incentive arrangements are to be considered.

The tariff arrangements detailed in an access arrangement are intended to be applicable for the length of a regulatory period. The form of regulation relates to the method for calculating and adjusting tariffs (when applicable) and the treatment of risk throughout the regulatory period. The form of regulation adopted should seek to achieve an efficient allocation of risk, by allowing the parties in the best position to handle risk to do so.

The Code provides a choice between a ‘price path’ approach and a ‘cost of service’ approach (as defined below), or some mix of these. Neither of these approaches, applied strictly, is likely to be consistent with efficient pricing principles. It is therefore probable that adopting either approach would lead to higher costs to the end user than a mixed approach, which might allocate risk more efficiently.

## 10.2 Code Requirements

There are four groups of principles contained in the Code. They include general principles that apply to all matters as well as those related specifically to total revenue, tariff variation and incentive mechanisms.

### *General principles*

Section 3.5 of the Code requires that, distinct from a reference tariff, an access arrangement must include a policy describing the principles that are to be used to determine a reference tariff (a reference tariff policy). A reference tariff policy must, in the relevant regulator’s opinion, comply with the reference tariff principles described in section 8 of the Code.

Under the Code (section 8.1), reference tariff principles are designed to ensure that certain key principles are reflected in the reference tariff policy and in the calculation of all reference tariffs. These general principles include:

- (a) 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 that service;
- (b) replicating the outcome of a competitive market;
- (c) ensuring the safe and reliable operation of the pipeline;
- (d) not distorting investment decisions in pipeline transportation systems or in upstream and downstream industries;
- (e) efficiency in the level and structure of the reference tariff; and
- (f) providing an incentive to the service provider to reduce costs and to develop the market for reference and other services.

To the extent that the principles are in conflict in their application to a particular reference tariff determination, the Authority may determine the manner in which they can best be reconciled or which of them should prevail, taking in account section 2.24 of the Code, which states that the Authority must consider a number of broad principles in its assessment of access arrangements.

Section 8.2 of the Code sets out the factors that the Authority must be satisfied with in approving a reference tariff policy, namely:

- (a) the revenue to be generated from the sales (or forecast sales) of all services over the access arrangement period (the total revenue) is established consistent with the principles and according to one of the methods contained in section 8;
- (b) 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 consistent with the principles contained in section 8;
- (c) 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 (referred to in paragraph (b)) is recovered from the users of that reference service consistent with the principles contained in section 8;
- (d) incentive mechanisms are incorporated into the reference tariff policy wherever the relevant regulator considers appropriate and such incentive mechanisms are consistent with the principles contained in section 8; and
- (e) any forecasts required in setting the reference tariff represent best estimates arrived at on a reasonable basis.

#### *Total revenue*

Under section 8.4 of the Code, the total revenue should be calculated according to one of three approaches, namely:

- 1) Cost of service: the total revenue is equal to the cost of providing all services (which may include forecast costs), calculated on the basis of:
  - (a) a return (*rate of return*) on the value of the capital assets that form the covered pipeline (*capital base*);
  - (b) depreciation of the capital base (*depreciation*); and
  - (c) the operating, maintenance and other non-capital costs incurred in providing all services provided by the covered pipeline (*non-capital costs*); or
- 2) IRR: the total revenue will provide a forecast internal rate of return (IRR) for the covered pipeline that is consistent with the principles in sections 8.30 and 8.31; or
- 3) NPV: the total revenue will provide a forecast net present value (NPV) for the covered pipeline equal to zero.

#### *Reference tariff variations*

Section 8.3 of the Code provides that, subject to the general principles for reference tariffs set out in sections 8.1 and 8.2 of the Code, the manner in which a reference tariff may vary within an access arrangement period can be nominated by the service provider. For example, a reference tariff may be designed on the basis of:

- (a) a ‘price path’ approach, whereby a series of reference tariffs is determined at the start of the access period (either individually or as a weighted average) to deliver a revenue

stream calculated consistent with the principles in section 8, and are not adjusted to account for subsequent events;

- (b) a ‘cost of service’ approach, whereby the tariff is set on the basis of the anticipated costs of providing the reference service and is adjusted yearly in light of actual outcomes (such as sales volumes and actual costs) to ensure that the tariff recovers the actual costs of providing the service; or
- (c) variations or combinations of these approaches, including a reference tariff control formula approach or trigger mechanisms.

#### *Incentive mechanisms*

Section 8.44 of the Code states that the relevant regulator should consider incentive mechanisms that allow the service provider to retain all, or any share of, any returns to the service provider from the sale of the reference service that exceed those expected during the access arrangement period. These higher than expected returns may be retained by the service provider during the access arrangement period (or for a longer period) where the relevant regulator considers it appropriate.

Without limiting alternatives, section 8.45 identifies some of the potential mechanisms through which gains from increased efficiency, innovation or volume of sales may be retained by the service provider.

Section 8.46 lists the objectives that the relevant regulator should consider in evaluating incentive mechanism. In considering any proposal, the regulator is required to ensure that users and prospective users gain from increased efficiency, innovation and volume of sales (but not necessarily during the access arrangement period in which the gains are made).

#### *Fixed principles*

The Code allows certain principles to be retained for a fixed period that may extend beyond the access arrangement period (section 8.47). In assessing any fixed principle, the relevant regulator is required to consider the interests of the service provider, users and prospective users.

### **10.3 Reference Tariff Policy**

#### *Envestra’s proposal*

Envestra did not include a reference tariff policy in its revised access arrangements.

Envestra stated in its access arrangement information that:

“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 current access arrangement Period.” (Envestra’s access arrangement information page 58)

However, there was no ‘Part B’ in Envestra’s revised access arrangement.

#### *Submissions from stakeholders*

No submissions were received on this issue.

### *QCA position*

Under the Code, the first element of a proposed reference tariff policy is a statement of the general principles that have been used to determine reference tariffs. The absence of any statement in the revised access arrangement setting out the general principles underlying the proposed reference tariffs does not meet the requirements of section 3.5 of the Code.

The Authority therefore requires that a statement of general principles applying to the setting of reference tariffs be included in the access arrangement. The statement should address the following issues:

- the method and process for assigning delivery points to particular reference tariffs;
- the process for introducing a new reference services and/or a new reference tariff/reference tariff component;
- the process for withdrawing a reference tariff/reference tariff component;
- the pricing principles to be adopted by the service provider in varying, withdrawing or introducing new reference tariffs/reference tariff components; and
- timeframes and information requirements relating to the process for varying, withdrawing or introducing new reference tariffs.

#### **Amendment 10.1**

**For Envestra’s access arrangement to be approved, Envestra must include a reference tariff policy in its revised access arrangement that meets the requirements of the Code.**

## **10.4 Determining Total Revenue**

### *Envestra’s proposal*

Envestra has proposed a ‘cost of service’ approach to determining total revenue.

### *Other jurisdictions*

A ‘cost of service’ approach to determine total revenue has been widely accepted by other jurisdictional regulators (for example, ICRC (2004), IPART (2005)).

### *Submissions from stakeholders*

No submissions were received on this issue.

### *QCA position*

The Authority accepts Envestra’s proposal to use a ‘cost of service’ approach to calculate total revenue. The Authority notes this approach was approved in the current access arrangement and has been widely used in other jurisdictions. Its use has generally allowed the components of total revenue to be readily understood by stakeholders.

The detailed calculation of total revenue is discussed in Chapter 15 (Reference Tariffs and Tariff Paths). This calculation differs in some aspects to that contained in Envestra’s access

arrangement information because of the different forecasts of cost and demand accepted by the Authority in determining the revenue requirement.

## 10.5 Tariff Variation

### *Envestra's proposal*

Envestra proposed a series of tariff variation approaches for its different reference services.

#### Haulage reference tariffs

Envestra proposed that haulage reference tariffs be adjusted according to a single weighted average price path, described by Envestra as a tariff basket approach. This mechanism sets a weighted average price path for all tariffs but does not specify price paths for individual customer groups or individual customers. Under this proposal, Envestra would be free to adjust, introduce or remove tariffs for different haulage services as long as the average tariff (weighted by the revenue generated by that tariff) was consistent with the price path.

This adjustment method is similar to that approved in the current access arrangement. The key difference is that the weighted average price path would apply to all haulage services rather than having separate weighted average price paths for large (demand) customers and small (volume) customers as applies in the current access arrangement.

The formula for adjusting the weighted average price path adopts the conventional form of 'CPI-X', whereby prices are adjusted for inflation each year subject to an 'X' factor which smoothes prices over the regulatory period.

Envestra also proposed a side constraint (or rebalancing formula) that would limit the size of annual tariff adjustments to individual customers.

#### Ancillary services

Envestra has proposed to adjust the reference tariff for ancillary services (such as special meter readings) using a price path that follows the rate of inflation each year.

#### Trigger mechanisms

Envestra proposed a trigger mechanism to pass-through the costs for specified events. Envestra defines the specified events as a change in imposts.

In its revised access arrangement, Envestra defines 'impost' as:

'any royalty, duty, excise, tax, impost, levy, fee, charge (including, but without limitation, any goods and services tax) imposed by the Commonwealth of Australia, any State or Territory of Australia, any local government or statutory authority or any other body (authorised by law to impose such an impost, tax or charge) on or in respect of the Network (or any part of it) or on or in respect of the operation, repair, maintenance, administration or management of the Network (or any part of it) or on or in respect of the provision of any Network Service' (Envestra's revised access arrangement, page 17).

### *Other jurisdictions*

#### Haulage reference services

ESCOSA (2005) noted that there are difficulties in establishing a tariff structure that will address issues such as cost reflectivity where the vast majority of costs of supplying network services are fixed. With respect to the single weighted average price path approach proposed by Envestra for its South Australian network, ESCOSA suggested that achieving cost reflectivity for individual tariffs (amongst other objectives) would be addressed through the incentive structure inherent in a tariff basket approach.

In its assessment of CEG's proposed single weighted average price path, IPART (2005a) considered that providing the flexibility to introduce new tariffs during the access arrangement period was not inconsistent with the objectives in section 8.1 of the Code. Further, this flexibility should promote those objectives to the extent that it allowed CEG to move towards more cost reflective pricing. However, to address the issues raised by CEG's proposed reference tariff control formula in terms of compliance with sections 8.38 and 8.42 of the Code, IPART required CEG to specify in the access arrangement how it would use the flexibility in the weighted average price cap to transition tariffs towards cost reflective levels over the course of the access arrangement. In its response, CEG provided indicative price paths and agreed to include these price paths in its access arrangement.

#### Trigger mechanism

IPART (2005) approved a range of pass-through events identified by AGLGN, including those relating to tax, regulatory events and costs of unaccounted for gas. However, IPART disallowed the pass-through of costs relating to mine subsidence, insurance and unforeseen events. These costs were disallowed by IPART because of the potential to reduce the incentive by AGLGN to minimise such risks, for example, by taking steps to mitigate risks and costs.

In accepting AGLGN's cost pass-through mechanism, IPART noted that there is a trade-off within section 8.1 of the Code which requires that while efficient costs are to be reflected in the reference tariff, there is also a need to encourage service providers to reduce costs. Therefore, while IPART accepted the need for the pass-through of efficient costs, it also noted that a materiality threshold that is set too low would reduce the incentive for service providers to reduce costs. AGLGN proposed to limit cost pass-through to material costs but did not propose a specific materiality threshold. IPART accepted AGLGN's proposal, indicating that materiality would be assessed on a case by case basis, taking account of the provisions in the Code.

Envestra and TXU were required by ESCV (2002) to include a materiality restriction to cost pass-through provisions in their access arrangements. The Commission noted that Envestra had proposed a cost pass-through threshold of 0.05 per cent of its annual revenue requirement. However, the Commission did not believe that an explicit threshold was either needed or desirable. Guidelines on what would constitute a material impact were developed subsequent to the approval of the access arrangements.

The ACCC (2003) considered that, for cost pass-through items, the financial impact of the event must be material, with the potential to affect the commercial viability of the business. While a materiality threshold was not defined, the ACCC indicated that the setting of such a threshold would serve to limit the number of cost pass-through applications made.

ESCOSA (2005) indicated that trigger events should be one-off and identifiable exogenous events, not a multitude of small cumulative events. ESCOSA also suggested that such events should trigger symmetrically, that is, pass through both cost increases and decreases.

### *Submissions from stakeholders*

#### Haulage tariffs

The Energy Users Association of Australia (EUAA) (2006) supported the requirement for Envestra to use separate weighted average price paths for demand and volume customers. The EUAA believed this was important to ensure the accurate allocation of costs between users.

#### Trigger mechanisms

The EUAA supported the inclusion of a materiality threshold to limit the extent of cost pass-through to network users. EUAA suggested that:

*‘users should not bear the costs of events that were in the control of the service provider, for example, unexpected network amelioration’ (EUAA 2006, page 4).*

In its submission on the Draft Decision, the Queensland Government (2006) supported the concept of cost pass-through of reasonable costs incurred by service providers in response to unforeseen events beyond their control. However, the Queensland Government suggested that pass-throughs should be triggered when a pre-determined nominal threshold was exceeded and that this threshold should be negotiated between the Authority and the service provider to provide greater certainty for the affected business.

In addition, the Queensland Government highlighted the imminent introduction of full retail contestability in 2007 and suggested that any associated costs should be clearly specified as a cost pass-through event.

### *QCA position*

#### Haulage reference tariffs

The Authority is not opposed in principle to the use of a weighted average price path approach. Indeed, the Authority approved such an approach in the current access arrangement for Envestra. However, in the current access arrangement two price paths are specified for haulage services, one for demand customers and one for volume customers, whereas a single price path for all haulage services is proposed in the revised access arrangement.

In deciding whether to accept this revision, a key consideration is the extent to which cost allocation (and therefore cost reflectivity) may be compromised if a single weighted average price path approach is approved. Scant information has been provided by Envestra in its access arrangement information in relation to cost allocation and the extent to which cost reflectivity concerns raised by the Authority in its 2001 Final Decision have been either addressed, or at least progressed.

In response to the Authority’s Draft Decision, Envestra provided further information regarding the extent to which residential customers are achieving cost reflectivity. The information provided by Envestra clearly shows that just under 30 per cent of domestic customers do not contribute sufficient revenue to meet their short run costs of supply, while a further 20 per cent meet these costs but do not contribute to the long run costs of network maintenance. The revenue shortfall (in the order of \$5 million each year) is made up from Envestra’s other customers. The Authority remains concerned, as it was in 2001, that large volume customers (typically commercial and industrial end users that consume less than 10 TJ) are paying more than they should to compensate for this shortfall in revenue.

To reduce these concerns, and consistent with the approach adopted in the current access arrangement, the Authority requires Envestra to retain a clear separation between reference tariffs for demand and volume customers to ensure that the potential for cross subsidisation between these customer classes is eliminated. Further discussion of cost allocation issues is provided in Chapter 15 (Reference Tariffs and Tariff Paths).

**Amendment 10.2**

**In order for Envestra’s access arrangement to be approved, Envestra is required to specify separate haulage service price paths for the demand and volume customer classes as contained in the current access arrangement.**

The required formulation of the separate weighted average price paths are discussed in Chapter 15.

**Ancillary services**

As the cost of providing ancillary services is largely a labour cost, the Authority accepts that these costs are likely to change over the access arrangement period in line with the rate of inflation. The Authority therefore accepts Envestra’s proposal to adjust reference tariffs for ancillary services based on movements in CPI.

**Trigger mechanisms**

In its Draft Decision, the Authority noted its in principle support for the concept of unforeseen and material changes in costs, which are beyond the control of the service provider, being passed through to consumers within the access period, as this is consistent with what would be expected in a competitive environment. However, the intention is not to protect the service provider from every unforeseen event that may occur during the regulatory period.

It is to be expected that forecast and actual costs will vary, both on the upside and the downside, during a regulatory period – this is inherent in the price path form of regulation proposed by Envestra and accepted by the Authority. Where an event fails to meet the requirements for cost pass-through within a regulatory period, this does not preclude these costs from being recovered in the future. At the regulatory reset, appropriate costs will be established for the ensuing regulatory period.

However, the Authority noted there were circumstances that warrant acceptance of a cost pass-through and that there were two elements to be satisfied in determining whether an event should lead to a cost pass-through. The first element to be considered is whether an event is of such an unusual and unexpected nature that the costs could not have been reasonably foreseen. In accepting a cost pass-through mechanism, the regulator should not override the intent of the price path form of regulation which generally results in cost savings/increases being retained/absorbed by the service provider, along with any other variations, until the next regulatory reset.

Unforeseen network upgrades, maintenance and other network activities instituted by the service provider or its customers would not in themselves constitute cost pass-through events. Rather, a pass-through event would be a major exogenous and unforeseen event outside the control of the service provider (which, in some instances, may coincidentally require a network upgrade or increased maintenance).

The second element to be considered in determining whether a cost pass-through is reasonable is the materiality of the costs incurred. The Authority did not consider relatively minor costs

should be considered for pass-through. Such an approach is consistent with section 8.1(f) of the Code, which requires the reference tariff policy to encourage service providers to reduce costs.

During the current access arrangement period, Envestra sought and received a cost pass-through for six separate items that ranged in value from \$41,500 to \$480,000 or, in total, just under \$1 million over the period. No unforeseen cost savings were passed through to users. The Authority considers that costs of the order of \$41,500 are not material and do not need to be passed through to users immediately. Rather, these costs should be borne by Envestra, offset by reduced costs elsewhere, until the next regulatory reset.

The Authority considered that setting a materiality threshold was important as it removed the uncertainty that would otherwise surround this issue. In its recent determination for electricity distribution the Authority settled on a threshold for consideration of a general cost pass-through of 1 per cent of (forecast) annual revenue per event based on the forecast revenue in the year in which the event occurred. Had this threshold been in place during the current access arrangement period, only the single largest of the six cost pass-through events affecting Envestra would have met the threshold.

In its Draft Decision, the Authority indicated that the definition of ‘impost’ proposed by Envestra in its revised access arrangement was overly prescriptive and went beyond that included in the current access arrangement. On this basis, the Authority did not accept the definition of impost proposed by Envestra was consistent with section 8.1(f) of the Code. The Authority required Envestra to amend its cost pass-through definition to recognise that cost pass-through (both positive and negative) would most likely be warranted for:

- changes in taxation or other statutory charges; or
- other major changes in government policy (for example, costs associated with the introduction of full retail contestability); and subject to

subject to a materiality threshold of 1 per cent of (forecast) annual revenue per event based on the forecast revenue in the year in which the event occurred.

Finally, the Authority noted that a highly prescriptive definition proposed by Envestra may remove the Authority’s capacity to approve the pass-through of reasonable costs in the future if the event concerned was not specifically recognised in Envestra’s definition.

In response to the Draft Decision, Envestra indicated that it did not intend to incorporate the amendment required by the Authority with respect to either the definition of impost or the materiality threshold. Envestra suggested that it would revise its definition of impost but that this would result in retention of the definition included in its revised access arrangement and adding costs resulting from, ‘other major changes in government policy’.

Envestra suggested the Authority’s definition was lacking because it did not include other charges identified by Envestra. For example, Envestra suggested that local government charges for road works are not statutory and therefore would not be covered by the Authority’s definition.

Envestra also argued that a pass-through threshold of 1 per cent of revenue per event was not reasonable as multiple events that may individually not exceed the materiality threshold could in sum exceed the threshold by a significant amount adversely affecting Envestra’s ability to earn its regulated rate of return. Envestra considered that the requirement to include a materiality threshold was not compliant with the Code.

The Authority is concerned that extending the provision for cost pass-through as proposed by Envestra would not be consistent with the price path approach to regulation where forecast costs are established on a set and forget basis.

If Envestra would prefer reference tariffs to be established on a ‘cost of service’, rather than price path form of regulation, it should adopt this method in its access arrangement. In simple terms, Envestra appears to want the benefits of both forms of regulation. As noted in the Draft Decision, the Authority is concerned that the definition of ‘impost’ proposed by Envestra could potentially include charges that should not be considered for pass-through, for example, penalties imposed by the Australian Taxation Office for late payment of tax.

The Authority believes the more generic definition it has proposed is adequate and would allow future events to be considered for cost pass-through on a case-by-case basis. The Authority therefore requires that Envestra amend its definition of a cost pass-through event to be the same as that proposed above.

With respect to materiality, the Authority does not accept the arguments presented by Envestra. A trigger mechanism that would allow non-material costs to be passed through to users would be inefficient and not consistent with the section 8.1(f) of the Code.

The Authority does not accept the suggestion by Envestra that it is imposing its own views other than to the extent that the Code requires the Authority to indicate what amendment would be required in order for the mechanism to be accepted (section 2.38(a)(ii)).

The Authority has considered Envestra’s arguments regarding the need for a specified materiality threshold. While it does not accept Envestra’s view on this matter, the Authority accepts that the materiality of any specific cost can be determined at the time the cost pass-through event is put forward. Therefore, the Authority will remove its requirement for Envestra to include a specific threshold in order for its access arrangement to be approved.

However, Envestra is required to recognise in its access arrangement that each cost pass-through event will be subject to a materiality test by the Authority. This test will be applied at the time a cost pass-through is sought by Envestra. Envestra should note that, in considering any cost pass-through, the Authority will take account of the provision of the Code that allows the Authority to reject cost pass-through where, in its view, it believes the cost to be not material to the efficient delivery of the reference service nor consistent with the intent of the Code. To establish that a cost pass-through is warranted, Envestra will therefore need to demonstrate that the impact of the event is material to its operations, beyond its control and was not reasonably able to have been foreseen at the time the access arrangement was put in place.

The Authority had hoped to remove this uncertainty by establishing the materiality threshold now.

**Amendment 10.3**

**In order for Envestra’s access arrangement to be approved, Envestra must define the of cost pass-through trigger event as;**

- **a change in taxation or other statutory charges; or**
- **any other major change in government policy (for example, costs associated with the introduction of full retail contestability);**

**where the direct costs of the event will have a material effect on the efficient delivery of the Reference Service.**

In principle, the Authority does not consider that it is practical or appropriate to pre-qualify certain events as accepted pass-through events when, by definition, all such events are either unforeseen or uncertain.

However, the Authority notes the concerns of both Envestra and other stakeholders that the introduction of full retail contestability will result in costs that are foreseeable but remain undefined at this stage. As a forecast of these costs cannot be determined on a reasonable basis at this time, the Authority will accept prudent costs associated with the introduction of full retail contestability on the same basis as a cost pass-through. In this single circumstance, the materiality test will not be imposed. This provision will ensure that Envestra is not unfairly penalised simply due to the coincidence of timing in the introduction of retail contestability and the approval of its future access arrangement.

## 10.6 Incentive Mechanisms

### *Envestra's proposal*

Envestra has proposed a range of incentive mechanisms and seeks to enshrine these as fixed principles to apply beyond the next access arrangement period. In summary, the incentive mechanisms proposed are as follows:

- reference tariffs are to be set using a price path approach (rather than a 'cost of service' approach) until the end of the third access arrangement period;
- rolling forward the asset base between access arrangement periods will be done using the Code prescribed method but 'will not be reduced as a result of assets forming part of the capital base becoming redundant' for a period of 30 years;
- CAPM will be used to determine the rate of return until the end of the third access arrangement; and
- the following incentive mechanisms will be included as fixed principles until the end of the third access arrangement period:
  - tariff basket price control. This mechanism sets a weighted average price path for all tariffs but does not specify individual price paths. Envestra would be free to adjust prices for different services. Side constraints will limit the size of price adjustments to individual end users; and
  - efficiency gains created by Envestra initiatives will be retained for ten years. The gains would be calculated as the difference between forecast and actual capex and/or opex.

### *Other jurisdictions*

#### Fixed Principles

A number of jurisdictions have accepted certain fixed principles in the service provider's access arrangement. However, these have typically been in areas where the Code has allowed a choice in approach but have generally been restricted to a much shorter time period than that which was sought by the service provider.

The ESCV (2002) allowed a fixed principle that CPI-X regulation would be used for the next 10 years for gas distributors. However, it rejected the arguments of service providers to lock in this fixed principle for 30 years. The ESCV considered that the efficiency incentives would not be materially strengthened by such an approach. It also considered that there may be circumstances where change would be required.

The ICRC (2004) accepted a fixed principle proposed by ActewAGL that capex, which does not satisfy section 8.16 of the Code, would be included in a Speculative Investment Fund until such time as these expenditures did satisfy section 8.16.

#### Incentive Mechanism

All jurisdictions have accepted some form of incentive mechanism in service providers' access arrangements. However, the approaches vary and have evolved over time.

IPART (2005) accepted an incentive mechanism where gains/losses from cost savings and variations from forecast demand were retained by AGL during the regulatory period. No carry-over mechanism was allowed that would extend beyond the expiry of the regulatory period.

In its first review of access arrangements, ESCV (then ORG) accepted inclusion of an efficiency carry-over mechanism. Its key feature was that efficiency gains could be kept by the service provider for a period of five years, while efficiency losses were to be treated asymmetrically with a 'zero floor', which meant that accumulated efficiency losses were not carried forward. ESCV (2002) noted data problems in its first assessment of efficiency carry-over for the period 1998-2002. Nonetheless, ESCV allowed some carry-over for Multinet but disallowed efficiency carry-overs for Envestra Albury and Envestra Victoria. ESCV allowed the continuation of the carry-over mechanism into the revised access arrangement.

However, the ESCV (2002) rejected Envestra's argument that a 'fair sharing' would require the carry-over gains to be retained by the service provider for ten years. ESCV considered that "the five-year carry-over period provides an incentive for the service provider to reduce costs, whilst at the same time ensuring that efficiency gains are passed through to customers without undue delay."

More recently, in its regulation of electricity distributors, the ESCV (2005) has found further data problems in determining efficiency gains/losses over time, and suggested that; "in hindsight the Commission underestimated the challenges that would present themselves in relying on the reported costs of the distribution businesses". Business restructuring and agreements with related third parties to provide services were noted by the ESCV as major obstacles in the assessment of efficiency gains.

ESCV (2005b) found service quality had been compromised by the incentive to delay spending and investment, an incentive which is strengthened by the inclusion of a carry-over mechanism. In response, ESCV only excluded capex from the carry-over mechanism. The remaining opex carry-over mechanism was clarified so that efficiency changes relative to the benchmarks were treated symmetrically (that is, negative efficiency gains (efficiency losses) are feasible).

ICRC (2004) noted that ActewAGL sought no efficiency carry-over mechanism.

#### *Submissions from stakeholders*

In its submission on the Draft Decision, the Energy Users Association of Australia (EUAA 2006) supported the removal of additional incentives. The EUAA considered that Envestra already has incentives built into its access arrangement and further incentives would be

unjustified and detrimental to end users. EUAA also considered that the inclusion of fixed principles would disadvantage users who may not benefit from future regulatory changes.

### *QCA position*

#### Efficiency carry-over mechanism

In its Draft Decision, the Authority did not accept Envestra's proposed incentive mechanism which provided for the retention of cost reductions (relative to forecasts) across subsequent regulatory periods. The Authority considered that there were sufficient incentives in the price path mechanism to encourage cost savings, which will be retained by Envestra during the regulatory period. The experience in other jurisdictions (and in other industry sectors in Queensland), where such mechanisms have been used (or even contemplated), suggested that they encourage an over emphasis on cost cutting which has contributed to under-investment and deferment of maintenance on the network, with resulting detriment to service quality for users.

In response to the Draft Decision, Envestra noted that, in its view, efficiency carry-over is an important part of the regulatory regime. Envestra did not accept that the reliability concerns raised by the Authority were important in relation to its gas distribution network, which it claimed has always complied with the service standard framework underpinning prices. Envestra also noted that service reliability had not suffered in its networks in South Australia and Victoria where efficiency carry-over mechanisms had been accepted.

The Authority maintains its view that efficiency carry-over mechanisms are problematic in terms of both their measurement and potential to discourage efficient investment in the network. In view of these concerns, and given that Envestra has not proposed any practical means by which these concerns might be addressed, the Authority has not changed its position on this issue from the Draft Decision. Given the uncertain effect that such a mechanism would have on the efficient delivery of the reference service, the Authority does not accept that inclusion of an efficiency carry-over mechanism is consistent with the requirements of the Code.

#### Fixed principles

According to its access arrangement information, Envestra has proposed the inclusion of fixed principles for a number of different reasons. However, a common theme is the potential for changes to the regulatory environment due to changes to the Code and/or the regulator to have an adverse impact on Envestra. For example, Envestra stated that should the Code be amended where;

*'there is a possibility that a commitment to incentive based regulation will not be a feature of this new regime' (Envestra's access arrangement information, page 58).*

Envestra also inferred that the transfer of regulatory responsibilities from the Authority to the Australian Energy Regulator during the next access arrangement period will create further uncertainties that should be addressed through the application of fixed principles until the end of the third access arrangement period or later.

In its Draft Decision, the Authority considered whether Envestra should be insulated from future changes to the regulatory regime and its administration by way of the inclusion of fixed principles. In approving a fixed principle, the Code requires the regulator to consider potential impacts on the service provider, users and prospective users. If it were assumed that changes to the regulatory regime will occur only when the benefits to service providers, users and

prospective users exceeded the costs, the need to insulate Envestra from any potential change is questionable.

On this basis, the Authority expressed the view that it is not necessary to enshrine an approach to rolling forward the capital base or method of tariff variation beyond the current access arrangement period. These matters are clearly addressed within the Code and it is highly unlikely that any future changes would be made without serious and extensive consideration of the implications of such changes. Those who might impose such changes in the future, irrespective of whether the relevant regulator is the Authority or some other body, will be much better placed to consider whether any transitioning from current access arrangement provisions is warranted.

In response to the Draft Decision, Envestra claimed that the Authority had not considered the interests of Envestra and, by default, deferred any decision to the future relevant regulator.

While the Authority agrees that, in assessing Envestra's proposed fixed principles, the Code requires consideration to be given to the interests of Envestra, the Authority is also required to give consideration to the interests of users and prospective users.

The Authority did not defer its decision on the proposed fixed principles to a future regulator as Envestra has suggested in its submission. The Authority simply decided not to accept the fixed principles proposed by Envestra. The Authority maintains the view that it is not in a position to enshrine regulatory arrangements at a time when the implications of regulatory changes for Envestra, users and prospective users is unknown. While accepting the fixed principles would remove uncertainty for Envestra, it would simultaneously remove any potential benefits to be gained by users and prospective users. The Authority does not propose to accept such a one sided outcome.

The Code specifically allows the relevant regulator to require the inclusion of a capital redundancy mechanism in the access arrangement. Envestra has proposed a fixed principle that no capital redundancies should occur for 30 years. Such a provision may have some merits when applied to a 'greenfield' gas pipeline during its initial market development phase. However, this is not the situation confronting Envestra's Queensland gas distribution network. As discussed further in Chapter 11, the Authority considers there is significant merit in having a mechanism to allow for a reduction in the asset base in the event of a decline in the volume of future sales so that prices and the value of the productive capital base supported by these prices can be kept in sync. It is acknowledged that use of such a mechanism could have significant implications for the service provider and it would be used only where clear evidence of redundant capital existed.

Consequently, the Authority rejects Envestra's proposal for a fixed principle to exclude capital redundancies for 30 years.

In relation to the last two fixed principles proposed by Envestra, the Authority continues to require that Envestra amends its weighted average price path (or tariff basket) approach. Furthermore, the Authority can see no reason to enshrine the amended tariff variation approach beyond the current access arrangement.

The Authority has rejected the inclusion of an efficiency carry-over mechanism in the revised access arrangement and similarly rejects the proposal that would see such a mechanism (if ever approved) extended across regulatory periods.

**Amendment 10.4**

**For Envestra’s access arrangement to be approved, Envestra must remove all reference to the efficiency carry-over mechanism and fixed principles.**

## 11. ROLLING FORWARD THE CAPITAL BASE

*The Code requires the capital base to be determined using a roll-forward approach. There are two roll-forward periods that are of relevance for Envestra's revised access arrangement.*

*The first period is from 1 July 2001 to 30 June 2006, with the roll-forward over this period providing the opening asset base for the next. Envestra's capital base as at 1 July 2001 was \$180.2 million. This value has been rolled forward to take account of actual prudent capital expenditure, actual inflation, forecast depreciation, disposals and any redundant assets during the current the period.*

*The Authority has accepted most of Envestra's capital expenditure over the current access period as being consistent with the Code. Some of the reductions to Envestra's forecast costs made in the Draft Decision have been reversed following the provision of further information by Envestra.*

*The Authority has accepted Envestra's disclosed level of capital contributions over the current access period. It has also accepted this figure as providing a reasonable forecast for capital contributions over the next regulatory period. As proposed by Envestra, both past and forecast capital contributions will not form part of the regulated capital base. Consequently, Envestra is required to maintain a register of these non-regulated assets to ensure that regulated and non-regulated assets are clearly segregated.*

*On this basis, the Authority has set Envestra's closing capital base for the current regulatory period (30 June 2006) at \$228.4 million.*

*The second roll-forward covers the next regulatory period and rolls forward the 30 June 2006 value of the capital base to 30 June 2011 using forecasts of capital expenditure, depreciation, inflation and redundant assets.*

*In its Draft Decision, the Authority required Envestra to make various adjustments to the roll-forward calculations for the next access period. The most significant related to the level of capital expenditure. Envestra forecast a total \$102.5 million in capital expenditure over the next access period. Following the provision of additional information by Envestra in response to the Draft Decision, the Authority has accepted forecast total capital expenditure of \$73.3 million as being consistent with the Code. Despite this reduction, total capital expenditure will still increase by 48.4 per cent compared to the total capital expenditure incurred by Envestra during the current access period.*

*On this basis, Envestra's closing capital base as at 30 June 2011 will be \$307.3 million.*

### 11.1 Introduction

The Code requires the capital base to be determined using a roll-forward approach. There are two roll-forward periods that are of relevance for Envestra's revised access arrangement.

The first roll-forward period is from 1 July 2001 to 30 June 2006, which provides the opening capital base for the next regulatory period. Envestra's capital base as at 1 July 2001 was \$180.2 million.<sup>4</sup> This value has been rolled forward to take account of actual prudent capital expenditure, actual inflation, forecast depreciation, disposals and removal of any redundant assets during the current the period.

---

<sup>4</sup> Refer to the Authority's 2001 Final Decision for an explanation on how this value was determined.

The second roll-forward period is from 1 July 2006 to 30 June 2011, with the roll-forward calculated in a similar manner, but based on forecasts rather than actual amounts.

In the sections below, Envestra's proposal for rolling forward the capital base is set out in terms of their revised access arrangement as initially submitted. While Envestra has provided additional information in response to the Draft Decision for consideration by the Authority, Envestra chose not to resubmit its revised access arrangement. Consequently, where the Authority has identified amendments that must be made in order for the revised access arrangement to be approved, the amendments refer to the revised access arrangement as initially submitted. However, the Authority has considered the additional information in preparing this Final Decision and revised the amendments that were proposed in the Draft Decision where appropriate.

## **11.2 Determining the Opening Capital Base at 1 July 2006**

### *Code requirements*

Section 8.9 of the Code outlines the process by which the capital base is adjusted at the expiry of an access arrangement period. Sections 8.15 to 8.29 detail the principles to be applied in adjusting the value of the capital base over time as a result of new additions to the capital base and as a result of assets ceasing to be used for the delivery of services.

### *Envestra's proposal*

The calculation of the 1 July 2006 capital base provided by Envestra is detailed below. Figures for 2001-02 to 2004-05 were based on actual information while figures for 2005-06 were based on revisions to the forecasts previously made in 2001. At the next regulatory review, actual figures for 2005-06 will be incorporated into the roll-forward undertaken at that time.

### *Past capital expenditure*

Envestra's actual capital expenditure did not reach the forecast total included in the current access arrangement. Table 11.1 shows the forecast versus actual capital expenditure for Envestra over the current access period. The actual figures for 2005-06 are the revised estimates.

Envestra engaged WorleyParsons (an engineering consultant with expertise in the gas industry) to undertake an audit of a random sample of projects. WorleyParsons were of the view that past expenditure had been undertaken in a prudent manner.

**Table 11.1: Envestra’s actual and forecast capital expenditure, 2001-02 to 2005-06 (\$m, nominal)**

	2001-02	2002-03	2003-04	2004-05	2005-06
<b>Stay In Business</b>					
Telemetry and regulators	0.03	0.05	0.00	0.08	0.61
Periodic meter changes	0.41	0.71	0.61	0.39	0.62
Mains Renewal	3.37	3.12	4.53	5.59	5.51
IT Systems	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.31	0.19	0.14	0.53
<b>Total Stay-in-Business</b>	<b>3.81</b>	<b>4.20</b>	<b>5.33</b>	<b>6.20</b>	<b>7.28</b>
<b>Growth</b>					
Large Consumers	0.00	0.00	0.00	0.01	0.35
Improve Supply	0.00	0.00	0.00	0.00	0.17
General Mains	2.06	1.00	1.08	0.89	1.45
Regulators	0.02	0.02	0.03	0.00	0.05
Meters	0.96	0.82	0.93	0.77	0.87
Services	1.58	1.73	1.81	1.74	1.90
Major Projects	0.00	0.00	0.37	0.34	2.56
Other	0.04	0.10	0.00	0.00	0.00
<b>Total Growth</b>	<b>4.65</b>	<b>3.67</b>	<b>4.22</b>	<b>3.76</b>	<b>7.36</b>
<b>Total actual capital expenditure</b>	<b>8.46</b>	<b>7.88</b>	<b>9.54</b>	<b>9.96</b>	<b>14.64</b>
<b>Forecast capital expenditure (2001)</b>	<b>13</b>	<b>12.9</b>	<b>12.6</b>	<b>13.3</b>	<b>12.9</b>

Numbers may not add due to rounding.

#### Past capital contributions

Envestra received capital contributions of \$1.4 million per year, on average, over the current access period which it removed from its capital expenditure before rolling forward the capital base.

#### Redundant and disposed assets

In its revised access arrangement information, Envestra indicated that there were no redundant assets or disposals during the current access period.

In its response to the Authority’s Draft Decision, Envestra indicated that it does not have detailed records of its older assets and that any redundant assets, were they identifiable, would not have a material value. In the event that such assets were identifiable, Envestra argued that the Authority’s proposed treatment<sup>5</sup> of these assets was equivalent to not making the adjustment in the first place.

However, Envestra provided an estimate of assets that no longer contribute to the delivery of reference services as a result of mains relocation or where mains renewal results in only one main where previously two had existed. Envestra estimated the value of these assets would be in the order of \$5,000 in 2004-05. Envestra calculated this amount by assuming that around 1,000 metres of mains were disused with a residual value of \$5 per metre. Envestra claimed that its estimate in 2004-05 would be reflective of all years in the current regulatory period.

<sup>5</sup> The Authority’s preferred treatment of disposed assets was to remove the value of the assets from the capital base and increase the revenue requirement by an amount equal to the remaining depreciated value of the assets. The treatment of redundant assets is prescribed in the Code.

### Depreciation

Envestra has used the forecast depreciation figures from the Authority's 2001 Final Decision to roll forward the capital base.

### Past inflation

Envestra rolled forward the capital base using the annual change in the CPI to March each year.

In its submission on the Authority's Draft Decision, Envestra claimed this approach maintained consistency with the way in which prices were adjusted over the current regulatory period.

### Summary

Table 11.2 shows how Envestra rolled forward its capital base over the current regulatory period. This table is included in section 5.7 of Envestra's access arrangement information. On this basis, Envestra has forecast a closing asset value of \$236.0 million as at 30 June 2006.

**Table 11.2: Envestra's proposed roll-forward of the capital base, 2001-02 to 2005-06 (\$m, nominal)**

	2001-02	2002-03	2003-04	2004-05	2005-06
Opening assets	180.2	194.8	203.2	214.2	222.4
Less depreciation	4.8	5.2	5.6	6.0	6.4
Plus inflation	10.9	5.8	7.1	4.3	5.3
Plus capital expenditure	9.6	9.4	10.9	11.2	16.0
Less capital contributions	1.2	1.6	1.3	1.3	1.4
<b>Closing assets</b>	<b>194.8</b>	<b>203.2</b>	<b>214.2</b>	<b>222.4</b>	<b>236.0</b>

*Numbers may not add due to rounding.*

### Other jurisdictions

In determining the opening capital base for the next access period, IPART (2005) and ICRC (2004) made adjustments for actual inflation, actual prudent capex (capital expenditure assessed to not be prudent was not included), capital contributions, disposals and redundant capital over the current period. IPART (2005) also required a regulatory asset register to be updated as part of the roll-forward process.

With respect to capital redundancies, neither ICRC (2004) nor IPART (2005) provided direct compensation for the amounts removed from the capital base.

IPART (2005) and ICRC (2004) required forecast depreciation to be used in the roll-forward of the capital base. Both regulators considered it was inappropriate for the businesses to use actual depreciation over the period, on the basis that the previous forecast depreciation was reflected in the revenue requirement and obtained through approved reference tariffs.

However, the previous forecast of depreciation was adjusted for actual inflation (see also ACCC (2002) and ESCV (2002)). This approach ensured that the initial real value of the asset would equal the total depreciation amount (adjusted for inflation). Using forecast depreciation uncorrected for actual inflation would result in either over or under depreciation of the asset (in real terms) which would not be consistent with the requirement of the Code for an asset to be only depreciated once (see section 8.33(d)).

IPART (2005) and ICRC (2004) both subtracted capital contributions from capital expenditure before it was rolled into the capital base.

#### *Submissions from stakeholders*

EUAA (2006) did not support the Authority's decision to make a provisional allowance for \$2.56 million in capital expenditure by Envestra for the extension to a main in 2005-06 as ECG had rejected this 'major project' expenditure because of insufficient information to support the claimed cost. EUAA was also concerned about the lack of information provided by Envestra in relation to redundant assets. EUAA supported the Authority's decision to accept \$0.1 million in capital expenditure for 'large customers' in 2005-06 in comparison to the \$0.35 million estimated by Envestra.

Origin (2006) also disagreed with the Authority's decision to make a provisional allowance of \$2.56 million in capital expenditure for a 'major project' in 2005-06. While noting the Authority's intention to remove the allowance if information supporting the cost was not provided by Envestra, Origin suggested including the provisional allowance would encourage service providers to include unsubstantiated claims while removal of the \$2.56 million would encourage service providers to provide complete information to the regulator at the outset of the regulatory review process, especially where it was clear that information would have been available, such as in this instance.

#### *QCA position*

Past capital expenditure

#### Draft Decision

The Authority engaged Energy Consulting Group (ECG) to review the prudence of capital expenditure over the current regulatory period, 2001-02 to 2005-06. ECG examined past capital expenditure in terms of 'stay in business' and 'growth' categories as suggested by Envestra (and consistent with the WorleyParsons report). ECG's key findings from the review were:

- 'stay in business' expenditure incurred by Envestra for all categories (telemetry and regulators, period meter changes, mains replacement and other) was considered prudent and consistent with the Code;
- 'growth' expenditure incurred by Envestra for improved supply, general mains, regulators and 'other' was found to be prudent and consistent with the Code;
- ECG considered that Envestra's forecast of \$0.35 million in 2005-06 for 'large consumers' was unjustified and adjusted these costs down to \$0.1 million; and
- ECG excluded \$2.56 million in 2005-06 for 'major projects' on the basis that no information to support this forecast was provided.

#### Final Decision

In response to the Draft Decision, Envestra provided additional information to support its actual capital expenditure during the current access arrangement period. ECG has taken account of this information in revising its recommended expenditure over the current regulatory period. In particular:

- 'stay in business' expenditure recommended by ECG's has not changed; and

- ‘growth’ expenditure has been adjusted to exclude information technology projects valued in total at \$0.79 million in 2003-04 and 2004-05 which Envestra has now indicated were included in error, but increased to include \$2.56 million expenditure for an extension to a main along Milton Road, both part of Envestra’s ‘major projects’ category. ECG’s recommendation in relation to ‘large consumers’ remains unchanged.

Table 11.3 shows the level of capital expenditure that ECG considered prudent during the current access period.

**Table 11.3: ECG’s recommended capital expenditure, 2001-02 to 2005-06 (\$m, nominal)**

	2001-02	2002-03	2003-04	2004-05	2005-06
<b>Stay In Business</b>					
Telemetry and regulators	0.03	0.05	0.00	0.08	0.61
Periodic meter changes	0.41	0.71	0.61	0.39	0.62
Mains Renewal	3.37	3.12	4.53	5.59	5.51
IT Systems	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.31	0.19	0.14	0.53
<b>Total Stay-in-Business</b>	<b>3.81</b>	<b>4.20</b>	<b>5.33</b>	<b>6.20</b>	<b>7.28</b>
<b>Growth</b>					
Large Consumers	0.00	0.00	0.00	0.01	0.10
Improve Supply	0.00	0.00	0.00	0.00	0.17
General Mains	2.06	1.00	1.08	0.89	1.45
Regulators	0.02	0.02	0.03	0.00	0.05
Meters	0.96	0.82	0.93	0.77	0.87
Services	1.58	1.73	1.81	1.74	1.90
Major Projects	0.00	0.00	0.00	0.00	2.56
Other	0.04	0.11	0.00	0.00	0.00
<b>Total Growth</b>	<b>4.65</b>	<b>3.68</b>	<b>3.85</b>	<b>3.42</b>	<b>7.01</b>
<b>Total</b>	<b>8.46</b>	<b>7.88</b>	<b>9.17</b>	<b>9.62</b>	<b>14.29</b>
<b>Envestra Total</b>	<b>8.46</b>	<b>7.88</b>	<b>9.54</b>	<b>9.96</b>	<b>14.64</b>

*Numbers may not add due to rounding. Slight difference between ECG’s and Envestra numbers may occur due to the use of different timeframes of historical inflation rates. Such differences will even out over time.*

The Authority reviewed ECG’s analysis for each of the categories above and has further considered ECG’s advice in response to the additional information provided by Envestra in response to the Draft Decision. The Authority accepts ECG’s recommendation regarding Envestra’s past ‘stay in business’ capital expenditure and ‘growth’ capital expenditure for improved supply, general mains, regulators and ‘other’.

ECG considered that, as there was only one net additional large customer, it could not accept the \$0.35 million forecast by Envestra in 2005-06. However, ECG acknowledged that, from its past experience, it was reasonable to make some provision for the cost of connecting large industrial consumers. ECG considered a prudent service provider would make provision for a cost in the range of \$0.05 million for a customer with a short main extension and \$0.30 million for a customer with a long main extension. Therefore, ECG recommended a provision of \$0.1 million for 2005-06 would be consistent with the Code, which the Authority accepted in its Draft Decision. As Envestra did not provide any further justification for the amount it had initially forecast, the Authority confirms its previous decision to accept a forecast cost of \$0.1 million for ‘large customers’ in 2005-06.

In its Draft Decision, the Authority made provision for \$2.56 million expenditure for an extension of a main along Milton Road to the Brisbane City Council’s bus depot at Toowong. The Authority anticipated that Envestra would be able to verify the cost of this project. ECG

indicated that sufficient information had now been provided by Envestra for it to accept the \$2.56 million expenditure in 2005-06.

Table 11.4 shows the capital expenditure proposed by Envestra, that recommended by ECG and that accepted by the Authority.

**Table 11.4: QCA accepted capital expenditure for Envestra, 2001-02 to 2005-06 (\$m, nominal)**

	2001-02	2002-03	2003-04	2004-05	2005-06
Total Stay-in-Business	3.81	4.20	5.33	6.20	7.28
Total Growth	4.65	3.68	3.85	3.42	7.01
<b>Total</b>	<b>8.46</b>	<b>7.88</b>	<b>9.17</b>	<b>9.62</b>	<b>14.29</b>
<b>ECG's total</b>	<b>8.46</b>	<b>7.88</b>	<b>9.17</b>	<b>9.62</b>	<b>14.29</b>
<b>Envestra's total</b>	<b>8.46</b>	<b>7.88</b>	<b>9.54</b>	<b>9.96</b>	<b>14.64</b>

*Numbers may not add due to rounding. Envestra has used different historical inflation rates to those of the Authority and ECG.*

#### Past capital contributions

Envestra reported the receipt of capital contributions during the current access period. No forecasts of capital contributions were provided during the approval process for the current access arrangement. In accounting for capital contributions from customers the relevant amounts can either be removed from the capital base or the contribution can be subtracted from revenues.

Excluding capital contributions from the capital base creates an ongoing administrative burden as these assets must be separately identified and managed throughout their productive lives. Unless there is a need to keep track of these contributions, it is far simpler to offset them against revenue and leave the capital base intact. This is the approach adopted by the Authority in its electricity distribution decisions.

In its response to the Draft Decision, Envestra indicated that it strongly preferred the approach of excluding capital contributions from the capital base. Furthermore, Envestra claimed that the Authority was not permitted under the Code to choose its preferred method for handling capital contributions. The Authority does not object to Envestra's proposal to exclude capital contributions from the regulatory capital base. However, as indicated in the Draft Decision, the Authority will accept Envestra's proposal on the basis that contributed assets are clearly separated from the regulatory capital base. Contributions to capital costs made by way of a surcharge (as defined in the Code) will also have to be recorded in the same way. Therefore, in order for Envestra's proposed treatment of capital contributions to be accepted, Envestra must produce and maintain a record of contributed assets and surcharges that includes:

- the amount of the contribution or the additional charge (above the reference tariff);
- the date the contribution or additional charge was paid;
- the contact details of the user who made the contribution; and
- a description of the new facility to which the contribution or surcharge relates.

In the absence of these records being provided by Envestra with respect to the current access arrangement period and being maintained by Envestra over the next regulatory period, the

Authority does not accept that Envestra's proposed treatment of capital contributions would be consistent with the Code. The Authority must ensure that the treatment of capital contributions as proposed by Envestra does not result in additions to the regulatory capital base for which Envestra has incurred no cost. The information to be reported by Envestra with respect to capital contributions must be included in Envestra's regulatory accounts, which are submitted each year to the Authority.

In discussions held between the Authority and Envestra in relation to the treatment of capital contributions, Envestra indicated that capital contributions over the four years from 2001-02 to 2004-05 showed that between 90 and 97 per cent of value of the contributions identified relate to alterations and relocations of existing mains and services. The entities requesting these alterations and relocations are, according to Envestra, local councils and the Queensland Department of Main Roads. The alterations and relocations are required where local or state governments require changes to the route of a gas main to fit in with a road upgrade (for example, redevelopment, road widening or resurfacing).

The Authority notes that capital contributions are defined in the Code as a charge paid by a user which exceeds the reference tariff. Consequently, payments by non-users to relocate existing mains that are part of the regulated capital base are not capital contributions as defined in the Code.

In principle, the replacement of a regulated asset would extend the effective life of that asset and, accordingly, the depreciation schedule of that asset should be adjusted to reflect its longer expected life. Based on the information supplied by Envestra, the largest such instance was the relocation in 2004-05 of 300 metres of high pressure steel main that was, at the time, five years old. According to Envestra, the Department of Main Roads contributed just over \$100,000 for the relocation. Were the depreciation schedule to be adjusted, Envestra's annual revenue requirement would have to be reduced by approximately \$40 each year, which is clearly not material. Furthermore, at the end of the effective life of the whole main, which would include the recently replaced section, the whole main would be replaced despite the 300 metre section having five years of remaining life. Therefore, in practice, the effective life of the asset has not been extended. Consequently, the Authority does not intend to adjust the capital base as a result of mains and services alterations and relocations during the current regulatory period.

Envestra should revise its historical and forecast capital contributions to ensure compliance with the Code. However, given Envestra's treatment of capital contributions, which the Authority has now accepted, such a revision will not have any effect on the net capital expenditure to be included in the revenue requirement. Further discussion on the treatment of capital contributions and mains relocations and alterations is provided in the section concerning the roll-forward of the capital base through the next regulatory period.

**Amendment 11.2**

**In order for Envestra’s access arrangement to be approved, Envestra must revise its estimates of capital contributions to be consistent with the Code and produce and maintain a record of contributed assets and surcharges that includes:**

- **the amount of the contribution or the additional charge (above the reference tariff);**
- **the date the contribution or additional charge was paid;**
- **the contact details of the user who made the contribution; and**
- **a description of the new facility to which the contribution or surcharge relates.**

**This information must be reported annually to the Authority as part of Envestra’s regulatory accounts.**

Redundant and disposed assets

Draft Decision

In its revised access arrangement information, Envestra claimed that no assets had become redundant or were disposed of during the current access period.

In its report to the Authority prior to the Draft Decision, ECG considered it was likely some replaced mains would no longer be contributing to the delivery of services by Envestra. However, Envestra did not supply ECG with information on this matter.

The Authority noted in its Draft Decision that the sensible technical approach to mains replacement is for complete sections of main to be replaced at once rather than individual pieces being replaced as their economic life expires. It is inevitable that this technically correct approach will mean that some assets will be withdrawn from service before reaching the end of their economic life. These assets should also be withdrawn from the capital base at the same time. The Authority did not accept Envestra’s claim that there were no assets in the regulatory capital base that had been withdrawn from service or ceased to be productive.

The Authority, therefore, required Envestra to provide information on such assets or provide a detailed explanation of why this would not be the case. The Authority indicated in its Draft Decision that it would exercise its judgement to determine an appropriate estimate if no further information was provided.

Final Decision

ECG considered the information provided by Envestra in response to the Draft Decision relating to both volume and demand customers. With respect to volume customers, ECG noted that service providers generally do not store detailed information on the age of meters and services which could be used to determine the value of those assets no longer connected to the network. Where a significant proportion of houses had disconnected their service from a single main, ECG acknowledged there may be redundant capacity in the main. However, ECG noted that the gas industry generally uses standard pipe sizes and, in the case where a significant number of houses had disconnected from the main, the appropriate size of main would not necessarily change.

However, ECG suggested the situation would be different for large customers. In these circumstances, a service provider should be able to identify assets that are no longer used by a large disconnected customer including the service, the meter and, where relevant, the dedicated main to that customer. While Envestra did not provide any information in relation to such customers, ECG did not observe any substantial decrease in network utilisation over the current regulatory period.

Based on Envestra's estimates of the value of disused assets, the Authority will remove these assets from the capital base and include an amount in the revenue requirement over the next regulatory period to compensate Envestra for the loss of remaining depreciation due to the reduction in its capital base. The adjustment is included in the calculation of the revenue requirement in Chapter 15.

#### Past depreciation

The Code requires that the roll-forward of the capital base be made using forecast depreciation figures included in the 2001 Final Decision, adjusted for inflation, as these represent the actual funds returned to Envestra over the current access arrangement period. This approach is consistent with that proposed by Envestra.

#### Past inflation

The 2001 Final Decision adopted a constant rate of expected inflation to roll forward the capital base from 2001-02 to 2005-06. However, in arriving at the opening capital base for the next regulatory period, this assumed rate of inflation can be adjusted to reflect actual inflation over the previous period and a revised estimate of inflation in 2005-06, as shown in Table 11.5.

**Table 11.5: Forecast and actual CPI over the current period, 2001-02 to 2005-06 (%)**

	2001-02	2002-03	2003-4	2004-05	2005-06
Forecast CPI (2001)	2.50	2.50	2.50	2.50	2.50
Actual CPI	2.84	2.69	2.48	2.49	2.77*
Envestra CPI	2.90	3.40	2.00	2.40	2.50*

\* Forecasts

The past inflation rate used by the Authority differs from that used by Envestra. The Authority used the rate for the financial year, while Envestra used the rate which reflects the 12 months to March each year.

In its response to the Draft Decision, Envestra argued that the capital base should be rolled forward in accordance with the way that tariffs were adjusted for inflation over the current regulatory period. During this time, tariffs were adjusted using the twelve months to March rather than June because only the figure to March was available at the time tariffs were approved. Envestra suggested that to roll forward the capital base using June inflation figures would be inconsistent with the principle of financial capital maintenance which underpins the Code.

Alternatively, Envestra suggested that, if the Authority maintains its approach of using inflation measured over the twelve months to June, then an adjustment should be made at a later date to reconcile any revenue differences as a result of using March rather than June inflation figures.

The Authority does not accept Envestra’s argument and intends to maintain its present method of rolling forward the capital base on a financial year basis using financial year measures of inflation. To do otherwise would be inconsistent with the formation of other elements of the ‘building blocks’ such as capital and non-capital expenditure.

However, for the purpose of adjusting prices during the regulatory period, the Authority is of the view that inflation data for the 12 months to the end of March is a reasonable estimate of inflation for the 12 months to the end of June. To the extent that there are differences between these inflation rates, the differences will self correct over time. Had the Authority made an adjustment to Envestra’s revenue requirement on the basis of the differences during the current regulatory period, including a revised forecast for 2005-06, just over \$100,000 would need to be removed from Envestra revenues over the next regulatory period. However, the Authority does not intend to make this adjustment for the reasons outlined above.

Summary: The opening value of the capital base (1 July 2006)

Table 11.6 shows the roll-forward of the capital base to its closing value on 30 June 2006. This closing figure then becomes the opening value for the next access arrangement period.

**Table 11.6: Roll-forward of Envestra’s capital base to 30 June 2006**

	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>
Opening assets	180.2	189.1	197.0	205.5	214.4
Less depreciation	4.8	5.2	5.6	6.0	6.4
Plus inflation	5.2	5.2	5.0	5.2	6.1
Plus capital expenditure	8.5	7.9	9.2	9.6	14.3
<b>Closing assets</b>	<b>189.1</b>	<b>197.0</b>	<b>205.5</b>	<b>214.4</b>	<b>228.4</b>

*Numbers may not add due to rounding.*

### **Amendment 11.3**

**In order for the Envestra’s access arrangement to be approved, Envestra must amend the roll-forward of the capital base for the current period in accordance with Table 11.6.**

### **11.3 Rolling Forward the Capital Base to 30 June 2011**

Once the opening capital base has been established, this value is then rolled forward to the end of the access arrangement period based on forecast capital expenditure, depreciation and inflation.

#### *Code requirements*

In general, the Authority must establish whether the new facilities investment (capital expenditure) forecasts provided by Envestra represent a best estimate arrived at on a reasonable basis (section 8.2(e) of the Code). The Authority is also required to address specific tests and provisions under sections 8.15-8.22 of the Code to determine the extent to which the service providers’ forecasts of capital expenditure comply with these tests and provisions, and hence whether those forecasts should be accepted for the purpose of calculating the reference tariffs for the next access arrangement period.

Section 8.16 of the Code provides that capital expenditure recognised should:

- (a) 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) satisfy one of the following conditions:
  - (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.

When evaluating forecast capital expenditure against the criteria above, the Authority must also be cognisant of economies of scale and scope in the increments in which capacity can be added and that sufficient capacity exists to meet forecast sales over a reasonable time frame.

Where a given amount of capital expenditure does not meet any of the tests in section 8.16, the portion that would meet these tests may be included in the capital base. There are two options open to the service provider to recover the additional costs that are unable to be included in the capital base (section 8.19). The service provider can:

- levy a surcharge on, or agree a capital contribution with, the relevant user or users; or
- place the excess costs into a speculative investment fund and seek to include them in the capital base in the future if circumstances change and the required criteria are met.

The overall objective of section 8.16 is to ensure that new investment in projects is subject to appropriate tests of economic feasibility and technical suitability before being included in the capital base and thus in the reference tariff. In particular, it is important to ensure that uneconomic investments are not included in the capital base on the basis that part of the cost will simply be imposed on users of the system who do not receive a commensurate benefit from such investment.

#### *Envestra's proposal*

Envestra's forecast capital expenditure for the next access period is significantly higher than in the current access period. Envestra stated that this is predominantly due to:

- a significant renewal of its network through the replacement of all cast iron and unprotected steel mains by the end of the next regulatory period;
- completion of security of supply projects that will provide consumers with a much higher degree of reliability of gas supply;
- a 35 per cent rise in the rate of replacement of meters to improve accuracy; and
- a substantial one-off investment in IT capital expenditure in 2008-09 that will enhance Envestra's long-term IT capability.

Information prepared by Envestra to support its revised access arrangement did not contain the costs related to the extension of retail contestability in Queensland as the specific cost implications were (and remain) unclear at the time of preparing their revised access arrangement. Envestra expected these costs could be recouped either through a cost pass-through or as a supplementary submission prior to final approval of their revised access arrangement.

Envestra’s forecast capital expenditure is summarised in Table 11.7.

**Table 11.7: Envestra’s forecast capital expenditure, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
<b>Stay in Business</b>					
Mains/Inlets	6.9	7.2	7.4	7.7	7.2
Periodic meter charges	0.9	0.9	0.9	1.0	1.0
IT Systems	0	0	5.7	0	0.1
Telemetry and regulators	0.5	0.5	0.5	0.5	0.6
Other	0.5	0.5	0.5	0.5	0.4
<b>Total Stay in Business</b>	<b>8.8</b>	<b>9.1</b>	<b>15.1</b>	<b>9.7</b>	<b>9.4</b>
<b>Growth</b>					
Mains/inlets/meters	5.9	5.9	5.4	6.1	6.4
Network Development	1.3	1.6	2.0	2.4	2.9
IT Projects	1.0	0.1	0	0	0
Major Projects	1.1	1.1	2.9	1.2	3.0
<b>Total Growth</b>	<b>9.3</b>	<b>8.8</b>	<b>10.3</b>	<b>9.7</b>	<b>12.3</b>
<b>Total</b>	<b>18.1</b>	<b>17.9</b>	<b>25.4</b>	<b>19.4</b>	<b>21.7</b>

*Numbers may not add due to rounding.*

#### Stay in business capital expenditure

Envestra has proposed \$52.1 million in ‘stay in business’ capital expenditure over the next access period, which will be required to sustain the current level and quality of its operations.

Envestra suggested its network has one of the highest percentages of cast iron and unprotected steel mains in Australia and that, without increased expenditure on mains renewal, it expected unaccounted for gas (UAG) to trend upwards.

Envestra has proposed to replace 70 km of mains per year through block replacement over the next access period. Envestra stated that it has undertaken economic analysis to compare the cost of replacing mains with the forecast cost of:

- continuing to repair leaks as they arise;
- gas lost from leakage; and
- ancillary tasks, such as attending to water ingress problems.

Envestra proposed that 258 km of mains in Brisbane and 50 km of mains in Ipswich could be economically replaced over the forecast period. However, Envestra acknowledged that an additional 35 km of mains in Brisbane and about 75 km of mains in Ipswich that it proposed to replace would not meet its own test of economic return. Worley Parsons supported Envestra’s proposed replacement of mains. Envestra suggested its proposed renewal rate of about 70 km per year would remove all cast iron and unprotected steel mains within approximately six years.

Envestra regularly changes gas meters in order to test them for metering accuracy. Envestra indicated that it expected meter replacements to rise to 4,500 per year over the next regulatory period. Envestra suggested the increase in meter replacement was in accordance with regulatory requirements for improved accuracy and was reflective of the age and type of meters in service.

Envestra stated that security of supply was continually reviewed to ensure that the risk of gas outages caused by accidents or vandalism was minimised. While Envestra indicated it had incurred little expenditure on security of supply projects in recent years, good industry practice indicated that expenditure would rise when compared to the current access period. Envestra indicated that of the over 150 district regulators, many were located above ground and were prone to vandalism and vehicle damage and therefore needed to be relocated underground. Envestra has also proposed a number of one-off projects to replace deficient regulator installations in Ipswich and several in the Brisbane CBD.

Envestra anticipated the introduction of full retail competition would require considerable investment in improved IT systems. Envestra engaged IBM to develop a strategy for Envestra to close key capability gaps. As a result, Envestra has proposed a \$5.7 million IT system upgrade in 2008-09. Envestra has also proposed capital expenditure to update its network data (SCADA) and odouring systems.

#### Growth capital expenditure

Envestra has proposed \$50.4 million in ‘growth’ capital expenditure over the next access period.

Envestra’s forecast capital expenditure for large customers was based on available information concerning the timing and planning of projects. However, Envestra noted that, due to the unique nature and size of such projects, historical expenditure was not necessarily a reasonable indicator of upcoming or future projects.

Envestra stated that its forecast expenditure on mains, inlets and meters provides for:

- growth of the network mains to service new delivery points. New mains and extensions range from large projects to provide gas to new housing estates to small extensions in existing network areas to connect individual new customers. Large (demand) customers could also require significant mains extensions. Envestra indicated that all extensions were evaluated on a case-by-case basis taking into consideration the forecast load demand of the customer;
- inlets associated with growth of the network. That is, the connection between a gas main and a customer’s meter, which can vary in length and size and, therefore, incur costs which depend on the terrain and environmental characteristics of the site being connected. For example, it is generally simpler and less costly to connect gas to a new home than to an existing home;
- meter requirements related to 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 to ensure that gas is supplied in a safe manner in accordance with Envestra’s obligations as a gas distributor; and
- mains and related facilities that are constructed on a routine basis to improve security of supply to consumers.

Envestra proposed new projects to improve supply over the next regulatory period with a total cost of over \$9 million. Envestra also made an allowance for miscellaneous projects of \$50,000

per year, essentially a contingency fund. However, Envestra has not assessed each of these projects individually in terms of their cost. WorleyParsons reviewed the proposed costs for the improvement of supply and found them to be prudent.

On the basis of advice provided by IBM, Envestra proposed IT projects that would address key capability gaps in Envestra current information systems. Envestra forecast the cost of these projects to be \$1 million in 2006-07 and \$0.1 million in 2007-08. While these projects were recommended by IBM, they are separate from those proposed as ‘stay in business’ expenditure.

Envestra forecast the cost of ‘major projects’ to be more than double the costs incurred over the current period. Envestra considered that growth in Queensland will lead to a number of significant future projects and that its forecasts allowed for the expansion of the network (new mains, industrial services and meters and telemetry) to service those customers who have already come to their attention via feasibility studies, general enquiries and Department of State Development planning. Envestra suggested that the potential major projects it has identified will be offset by an equivalent number of lost large customers and therefore it does not forecast any net increase in the number of demand customers.

Envestra forecast capital expenditure associated with its enhanced network development proposal as outlined in Chapter 13. The capital expenditure identified by Envestra provides for the additional connections resulting from the increased customer connections over the next regulatory period.

#### Forecast capital contributions

Envestra forecast \$1.4 million per year in capital contributions from customers, based on the average level of contributions received over the current period. Envestra has not included capital contributions as expenditure to be included in the capital base. Forecast capital expenditure, therefore, is net of capital contributions.

#### Summary

Table 11.8 shows how Envestra has rolled forward its capital base over the current regulatory period.

**Table 11.8: Envestra’s proposed roll-forward of the capital base, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
Opening assets	236.0	257.5	279.2	308.7	332.5
Less depreciation	2.6	2.8	3.2	3.6	3.8
Plus inflation	6.1	6.6	7.3	7.9	8.5
Plus capital expenditure	18.0	17.8	25.4	19.4	21.8
<b>Closing assets</b>	<b>257.5</b>	<b>279.2</b>	<b>308.7</b>	<b>332.5</b>	<b>359.0</b>

*Numbers may not add due to rounding.*

#### *Other jurisdictions*

Regulators have frequently considered that proposed access arrangements have provided insufficient support for expenditure forecasts in terms of the requirements set out in section 8.16 of the Code. In these circumstances, additional information has been required from the service providers with a view to establishing compliance with the Code. In other cases, regulators have

required downward adjustments to capital expenditure forecasts (for example, see IPART (2005)).

#### *Submissions from stakeholders*

Origin Energy (2006) noted that the Authority had accepted forecast capital expenditure in its Draft Decision that equated to an increase of 32 per cent compared to actual expenditure in the current regulatory period. Origin suggested this increase was sufficient for adequate renewal for Envestra's mains, meters and services.

EUAA (2006) was concerned that the Authority had included provisional amounts for some forecast capital expenditure in the Draft Decision that were subject to further information being provided by Envestra. EUAA suggested that such an approach was arbitrary. However, EUAA supported the Authority's decision to reduce forecast capital expenditure for mains renewal and a number of 'growth' capital expenditure items.

The Queensland Government (2006) noted that its 'Sustainable Housing Policy' would result in an increase in the demand for instantaneous gas hot water heaters. In particular, the Queensland Government suggested that the mains replacement programs proposed by the service providers would be necessary in older areas, particularly some parts of Brisbane, in order to replace lower pressure mains to enable instantaneous gas hot water systems to work effectively. The Queensland Government urged the Authority to ensure that the service providers had capacity for sufficient capital expenditure to enable the timely upgrade of infrastructure to support Government policies.

#### *QCA position*

To assist the Authority in forming its opinion regarding the Code compliance of Envestra's forecast capital expenditure, ECG was commissioned to undertake a detailed assessment of the forecast capital expenditure with specific reference to the technical prudence aspects of the Code's requirements. ECG reviewed the efficiency and sufficiency of the proposed capital expenditure, safety and service requirements, reasonableness of growth related investment and consistency with good asset management practices. ECG prepared advice on the revised access arrangement initially submitted by Envestra and subsequently revised its report based on additional information provided by Envestra in February and March 2006.

ECG noted that Envestra's forecast capital expenditure represents a significant increase compared with the current period. ECG's key findings from its initial report were:

- 'stay in business' expenditure forecast by Envestra for regulators and 'other' was considered prudent and consistent with the Code;
- 'stay in business' expenditure forecasts by Envestra for mains replacement, periodic meter changes, IT systems and telemetry was not considered to be consistent with a prudent service provider acting efficiently; and
- 'growth' expenditure for all categories was not considered to be consistent with the Code and ECG proposed numerous adjustments to forecast capital expenditure in this area.

The Authority noted in its Draft Decision that ECG was unable to support forecast capital expenditures for a range of specific items proposed by Envestra because insufficient information had been provided by Envestra. In response to the Draft Decision, Envestra submitted additional information to the Authority and this was referred to ECG for further

advice. After considering the additional information ECG revised its report to the Authority and its key findings were:

- no change to the previously recommended expenditure on network renewal;
- a significant upward revision to recommended ‘stay in business’ expenditure for IT equipment; and
- an increase in forecast ‘growth’ expenditure associated with ‘major projects’ and ‘meters’. ECG also recommended that forecast expenditure for improved data management capabilities be accepted.

Table 11.9 summarises ECG’s recommendation regarding Envestra’s forecast capital expenditure.

**Table 11.9: ECG’s forecast Capital Expenditure, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
<b>Stay in Business</b>					
Mains/inlets	5.09	5.23	5.37	5.52	5.67
Periodic meter changes	0.73	0.76	0.79	0.83	0.85
IT Systems	0.00	0.00	5.70	0.00	0.11
Telemetry and regulators	0.42	0.43	0.46	0.47	0.49
Other	0.49	0.53	0.40	0.46	0.42
<b>Total Stay in Business</b>	<b>6.73</b>	<b>6.95</b>	<b>12.71</b>	<b>7.28</b>	<b>7.55</b>
<b>Growth</b>					
Mains/inlets/meters	4.94	4.93	4.49	5.03	5.26
Network Development	0.00	0.00	0.00	0.00	0.00
IT Projects	0.53	0.10	0.00	0.00	0.00
Major Projects	1.28	1.32	1.36	1.39	1.43
<b>Total Growth</b>	<b>6.74</b>	<b>6.35</b>	<b>5.85</b>	<b>6.42</b>	<b>6.69</b>
<b>Total</b>	<b>13.47</b>	<b>13.30</b>	<b>18.56</b>	<b>13.70</b>	<b>14.24</b>
<b>Envestra Total</b>	<b>18.05</b>	<b>17.89</b>	<b>25.39</b>	<b>19.38</b>	<b>21.74</b>

*Numbers may not add due to rounding.*

Stay in business capital expenditure

### Draft Decision

ECG advised that Envestra’s proposed time frame for mains renewal was short in comparison with the 18 to 30 years for planned renewals in other jurisdictions, especially as it involves replacing mains in some areas which may not satisfy economic replacement criteria. Should Envestra continue with its planned renewal rate of about 70 km each year, it would eliminate all its cast iron and unprotected steel mains within approximately six years. ECG considered that a rate of replacement of 50 km per year was sufficient to prevent any increase in UAG and was consistent with complete replacement of cast iron and unprotected steel mains within 9 years.

The Authority considered a more modest replacement program was desirable and noted the time frames allowed in other jurisdictions, although it acknowledged Envestra’s network to be in

poorer condition. The Authority noted that, according to ECG, at the recommended replacement rate of 50 km per year, Envestra would be able to replace all the pipes it proposed in nine years. This replacement rate was a significant step up from the 35 km per year Envestra had replaced over the current period. The Authority accepted ECG's recommendation of 50 km of main renewal per year and the commensurate forecast costs.

ECG reviewed Envestra's Asset Management Plan, its Gas Measurement Scheme and the WorleyParsons Report but was unable to find sufficient information on the reasons for the proposed increase in the number of periodic meter changes for domestic and industrial and commercial meters in the next regulatory period. ECG was therefore unable to conclude that the forecast number of meter changes was prudent. ECG proposed instead that the periodic meter change program should continue at the rate estimated for the current period, with an average domestic rate of 3,500 meters per year and an average industrial and commercial program of 180 meters per year.

Envestra suggested the number of periodic meter changes would have to rise in the next regulatory period as a result of previously refurbished meters now needing to be replaced. The Authority accepted there may be some justification for increased periodic meter changes but, in the absence of information to support this claim, the Authority did not accept Envestra's forecasts. The Authority made a provisional allowance and accepted half of the difference between Envestra's and ECG's forecast costs. Envestra was required to provide further information to substantiate its forecast costs. In the absence of such information, the Authority indicated that it intended to adopt the cost of meter change recommended by ECG in its Final Decision.

The Authority accepted that Envestra was likely to require additional IT spending in the forecast period, given the introduction of FRC. The increase in IT spending compared to the past related to a single claim for \$5.7 million in 2009. In the absence of further information, the Authority accepted half the sum sought by Envestra in anticipation that Envestra could justify some, if not all, of the expenditure. However, the Authority intended to remove this amount prior to making its Final Decision should the capital expenditure on IT equipment not prove to be in accordance with the Code.

ECG received no information from Envestra to support its revised telemetry expenditure. Envestra incurred telemetry costs of approximately \$310,000 over the current regulatory period. ECG recommended an increased provision to \$400,000 for the forecast period would also allow for any unforeseen events.

Given the lack of information justifying the telemetry figures in the past, the Authority was concerned at allowing any increase in this cost for the next period. It accepted ECG's modest increase (compared to Envestra's more substantive increase), but required Envestra to provide further justification for these figures. If no further information showing this expenditure to be justified was provided by Envestra, the Authority intended to remove this amount from forecast capital expenditure prior to making its Final Decision.

ECG advised that the types of works Envestra proposed for regulators were in line with what it would expect to be carried out by a prudent operator and that the expenditure was in the range that could be expected for these types of works. The Authority, therefore, accepted Envestra's forecasts of regulator costs.

ECG analysed other costs (including odourisation and corrosive protection) and recommended that these were prudent. The Authority, therefore, accepted Envestra's forecast of these costs.

## Final Decision

In its initial report, ECG recommended that Envestra's mains renewal program be extended from five years to around eight or nine years. Envestra provided additional information in response to the Draft Decision and suggested that ECG had not adequately addressed the implications of the Queensland Government's 'Sustainable Building Code' which came into effect on 1 March 2006 and requires new homes to have a gas, heat pump or solar hot water heater.

Envestra suggested that, in the absence of its five year mains renewal program, meeting the requirements of the new building code would restrict Envestra's potential growth in customer numbers.

In considering these further arguments, ECG estimated that only around 5 per cent of new customers are in areas where renewals take place, that is, older more established suburbs near the centre of Brisbane. Newer areas of Brisbane where Envestra obtains most of its new customers are much less affected by the mains renewal program.

ECG also considered that its proposed renewal program, while slower than that proposed by Envestra, would still lead to substantial reductions in unaccounted for gas.

Consistent with ECG's advice, the Authority accepts that a mains renewal program over the next regulatory period of \$24.8 million, compared to \$33.9 million sought by Envestra, provides a reasonable forecast and is consistent with a prudent service provider acting efficiently.

Envestra advised ECG that its significant increase in periodic meter changes was a result of the conversion from town gas to natural gas which occurred over a five year period commencing around 15 years ago. At the time, a large number of meters were installed and the expected surge in meter replacements over the next regulatory period reflects the productive lives of these meters coming to an end. ECG acknowledged this argument and agreed that evidence presented by Envestra was consistent with meter replacement programs in other States. ECG recommended that the forecast cost of periodic meter replacement proposed by Envestra was reasonable. The Authority accepts Envestra's forecast cost for meter replacement on this basis.

Envestra's forecast expenditure on IT equipment was not recommended by ECG in its initial report, on the basis that insufficient information had been provided by Envestra to support the expenditure. ECG has reconsidered the forecast cost of the IT equipment in light of further information provided by Envestra. ECG noted that the IT equipment included a 'Cordaptix' billing system and a 'Maximo' asset management system. Both of these systems would replace an existing system that is no longer suitable for Envestra. The new system would also provide improvements in the ring-fencing of commercial information and the data management needs associated with full retail contestability. The loss of Envestra's existing IT vendor (Origin) suggested to ECG that Envestra's current IT system did need to be replaced.

ECG examined the software requirements of the proposed new system as well as the cost of tailoring and testing the system for Envestra as well as the training and other implementation costs. ECG considered the cost of the system to be in accordance with the size of Envestra's Queensland network and was comparable in cost to systems adopted by gas distributors in other States, typically as a result of the onset of full retail contestability. On this basis, the Authority accepts that the forecast capital expenditure on IT equipment proposed by Envestra is consistent with the requirements of the Code. The Authority also accepts this expenditure is likely to occur in line with the implementation of full retail contestability in 2006-07 rather than in 2008-09 (as indicated in Envestra's revised access arrangement). However, the Authority can not make this revision in timing until Envestra has formally revised its access arrangement information.

In response to the Authority's Draft Decision, Envestra supplied additional information regarding its proposed upgrades to telemetry equipment. ECG considered the information provided by Envestra and found that, while some of the expenditure on telemetry could be justified, the full cost proposed by Envestra was not able to be justified. ECG suggested that the recent trend in telemetry expenditure provided a reasonable forecast of future costs. In addition to the underlying expenditure trend, ECG also endorsed the cost associated with four large telemetry projects which ECG regarded as being separate from ongoing upgrades.

The Authority acknowledges that some additional information was provided by Envestra and notes that ECG was only able to assess those costs for which information was provided. The Authority has taken the view that, in the absence of relevant information, those costs are not justified and it therefore accepts the forecast recommended by ECG.

The 'other' item in 'stay in business' expenditure refers to odourisation, corrosion protection and other general items such as cabling, air conditioners, general software, specialised maintenance equipment and desktop computers. ECG had previously accepted Envestra's forecast cost of odourisation and corrosion protection but revised downward Envestra's forecast expenditure for the remaining items. ECG has advised that Envestra provided information that, in its view, supported forecasts relating to the replacement of personal computers and the purchase of specialised stopping equipment used for mains repair work. Overall, ECG has now recommended total forecast capital expenditure for all 'other' items of \$2.13 million. The Authority accepts the forecast cost of 'other' items on the basis of the recommendation made by ECG.

Growth capital expenditure

#### Draft Decision

ECG based its analysis of Envestra's forecasts for general mains on the expenditure and unit lengths from its work in other jurisdictions, including ACT and NSW. Envestra's unit costs were approximately \$38 per metre for domestic customers in new areas and about \$60 per metre for domestic customers in existing areas. ECG advised these unit costs were similar to those in other jurisdictions. Envestra's unit costs were approximately \$109 per metre for industrial and commercial customers. ECG advised that this unit cost was comparable with other jurisdictions. The Authority accepted Envestra's forecast costs for general mains.

The unit cost for Envestra's domestic customer services (inlets) is approximately \$968 in new areas and approximately \$1,604 in existing areas. ECG considered these costs to be higher than in other jurisdictions. According to ECG, the unit cost for AGLGN was \$731 per service for domestic customers in new areas and \$1,305 per service for domestic customers in existing areas. Based on its experience, ECG estimated that the unit cost for domestic services in new areas would be in the range of \$600 to \$900 and in existing areas would be in the range of \$1,000 to \$1,500. ECG therefore considered that an average service cost for domestic customers of \$750 per customer in new areas and \$1,300 per customer in existing areas would be reasonable.

For industrial and commercial customer services (inlets), Envestra's unit cost was approximately \$2,588. ECG also considered this to be higher than in other jurisdictions as the average unit cost for AGLGN was \$1,305 for industrial and commercial customers. Based on its experience, ECG estimated that the unit cost for industrial and commercial services would be in the range of \$1,000 to \$1,500. ECG therefore considered that an average service cost for industrial and commercial customers of \$1,300 per customer would be reasonable. In its Draft Decision, the Authority considered the explanations above regarding Envestra's forecast services (inlet) costs and accepted ECG's revised forecasts as appropriate on the basis of the comparative costs provided by ECG for network operators in other jurisdictions.

Envestra's estimated unit cost for meters is approximately \$336 per meter for domestic customers and approximately \$2,104 per metre for industrial and commercial customers. ECG considered the domestic meter unit cost to be higher than in other jurisdictions and suggested a range of \$160 to \$200 per meter. ECG considered that the cost of \$2,104 per meter for industrial and commercial customers was comparable with that in other jurisdictions. The Authority accepted ECG recommendation that the appropriate unit cost for domestic customer meters should be \$180 per meter and that Envestra's forecast cost for industrial and commercial customer meters was appropriate.

A further aspect of Envestra's forecast cost for mains, inlets and meters was in relation to its 'improve supply' program, which aims to reduce the risk of accidental damage to Envestra's network and provide for augmentation to support load growth. ECG stated that it had not been provided with any data on the scope, estimated cost or justification for the projects related to supply improvement. WorleyParsons listed the eight separate projects plus a miscellaneous allowance of \$50,000 per year that constituted the proposed improved supply program. For example, Envestra has proposed to connect the two Rockhampton networks and reinforce networks in Albany Creek, Carseldine and Deception Bay. Although ECG did not receive detailed information on these projects, it considered these projects and related costs were consistent with a prudent service provider acting efficiently. On this basis, the Authority accepted Envestra's forecast costs of the 'improve supply' category.

Overall, ECG forecast the cost of mains, inlets and meters to support the growth of Envestra's network to be \$4.9 million in 2006-07 rising to \$5.19 million in 2010-11.

Envestra's forecast costs for network development relate to the additional connections to its network and resulting capital expenditure from its additional network development proposal (see Chapter 13). ECG did not comment on these additional costs, as it believed the prudence of the network development activities to be outside the scope of its review. However, ECG noted it was not apparent how the additional costs were derived from the network development activities. While the Authority accepted an increase in forecast costs for network development, it did not accept Envestra's additional network development activities as proposed. For the purposes of its Draft Decision, the Authority did not accept the capital expenditure associated with this aspect of Envestra's revised access arrangement.

With respect to 'growth' IT projects in 2006-07 and 2007-08, ECG was unable to recommend acceptance of these forecasts as insufficient information had been provided by Envestra. While the Authority made a substantial provision for 'stay-in-business' IT expenditure proposed by Envestra, it was concerned that so many of Envestra's expenditure proposals were not able to be scrutinised in detail. As a result, the Authority did not accept Envestra's proposed forecast cost of 'growth' IT capital expenditure.

ECG received only Envestra's general advice concerning the timing and planning of major projects. Envestra suggested that, due to the unique nature and size of such projects, historical trends are not necessarily a reasonable indicator of upcoming or future projects. While ECG accepted that additional major projects were likely over the revised access arrangement period, it considered that not all projects proposed by Envestra would proceed. In the absence of any detailed information on the specific projects Envestra expected to obtain, the Authority included only half of Envestra's forecasts relating to major projects for the Draft Decision. Envestra was required to provide further information for the Final Decision.

### Final Decision

Envestra's forecast costs for 'mains, inlets and meters' comprise costs that ECG has examined under the subcategories of 'large consumers', 'improve supply', 'general mains', 'regulators', 'meters', 'services' and 'major projects'. These subcategories are discussed in turn.

Envestra sought \$0.35 million for costs associated with ‘large consumers’ in 2005-06 and adopted this amount, in real terms, to forecast costs over the next regulatory period. ECG assessed a reasonable cost to be \$0.1 million in 2005-06 and has used this amount, in real terms, as the forecast cost over the next regulatory period. ECG suggested that its forecast was consistent with the historical trend and noted that Envestra had not provided justification for any higher amount. On this basis, the Authority accepts ECG’s forecast as reasonable and consistent with the Code.

With respect to ‘improve supply’, ‘general mains’ and ‘regulators’, the Authority accepted Envestra’s forecast costs in its Draft Decision.

ECG had previously considered Envestra’s forecast cost of commercial and industrial meters to be reasonable but revised downward the forecast cost of domestic meters. In considering the additional information provided by Envestra in response to the Draft Decision, ECG accepted that Envestra’s meter cost also included provision for a meter box. As a result, ECG has increased its forecast meter cost from \$180 to \$240 per meter, still somewhat less than the \$336 per meter forecast by Envestra. The Authority accepts the forecast cost of meters recommended by ECG.

In its initial report, ECG revised downward the forecast cost of services for new and exiting domestic customer services and the cost of services to commercial and industrial users. In reconsidering its forecasts in light of additional information provided by Envestra, ECG noted that the cost of domestic services, both for new and existing domestic consumers, would be higher than elsewhere due to the complexity (and hence higher cost) of risers (the upward connection between the service and the meter) in Queensland. Consequently, ECG revised its forecast cost of services to domestic customer upward by 10 per cent.

With respect to commercial and industrial users, ECG acknowledged that travel costs would be higher in Queensland than in southern states as a result of the dispersion of customers across the Envestra network compared to elsewhere. ECG recommended the forecast average cost of these services should be increased to \$2,200 from its previous forecast cost of \$2,104.

The Authority acknowledges that using comparative costs can be problematic due to variations in geographic and other local factors. ECG has attempted to take account of the difference between the costs proposed by Envestra and those observed in other States and the Authority accepts that these costs are reasonable estimates.

ECG had previously received only limited advice from Envestra as to the forecast cost associated with ‘major projects’. Since the Draft Decision, Envestra provided detail for projects that could result in approximately \$18 million of new capital expenditure. In reviewing the material provided by Envestra, ECG considered that a reasonable estimate of these costs would be based on one project above \$0.5 million and one project below \$0.5 million proceeding each year. On this basis, ECG estimated a forecast cost of \$1.25 million each year in real terms would be reasonable over the next regulatory period. In the Authority’s view, estimation of both the timing and potential cost of prospective very large new customers requires a conservative approach to be adopted, with historical trends being a key indicator. The Authority therefore accepts the forecast cost recommended by ECG.

In its initial report, ECG did not recommend inclusion of costs proposed by Envestra for five information technology projects to address risk management, asset use and data management and verification issues. In response, Envestra provided the scope and its justification for each of these projects. ECG considered that two of the five projects were justified, while the other three projects were considered unnecessary. ECG considered the two projects it had supported, which addressed issues relating to asset management and business performance monitoring, were important to the effective operation of Envestra’s Queensland network. However, ECG

indicated that the projects relating to risk management, field data capture and data integrity and management were either not required in Queensland or would be rendered unnecessary by the proposed new IT system (discussed as part of Envestra’s ‘stay in business’ expenditure). The Authority accepts the forecast cost of the information technology projects relating to asset management and business performance reporting as these projects will result in improved efficiency to Envestra’s Queensland operations, while the inclusion of the remaining projects has not been justified by Envestra.

As in the Draft Decision, the Authority did not accept Envestra’s enhanced network development activities (see Chapter 13), hence capital costs associated with ‘increased network utilisation’ have not been accepted by the Authority.

#### Summary

Table 11.10 summarises the forecast capital investment that has been accepted by the Authority for the next access period.

**Table 11.10: Forecast capital expenditure, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
<b>Stay in Business</b>					
Mains/inlets	5.09	5.23	5.37	5.52	5.67
Periodic meter changes	0.73	0.76	0.79	0.83	0.85
IT Systems	0.00	0.00	5.70	0.00	0.11
Telemetry and regulators	0.42	0.44	0.46	0.47	0.50
Other	0.49	0.52	0.39	0.46	0.42
<b>Total Stay in Business</b>	<b>6.73</b>	<b>6.95</b>	<b>12.71</b>	<b>7.28</b>	<b>7.55</b>
<b>Growth</b>					
Mains/inlets/meters	4.93	4.93	4.49	5.03	5.26
Network Development	0.00	0.00	0.00	0.00	0.00
IT Projects	0.53	0.10	0.00	0.00	0.00
Major Projects	1.28	1.32	1.36	1.39	1.43
<b>Total Growth</b>	<b>6.74</b>	<b>6.35</b>	<b>5.85</b>	<b>6.42</b>	<b>6.69</b>
<b>Total</b>	<b>13.47</b>	<b>13.30</b>	<b>18.56</b>	<b>13.70</b>	<b>14.24</b>
<b>ECG Total</b>	<b>13.47</b>	<b>13.30</b>	<b>18.56</b>	<b>13.70</b>	<b>14.24</b>
<b>Envestra Total</b>	<b>18.05</b>	<b>17.89</b>	<b>25.39</b>	<b>19.38</b>	<b>21.74</b>

*Numbers may not add due to rounding.*

#### **Amendment 11.4**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its forecast capital expenditure for the five years of the next access arrangement period in accordance with Table 11.10.**

## 11.4 Redundant Capital

### *Code requirements*

The Code provides (section 8.27) that a reference tariff policy may include (and the relevant regulator may require that it include) a mechanism that will, with effect from the commencement of the next access arrangement period, remove an amount from the capital base for a covered pipeline so as to:

- ensure that assets which cease to contribute in any way to the delivery of services are not reflected in the capital base; and
- share costs associated with a decline in the volume of sales of services provided by means of the covered pipeline between the service provider and users.

Before approving a reference tariff which includes such a mechanism, the relevant regulator must take into account the uncertainty such a mechanism would cause and the effect that the uncertainty would have on the service provider, users and prospective users. If a reference tariff does include such a mechanism, the determination of the rate of return (under sections 8.30 and 8.31) and the economic life of the assets (under section 8.33) should take account of the resulting risk (and cost) to the service provider of a fall in the revenue received from sales of services provided by means of the covered pipeline or part of the covered pipeline.

Section 8.28 provides that, if assets that are the subject of redundant capital subsequently contribute, or make an enhanced contribution, to the delivery of services, the assets may be treated as a new facility having new facilities investment (for the purpose of sections 8.16, 8.17, 8.18 and 8.19) equal to the redundant capital value increased annually on a compounded basis by the rate of return from the time the redundant capital value was removed from the capital base.

Under section 8.29, a reference tariff policy may include (and the relevant regulator may require it to include) other mechanisms that have the same effect on reference tariffs as the above but which do not result in the removal of any amount from the capital base.

### *Envestra's proposal*

Consistent with its proposed fixed principle to exclude the potential for adjustment to the capital base in the event of capital becoming redundant, Envestra has not included a capital redundancy mechanism in its revised access arrangement.

Envestra provided no forecast of asset disposals over the next access period.

### *Other jurisdictions*

Generally, service providers in other jurisdictions have given effect to the redundant capital provisions by inserting the relevant provisions of section 8.27 of the Code directly into the access arrangement, either voluntarily or at the direction of the relevant regulator (see IPART (2005), ICRC (2004)).

ICRC (2004) did not accept an accelerated depreciation claim by ActewAGL for forecast capital redundancies.

### *Submissions from stakeholders*

EUAA (2006) was concerned at the lack of information provided by Envestra in relation to redundant assets.

### *QCA position*

The Authority has rejected Envestra's proposed fixed principle regarding capital redundancy (see Chapter 10). The Authority considers there is significant merit in having a mechanism to allow for a reduction in the asset base in the event of a decline in the volume of sales. In the absence of such a mechanism, there would be no scope to reduce the asset base to ensure reference tariffs reflect the efficient value of the distribution network. The Authority requires the access arrangement be amended to include reference to a capital redundancy mechanism.

The Authority is also of the view that it is appropriate to insert specific provisions into Envestra's access arrangement, consistent with section 8.28 of the Code, to address the situation where assets that have been declared as redundant capital subsequently contribute to, or make an enhanced contribution to, the delivery of services.

The Authority believes that the specific inclusion of this mechanism provides an incentive for Envestra to manage its network efficiently and to maximise its growth to ensure that the interests of the company and users are taken into account.

#### **Amendment 11.6**

**For Envestra's access arrangement to be approved, Envestra must include a capital redundancy mechanism in its reference tariff policy as per its current access arrangement.**

## **11.5 Forecast depreciation**

Depreciation is inextricably linked with asset valuation, the treatment of maintenance expenditure and the allowed return on an entity's capital base. This is because:

- the capital base provides the basis or starting value from which the asset is to be depreciated. That is, depreciation can be considered as the difference between the value of an asset at the commencement of a period and its value at the end of a period (assuming no indexation of the capital base);
- maintenance expenditure can affect the rate of depreciation as it affects the rate at which an asset wears out. An asset that is well maintained will generally decline in value more slowly than one which is not maintained to the same level; and
- the return on the entity's capital base relates to the undepreciated value of the asset (that is, that part of the value of the asset that has not already been returned to the owner through depreciation charges).

Accordingly, depreciation calculations will form an important element of the determination of regulatory prices.

### *Code requirements*

The Code contains different depreciation provisions depending on whether the total revenue calculation, as stipulated in the determination of total revenue, is based on the cost of service, the internal rate of return (IRR) or the net present value (NPV) approach.

Section 8.33 of the Code states that the depreciation schedule should be designed:

- (a) so as to result in the reference tariff changing over time in a manner that is consistent with the efficient growth of the market for the services provided by the pipeline (and which may involve a substantial portion of the depreciation taking place in future periods, particularly where the calculation of the reference tariffs has assumed significant market growth and the pipeline has been sized accordingly);
- (b) so that each asset or group of assets that form part of the covered pipeline is depreciated over the economic life of that asset or group of assets;
- (c) so that, to the maximum extent that is reasonable, the depreciation schedule for each asset or group of assets that form part of the covered pipeline is adjusted over the life of that asset or group of assets to reflect changes in the expected economic life of that asset or group of assets; and
- (d) subject to the capital redundancy provision (section 8.27), so that an asset is depreciated only once (that is, so that the sum of the depreciation that is attributable to any asset or group of assets over the life of those assets is equivalent to the value of that asset or group of assets at the time at which the value of that asset or group of assets was first included in the capital base, subject to such adjustment for inflation (if any) as is appropriate given the approach to inflation adopted).

Section 8.34 translates certain detailed principles into a form that is applicable where the IRR or NPV methodology for determining total revenue is used, and draws a distinction between assets that were in existence at the commencement of the access arrangement period, and those new facilities installed during the access arrangement period.

### *Envestra's proposal*

Envestra has used a straight-line approach for forecasting depreciation. Envestra has suggested that 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.

Envestra suggested the straight-line approach also has the advantage of being:

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

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

Envestra has used the asset lives as approved by the Authority for the current access period.

Envestra has proposed to modify the depreciation amount to be recovered in the next access period by deferring 60 per cent to some future period. This proposal was based on Envestra’s concern regarding the significant increase in its revenue requirement resulting from its mains renewal program. Envestra refers to the depreciation that is not deferred as “economic” depreciation.

Based on Envestra’s forecasts for capital and non-capital costs, annual depreciation projections (excluding deferred depreciation) were calculated by Envestra as shown in Table 11.11.

**Table 11.11: Envestra’s forecast of depreciation, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
Depreciation*	2.6	2.8	3.1	3.5	3.7

\* Excludes proposed deferred depreciation

#### *Other jurisdictions*

IPART (2005) made the following key findings regarding AGLGN’s proposed depreciation charges over the next regulatory period:

- accepted the straight line depreciation method used to derive the proposed depreciation met the Code requirements; and
- considered retrospective changes to the lives of assets did not meet the Code requirements.

#### *Submissions from stakeholders*

No submissions were received on this matter.

#### *QCA position*

The forms of depreciation and their relative merits were discussed at length in the Authority’s 2001 Final Decision. The Authority accepted Envestra’s straight-line approach at that time. Envestra’s proposal is based on a continuation of the same approach, although with recovery of a proportion of depreciation deferred to a future regulatory period.

Straight-line depreciation determines the capital consumption charge for any given period by dividing the net value of the asset (actual cost less the estimated salvage value) by its expected life. The straight-line method therefore allocates an equal amount of depreciation each year until the asset has been written down to its estimated scrap value at the end of its useful life.

This approach is simple, well understood and transparent. Where the consumption of the service potential of assets is similar through time, or where the deterioration of assets is time related, this approach is a reasonable method for allocating depreciation. However, where consumption is not consistent between years, or where the deterioration of the asset is due to circumstances other than time, alternative methods may be more appropriate.

The Authority has considered the need for Envestra’s proposed deferral of depreciation in the light of the revenue requirement and reference tariffs (discussed in Chapter 15). The Authority has not accepted the proposal in principle or as being necessary in practice.

Table 11.12 shows the Authority’s forecast depreciation for Envestra based on the straight-line method. The analysis also used a weighted average life for forecast capital expenditure, based on the original weighted average life of the existing asset base.

**Table 11.12: Forecast depreciation, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
Forecast	4.9	5.5	6.3	7.1	7.6

*Numbers may not add due to rounding.*

**Amendment 11.7**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its forecast depreciation must be amended in accordance with Table 11.12.**

## 11.6 Expected Inflation

An expected rate of inflation was used in the current access arrangement period. The expected inflation rate was determined to be 2.5 per cent. Differences between the expected rate of inflation and that actually occurring in the period were reconciled in the current review process (see section 11.2).

### *Envestra’s proposal*

Envestra suggested the expected inflation rate would be between 2.5 per cent and 3 per cent.

### *QCA position*

For the Draft Decision, the Authority used an expected rate of inflation of 2.77 per cent over the revised access arrangement period. This rate was based on the difference between the 10 year Commonwealth bond rate and a similar duration indexed bond rate, averaged over the 20 days up to and including 29 September 2005. Further detail on the approach used to arrive at this expected inflation rate can be found in Chapter 12.

For this Final Decision, the Authority has not revised the forecast rate of inflation. This reflects the Authority’s decision to accept Envestra’s post nominal WACC estimate in which the nominal and real risk free rates are embedded. To revise the forecast rate of inflation would result in inconsistencies between the rate of inflation and the WACC.

**Amendment 11.8**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its expected inflation rate to 2.77 per cent over the access arrangement period.**

## 11.7 Roll-forward of the Capital Base from 2006-07 to 2010-11

Table 11.13 summarises the discussion in this Chapter with respect to capital expenditure, disposals and depreciation. In addition, an indexation component has been included to increase the value of the capital base each year by the expected inflation level (2.77 per cent).

**Table 11.13: Roll-forward of the capital base, 2006-07 to 2010-11 (\$m, nominal)**

	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
Opening assets	228.4	243.4	258.2	277.9	292.4
Less depreciation	4.9	5.5	6.3	7.1	7.6
Plus inflation	6.5	6.9	7.4	7.9	8.3
Plus capital expenditure	13.5	13.3	18.6	13.7	14.2
<b>Closing assets</b>	<b>243.4</b>	<b>258.2</b>	<b>277.9</b>	<b>292.4</b>	<b>307.3</b>

*Numbers may not add due to rounding.*

#### **Amendment 11.9**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its roll-forward of the capital base for the five years of the access arrangement period in accordance with Table 11.13.**

## 12. RATE OF RETURN

*The Authority has estimated the rate of return to be used for the purpose of determining each service provider's reference tariff using a Weighted Average Cost of Capital (WACC)/Capital Asset Pricing Model (CAPM) framework.*

*The individual parameter estimates used by the Authority to arrive at its estimate of the WACC are as follows:*

<i>Risk-free rate (%)</i>	<i>5.25</i>
<i>Market risk premium (%)</i>	<i>6.00</i>
<i>Debt margin (%)</i>	<i>1.425</i>
<i>Debt beta</i>	<i>0.12</i>
<i>Asset Beta</i>	<i>0.55</i>
<i>Equity beta</i>	<i>1.10</i>
<i>Gamma</i>	<i>0.50</i>
<i>Expected inflation (%)</i>	<i>2.77</i>
<i>Nominal post-tax cost of equity (%)</i>	<i>11.25</i>
<i>Nominal post-tax WACC (%)</i>	<i>8.75</i>

*In the Draft Decision, the Authority accepted the WACC of 8.80 per cent that was proposed by Envestra. Having accepted Envestra's proposed WACC in the Draft Decision, the Authority does not intend to revisit this issue.*

### 12.1 Introduction

Having arrived at a value for the regulated asset base, the application of an appropriate rate of return to these assets provides the first of the building blocks to be set.

The Authority recently reviewed its methodology for determining the cost of capital, as part of its assessment of the draft access undertaking for the Dalrymple Bay Coal Terminal (DBCT). The Authority's review was informed by a report prepared by Dr Martin Lally of Victoria University (Wellington, New Zealand). The review involved an extensive process of public consultation.

As a result of this review, the Authority has made some changes to its previous approach. By their nature, the changes are non-specific technical matters of methodology – none require a consideration of industry or business-specific factors such as those relating to the particular circumstances of the service providers.

Given the recent nature of this review and the need for regulatory consistency in the Authority's decisions, the Authority's revised approach will apply to this review unless otherwise stated.

The Authority's draft DBCT decision (QCA 2004b) contains a full explanation of the issues. While the changes of approach are generic, the value of certain parameters will be determined

by the service provider's particular circumstances. These issues are fully discussed in the relevant sections.

## 12.2 Code Requirements

The Code (sections 8.30 and 8.31) provides that 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).

By way of example, the Code notes that 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 (CAPM). The Code states that, 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 Authority is satisfied that to do so would be consistent with the pricing objectives contained in section 8.1 of the Code.

## 12.3 Determining the Rate of Return Framework

The Authority employs the Officer (1994) version 3 WACC formulation<sup>6</sup>. This approach defines firm cash flows in nominal, post-tax terms and modifies the cash flows, as opposed to the discount rate, for tax and the effects of dividend imputation. Allowing for the cash flow adjustments described, the WACC is:

$$WACC = \hat{k}_e(1 - L) + k_d L$$

where  $L$  is firm leverage (debt to total value),  $\hat{k}_e$  is the cost of equity and  $k_d$  is the cost of debt.

Other features of the Authority's recently revised approach are that:

- the value of gamma adopted is 0.5;
- the risk-free rate is based on a 20-day average of the 10 year government bond rate;
- the market risk premium adopted is 6.0 per cent;
- the debt beta is estimated as the mid-point between zero and the debt margin divided by the market risk premium; and
- the Conine beta levering formula, which incorporates the imputation-adjusted corporate tax rate, is adopted in place of the Brealey Myers formula.

### *Envestra's proposal*

Envestra advocated using a pre-tax approach to calculating the WACC because it believes this to be less intrusive, less data intensive and simpler to implement. However, Envestra also noted that all decisions handed down by the QCA have used a post-tax nominal approach to

<sup>6</sup> Officer (1994) presents four versions of the model that vary according to the definition of company post-tax net cash flows.

calculating the WACC and Envestra has calculated its proposed WACC of 8.80 per cent using this approach.

#### *Submissions from stakeholders*

The Energy Users Association of Australia (EUAA, 2006) argued that the nominal post-tax WACC seemed to be high in comparison with other WACC decisions. The EUAA were concerned that the Authority had acquiesced to the distributors' high WACC proposals and that adopting a lower WACC would reduce costs to consumers and provide an incentive for Queensland's gas distribution industry to become more efficient.

#### *QCA position*

In its Draft Decision, the Authority accepted the post-tax nominal WACC of 8.80 per cent proposed by Envestra. To the extent that submissions received in response to the Draft Decision commented on matters relevant to the WACC proposed by Envestra and accepted by the Authority, they did not raise any issues that convince the Authority to amend its decision.

Consequently, the Authority does not propose to revisit the setting of the rate of return and confirms its Draft Decision to accept the WACC proposed by Envestra of 8.80 per cent.

In light of this decision, and in order to maintain internal consistency with this Final Decision, the Authority will also not revisit the estimated rate of inflation. To do otherwise would create internal inconsistencies within the set regulatory environment, for example, between the risk-free rate and the rate of inflation. Furthermore, Envestra will be compensated for any divergence between forecast and actual inflation through the annual revision to reference tariffs.

The following discussion largely reflects that contained in the Draft Decision and is reproduced here for the sake of completeness in this Final Decision.

### **12.4 Quantifying the Risk-Free Rate**

The risk-free rate is an input to both the CAPM and the cost of debt. The market risk premium (MRP), adjusted by a firm's equity beta, is added to the risk-free rate to determine the cost of equity and the debt margin is added to the risk-free rate to determine the cost of debt.

In setting the risk-free rate, there are three important issues to consider: choice of the proxy instrument, measurement period and the term of the risk-free rate. To date, the Authority has benchmarked the risk-free rate with reference to Commonwealth Government bonds, averaged the rate over 20 days and determined the rate with reference to the yield on a 10 year maturity bond.

#### *Envestra's proposal*

Envestra argued that the June 2005 yield curve was inverted (it was downward sloping) and that this inversion meant that risk-reward relationship underpinning CAPM would not be borne out if the regulatory WACC was set using the yield on a 10-year Commonwealth Government bond. Envestra also argued that inverted yield curves tend to be transient and tend to revert back to normal yield curves (upward sloping yield curves) in time. Envestra proposed that it was necessary to make an adjustment to the risk-free rate for regulatory purposes.

Envestra used two techniques to derive a lower bound and an upper bound for the risk-free rate. The lower bound was obtained by increasing the risk-free rate by 4.44 per cent. Given current nominal bond yields of around 5.2 per cent, Envestra suggested that the lower bound for the risk-free rate should be 5.43 per cent. The 4.44 per cent increase in the risk-free rate was based

on Ofcom's June 2005 decision to set a risk-free rate of 4.7 per cent when yields on 5-year gilts were around 4.5 per cent (a 4.44 per cent increase). Envestra noted that Ofcom's rationale for the adjustment was that the (then) current market yields may not be a good proxy for future rates.

Envestra also argued that, by setting the risk-free rate at the nominal bond rate, appropriate weight would not be attached to the transitory nature of inverted yield curves or the implications of setting rates of return below that necessary to attract investment.

Envestra argued that the upper bound for the plausible range should be the risk-free rate that would exist in a normal environment. They have suggested that the current RBA official cash rate of 5.5 per cent is at its 'neutral' level and that there will be no requirement for the RBA to lower rates in the near future. Thus, longer-term rates will have to rise above 5.5 per cent for the yield curve to return to its normal shape. Envestra state that The Australian Office of Financial Management currently estimates that the average term premium margin for 10-year bonds over cash deposits to be 75 basis points. Envestra has thus used an upper bound for the plausible risk-free rate of 6.25 per cent.

Envestra have thus argued that the plausible range for the risk-free rate is between 5.43 per cent and 6.25 per cent.

#### *Other jurisdictions*

IPART (2005) used the 20 day average of the yield on a 10-year Commonwealth Government bond to determine the appropriate risk-free rate.

The ESCV (2002) has derived its proxy real risk-free rate as the average of the redemption yield on inflation-indexed bonds over 20 trading days.

ICRC (2004) calculated the risk-free rate using Commonwealth Government bond data as published by the RBA. The Commission interpolated an implied 10-year maturity because no bond had a 10-year maturity at the time of the decision.

#### *Submissions from stakeholders*

The Authority received no submissions on this issue.

#### *QCA position*

The Authority is of the view that the rates that are determined by the market provide the best estimate of expected financial conditions over the term of the bond. This is because the market rates, by their very nature, incorporate the greatest amount of information and the views of market practitioners. As such, the Authority does not believe that there is necessarily a disconnect between the risk-free rate and the CAPM because of the inverted nature of the yield curve. An inverted yield curve merely suggests that the market believes that future interest rates will be lower than current interest rates.

The Authority also rejects Envestra's view that long-term interest rates must increase for the yield curve to return to its normal upward sloping shape. If this were the case then the market would not be discounting long-term interest rates and the yield curve would not be downward sloping.

It is interesting to note that Envestra's proposed reasonable range does not include the actual risk-free rate implied by the market. This casts serious doubt on the validity of Envestra's proposed range.

For these reasons, the Authority rejects Envestra's proposal that the risk-free rate is between 5.43 per cent and 6.25 per cent. The Authority does not believe that Envestra's proposed range is commensurate with the prevailing conditions in the market for funds.

In its Draft Decision, the Authority calculated the risk-free rate using an average of the yield on a Commonwealth Government 10-year bond for the 20 days up to and including 29 September 2005. As such, the nominal risk-free rate that the Authority used for the purposes of determining its estimate of the appropriate rate of return in the Draft Decision was 5.25 per cent.

Regardless of the differences on this issue between the Authority and Envestra at the time of the Draft Decision, the Authority accepted the rate of return proposed by Envestra. Despite changes in the risk-free rate, the Authority does not propose to change its decision, as it was not based on an acceptance of Envestra parameters. The Authority also notes that, if its WACC calculation was updated to account for changes in the risk-free rate since the Draft Decision, the corresponding real WACC would actually be lower than is currently the case.

## 12.5 Determining the Capital Structure

A firm's WACC is the weighted average cost of servicing the various classes of financial claims on the firm. Each source of capital or financial claim involves different risks and, therefore, different costs. Business or operating risk reflects the risk of the firm when it is solely financed by equity funds. The addition of debt financing increases the risk to equity holders and hence the cost of equity.

The Authority's typical approach to determining the capital structure for a regulated business involves determining an 'optimal' capital structure by examining the average level of leverage in an industry (or set of related industries), regulatory precedents and by using simulation techniques.

### *Envestra's proposal*

Envestra has proposed a capital structure of 60 per cent debt and 40 per cent equity on the basis that it has become the standard regulatory benchmark capital structure for gas distribution and transmission businesses.

### *Other jurisdictions*

IPART (2005) set the capital structure for AGL at 60 per cent debt and 40 per cent equity.

The ESCV (2002) adopted an assumed gearing level of 60 per cent of debt to assets. This was based on observed gearing levels by comparable Australian businesses.

ICRC (2004) set a capital structure of 60 per cent debt and 40 per cent equity.

The ACCC (2003) set EAPL's capital structure at 60 per cent debt and 40 per cent equity.

### *Submissions from stakeholders*

The Authority received no submissions on this issue.

*Consultant's assessment*

The Authority employed the Allen Consulting Group (ACG) to provide advice on several of the rate of return parameters, including the appropriate capital structure for the service providers.

ACG considered the gearing levels of various listed Australian gas network businesses and found an average gearing level in 2004-05 for the sample of companies to be around 50 per cent. However, this average increases to around 61 per cent when two of the companies with substantial interests outside of pipeline infrastructure are excluded from the sample. ACG also considered a sample of listed US gas companies and found an average gearing level of between 50 and 60 per cent.

ACG also noted that there is regulatory consensus over the regulated capital structures for gas companies and that regulators have tended to adopt a gearing ratio of 60 per cent. ACG could find no evidence to suggest that gas distribution in Queensland is sufficiently different from other jurisdictions to warrant a departure from regulatory practice. ACG recommended that a gearing level of 60 per cent be applied in calculating the WACC for the Queensland gas distribution businesses.

*QCA position*

The Authority notes that the recommendation made by ACG is consistent with the proposal of both Allgas and Envestra and is also consistent with regulatory precedent in Australia. The Authority is satisfied that an assumed gearing level of 60 per cent meets the requirements of the Code.

The Authority accepts Envestra's assumed capital structure of 60 per cent debt and 40 per cent equity.

**12.6 Determining the Cost of Debt**

The cost of debt is typically expressed as the sum of the risk-free rate and a debt margin. The debt margin will vary depending on the entity's credit rating and the term of the debt.

In its 2001 Final Decision, the Authority used an approach which estimated debt costs by reference to the interest rate margin above the risk-free rate. At that time, the Authority set the debt margin at 155 basis points, reflecting the margin applying to debt rated at BBB+ at that time.

*Envestra's proposal*

Envestra estimated a plausible range for the debt margin using a three-step approach. First, Envestra noted that Australian regulatory precedent was to use a credit rating of BBB to BBB+ for a regulated energy distribution business with 60 per cent gearing.

Envestra then estimated the debt margin payable by the BBB/BBB+ rated corporate borrower, relative to the risk-free rate. Envestra used CBASpectrum to estimate the appropriate debt margin. Envestra noted that CBASpectrum rates have been the subject of much debate in recent times and that the methodology applied by CBASpectrum is likely to underestimate the cost of 10-year BBB/BBB+ rated debt. Envestra cited work carried by NERA and the ACG which suggested that around 25 basis points should be added to the debt margin calculated using CBASpectrum. On this basis, Envestra added 25-26 basis points to the CBASpectrum estimates of debt margins. Envestra found that the CBASpectrum debt margin for BBB/BBB+ rated

corporate bonds was approximately 100-109 basis points above the 10-year Commonwealth Government bond rate.

Envestra then added 12.5 basis points for debt-financing costs (see section 12.7) to arrive at a range for the debt margin of 138 to 148 basis points.

#### *Other jurisdictions*

IPART (2005) set a debt margin range of 113 -122 basis points (including 12.5 basis points for debt-financing costs) based on a 20-day average of CBASpectrum data for BBB+ and BBB rated bonds.

The ESCV (2002) set a debt margin of 110 basis points based on CBASpectrum data for BBB+ corporate bonds averaged over the same days as the risk-free rate was calculated.

ICRC (2004) adopted a range of 124.5 to 143 basis points for the debt margin (including debt-financing costs) based on a credit rating range of BBB+ to A and using CBASpectrum data.

The ACCC (2003) used a 40-day average of the BBB+ debt margin for five-year maturities using CBASpectrum data and adopted a debt margin of 92 basis points.

#### *Submissions from stakeholders*

The Authority received no submissions on this issue and Envestra did not address the issue in its response to the Draft Decision.

#### *Consultant's assessment*

##### Credit Rating

The Authority engaged ACG to advise on the appropriate cost of debt for the service providers. In assessing the cost of debt for the service providers, ACG first considered the appropriate credit rating to apply to the service providers, and then considered the appropriate debt margin given the assumed credit rating.

ACG noted that, provided that differences between actual company ratings and regulated company ratings are taken into account, analysis of actual credit ratings and financial ratios for Australian energy network companies provides a useful benchmark for assessing a credit rating for the regulated Queensland gas distribution businesses. ACG analysed the credit ratings and financial ratios of various Australian energy network companies for the purposes of comparison with the Queensland distribution businesses. It was apparent from this analysis that companies with higher gearing levels had lower credit ratings.

ACG analysed financial data for the service providers based on their regulatory accounting statements, which provide financial information for the regulated part of the business. ACG considered a base case scenario and also a scenario where income had decreased by 5 per cent but costs had remained steady. ACG noted that the pre-tax interest coverage ratio and the funds from operations (FFO) interest coverage ratio suggest an A rating in 2002-03 and a BBB rating in 2003-04. ACG also noted that the FFO to total debt ratios suggested a rating of AA or A in 2002-03 and A in 2003-04. ACG suggested that the coverage ratios lie mainly near the threshold between BBB and A ratings and that a rating of BBB+ or A- would be expected. ACG recommended that the Authority err on the side of conservatism and adopt a BBB+ credit rating for the regulated entities based on an assumed gearing level of 60 per cent.

## Debt Margin

ACG assessed various sources of data in considering an appropriate debt margin to apply to a 10-year corporate bond with a rating of BBB+. ACG acknowledge that there is a growing body of evidence to suggest that the CBASpectrum estimates do not reflect debt margins for longer term debt. However, as a starting point, ACG noted that the CBASpectrum spread on 10-year corporate BBB+ rated bonds averaged over the 20 days to 30 September 2005 was 101.6 basis points.

ACG considered the Bloomberg spreads for various maturities and credit rating, although Bloomberg does not provide data for BBB+ rated bonds of 10-year maturity. However, ACG note that for BBB+ rated bonds with maturities of 9 years, the Bloomberg estimate was 22.1 basis points higher than the CBASpectrum estimate. Similarly, the difference was 20.9 basis points for estimates of 10-year A rated bonds.

ACG also considered actual corporate bonds, with maturities of 4 years or more, that were currently trading in the market. The spread of these bonds was compared to the spreads as suggested by the Bloomberg and CBASpectrum data. ACG found that the Bloomberg estimates are significantly more accurate predictors of actual bond margins, particularly for longer-term debt. This evidence suggested that the CBASpectrum estimates were underestimating the correct spread by around 20 basis points.

The Bloomberg data does include a spread for a BBB+ rated bond with a maturity of 9 years. ACG took a simple linear extrapolation from the predicted margins for 8 and 9 year bonds and found an implied margin of 133.6 basis points for 10-year bonds. This was 30 basis points above the CBASpectrum estimate. However, ACG noted that this is likely to be an overestimate as the yield curve tends to be concave.

ACG also found that evidence from credit-wrapped bonds in Australia suggests that the debt margin for a BBB+ rated infrastructure business in Australia may be in the range of 95 – 100 basis points. While the CBASpectrum value is within this range, ACG noted that this data should be treated with caution.

ACG noted that there was a BBB+ rated 10-year bond issued by Santos and that these bonds began trading on 27 September 2005. As such, there were only four observations for this bond to 20 September 2005. The bond was trading at a debt margin of 122 basis points, on average, over the four days.

It is clear that the different sources of evidence provide different estimates as to the debt margin for a 10-year BBB+ rated corporate bond. ACG has considered all the sources of evidence and suggested that a debt margin of 130 basis points would be a reasonable and conservative estimate. This is 28 basis points higher than the debt margin obtained using CBASpectrum data.

### *QCA position*

The Authority accepts the view of National Economic Research Associates (NERA) and ACG that the estimates of long-term bond yields using the CBASpectrum data are likely to underestimate the actual debt margins for Australian firms. The Authority also notes that Bloomberg do not provide estimates for 10-year BBB+ rated bonds, although it appears that Bloomberg consistently provides more accurate forecasts of actual debt margins than does CBASpectrum.

It appears reasonable to place the heaviest weight on the estimates that are provided by Bloomberg, given that the Bloomberg estimates tend to be fairly accurate predictors of actual

debt margins observed in the market across a range of credit ratings and maturities. It is also reasonable to consider the CBASpectrum estimates with a further addition to the estimated spread of around 20-25 basis points to account for downward bias in the CBASpectrum estimates. The evidence surrounding credit-wrapped bonds and the Santos bond certainly seem to be somewhat thinner.

A simple linear extrapolation of the Bloomberg data would, in usual circumstances, tend to overestimate the debt margin as yield curves do tend to be somewhat concave in shape. This would suggest that a debt premium of 133 basis points is too high. This is backed up by other available data, notably the CBASpectrum data which suggests a debt margin of just under 102 basis points, which adjusts to around 122 to 127 basis points after accounting for the downward bias.

Based on the weight of evidence, the Authority has accepted that ACG's recommendation of 130 basis points for the debt margin is a reasonable and conservative estimate of the actual debt margin for a 10-year corporate bond from a firm with a BBB+ credit rating.

## 12.7 Debt Raising Costs

When raising debt the service provider has to pay debt financing costs over and above the debt margin.

### *Envestra's proposal*

Envestra has added 12.5 basis points to the cost of debt to account for financing costs. This was based on work undertaken by ACG into appropriate debt-financing costs and also recent regulatory decisions.

### *Other jurisdictions*

IPART (2005) accepted AGL's proposal to include 12.5 basis points to account for debt-raising costs.

ICRC (2004) allowed 12.5 basis points to be included in the debt-margin to account for debt-financing costs.

### *Submissions from stakeholders*

The Authority received no submissions on this issue and Envestra did not address the issue in its response to the Draft Decision.

### *Consultant's assessment*

ACG recognised that there is also a transaction cost in raising finance initially. ACG have indicated that recent research suggests that the 12.5 basis points usually used by Australian regulators may be considered to be an upper bound for that costs based on a recent detailed study that was conducted by ACG. Nonetheless, ACG recommended that an allowance of 12.5 basis points for debt-raising costs be included.

### *QCA position*

Under the industry benchmark approach adopted by the Authority for determining the cost of debt, the Authority accepts that efficient debt-raising costs should also be recognised. As these

costs are related directly to debt raising, the Authority is inclined to add a margin to the cost of debt, rather than separately identifying the costs in operating expenditure.

The Authority accepts that currently 12.5 basis points is generally accepted as an efficient level of cost to allow for debt issuing and will add this amount to the service providers' debt margin. The Authority also notes that this figure is based on the best empirical evidence that is currently available.

On this basis, the Authority has determined that the debt margin for should be 142.5 basis points, representing a debt margin of 130 basis points plus an additional 12.5 basis points in recognition of debt-raising costs.

## 12.8 Quantifying the Market Risk Premium

The market risk premium (MRP) is the return investors require, in addition to the risk-free rate, for investing in a well diversified portfolio of risky assets. As the MRP is an expected return, it is not directly observable. Historical estimates such as the historical difference between realised returns of the stock market and the risk-free rate are commonly used to provide an indicator of the forward-looking MRP. However, this approach is sensitive to the averaging period.

In its 2001 review of access arrangements, the Authority considered a market risk premium of 6 per cent was an appropriate estimate. The Authority has adopted a MRP is 6 per cent in all of its other regulatory decisions.

### *Envestra's proposal*

Envestra argued that it was reasonable to infer that estimates of the market risk premium derived from stock market data understate the true market risk premium. Envestra noted that shares only make up a proportion of the market portfolio and that other segments of the market portfolio have experienced higher returns than the stock market.

Envestra cited several studies that have suggested that the market risk premium is in excess of 6 per cent and also noted that the average annual Australian market risk premium from 1883 to 2000, as measured by the average annual excess returns from holding shares (as opposed to Commonwealth Government bonds), was 7.3 per cent per annum.

Envestra proposed a range for the market risk premium of between 6 and 7 per cent.

### *Other jurisdictions*

IPART (2005) adopted a uniformly distributed market risk premium range of 5.5 to 6.5 per cent.

The ESCV (2002) adopted a market risk premium of 6 per cent.

ICRC (2004) used a market risk premium of 6 per cent which it believed was supported by the available empirical evidence.

The ACCC (2003) considered that EAPL's proposed market risk premium of 6 per cent was not inconsistent with the requirements of the Code.

### *Submissions from stakeholders*

The Authority received no submissions on this issue and Envestra did not address the issue in its response to the Draft Decision.

*Consultant's assessment*

Lally undertook surveys of the major methodologies used in estimating the market risk premium as part of previous reviews undertaken by the Authority. These methodologies include historical averaging, historical estimation and forward-looking estimation based on forecasts. Lally noted that these methodologies produce a range of estimates for the market risk premium and that, as a consequence, there is considerable statistical uncertainty surrounding the estimate of this parameter. Lally suggested that all of the approaches suffer from methodological or estimation difficulties and that it is appropriate to consider estimates derived from multiple sources. Lally concluded that the Authority's current estimate of 6 per cent was reasonable in the context of the Officer CAPM.

ACG also considered evidence from historical estimates, forward-looking estimates and market practitioners of the appropriate MRP. ACG noted that historical estimates of the MRP in Australia were in the order of 4.5 – 7.5 per cent but that there were some concerns over whether such estimates were a reliable guide to the MRP over a future period. ACG argued that historical measures do not take account of ex-ante expectations and that methods that adjust historical estimates to account for unexpected capital gain suggest an ex-ante MRP using historical data may be between 4.5 to 6 per cent. ACG also noted that it would appear that market practitioners typically view the MRP as being 6 per cent but that the expected MRP over the future period may be below this level.

*QCA position*

The Authority accepts that there may be some estimates of historical MRPs that suggest a value of greater than 6 per cent. However, the weight of evidence clearly suggests that the MRP is no greater than 6 per cent and may in fact be lower than this.

The Authority also notes that regulators in Australia have almost always adopted a MRP of 6 per cent for regulatory purposes. Regulatory consistency would suggest that it is appropriate to use a MRP of 6 per cent for the Queensland gas distributors.

The Authority sees no reason to change its view as to the appropriate MRP. Indeed, the Authority is of the view that a MRP of 6 per cent is likely to be a conservative estimate of the true forward-looking MRP.

For example, a recent New Zealand Treasury study of the market risk premium for the purpose of determining the required capital contribution to the New Zealand Superannuation Fund concluded that the long-term forward looking market risk premium sat in the range of 3 per cent to 5 per cent and recommended 4 per cent as the appropriate level.

**12.9 Determining the Equity Beta**

An equity beta is required to determine the distributors' cost of equity for use in the CAPM formula. Because the observed equity betas of chosen comparators are generally based on different levels of gearing, there is a need to standardise the observations to eliminate this impact. This is done by first converting the observed equity betas to their underlying asset betas. On the basis of the resulting asset betas, an asset beta for the distributors can be determined. That asset beta is then converted to an equity beta using the level of gearing assessed as appropriate for the distributors. The conversion from equity betas to asset betas and back to an equity beta is done via an appropriate levering/de-levering formula.

### Levering Formula

Following its recent technical review, the Authority has adopted the Conine formula as the appropriate formula to use in regulatory determinations, with the corporate tax rate replaced by the imputation-adjusted tax rate, consistent with the corporate tax environment in Australia. The Authority notes that this formula is sufficiently general to accommodate any assumptions that the Authority makes on the value of gamma and/or the debt beta.

$$\beta_e = \beta_a \left[ 1 + (1 - T_e) \frac{L}{1 - L} \right] - \beta_d (1 - T_e) \frac{L}{1 - L}$$

where:

$\beta_e$  is the equity beta;

$\beta_a$  is the asset beta;

$\beta_d$  is the debt beta;

$L$  is leverage (debt to total assets); and

$T_e$  is the imputation adjusted tax rate

### *Envestra's proposal*

Envestra has proposed that the equity beta be set at no less than 1.0 and that a reasonable range for the equity beta would be 1.0 – 1.1. Envestra has cited work undertaken by Gray et al (2005) for the Energy Networks Association which concludes that a default assumption of an equity beta of 1.0 is the least error prone approach. Envestra also cite work undertaken by ACG which recommended that the equity beta should not be reduced below 1.0 until sufficient evidence was presented to the contrary.

Envestra also argued that the equity beta needs to account for the exposure to volume risk and that the Authority's position in its final electricity determination suggested that, in the absence of a revenue cap or capital expenditure pass through, an equity beta of 1.0 would have been likely. Envestra argued that any regulatory arrangements that pass volume risk and capital expenditure risk to the business, such as the under the price cap proposed by Envestra, are systematically riskier than those arrangements that employ a revenue cap.

### *Other jurisdictions*

IPART (2005) was satisfied that an equity beta uniformly distributed around 0.9 met the requirements of the Code. IPART noted that the equity beta should be a forward looking estimate and that there was evidence to suggest that AGL's equity beta had declined in recent years.

The ESCV (2002) adopted an equity beta of 1. The Commission noted that a far lower equity beta (0.55) would be derived if exclusive reliance were placed on the most recent market evidence. However, the Commission sought to provide continuity between regulatory decisions and also had regard to the long-term consequences of the Commission's decisions for the Victorian gas industry.

ICRC (2004) considered that the supportable equity beta was in the range of 0.9 to 1.09. This view was based on available empirical evidence and regulatory precedent.

The ACCC (2003) noted that current empirical estimates of the re-levered equity beta suggest that the equity beta should be considerably less than 1. However, the Commission was of the view that it may be premature to rely wholly on those estimates given the thin trading and limited number of observations. The Commission considered that an equity beta of 1 was appropriate at the time.

#### *Submissions from stakeholders*

The Authority received no submissions on this issue and Envestra did not address the issue in its response to the Draft Decision.

#### *Consultant's assessment*

The Authority engaged ACG to consider the appropriate equity beta to use for a regulated gas distribution business in Queensland. ACG calculated estimates of proxy betas using the Conine de-levering formula and using a debt beta assumption of 0.1. This approach ensures consistency with the method that is used by the Authority.

ACG considered from first principles the factors that might affect a company's asset beta. ACG considered the nature of the product and the likely income elasticity of demand, noting that if income elasticity is high then a higher asset beta would be expected. ACG suggested that gas distribution services are linked to GDP growth and that this is heightened in Queensland where the economy is growing faster than the Australian economy. ACG also held that commercial and industrial load tends to be more sensitive to changes in GDP than residential load, as residential load tends to represent basic household consumption. Commercial and industrial load, as a proportion of overall load, is higher in Queensland than in other states and this suggests that gas consumption in Queensland will be sensitive to GDP.

While pricing structures that have a significant fixed component would cushion the revenue impact from an economic downturn, ACG did not expect the pricing structure of the service providers to have a mitigating effect on the asset beta.

ACG also noted that, while contractual periods for gas transmission tend to be long term with significant take-or-pay components, the contracts entered into by gas distributors tend to involve smaller end users, shorter time horizons and have greater volume flexibility. However, ACG did not believe the resulting impact on the asset betas of distributors, as compared to gas transmission companies, was clear.

ACG agreed that a price-cap form of regulation that is applied to gas distribution businesses in Queensland makes that activity subject to a slightly higher element of systematic risk than is applicable for electricity distribution businesses which are regulated under a revenue cap. ACG did note that it is possible for gas service providers to seek changes to reference tariffs in the event of significant changes in costs.

Overall, ACG believed that the indicators of systematic risk discussed above suggest that the asset beta of the Queensland gas distribution businesses would be similar to that of similar businesses in other states, although Queensland may be slightly higher due to its large industrial component. Gas distribution is also likely to have slightly higher risk than electricity distribution in Queensland due to the form of regulation and composition of demand.

ACG then constructed a proxy group of listed Australian gas companies and US gas companies for the purpose of deriving an appropriate beta estimate. In doing so, ACG took into account the potential impact of the ‘dot-com’ bubble period (March 2000 to mid-2001) on estimates of these comparators’ equity betas. This is because the rise (and subsequent fall) in technology stocks led to a decrease (and subsequent increase) in the values of safe assets (for example, utilities) as investors switched between stocks. This has meant that utility stocks have been moving contrary to the general movements of the market, which has the effect of biasing their beta estimates downward. If it is assumed that the ‘dot-com’ bubble was an abnormal event, then beta estimates for utility stocks obtained using data from the bubble period will be biased downward.

Although the effect of the ‘dot-com’ bubble was most pronounced in the US, there is evidence to suggest that in Australia the utilities sector did move contrary to the market as a whole, particularly for the period from March 2000 to the middle of 2001. Therefore, any current beta estimates for the last five years will include observations from the ‘dot-com’ bubble period. In particular, the current 60-month beta estimate includes the period after November 2000 and so includes much of the ‘dot-com’ bubble. As such, these estimates of beta may not provide an unbiased estimate of future betas.

When analysing Australian and US comparator firms ACG has used three approaches to try and remove the bias in the forward-looking beta estimates. Firstly, ACG has presented beta estimates using shorter periods (than the standard 60 month period) of 48 months and 60 weeks, as these will contain less data from the dot com period. Secondly, 60 month estimates have been presented for entities over the period prior to the dot com bubble. And thirdly, for the US gas companies, 60 month estimates have been provided using data that excludes observations affected by the dot com bubble.

ACG estimated rolling equity beta estimates using both weekly and monthly data for a group of proxy Australian companies (re-levered to 60 per cent gearing). The weekly estimates were between 0.6 and 1.4 from 1996 to 1998 and then started to fall quickly from late 1998. Weekly estimates rose again after 2001, particularly when the dot com bubble estimates dropped out of the sample set. Since January 2004 the weekly estimates have been in the range from 0.4 to 0.8 with an average equity beta value of 0.55. The most recent 60 month estimate puts beta at 0.21, but ACG note that this may significantly underestimate the true forward-looking beta as not all the observations of the dot com period have dropped out and the monthly series will tend to follow the weekly estimates, which have clearly increased since the dot com bubble.

ACG carried out a similar exercise for US listed gas transmission and distribution companies and found a similar phenomenon. That is, betas tended to drop during the ‘dot com’ period and have started to rise as ‘dot com’ observations drop out of the sample set. ACG also calculated betas using 60 monthly estimates but excluding data from the ‘dot com’ period. The geared equity beta falls between 0.3 and 0.8 until 1998 and has been more stable at around 0.5 to 0.6 since July 2002.

ACG believe that the Australian and US evidence supports the supposition that the geared equity beta of the Queensland gas distributors is likely to be above 0.6, and is probably above 0.9.

Based on ACG’s assessment of the evidence, and noting that direct evidence on Australian equity betas for similar companies is deficient, it has concluded that an equity beta of 1.0 for the Queensland gas distribution businesses is justified.

### *QCA position*

Because it is not possible to directly observe the equity beta's of the regulated entities, the first-principles analysis conducted by ACG examines the explanatory factors that underpin the systematic risk of the service providers.

The Authority acknowledges commercial and industrial businesses consume a significant proportion of the gas that is distributed by the service providers and that commercial and industrial consumption will be more closely related to economic conditions than will residential consumption. As such, the service providers will be subject to some level of systematic risk.

The Authority also acknowledges that the equity beta that was considered appropriate for electricity distribution was influenced, by the fact that there were provisions for cost pass-throughs and review triggers in the event that demand was significantly different to forecast. These factors led to the electricity distributors receiving a lower equity beta than may have otherwise been the case. In this regard, the Authority notes that the equity beta adopted for most electricity businesses in Australia is 1.0, compared with the 0.90 adopted in the Authority's Final Determination for Queensland electricity distributors.

The Authority is of the view that, in many instances, gas is a fuel of choice, while everyone generally connects to electricity. Because it is a fuel of choice, it faces competition from other sources of energy such as electricity and LPG. As such, the Authority accepts that the gas distributors will be subject to a greater level of systematic risk than the electricity distributors and that a higher equity beta is justified.

The Authority notes that recent regulatory decisions in other jurisdictions in Australia have tended to adopt an equity beta in the region of 1.0. However, it is clear that Queensland service providers have a much higher proportion of commercial and industrial consumption to total consumption, than do their counterparts in other states. Industrial and commercial consumption is likely to be closely linked to prevailing economic conditions, whereas residential consumption is likely to be less affected by changes to economic conditions. As such, the Authority is of the view that the systematic risk of the Queensland service providers is likely to be higher than the systematic risk of the service providers in other states.

With regard to the empirical estimates of the equity beta the Authority accepts that the 'dot-com' bubble is likely to have affected the measurement of betas over recent years, and that measures of beta using data from this period may underestimate the true value of beta. However, it is not clear to what extent the equity betas will increase in the post 'dot-com' period. The Authority accepts that betas calculated using recent weekly data may provide better estimates as the data from the 'dot-com' period has now dropped out of this sample. However, the weekly estimates of the Australian and US comparators provide significantly different estimates of equity betas for gas companies. Nonetheless, the Authority accepts that current low levels for monthly estimates of equity betas for gas companies in both Australia and the US are not likely to persist and that there is likely to be some upward trend as we move away from the 'dot-com' period.

The Authority has considered all the evidence with regards to the appropriate equity beta for gas service providers in Queensland and is of the view that empirical estimates are not currently sufficiently accurate to be heavily relied upon. The Authority is of the view that gas service providers are subject to higher systematic risk than the electricity distributors, largely because of the nature of the product, and that Queensland gas service providers will be subject to higher systematic risk than gas service providers in other states. On this basis, the Authority believes that an equity beta of 1.1 is the best estimate of the appropriate equity beta for a gas service provider in Queensland.

## 12.10 Determining the Dividend Imputation Rate

Gamma is the product of two elements, the utilisation rate of imputation credits and the ratio of imputation credits to company tax paid. The theoretical value of gamma ranges between zero and one (inclusive) and can be recognised in the cost of capital model through either an adjustment to the regulated firm's cash flows or to the discount rate. The closer gamma is to one, the lower the regulated price.

In its 2001 review of access arrangements, the Authority employed a 0.50 value (50 cents in the dollar) for gamma. To date, the Authority has used this value for gamma in all of its regulatory decisions.

### *Envestra's proposal*

Envestra argued that the plausible range for gamma is from 0 to 0.35. Envestra adopted a gamma of 0.18 (the midpoint of Envestra's proposed range) for the purpose of calculating the cost of tax to be included in the cash flows.

Envestra submitted an analysis of gamma as an appendix to its access arrangement submission. The paper was prepared with support from Dr Steven Bishop. The objective of the paper was to provide a plausible range for the value of gamma for use in setting reference tariffs. The range was derived from a review of:

- academic and practitioner research;
- economic theory;
- regulatory determination documents;
- utility company tax and franked dividend statistics;
- analysis of Australian Tax Office (ATO) and Australian Bureau of Statistics (ABS) data; and
- the context of tax reforms that were implemented in conjunction with dividend imputation.

The analysis argued that the most likely marginal value for utility sector investors is zero, with an average value for the capital market in the range 0 to 35 per cent.

The paper presented its key findings as:

- the relevant cost of capital is determined by the risk profile of the regulated business rather than the taxation regime that affects the return available to investors;
- any value placed on franked tax credits (FTCs) should be adjusted in the effective tax rate applied to valuing businesses or assessing a pre-tax revenue requirement in a regulatory environment;
- historical analysis of the value of gamma for the gas and electricity sector suggests the upper end of the range is 0.29 if the domestic taxpaying investor is the marginal investor. However, Envestra believes that this assumption is implausible based on the weight of capital invested in the sector and that therefore the value of gamma is most likely below 0.29;

- the most recent empirical drop-off based research places the average value of gamma at 0.35. This updates the 0.5 value used in prior regulatory price determinations;
- more recent research finds that the value of gamma has fallen to zero for the marginal investor since regulations have made trading in FTCs too costly; and
- assessment of the average value of gamma from ATO and ABS data suggests a value of 0.19.

*Consultant's assessment of Envestra's initial submission*

The Authority engaged Professor Martin Lally to review Envestra's submission on the valuation of imputation credits for regulatory purposes. Lally noted that Envestra argued for a gamma estimate of zero, along with an upper bound of 0.26 (although Envestra refers to other studies where this figure is given as 0.35), and that these estimates rested on five intermediary conclusions, namely:

- the distribution rate for imputation credits is 0.7;
- the appropriate correction for timing delays in respect of distributing the credits is 0.75;
- the appropriate utilisation rate for the regulated sector is zero;
- in so far as all investors are considered in determining the utilisation rate, application of appropriate utilisation rates to each investor group along with their market value weights yields an estimate for the utilisation rate of 0.3, and therefore an estimate for gamma of 0.21; and
- in so far as all investors are considered in determining the utilisation rate, an alternative version of the last calculation is offered using weights for investors in the regulated sector rather than the market as a whole which yields an estimate for the utilisation rate of 0.375, and therefore an estimate for gamma of 0.26.

Lally argued that all five of these intermediary conclusions were flawed.

Firstly, Lally observed that within the Officer model the distribution rate is a firm specific parameter rather than a market average parameter. Lally noted that Envestra appeared to recognise this point by offering an estimate for the regulated sector. However, this estimate used 'tax expense' from financial statements rather than tax paid and that significant differences can arise because of this.

Secondly, Envestra have overestimated the delay in attaching credits by one year because payments of corporate tax are immediately available for delivery of imputation credits. Lally found that, to be consistent with the way in which Envestra had estimated the distribution rate, the timing delay should be zero rather than as estimated by Envestra.

Lally also argued that the use of a utilisation rate of zero in accordance with the alleged price-setting role of foreign investors was inconsistent with:

- the definition for this parameter as a value-weighted average over all investors;
- the use of the Officer CAPM in recognising foreign investors; and
- the way in which investors trade-off expected return and risk in making portfolio decisions.

Lally went on to argue that the estimate of the utilisation rate of 0.30 was flawed in:

- ascribing a utilisation rate to superannuation funds and insurance companies of 0.5 rather than 1;
- including inter-corporate holdings of equity and foreigners in the analysis; and
- overestimating the weight of government holdings in equity.

Lally argued that the estimate of the utilisation rate of 0.375 is flawed in that it fails to adopt market-wide value weights in the averaging process in accordance with the definition of the utilisation rate in the Officer model.

In conclusion, and taking account all of these points, Lally suggested that an appropriate estimate of the utilisation rate was 0.92 and that, even in conjunction with Envestra's estimate of 0.7 for the distribution rate, the implied value for gamma was 0.64 and not 0 – 0.26 as suggested by Envestra.

#### *Envestra's submission on the Draft Decision*

In its response to the Draft Decision, Envestra accepted some of the comments made in the Lally review and, as such, adjusted its proposed reasonable range for gamma to 0 – 0.4. Envestra continued to argue that the most likely value for gamma was still zero.

Envestra argued that overseas investors are the most likely marginal investors in the utility sector and set the cost of capital for specific companies and sectors. Envestra suggested that the role of the marginal investor versus the average investor was central to the difference in position between itself and Lally and that it was appropriate to assume that market prices are determined by the marginal investor. Envestra argued that Lally's comments regarding averaging across investors to estimate a utilisation rate appears to be driven by a view derived from a post personal tax CAPM and that this may not be consistent with a post corporate, pre personal tax CAPM that is used by most Australian regulators. However, Envestra decided to estimate a marginal gamma and an average gamma and this resulted in the proposed range now being 0 – 0.4.

Envestra provided responses to each of the five criticisms made by Lally in regards to Envestra's initial report. Envestra agreed that the relevant distribution rate is that for the individual firm rather than for the market. Envestra maintained its view that the time accumulative ratio based on tax expense is more appropriate for a benchmark company than a ratio based on tax paid.

Envestra re-estimated its estimate for the value of a redeemed dollar of imputation credits (the utilisation rate) and found a weighted average value of 0.81. This is slightly higher than the 0.75 value that Envestra suggested in its original submission and which Lally argued was understated.

In his original report, Lally argued that using a utilisation rate of zero was inconsistent with various aspects involved in the calculation of an appropriate rate of return. Envestra argued that an assumption of a utilisation rate of zero was not inconsistent and that it is the marginal investor and not the average investor that sets security prices. As such, it argued that the utilisation rate and the gamma for the utilities sector can be 0.

Envestra disagreed with Lally's argument that the weights for investor groups should be based on Listed Company data rather than ABS data which includes unlisted companies. Envestra argued that the constraint to use listed companies is a CAPM estimation matter arising because

of measurement challenges with the market but that the same constraint need not be applied when broader measurement data is available. Envestra noted that it is comfortable with using ABS and ATO data.

With regards to Lally's assertion that Envestra's estimate of the utilisation rate of 0.375 is flawed in that it fails to adopt market-wide value weights in the averaging process, Envestra again argued that it was the marginal investor that was relevant and that the average across investors notion arises from a form of the CAPM that has not been adopted by regulators.

Envestra also provide some discussion of a paper by SFG Consulting that suggests that there is an inconsistency between a gamma of 1 and a market risk premium of 6 per cent and that the inconsistency is removed if the gamma is set to zero.

#### *Consultant's assessment of Envestra's submission on the Draft Decision*

The Authority re-engaged Professor Martin Lally to review Envestra's response to his original comments, which Envestra submitted as Attachment A in its response to the Draft Decision. Lally noted that Envestra had revised its estimate of the range for gamma to 0 – 0.4. Lally reviewed Envestra's response to the five principal points of criticism raised in his original critique, as well as the new argument presented by Envestra. Lally's responses to Envestra's arguments can be summarised as follows:

- the appropriate estimate for the distribution ratio is that based on tax paid and industry-specific data and it should be 0.82 rather than Envestra's preferred estimate of 0.60;
- Envestra's continued recognition of delays between the payment of tax and the attachment of imputation credits is inconsistent with the way they have defined the distribution ratio and, as such, the appropriate utilisation rate for Australian tax-paying investors is 1 rather than 0.81;
- within the Officer (1994) model, the utilisation rate (U) is a weighted average over the utilisation rates of all investors in the market rather than only one group and that Envestra's claim that there is a fundamental distinction between the Officer and the Lally and van Zijl versions of the CAPM is wrong;
- recognition of foreign investors is inconsistent with the assumption in the officer model that national equity markets are segmented and the effect of recognising foreign investors in estimating U but not otherwise in implementing the Officer model is to drive the allowed output price for a firm further away from the 'correct' answer, and foreign investors have no appreciable impact upon betas and the estimate of the Australian market risk premium;
- foreign investors would continue to invest in Australia, to gain the benefits of risk diversification, regardless of asset prices that encompass the benefits of imputation credits;
- in respect of Envestra's estimate for U arising from averaging over the utilisation rates of all investors Envestra have not responded to the criticism relating to their inclusion of inter-corporate shareholdings and their claim that U is not a CAPM parameters is false. In addition, Envestra's claim that marginal investors are relevant in the weighting process is incorrect and that the definition of U within the Officer model is a weighted average over all investors; and
- a market risk premium of 6 per cent and a gamma close to 1 are perfectly consistent with observed levels for the dividend market yield as the assumptions that a firm's cash flows

are not expected to grow and that taxable income is equal to pre-tax cash flow are both false.

Lally concludes that, in respect of the distribution ratio, the appropriate value for the regulated sector as a whole is about 0.80 and that the utilisation rate should be a weighted average over classes of investors, requires no adjustment for distribution lags and should exclude foreigners. The resulting estimate for U is close to 1 and, as such, the estimate for gamma for the regulated sector as a whole is about 0.80 and not 0 as claimed by Envestra.

#### *Other jurisdictions*

IPART (2005) set a uniformly distributed range for gamma of 0.3 to 0.5. This was based on several academic studies and recent independent expert reports on ASX-listed companies prepared by market practitioners.

The ESCV (2002) was of the view that the market value of franking credits at the point of creation was approximately 50 per cent of their face value (a gamma of 0.5).

ICRC (2004) considered that background material and analysis supported a gamma range of 0.3 to 0.5.

The ACCC (2003) noted that there were good arguments for gamma being set at a value of 1. However, the ACCC set gamma at 0.5 noting that this value was at the extreme lower end of the range that has the quality required by the Code.

#### *QCA position*

To date, the Authority has employed a gamma of 0.50 in all its regulatory decisions. The Authority models the impact of gamma in the firm's cash flows.

Lally has undertaken work for the Authority as part of this, and previous, reviews and, in the Authority's view, has made a strong case that the value of the utilisation rate in the context of the Officer CAPM should be 1.0 (or very close to 1.0), for consistency with the domestic framework of the model. A utilisation rate of close to 1.0 would result in a gamma considerably in excess of the 0.50 currently adopted by the Authority.

The service provider's arguments, by focusing on one aspect of the gamma debate that would, if a change were to be made, benefit them, while ignoring other relevant but potentially less favourable changes, contribute little to this difficult issue. In this regard, a gamma of zero may be appropriate if an international CAPM model was used, but, in such case, it would be expected the appropriate MRP would be significantly less than 6 per cent and the asset beta significantly less than that determined by reference to the Australian market.

The Authority is also of the view that Lally has presented strong arguments, both in his initial response to Envestra's revised access arrangement and in his response to Envestra's submission on the Draft Decision, to suggest that the proposed gamma range submitted by Envestra is flawed and that the value of gamma using Envestra's methodology is likely to be above 0.5.

On the basis of all the evidence, the Authority believes that a value of gamma greater than 0.5 is justified and that a reasonable range for gamma for the regulated utilities sector is 0.5 – 1. Envestra is therefore required to amend its estimate of gamma to 0.5.

**Amendment 12.1**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its value for gamma to 0.5.**

**12.11 Expected Inflation**

Expected inflation is not an explicit parameter in the calculation of WACC. Rather, it is a component of the risk-free rate.

In its 2001 review of access arrangements, the Authority estimated the expected inflation rate as the difference between the nominal and indexed long-term Commonwealth Government bond yields.

*Envestra’s proposal*

Envestra proposed a plausible inflation rate of 2.5 – 3 per cent. This is in the top half of the RBA’s target range and reflects the impact on inflation of higher oil prices.

*Other jurisdictions*

ESCV (2002) derived its proxy real rate and the inflation rate using an average of the redemption yield on inflation-indexed bonds over 20 days.

ICRC (2004) calculated the inflation rate using the Fisher equation and the nominal risk-free rate and the real risk-free rate.

IPART (2005) calculated the inflation rate based on the difference between nominal and real interest rates using the Fisher equation.

*Submissions from stakeholders*

The Authority received no submissions on this issue.

*QCA position*

The benefit of the Authority’s current approach is that it delivers a forward-looking estimate of inflation rather than a historic measure. This method is also consistent with the approach adopted by other regulators.

Consistent with the view that information should be as up-to-date as possible, the Authority has calculated an expected inflation rate based on the difference between the 10 year Commonwealth bond rate and a similar duration indexed bond rate, averaged over 20 trading days up to and including 29 September 2005. The 20 trading day average yield on a Commonwealth Indexed Bond was 2.42 per cent, while on the Commonwealth bond the rate was 5.25 per cent. This implies an expected inflation rate of 2.77 per cent.

As the Authority has not updated the WACC, the forecast inflation rate will not be updated and will remain at 2.77 per cent. This maintains the consistency between the calculation of the WACC and the calculation of nominal values of the building blocks.

## 12.12 Conclusion

The Authority undertook analysis of each of the WACC parameters with a view to calculating an appropriate WACC for the Queensland gas service providers. In many instances, the Authority rejected the arguments that have been put forward by the service providers and their respective parameter estimates. Based on the value of the parameters as selected by the Authority, a post-tax nominal WACC of 8.75 per cent was reached. Despite the fact that the Authority did not agree with the service providers as to the appropriate values for all of the WACC parameters, this WACC value was very close to the WACC value proposed by the service provider.

The Authority therefore decided in its Draft Decision to accept Envestra's proposal and set the WACC at 8.80 per cent. Despite marginal changes in the risk free rate, the Authority does not propose to change its decision, as it was not based on an acceptance of individual Envestra parameters. The Authority also notes that, if its WACC calculation was updated to account for changes in the risk-free rate since the Draft Decision, the corresponding real WACC would actually be lower than is currently the case.

## 13. NON-CAPITAL COSTS

*The Authority engaged Energy Consulting Group (ECG) to assess the efficiency of the non-capital costs proposed by Envestra. ECG based its recommendations on a comparison between actual costs incurred in the current access arrangement period with the forecast costs for the next period.*

*In many instances, the Authority accepted Envestra's forecasts based on ECG's recommendation. In other instances, the Authority accepted ECG's recommendations that some of the expenditure proposed by Envestra be decreased or removed entirely as the expenditure did not comply with the Code. In response to the Authority's Draft Decision, Envestra provided information that has allowed a number of forecast costs that were not previously accepted to be properly assessed. In a number of instances, the Authority has now accepted these costs as being consistent with a prudent service provider acting efficiently.*

*One exception to accepting ECG's recommendations relates to Envestra's proposed marketing expenditure. While the Authority has not included the amount proposed by Envestra, it has accepted a significant increase in marketing costs from the amount actually spent by Envestra per year over the current regulatory period.*

*The Authority has accepted a revised forecast for unaccounted for gas to reflect the slower rate of mains replacement that has been included by the Authority. The Authority has used the price of gas proposed by Envestra, as it provided further evidence to support this price following the Authority's Draft Decision.*

*The Authority has accepted Envestra's general approach to calculating regulatory tax, which treated Envestra's Queensland network as a separate business. However, the Authority has used the parameters from this Final Decision (including a gamma of 0.5) to determine the appropriate allowance for tax.*

### 13.1 Introduction

Non-capital costs are those costs associated with the operation and maintenance of gas distribution networks. These costs can be divided into the activities of:

- operating and maintenance – the bulk of non-capital costs, including costs directly attributable to the repair and upkeep of the network;
- administration and overheads;
- network development (marketing);
- ancillary services;
- unaccounted for gas (UAG); and
- tax.

### 13.2 Code Requirements

Under the Code (sections 8.36 and 8.37), non-capital costs are described as the operating, maintenance and other costs incurred in the delivery of the reference service. Non-capital costs may include, but are not limited to, costs incurred for generic market development activities aimed at increasing long-term demand for the delivery of the reference service.

A reference service may provide recovery of all non-capital costs (or forecast non-capital costs, as relevant) except for any 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.

Section 8.2 (e) of the Code requires that any forecasts used in setting reference tariffs must be best estimates arrived at on a reasonable basis.

### 13.3 Determining Non-Capital Costs

In considering whether the forecast non-capital expenditure proposed by Envestra was in accordance with the Code, the Authority focused on the efficient costs that Envestra would be expected to incur in the operation of its network. It should be noted that the efficient level of expenditure does not necessarily correspond to actual expenditure.

The efficient level of non-capital expenditure will depend on the level of capital expenditure. A firm may decide that efficiency can be enhanced by fully maintaining capital currently in use. Alternatively, the firm may decide that it is more economic to spend less on maintenance with a view to earlier replacement of the network. Any trade-off that may occur between the two should not compromise the safety and integrity of the network as a whole, and should result in the overall lowest cost outcome for consumers consistent with the efficient operation of the network. The efficient level of non-capital expenditure will also be influenced by any augmentation or extension of the network.

Costs relating to unaccounted for gas and taxation are considered separately in sections 13.4 and 13.5.

#### *Envestra's proposal*

Envestra provided forecast non-capital costs for its revised access arrangement. According to Envestra, these costs include a \$1.3 million productivity improvement each year of the next regulatory period. Table 13.1 details Envestra's forecast non-capital costs.

**Table 13.1: Envestra's forecast non-capital costs, 2005-06 to 2010-11 (\$m, nominal)**

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Operating and maintenance	9.74	10.30	10.37	10.20	10.55	10.59
Administration and general	1.93	2.05	2.15	2.59	2.68	2.74
Network development	0.55	1.70	1.80	1.91	2.03	2.15
Material changes	0.00	3.69	3.74	4.16	4.12	4.40
<b>Total</b>	<b>12.22</b>	<b>17.74</b>	<b>18.06</b>	<b>18.86</b>	<b>19.38</b>	<b>19.88</b>

*Note: The operating and maintenance costs in this table do not include forecast costs of UAG and tax, which are discussed separately in sections 13.4 and 13.5.*

Envestra's network operation and management services will continue to be provided by Origin Energy Asset management (OEAM). Envestra will meet all cost and disbursements reasonably incurred by OEAM in the performance of the agreement it has with Envestra. In addition, Envestra is contracted to pay OEAM a management fee of 3 per cent of total revenue and an incentive payment for efficiency gains in the previous year.

### Operating and maintenance costs

Envestra's forecast operating and maintenance costs cover the following functions: network management and maintenance, meter reading and billing, leak repairs, planning, facilities management and regulatory fees. Envestra has used actual figures from 2004-05 as a baseline for establishing costs over the forecast period but, based on information from BIS Shrapnel, has adjusted forecast labour costs to reflect an expected increase in average weekly ordinary time earnings of 4.8 per cent per year over the next regulatory period.

Costs associated with unaccounted for gas and taxation were included by Envestra in its operating and maintenance costs. However, the Authority has removed these figures from this category (and Table 13.1) and discussed them separately in sections 13.4 and 13.5.

### Administration and general costs

The costs included in this category include those relating to accounting and finance, human resources management, information technology services, regulatory functions and insurance. As with operating and maintenance costs, Envestra has used 2004-05 actual costs to establish a baseline for the next period, with an adjustment made for an expected increase in wages over the forecast period.

### Network development

Network development expenditure included marketing activities, such as working with property developers to maximise the uptake of gas services, promoting the safe use of natural gas and increasing the utilisation of the network by improving public awareness of the advantages of using natural gas. Envestra's network development activities also included the cost of processing connection orders and main extension requests, as well as the costs associated with determining the locations of new gas meters and delivering meters prior to installation.

In its revised access arrangement, Envestra proposed a significant increase in network development expenditure in order to carry out a number of activities that are additional to those described above. Envestra suggested these additional activities will benefit consumers in the long term due to the incremental loads that would eventuate, in a similar way to current network development activities. While the detail of Envestra's network development plan is confidential, key aspects of the additional activities included:

- incentives for consumers wishing to install gas hot water in new or old homes in order to increase the uptake of gas hot water systems in Queensland. According to Envestra, the temperate Queensland climate results in minimal gas heating penetration into new dwellings, leaving hot water as the only major residential gas appliance. The incentive would offset, to some extent, the barriers to switching to natural gas (such as purchase cost and installation) but would still deliver, according to Envestra, a net benefit to consumers in the longer term; and
- proposals to increase gas utilisation in the industrial and commercial sector where opportunities have not yet been fully exploited. Envestra suggested that, to some extent, gas distributors have tended to neglect developmental and longer term projects with the advent of privatisation and the gas access regime. Envestra indicated that opportunities existed for the development of technologies such as small-scale combined heat and power projects and combined chilling, heat and power projects, as well as the development of gas fired air-conditioning for buildings. In order to achieve penetration in this area, Envestra has proposed to employ additional human resources with the necessary skills to capitalise on these opportunities.

### Material changes

Envestra defined material changes as activities (largely operating and maintenance costs) for which the forecast cost over the next access arrangement period was significantly higher than in the current regulatory period. The material changes to non-capital costs identified by Envestra included:

- IT projects to improve asset use, business intelligence, field data capture and risk management;
- new regulatory and operating requirements of the Queensland Government, Brisbane City Council, Energex and Standards Australia. In addition, Envestra indicated that costs relating to regulation under the Australian Energy Regulator as opposed to the Authority and possible changes in the Code will result in material increases to Envestra's forecast non-capital costs;
- environmental management costs relating to more stringent requirements for cleaning up disused gas manufacturing sites;
- risk management costs from proposals to map all large diameter pipelines, the 'dial before you dig' program, terrorist management systems, related staff training and temporary service cut off;
- miscellaneous costs arising from anticipated real wage increases for contractors and an expected increase in the superannuation guarantee paid to employees;
- costs to manage the ageing workforce of OEAM with retirements of key staff and difficulties in obtaining skilled replacements; and
- office and equipment costs associated with the expected growth of Envestra's network over the next access arrangement period.

### WorleyParsons review of Envestra's performance and efficiency

Envestra engaged WorleyParsons to prepare an assessment of Envestra's forecast non-capital costs, apart from those related to the additional network development proposed by Envestra. The report was provided to the Authority as supplementary information to support Envestra's forecast non-capital costs.

With respect to Envestra's past performance, WorleyParsons undertook a benchmarking study and claimed that Envestra's operating costs were within an acceptable range compared with industry peers, once environmental factors were taken into account (for example, the warmer climate in Queensland). The benchmark indicators used by WorleyParsons included Envestra's operating costs relative to length of main, customer numbers, capital base value and revenue generated. Specific measures were also considered for the cost of mains renewal, unit cost of meter changes and new customer connections.

WorleyParsons noted that material cost increases over the next access arrangement period totalled \$19 million, which in aggregate was very significant.

WorleyParsons reviewed each of Envestra's proposed material changes in detail, including the underlying assumptions, the supporting spreadsheets and other documentation (where relevant) and concluded that the forecast expenditure change was reasonable. As part of the review, some items were removed and others revised downwards. WorleyParsons noted that the majority of the changes were externally imposed on Envestra.

WorleyParsons considered Envestra's forecast non-capital expenditure to be reasonable and representative of a prudent distributor acting efficiently.<sup>7</sup>

#### *Other jurisdictions*

In its Final Decision, ESCV (2002) noted that, in considering the efficiency of non-capital costs, it was inevitable that the use of external benchmarks was required to establish changes in expenditure over time but that actual firm specific information was required to establish base-level expenditure. ESCV also suggested the information asymmetry between the service provider and the regulator (and its consultants) warranted it considering both the service provider's historical trend in costs and external benchmarks.

ESCV concluded that, given the natural incentive of service providers to present information that supports estimates favourable to their interests, it was incumbent of the regulator to utilise an incentive form of regulation, such as CPI-X, to reveal efficient costs. While more than one service provider suggested the required efficiency gains were unnecessary, as efficient cost estimates were already incorporated into their forecasts, ESCV required the service providers to achieve efficiency gains of 1 per cent for overall non-capital costs over the forecast period.

Other jurisdictional regulators have typically required service providers to incorporate non-capital cost efficiency improvements over the regulatory period. For example IPART (2005a) required CEG to adopt a 1 per cent productivity improvement over its five year access arrangement. Similarly, IPART (2005) expected AGLGN to make annual efficiency savings of 1.5 per cent each year in the areas of operating and maintenance expenditure, and administration and overheads.

In South Australia, ESCOSA (2006) determined that the inclusion of a management fee in Envestra's forecast non-capital costs would not reflect the 'lowest sustainable cost' requirement under Section 8.37 of the Code. It was the Commission's view that the management fee represented a profit margin and, unless Envestra could demonstrate otherwise, this expenditure would not be allowed.

#### *Submissions from stakeholders*

In response to the Authority's Draft Decision, Origin Energy (2006) strongly supported the increase in the forecast cost of gas marketing activities accepted by the Authority. However, Origin Energy recommended that Envestra's marketing plans be consistent with the Queensland Government's Sustainable Housing policy, the economics of gas supply to new and existing premises and promote the utilisation of gas in commercial and industrial processes as a priority over residential customers.

The EUAA (2006) was concerned that Envestra did not provide adequate information to allow the Authority to make informed decisions.

#### *QCA position*

The Authority engaged Energy Consulting Group (ECG) to provide independent advice on Envestra's forecast non-capital costs included in its revised access arrangement. With the receipt of Envestra's response to the Authority's Draft Decision, the Authority engaged ECG to assess their response.

---

<sup>7</sup> p15. WorleyParsons' report, Attachment 2 to Envestra's proposed Access Arrangements (Sept 2005).

In examining Envestra’s forecast non-capital costs, ECG based its recommendations on a comparison between actual costs incurred in the current access arrangement period and the forecast costs for the next period. Such an approach allowed ECG to assess any trends and significant variations from past trends.

In some cases, ECG was not able to recommend the expenditure proposed by Envestra for particular activities as, in ECG’s view, the forecast expenditure was not compliant with the Code. Table 13.2 details ECG’s recommended non-capital costs for Envestra over the next access arrangement period.

**Table 13.2: ECG’s recommended non-capital costs, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
Operating and maintenance	10.14	10.21	10.02	10.37	10.44
Administration and general	2.04	2.15	2.57	2.65	2.72
Network development	0.55	0.58	0.60	0.63	0.66
Material changes	2.90	2.79	3.14	3.03	3.29
<b>Total</b>	<b>15.63</b>	<b>15.73</b>	<b>16.33</b>	<b>16.68</b>	<b>17.11</b>
<b>Envestra Total</b>	<b>17.74</b>	<b>18.06</b>	<b>18.86</b>	<b>19.38</b>	<b>19.88</b>

ECG noted that Envestra had incorporated a management fee and related incentive bonuses it expected to pay OEAM in its forecast non-capital costs. ECG highlighted that related party transactions are currently a contentious issue for many jurisdictional regulators.

The Authority is concerned that outsourcing arrangements can reduce transparency, particularly where there is not a high degree of independence between the parties. However, the Authority has not removed the management fee and has assumed that this fee and the related incentive payment to OEAM will, over time, result in lower costs to consumers.

#### Operating and maintenance

ECG used trend analysis to determine the efficient operating and maintenance costs over the forecast period. In order to undertake this analysis, ECG used the actual operating and maintenance costs incurred by Envestra in the current access arrangement period, along with the forecast costs for the next period, to assess the efficiency of any deviation from trend. OEAM had selected a contractor to provide the majority of these services by competitive tender. In ECG’s view, the competitive tender process should have revealed efficient costs. Therefore, ECG adopted the costs incurred by Envestra in 2004-05 as a starting point for its trend analysis.

ECG analysed the various components of Envestra’s forecast operating and maintenance expenditure. These cost components include:

- network management;
- maintenance;
- meter reading and billing;
- leak repairs;
- planning;

- facilities management; and
- regulatory fees.

Envestra forecast its network management costs (including operations administration, operations management and training) to fall marginally over the next access arrangement period. ECG considered these cost forecasts were in accordance with the Code and, as a result, the Authority accepts Envestra's forecast cost for network management, as it also did in the Draft Decision.

Network maintenance costs are associated with general maintenance, odorisation, telemetry and other similar activities, with around 60 per cent of total cost related to labour. ECG noted that Envestra had forecast these costs to rise steadily over the forecast period partly due to rising wage rates.

ECG suggested the forecast wage increases proposed by Envestra should not be adopted, as real wage increases would be offset by associated non-labour costs falling in real terms. On this basis, ECG recommended that an efficient forecast cost of network maintenance would be consistent with the cost in 2004-05 and remain fairly steady in real terms over the forecast period. The Authority accepts this recommendation.

Envestra indicated that the forecast cost of meter reading and billing would increase by around 1 per cent in real terms over the forecast period, in line with expected increases in customer numbers. Envestra has now advised that forecast costs are increasing due to rising wages not new connections. ECG considered this was reasonable. The Authority has included the revised level of forecast costs on the basis of ECG's advice.

ECG noted that leak repair costs were forecast to increase by \$0.9 million to \$2.3 million in 2006-07 but Envestra did not provide an explanation of how the forecast increase had been derived. As a result, ECG initially recommended that the efficient level of expenditure for 2006-07 should be held to the 2005-06 level, falling thereafter in line with the trend provided by Envestra.

In response to the Authority's Draft Decision, Envestra provided further information that showed the effect of an accounting policy change to expense rather than capitalise ad hoc repairs. However, leak repair costs, net of these smaller repairs, were still forecast to increase by \$0.14 million in 2006-07. ECG accepted that, as mains are replaced and gas pressures increased, leakages can be induced in remaining older parts of the network. However, ECG suggested the slower mains replacement program it has recommended should not impact on leak repairs if Envestra replaced the poorest mains first. As a result, ECG recommended that forecast (net) leak repair costs should be consistent with the 2005-06 level of \$1.34 million. The Authority has adopted the costs proposed by ECG for leak repairs.

According to Envestra, network planning costs peaked in 2004-05 and are forecast to decline gradually through to 2010-11 in real terms. Similarly, Envestra expected the cost of facilities management to decline over the forecast period. Following the Authority's Draft Decision, Envestra further explained that the fall in forecast facilities management cost was as a result of maintenance cost and tax savings from the sale of three properties. On this basis, ECG suggested the forecast costs proposed by Envestra were reasonable. The Authority accepts Envestra's forecast costs of network planning and facilities management.

Envestra assumed regulatory licence fees would remain at the 2005-06 level over the forecast period. The Authority accepted this forecast as reasonable.

Envestra included forecast expenditure on unaccounted for gas and tax as part of its operating and maintenance costs. The Authority has considered these items separately (see sections 13.4 and 13.5).

#### Administration and general

ECG separately assessed Envestra's administrative and general costs. These cost components include:

- information technology;
- human resources;
- accounting and finance;
- regulatory functions; and
- self insurance.

In its initial report, ECG was concerned by the substantial increase in costs associated with information technology in 2008-09, which were forecast by Envestra to increase by more than 70 per cent to around \$1 million and remain at that level thereafter. ECG suggested the introduction of the proposed new systems should lead to cost savings rather than cost increases. As Envestra did not provide sufficient information to justify the increase, ECG recommended forecast costs should reflect those provided for 2007-08 and remain at around that level for the remainder of the forecast period. On the basis of ECG's advice, the Authority accepted Envestra's forecasts for 2006-07 and 2007-08. For the remaining years, the Authority included ECG's recommendation plus half of Envestra's proposed increase in expenditure above ECG's recommendation, conditional on Envestra providing sufficient evidence to substantiate these costs.

Following the Authority's Draft Decision, Envestra provided a breakdown of its forecast information technology costs. Envestra advised ECG that the forecast cost increases from 2008-09 relate only to the introduction of new information technology operating systems. That is, Envestra advised that it had incorrectly included ongoing costs for the current operating system beyond its expiration. As a result of the additional information, ECG recommended inclusion of Envestra's amended forecast costs. The Authority accepts the amended forecast costs recommended by ECG.

Costs associated with human resources management, accounting and finance and regulatory functions were forecast by Envestra to remain fairly stable over time as these activities are largely independent of network size or activity levels. On ECG's advice, the Authority accepted these costs.

At the time of the Authority's Draft Decision, ECG was unable to assess the cost of self-insurance claimed by Envestra due to a lack of detailed information. In response to the Draft Decision, Envestra provided a quote from an insurance broker to cast some light on the cost of self-insurance. Envestra confirmed that any property damage and business interruption cost related to accidents that occur in the future will be paid from the self-insurance account. Following assessment of this additional information, ECG concluded that the forecast cost of self-insurance is efficient. The Authority is of the view that some level of self-insurance is justified if the service provider believes that it is cheaper to self-insure than to insure through the market. In this case, the Authority is satisfied with the forecasts for self-insurance provided by Envestra.

### Network development

In 2001, the Authority approved network development expenditure of \$500,000 each year of the current access arrangement period. During this period, Envestra has indicated that its network development costs covered marketing and a range of other activities that Envestra refers to as operations support. These operations support activities include processing new connection orders and mains extension requests, site visits to determine gas meter locations and coordinating inlet and meter installation with customers and delivering meter boxes to builders. In its initial report, ECG considered operations support costs were justified and recommended they be set at the same level across the next access arrangement period. This decision was mainly a result of concerns about using the wage escalation factor proposed by Envestra. In response to the Authority's Draft Decision, Envestra provided further information to justify the wage escalation factor. ECG is now satisfied that the wage escalation factor is appropriate and, as such, accepts Envestra's forecast expenditure for operations support. ECG did note that these activities were basically operating and maintenance activities and had little to do with network development.

The Authority agrees that operations support appears to be more akin to operating and maintenance expenditure than network development expenditure. However, the classification of such costs is largely a matter for Envestra. Regardless, ECG has indicated these costs are efficient, and the Authority therefore accepts Envestra's forecast costs for operations support.

Envestra also proposed additional network development expenditure of \$1.15 million in 2006-07 rising to \$1.5 million in 2010-11. Envestra provided the Authority with a copy of its network development plan on a confidential basis. A large portion of the proposed expenditure is to provide incentives for the uptake of gas hot water systems in new and existing homes. For these incentives to provide a net benefit to existing customers, higher tariffs in the short term would need to be offset by lower tariffs in the future as a result of the increase in gas usage and customer numbers stemming from the incentive. The success of the proposal would largely depend on the extent to which the incentives induced increased gas usage and new customer connections beyond what might otherwise prevail.

Given the Queensland Government's Sustainable Housing Policy, which is due to commence in early 2006, will encourage the take-up of gas hot water systems in new housing, the Authority is not inclined to accept that the proposal by Envestra is necessary. Furthermore, the risk of this proposal will be borne by Envestra's existing customers (not Envestra) as the higher tariff required to pay for the incentive would be 'locked in' while the benefit to existing customers is dependent on the response in demand assumed by Envestra being proven to be correct.

The Authority accepts that further sustainable growth of Envestra's network is in the interests of Envestra and current and prospective users of its network. Operations support aside, Envestra only incurred costs of around \$200,000 per year over the current access arrangement period on network development activities. The Authority proposes to restore the real value of forecast network development costs (other than operations support) to \$600,000 per year over the next access arrangement period. This will provide a significant increase in capacity compared to the \$200,000 per year spent by Envestra over the current access arrangement period.

### Material changes

ECG reviewed each of the 'material changes' that Envestra proposed in its forecast expenditure over the next access arrangement period. At the time of the Authority's Draft Decision, ECG considered the costs associated with environmental management and some aspects of risk management, new regulatory and operating requirements and miscellaneous costs were consistent with a prudent operator acting efficiently.

ECG noted that there is always some degree of uncertainty associated with estimating costs for investigating contamination issues, ongoing monitoring and remediation of former gas sites. However, ECG suggested that Envestra was acting prudently in regards to environmental management and that the forecasts were within the range expected given the number of sites involved. ECG concluded that this expenditure was Code compliant. Similarly, ECG found that the forecast cost for excavations around power poles, inlet mapping, temporary service cut-offs, improved corporate governance, contractors and new government charges stemming from the Petroleum and Gas Act were efficient. In its Draft Decision, the Authority accepted this position and included Envestra's forecast costs for these activities.

Prior to the Authority's Draft Decision, ECG was not able to obtain sufficient information regarding many of the other 'material changes' identified by Envestra in order to assess their compliance with the Code. As a result, the Authority did not incorporate the costs for these 'material changes' in its Draft Decision. 'Material changes' that ECG could not recommend on this basis in its initial report included:

- new requirements from the Brisbane City Council that would lead to increased costs to Envestra for main laying and leak repairs;
- additional expenditure for spoil and waste disposal and the cost of servicing new customers;
- regulatory transition to the Australian Energy Regulator, regulatory reporting and several unspecified IT projects; and
- risk management activities relating to 'dial before you dig', anti-terrorism measures, system competency training and undertaking security reviews.

In response to the Authority's Draft Decision, Envestra provided additional information on the 'material changes' listed above. Following review of this additional information, ECG considered that Envestra's proposed expenditure relating to the new requirements of the Brisbane City Council was prudent and efficient. ECG also recommended acceptance of Envestra's forecast expenditure for soil and waste disposal. ECG based both of these recommendations on the fact that the expenditure was unavoidable because of council requirements and that the forecasts were derived from past actual expenditure. The Authority accepts Envestra's forecast costs for these items.

Prior to the Authority's Draft Decision, ECG was concerned that Envestra's forecast cost for servicing new customers may have also been included in operating and maintenance costs. Following the provision of additional information by Envestra, ECG is now satisfied that the cost of servicing new customers was not included elsewhere in Envestra's forecast costs. However, ECG was unable to reconcile Envestra's forecast total expenditure for servicing new customers based on the number of new customers forecast and Envestra's advice that \$11 per customer was used. As a result, ECG recommended that \$190,000 be approved, based on Envestra's unit cost per new customer as opposed to the \$570,000 proposed by Envestra. The Authority accepts the expenditure recommended by ECG.

ECG recommended that additional expenditure be allowed for regulatory reporting based on revisions to Queensland legislation but did not support additional expenditure for the transition to the Australian Energy Regulator. The Authority notes that, during the current access arrangement period, forecast costs relating to a change in Queensland legislation were accepted through the cost pass-through mechanism. On this basis, the Authority accepts ECG's recommendation.

In response to the Draft Decision, Envestra provided additional information on its forecast expenditure for IT projects. ECG considered capital expenditure for two of the five IT projects to be prudent and efficient (see Chapter 11). ECG considered that Envestra's operating expenditure for these two projects was appropriate but should commence in the year after completion rather than in the same year that the capital expenditure occurred. The Authority agrees with ECG's recommendation.

ECG recommended that the additional costs for the software licence relating to 'dial before you dig' activities to be prudent and efficient. However, ECG was unable to accept the remaining forecast amounts for 'dial before you dig' activities as there was no demonstrated need for the additional costs Envestra had included. Similarly, ECG could not conclude that the appointment of a full time employee for systems and competency assessment was efficient as it believed the more cost effective option would be a mix of internal and external personnel. In regards to terrorist risk management, ECG considered that Envestra was acting prudently in conducting a security review every second year but could not recommend additional expenditure for security patrols in the event of a heightened terrorism alert as being in accordance with the Code. ECG suggested that this expenditure could be considered as a cost pass-through item should such costs eventuate. The Authority accepts ECG's recommendations for risk management expenditure.

At the time of the Draft Decision, ECG was not able to determine if the forecast cost associated with OEAM's ageing workforce was in accordance with the Code and recommended against its acceptance. Envestra provided additional information on this issue in response to the Authority's concerns. Envestra argued that the forecast expenditure will be incurred by OEAM, which expects retirements of key staff and difficulties obtaining skilled replacements.

ECG noted that the additional information provided by Envestra did not outline any other options which have been evaluated instead of recruiting more staff and engaging ad hoc contractors, such as outsourcing. ECG acknowledged that the recruitment of new graduate engineers in tasks not normally outsourced was prudent but all other expenditure for OEAM's ageing workforce was rejected.

However, the Authority rejects both ECG's recommendations on this issue and Envestra's proposal to include OEAM specific operating costs. That such costs could be passed through to Envestra regardless of the impact on the competitiveness of providing such services only serves to highlight the unsatisfactory nature of the costs plus arrangement between Envestra and OEAM. Having already accepted the management fee paid by Envestra to OEAM, the Authority does not accept that costs associated with the inadequacies of Envestra's principal contractor should also be borne by consumers. As noted earlier, the Authority is required to accept only efficient costs, not the actual costs that result from Envestra's contractual requirements to employ OEAM.

With regards to changes to Australian Standards, ECG retained its position that it was unaware of any changes to standards and whether those standards would impose additional easement management tasks on network operators. Similarly, ECG was also unaware of any changes by the Commonwealth Government to increase the Superannuation Guarantee Levy. As a result, ECG did not recommend this expenditure proposed by Envestra. The Authority is of the view that these expenditure requests would be better dealt with through the cost pass-through mechanism. As a result, the Authority does not accept these expenditures as being consistent with the Code.

Envestra claimed that it would require additional office space and related equipment for increased staffing levels over the next access period. At the time of the Draft Decision, ECG reported it was not able to substantiate these claims and, as a result, was unable to determine whether these forecast costs were in accordance with the Code. Following receipt of additional

information from Envestra, ECG recommended that three additional graduate engineers be recruited as part of Envestra’s claim for ageing workforce expenditure. As a result, ECG calculated the necessary amount of office and equipment expenditure for the graduate engineers based on information provided by Envestra. ECG recommended that this amount of office and equipment expenditure be approved. For the same reasons that the Authority has rejected expenditure in relation to OEAM’s ageing workforce (as noted above), it rejects both ECG’s recommendation on this issue and Envestra’s forecast expenditure for office and equipment.

#### Efficiency Factor

Based on its experience, ECG suggested that network operators generally achieve productivity improvements over time through normal business improvement processes. At the time of the Authority’s Draft Decision, ECG noted that Envestra had not incorporated an efficiency factor into any of its forecast costs. Consequently, ECG proposed that a 1.5 per cent per year productivity factor should be included in the operating and maintenance, and administration and general expenditure components of non-capital costs.

In response to the Draft Decision, Envestra provided additional information to demonstrate that productivity improvements were already factored into its non-capital costs. ECG reviewed the additional information and was satisfied that the productivity improvement incorporated into the non-capital costs were commensurate with levels recorded in other jurisdictions.

The Authority agrees with ECG’s view that service providers should improve productivity over time due to improved business practices. In its Draft Decision, the Authority accepted ECG’s recommendation of a 1.5 per cent productivity factor to be applied to the operation and maintenance, and administration and general cost categories. However, in light of the additional information provided by Envestra, the Authority now accepts that Envestra’s non-capital costs already incorporate an allowance for productivity improvements and no additional efficiency factor need be applied.

#### Summary

Table 13.3 provides a summary of the non-capital costs (excluding UAG and tax) that the Authority has accepted for the purposes of this Final Decision. The Authority’s proposed allowance for non-capital costs is prudent and in accordance with the Code.

**Table 13.3: Forecast non-capital expenditure (\$m nominal)**

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Operating and Maintenance		10.14	10.21	10.02	10.37	10.44
Administration and General		2.04	2.15	2.57	2.65	2.72
Network Development		0.93	0.94	0.96	0.98	0.99
Material changes		2.81	2.73	2.99	2.92	3.11
<b>Total</b>	<b>12.22</b>	<b>15.92</b>	<b>16.03</b>	<b>16.54</b>	<b>16.92</b>	<b>17.26</b>
<b>ECG Total</b>		<b>15.63</b>	<b>15.73</b>	<b>16.33</b>	<b>16.68</b>	<b>17.11</b>
<b>Envestra Total</b>		<b>17.74</b>	<b>18.06</b>	<b>18.86</b>	<b>19.38</b>	<b>19.88</b>

**Amendment 13.1**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its forecast non-capital costs (excluding UAG and cost of tax) over the next regulatory period in accordance with Table 13.3.**

**13.4 Unaccounted for Gas**

Unaccounted for gas (UAG) is defined as the difference between the quantity of gas delivered into and withdrawn from a network in a given period. Unaccounted for gas is primarily the result of:

- physical losses – as a result of leakage, third party intervention or planned maintenance (such as the purging of new mains); and
- apparent losses – resulting from meter inaccuracies and accounting procedures. Perhaps the main contributor to apparent losses is that not all meters can be read at the same time.

Many factors influence the level of physical losses, such as gas pressure, the temperature of the surrounding environment, gas composition, and the age and condition of the network.

The Code requires the Authority to ensure reference tariffs are based on efficient costs not actual costs. In its 2001 Final Decision, the Authority gave detailed consideration to the issue of UAG as it believed that the level of UAG on both the Allgas and Envestra networks was unacceptably high. The Authority reasoned that, as it had established a capital base consistent with a depreciated network built using modern equivalent methods, that the acceptable level of UAG should also be determined on this basis. Consequently, the Authority included forecast costs for UAG that were less than that forecast by the service providers at the time.

*Envestra’s proposal*

Table 13.4 shows Envestra’s forecasts for UAG. Envestra argued that achievement of the forecast reductions in UAG was based on Envestra’s proposed mains replacement program of 70 km per year over the access arrangement period.

**Table 13.4: Envestra’s Forecast UAG, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
UAG	1.53	1.46	1.39	1.31	1.23

*Other jurisdictions*

ICRC (2004) required ActewAGL to achieve a UAG benchmark rate of 1 per cent of throughput and a price of \$2.50 per GJ. Cost incurred above this amount would not be compensated while costs below this would be retained by the service provider.

IPART (2005) required AGLGN to achieve 2.2 per cent UAG rate of loss in the first three years of the next regulatory period, falling to 2.1 per cent for the last two years. IPART considered that as older distribution pipes were replaced, UAG levels would decline as well.

### *Submissions from stakeholders*

EUAA (2006) noted that the Authority requested that Envestra provide more information to determine the efficient costs for UAG. EUAA sought a clear rationale for any changes to the Draft Decision in this matter.

### *QCA position*

#### Draft Decision

The Authority discussed in detail the issue of UAG in its 2001 review of access arrangements for Allgas and Envestra. It was clear at that time that the Queensland networks had materially higher levels of UAG than other networks in Australia. In its 2001 Final Decision, the Authority examined the level of UAG on other distribution networks and included a cost for UAG based on an average loss across those networks. The benchmark developed by the Authority at that time recognised the different characteristics of high and low pressure parts of the networks and resulted in a benchmark UAG rate of 4.8 per cent of total gas throughput for Envestra. The costs of UAG accepted in the 2001 Final Decision were based on this benchmark rate.

In its 2005 Draft Decision, the Authority stated that it would review the benchmark UAG rate for the Queensland networks before reaching a final decision on forecast UAG for their revised access arrangements.

Envestra has stated that its UAG, as a proportion of total gas throughput, rose from 4.8 per cent in 2001-02 to 5.8 per cent in 2004-05. Reductions in UAG were forecast by Envestra in future years. ECG, working off Envestra's stated UAG results, also forecast declining UAG in the future but at a less rapid rate, reflecting ECG's recommendation that Envestra's forecast network renewal program be scaled back.

At the time of the 2001 Final Decision, Envestra estimated UAG to be 13.5 per cent of total throughput (based on 2000-01 data). However, the volume of UAG reported by Envestra in its revised access arrangement was around half that previously reported for 2000-01. For this reason, in its Draft Decision, the Authority did not accept that either Envestra or ECG forecasts necessarily represented best estimates. Envestra was required to review the UAG information it provided to the Authority to confirm historical levels of UAG.

#### Final Decision

In response to the Authority's concerns, Envestra advised that its forecast UAG for the current period, which was provided at the time of the 2001 Final Decision, was based on a conservative estimate of UAG in 2000-01 which now appears to be clearly inaccurate. Envestra explained that the difference between the estimate of UAG of 577TJ in 2000-01 and the revision to 278TJ was due to two key factors. First, higher than expected benefits from the mains renewal program in 1999-00 and lower than expected deterioration of remaining mains. Second, the difference between forecast and actual UAG may have been influenced by the replacement of inaccurate meters and a movement in unbilled gas. ECG considered that the factors identified by Envestra could explain the difference between previous and revised estimates of UAG in 2000-01 but, given the lack of detailed information on how the original forecasts were determined, ECG was not able to confirm this.

As a result of this error in Envestra's estimate of UAG in 2000-01, its forecasts of UAG for the current period were considerably overstated. In its 2001 Final Decision, the Authority was concerned that the forecasts proposed by Envestra (and Allgas) were significantly higher than in

other jurisdictions. In light of this concern, the Authority adopted throughput benchmarks which resulted in significant reductions to the forecast cost of UAG. In hindsight, it appears that the reductions in the forecast cost of UAG were appropriate as the estimated UAG at the time was significantly overstated by Envestra.

ECG accepted Envestra's revised figures for UAG in 2000-01 and considers the levels of UAG through to 2004-05 varied within a range that would be expected given Envestra's mains renewal program. The Authority accepts that the data for UAG levels over the current regulatory period appear reasonable, given the revised starting point.

In order to assess Envestra's expected levels of UAG for the next access arrangement period and those levels that would be considered efficient, the Authority commissioned ECG to review the benchmark UAG rate. ECG compared the Queensland networks with other networks in Victoria, New South Wales and the Australian Capital Territory. ECG suggested that UAG per length of mains replaced would be a better guide to UAG performance than using a benchmark based on UAG as a proportion of throughput as the Authority had done in 2001, as the 'leakiness' of mains is not affected by throughput. ECG found that the Queensland network's UAG losses as a percentage of throughput, which are high compared to other jurisdictions, reflected the lower volume of gas consumed by residential customers, which typically account for nearly all of UAG. However, when UAG losses were measured against an alternative measure, the losses were more comparable.

Using Envestra's actual UAG data from the current period, ECG calculated that Envestra's UAG declined by 318GJ per km of mains replaced. This compares with ECG's calculation for Allgas of 478GJ. While there appears to be a considerable variation between the Queensland networks, ECG has advised that Envestra's improvement in UAG of 318GJ per km of mains replaced compares favourably with networks in other jurisdictions for which it has direct knowledge.

The Authority accepts that use of benchmarks set on a loss per km of mains replaced should be more robust than a benchmark set on a throughput basis. The Authority notes that forecast UAG levels for Envestra, as assessed by ECG, are comparable to those in other jurisdictions. While measurement irregularities are of concern, the Authority accepts that Envestra's UAG levels appear to be consistent with the levels experienced in other jurisdictions.

However, ECG forecast a slower decline in aggregate UAG than did Envestra, reflecting the inclusion of a mains replacement program over nine years rather than the five years as proposed by Envestra.

In order to establish the forecast cost of UAG over the next access arrangement period, the price of gas must be determined. In its Draft Decision, the Authority required Envestra to provide evidence to support its claimed gas prices over the forecast period (which were provided to the Authority on a confidential basis). Envestra has provided this evidence on a commercial-in-confidence basis to the Authority.

Consequently, the forecast cost of UAG for the next access arrangement period has been calculated using ECG's forecast volume of UAG and the price of gas advised by Envestra. Table 13.5 shows the forecast cost of UAG that the Authority has accepted.

**Table 13.5: Forecast UAG (\$m, nominal)**

	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
UAG	1.34	1.29	1.24	1.19	1.13

**Amendment 13.2**

**In order for Envestra’s access arrangement to be approved, Envestra must amend its forecast UAG over the next regulatory period in accordance with Table 13.5**

**13.5 Taxation**

In its Decision on the 2001 access arrangements, the Authority accepted the forecast cost of tax supplied by each service provider at the start of the regulatory period based on the requirement that this would be adjusted at the end of the regulatory period to bring those forecasts into line with actual tax paid. The Authority made this position quite clear in both its Draft Decision and in its Final Decision.

*Envestra’s proposal*

Envestra has accepted the Authority’s preference for a post-tax approach to calculating the rate of return and has calculated a cost of tax for inclusion in the cash flows over the next access arrangement period.

Envestra calculated its forecast cost of tax based on a notional entity that represents the regulated Queensland gas distribution network. To arrive at its forecast tax position, Envestra has taken its proposed annual tariff revenues and capital contributions and then deducted non-capital costs, tax depreciation and interest costs to arrive at a notional net income. Tax payable has then been calculated using the statutory tax rate of 30 per cent. Envestra then calculated its regulatory cost of tax using its estimate of gamma of 0.18 (see Chapter 12), as shown in Table 13.6.

**Table 13.6: Envestra’s Forecast Tax, 2006-07 to 2010-11 (\$m nominal).**

	2006-07	2007-08	2008-09	2009-10	2010-11
Forecast Tax	1.4	2.1	2.7	3.5	4.4
Regulatory Tax	1.2	1.7	2.2	2.8	3.6

Envestra has not made any adjustment to its proposed revenue requirement for the upcoming access arrangement period to account for any differences between forecast tax and actual tax in the current access arrangement period. Envestra argued that an ex-post adjustment is not consistent with a price path approach in that forecasts are approved on a ‘set and forget’ basis. Envestra also claimed that its current access arrangement, as approved by the Authority in 2001, did not require it to make any adjustment to equate forecast tax with actual tax paid over the current regulatory period.

*Other jurisdictions*

Several regulators (IPART, ERA, ICRC and ESCOSA) use a pre-tax WACC that accounts for tax within the WACC model. Others (ESCV, ACCC and the Authority) use a post-tax WACC and recognise the cost of tax in the cash flows.

The ESCV (2002) used a post-tax version of WACC for the gas distributors in Victoria. The view of the ESCV was that the allowance for company taxation should reflect an unbiased forecast of the taxation liabilities for an efficient company. The ESCV adopted its own industry-wide benchmark assumptions for many of the tax inputs on the basis of independent professional tax advice. Many of the inputs used were required for the assessment of reference

tariffs, including assessable revenue, operating expenditure, capital expenditure and interest expenses. The taxation that was allowed in the building blocks was not reconciled against actual tax paid by the company and no adjustment was made on an ex-post basis.

The ACCC (2003) considered that a key objective in determining the allowance for taxation was that it reflect an unbiased estimate of tax liabilities for an efficient company. The ACCC used a post-tax nominal framework and included tax in the cash flows. The ACCC used some of the inputs from the regulatory framework to deduce likely tax liabilities for the regulated entity. The ACCC also used information on the tax position of the regulated business, information to determine depreciation allowances, an assumption regarding the company tax rate and an assumption regarding imputation credits facing the benchmark firm to determine a tax liability to be included in the cash flows.

#### *Submissions from stakeholders*

EUAA (2006) noted that the Authority requested that Envestra provide more information to determine the efficient tax forecasts. EUAA sought a clear rationale for any changes to the Draft Decision in this matter.

#### *QCA position*

The Authority has set a post-tax WACC for Envestra's next access arrangement period (see Chapter 12). As a result, an allowance for regulatory tax needs to be determined.

#### *Draft Decision*

In its Draft and Final 2001 Decisions, the Authority adopted an approach to passing through the true cost of tax based on an adjustment at the end of the regulatory period in recognition of the fact that it is extremely difficult to accurately forecast tax and because this approach would ensure that the service providers were not penalised by being unable to recover their actual cost of tax.

However, despite the clearly stated intention of the Authority that such an adjustment would be required, Envestra has now argued that retrospective adjustments are inconsistent with the price path form of regulation which underpins the approved access arrangement and that the wording of its current (approved) access arrangement did not support such an adjustment being required.

As it anticipated a reconciliation of forecast and actual tax at the end of the access arrangement period, the Authority did not examine the tax forecasts included in the revenue to be raised by the service providers in the current access arrangement period as closely as it would have done had this not been the case.

As it has turned out, the forecasts that were included (and hence the revenue raised from customers) was higher than the actual costs incurred by Envestra (or Allgas). However, while Allgas has proposed to make the anticipated adjustment to return this windfall to customers, Envestra has now declined. The Authority has obtained legal advice which indicates that the tax adjustment as previously envisioned is not enforceable.

In light of this unexpected situation, the Authority had to reassess its approach to tax for the next access arrangement period. In its Draft Decision, the Authority required the service providers to either put forward very robust tax forecasts for the Queensland regulated business which the Authority would be prepared to accept on a 'set and forget' basis or include an adjustment mechanism that is clearly enforceable.

For the purposes of its Draft Decision, the Authority accepted Envestra’s method of calculating forecast tax based on the ‘building block’ cost components and Envestra’s actual tax depreciation, subject to a reconciliation with actual tax at the end of the next access arrangement period. The Authority’s acceptance of the proposed approach to forecasting the tax liability of the Queensland regulated business was on the basis that Envestra would not be able to adopt an alternative approach should its tax position change. However, the Authority did adjust the forecasts of tax provided by Envestra to reflect the revenues and costs that the Authority had accepted for the Draft Decision and a gamma of 0.5. The Authority required Envestra to amend its revised access arrangement to reflect the Authority’s calculated forecast of regulatory tax and to include a provision for reconciliation with actual tax.

#### Final Decision

Envestra provided additional information on this issue in response to the Authority’s Draft Decision. Envestra has indicated that its approach to calculating the cost of tax was consistent with the method used by the ESCV in its electricity and gas regulatory decisions since 2000. Envestra considered that its method was robust as it was based on its forecast costs included in the access arrangement. As a result, Envestra believed that its regulatory tax forecasts should be included on a ‘set and forget’ basis. Envestra argued that this approach would preserve the incentive properties of the regulatory regime in Queensland.

However, Envestra indicated it would accept an ex-post adjustment for actual tax if the Authority included a mechanism to counter the effect of over-estimated demand. Envestra argued that, if it incurred a revenue shortfall from less than forecast demand, it would also be disadvantaged by also having to return a higher than forecast amount of tax payable. However, Envestra’s preferred approach was for a ‘set and forget’ approach to both regulatory tax and demand.

The Authority has reconsidered its requirement for a reconciliation of tax at the end of the next access arrangement period. Given the cost of tax is a residual calculation based on a number of the ‘building block’ components already accepted as best estimates and, as noted by Envestra, the tax forecast will attenuate any forecast errors in demand, either positively or negatively, the Authority has decided that an ex-post adjustment to regulatory tax is not required.

However, as has been noted in Chapter 12, the Authority requires that Envestra use a gamma of 0.5 for the purposes of calculating regulatory tax. The Authority has also adjusted the forecasts of tax that have been provided by Envestra to reflect the revenues and costs that the Authority has accepted for the purposes of this Final Decision. For the purpose of calculating tax depreciation, the Authority has used regulatory depreciation as this is consistent with the approach to calculating the cost of tax using the ‘building blocks’.

Forecast tax and forecast regulatory tax, which takes account of gamma (see Chapter 12), are shown in Table 13.7.

**Table 13.7: Forecast Tax, 2006-07 to 2010-11 (\$m nominal)**

	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
Forecast Tax	1.9	2.2	2.4	2.6	2.9
Forecast Regulatory Tax	0.9	1.1	1.2	1.3	1.4

**Amendment 13.3**

**In order for Envestra’s access arrangement to be approved, Envestra must include the forecast cost of tax as outlined in Table 13.7.**

## 14. GAS DEMAND FORECASTS

*The Authority has considered the gas demand forecasts submitted by Envestra in light of independent forecasts it has commissioned. The forecasts that were commissioned by the Authority differed in some areas to the forecasts that were submitted by Envestra. The Authority considers that Envestra is unlikely to overstate demand growth, given the consequences that this would have in terms of revenue and pricing.*

*The Authority has considered whether the forecasts arrived at by Envestra are best estimates made on a reasonable basis. The Authority has assessed the Envestra forecasts and the associated methodology and has compared these with the forecasts and methodology of its independent expert McLennan Magasanik Associates (MMA).*

*In its Draft Decision, the Authority accepted Envestra's forecasts for volume customers, but not the forecasts for demand customers. In its response to the Draft Decision, Envestra provided further information on its forecasts and a revised set of forecasts for demand customers. Envestra also revised its forecasts for volume customers as its previous forecasts included additional customers expected from its enhanced network development strategy, which was not accepted by the Authority. The Authority re-engaged MMA to update its forecasts based on latest data and consider the additional information provided by Envestra.*

*While the Authority has accepted Envestra's forecasts for demand customers, Envestra's proposed forecasts for volume customers do not take into account the increased level of marketing expenditure accepted by the Authority in its Draft Decision. Therefore, the Authority does not accept Envestra's forecasts are best estimates arrived at on a reasonable basis. The Authority is of the view that the forecasts for volume customers provided by MMA are better estimates than those provided by Envestra. The Authority requires Envestra to amend its forecasts for volume customers.*

### 14.1 Introduction

The forecasts of gas demand over the access arrangement period are important inputs in the process of setting reference tariffs. As such, it is necessary for the Authority to determine whether estimates of the quantity of gas to be demanded by customers over the period of the access arrangement are reasonable.

### 14.2 Code Requirements

Section 8.2(e) of the Code requires that the Authority be satisfied that any forecasts required to set reference tariffs represent best estimates arrived at on a reasonable basis. The Authority must also consider the objectives in section 8.1 of the Code when determining the Reference Tariff and Reference Tariff Policy.

### 14.3 Determining Gas Demand Forecasts

Reference tariffs are set using assumed levels of gas demand over the next access arrangement period. If these forecasts are too high, resultant tariffs will be lower than those necessary to achieve the forecast revenue requirement. Conversely, if forecasts are too low, prices will be set higher than those necessary to raise the forecast revenue requirement.

In considering their forecasts, service providers would be more likely to underestimate demand, to ensure that they achieve or exceed their revenue target, than to overestimate demand. Service providers will have a natural incentive to exceed the forecast growth of the market during the

access period since their efforts in this regard will result in revenue over and above that necessary to meet the full economic cost of service delivery.

The Authority's task is therefore to determine the most robust demand forecasts that recognise the service providers' revenue requirements while maintaining incentives to grow the market.

#### *Envestra's proposal*

Envestra noted that the consumption range for volume customers on its network is relatively large and adopted different methods to arrive at forecasts for residential users compared to commercial and small industrial users (see Table 14.1).

Envestra's forecasts for residential customers were compiled separately for existing dwellings and new dwellings. For established dwellings, Envestra forecast consumption by taking the average actual usage in 2004-05, adjusted to reflect recent trends in increasing appliance efficiency and an income response. Average consumption values were then multiplied by the number of users in 2004-05, adjusted for disconnections, and an amount attributable to the incremental marketing program was added to this volume.

For new dwellings, Envestra expected that consumption per household would be higher than for existing dwellings as they would, at a minimum, have both a gas cooker and a gas hot water service. To construct these forecasts, Envestra compiled information on the estimated number of new dwellings for each region (Brisbane and Northern) from 2005-06 to 2010-11. This was adjusted to reflect the fact that the network would not run past all new dwellings constructed and that a significant proportion of new dwellings would not be able to access the gas network..

Envestra then estimated the number of users attributable to new dwellings at current marketing levels and increased this to reflect its estimate for the impact of its marketing activities to arrive at the total number of new dwelling users. Average usage per meter was forecast by taking into account the appliance mix, trends in appliance efficiency and changes in government policy. Forecast consumption for new dwellings was then estimated by multiplying the forecast number of new users by the forecast average volume per meter.

To forecast consumption for the commercial segment of the market (the less than 10 TJ non-residential segment), Envestra used estimates of economic output, the demand response to the change in output and the change in volumes per meter to estimate the total gas volume for each region.

Envestra's forecast for the small industrial segment of the market was calculated on the same basis as for the commercial segment. However, average volumes per meter from 2005-06 to 2010-11 were assumed to be the same as occurred in 2004-05 and growth was predicted to proceed at a lower rate than recent historical growth. Envestra suggested that competition from imports would constrain demand from local manufacturing operations thereby reducing the rate of growth in this segment of the market.

**Table 14.1: Envestra’s initial forecasts of consumption for volume customers, 2005-06 to 2010-11 (TJ)**

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
Brisbane – Residential	680	695	695	723	754	789
Northern – Residential	24	24	23	23	23	23
Brisbane - Commercial	1,083	1,133	1,183	1,234	1,292	1,356
Northern - Commercial	167	171	175	178	182	186
<b>Total</b>	<b>1,953</b>	<b>2,023</b>	<b>2,076</b>	<b>2,158</b>	<b>2,251</b>	<b>2,353</b>
<b>Growth (%)</b>		<b>3.5</b>	<b>2.6</b>	<b>3.9</b>	<b>4.3</b>	<b>4.6</b>

In its response to the Draft Decision, Envestra argued that its original demand forecasts for volume customers were no longer best estimates arrived at on a reasonable basis. Envestra argued that its initial forecasts were formulated without detailed knowledge of the Queensland Government’s Sustainable Housing Policy, which has now been introduced. In addition, Envestra assumed it would receive the full amount of marketing expenditure which it had proposed in its revised access arrangement, which the Authority rejected in its Draft Decision.

Envestra argued that the MMA forecasts had given due consideration to the issues specific to the Queensland market for natural gas and, as such, was of the view that the MMA forecasts for volume customers would satisfy the requirements of the Code. Envestra’s revised forecasts are shown in Table 14.2.

**Table 14.2: Envestra’s revised forecasts of consumption for volume customers, 2005-06 to 2010-11 (TJ)**

	<i>2005-06</i>	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
Brisbane – Residential	673	673	673	673	675	677
Northern – Residential	23	23	23	23	23	23
Brisbane - Commercial	1,055	1,099	1,135	1,161	1,189	1,214
Northern - Commercial	160	166	171	174	178	181
<b>Total</b>	<b>1,911</b>	<b>1,961</b>	<b>2,002</b>	<b>2,031</b>	<b>2,065</b>	<b>2,095</b>
<b>Growth (%)</b>		<b>2.6</b>	<b>2.1</b>	<b>1.4</b>	<b>1.7</b>	<b>1.4</b>

For demand customers, Envestra forecast maximum daily quantity (MDQ) for each tariff zone by forecasting MDQ for each user (see Table 14.3). Envestra argued that large industrial demand and MDQ is difficult to forecast and is poorly correlated with macroeconomic drivers.

In its response to the Draft Decision, Envestra updated its original forecasts for demand customers by making various adjustments to the forecasts that it originally proposed. These adjustments include an assumption that load factors remain stable and that the net growth in consumption and MDQ for demand customers is around 2 per cent per year.

**Table 14.3: Envestra’s forecasts of MDQ for demand customers, 2006-07 to 2010-11 (GJ)**

	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
Brisbane	16,720	17,020	17,330	17,640	17,960
Northern	400	410	420	430	440
<b>Total</b>	<b>17,120</b>	<b>17,430</b>	<b>17,750</b>	<b>18,070</b>	<b>18,400</b>
<b>Growth (%)</b>		<b>1.8</b>	<b>1.8</b>	<b>1.8</b>	<b>1.8</b>

*Other jurisdictions*

IPART (2005) engaged an independent expert to assess the methodology used by AGL to determine its gas demand forecasts, and to make recommendations to assist the Tribunal in determining whether the forecasts were best estimates arrived at on a reasonable basis. The tribunal required AGL to make some amendments to its gas demand forecasts.

The ESC (2002) required that the distributors submit their own gas demand forecasts together with independent verification that the forecasts were ‘the best estimates arrived at on a reasonable basis’. The Commission then assessed the forecasts in light of other additional evidence and required the distributors to make some adjustments to their demand forecasts.

ICRC (2004) engaged an independent consultant to assess whether the ActewAGL forecasts were best estimates arrived at on a reasonable basis. The consultant also prepared its own forecasts because it did not believe that ActewAGL’s forecasts were appropriate. The Commission required ActewAGL to make adjustments to various aspects of its gas demand forecasts.

ESCOSA (2006) engaged an independent consultant to assess whether the Envestra forecasts were best estimates arrived at on a reasonable basis. The consultant also provided its own set of forecasts. ESCOSA accepted some aspects of Envestra’s forecasts, but required that it make some amendments and incorporate those forecasts developed by the consultant.

*Submissions from stakeholders*

Origin (2005) suggested that Envestra’s forecast demand growth appeared to be excessive despite Envestra’s concessions that growth would be slowed by conservation initiatives introduced by the Queensland Government. Origin recommended that the Authority undertake further investigation of Envestra’s demand forecasts.

In response to the Authority’s Draft Decision, the EUAA (2006) expressed concern that the distributors would try to overstate demand growth and it therefore supported the Authority’s use of many of the MMA forecasts. However, the EUAA expressed concern that the Authority had accepted the Envestra forecasts for commercial and industrial users, which were somewhat higher than the MMA forecasts.

### *QCA position*

#### Draft Decision

The Authority commissioned McLennan Magasanik Associates (MMA) to develop an independent set of gas demand forecasts for Queensland to assist the Authority in forming an opinion on the reasonableness of the forecasts initially submitted by Allgas and Envestra. Prior to Draft Decision, MMA produced a separate report for each network which can be found on the Authority's website. MMA's forecasts were disaggregated on the basis of customer class, region and maximum daily quantity (MDQ) where appropriate.

The information on which MMA based its forecasts for Envestra included:

- historical information supplied by Envestra;
- information and forecasts available in the public arena; and
- a telephone survey of Envestra's largest customers.

The approach taken by MMA was to:

- separate demand into reasonably homogenous market categories, in this case residential, small business (commercial and small industrial) and large industrial;
- consider the important markets or sub-components of markets. For the residential and small business markets, this was the number of connections and the average usage. For the large customer market total usage and MDQ was used;
- assess trends over recent years and examine changes to key drivers;
- conduct a survey of the largest customers;
- forecast the residential, small business and large industrial markets separately; and
- disaggregate demand into demand and volume customer groups which are the basis of the proposed reference tariffs and into zones as appropriate.

MMA forecast demand for the residential and commercial and small industrial (less than 10 TJ) customers separately for each of the Brisbane and Northern zones. These forecasts were then combined to arrive at forecasts of demand for volume customers for the two zones.

MMA arrived at forecasts for residential demand by forecasting changes to customer numbers and changes to average usage. MMA forecast customer numbers to grow in line with the forecast growth rate in dwellings in each zone. For the Brisbane zone this was a growth rate of 2.4 per cent and for the Northern zone this was a growth rate of 0.9 per cent.

MMA forecast average consumption to decrease over the period based largely on recent trends which indicate that average consumption is decreasing, new sustainability initiatives that require efficient hot water and showerheads and an assumption to account for the impact of recent price increases.

On this basis, average consumption in the Brisbane region was forecast by MMA to decline from 10 GJ in 2005 to 8.9 GJ in 2011 while average usage in the Northern region was forecast to decline from 8.1 GJ in 2005 to 7.4 GJ in 2011.

The combined effect of the changes to customer numbers and average usage resulted in consumption being forecast to be relatively flat in both zones. Consumption in Brisbane was forecast to increase from 673 TJ in 2005 to 677 TJ in 2011 and consumption in the Northern region was forecast to remain stable at 23 TJ.

MMA forecast consumption for the commercial and small industrial market to increase by around 2.3 per cent per annum over the forecast period. For the Brisbane zone consumption was expected to increase from 1058 TJ in 2005 to 1214 TJ in 2011. For the Northern zone consumption was forecast to increase from 161 TJ in 2005 to 181 TJ in 2011.

#### Final Decision

Following release of the Draft Decision, the Authority commissioned MMA to update its forecasts to account for any further information submitted by stakeholders and also to take into account the forecast level of marketing expenditure that the Authority had accepted. The first set of MMA forecasts assumed that there was no substantial change in the level of marketing from that allowed in the first access arrangement period. However, in its Draft Decision, the Authority accepted a moderate increase in marketing expenditure which would be expected to result in higher demand, although the ‘enhanced network development’ activities were not accepted (see Chapter 13). MMA has forecast that residential consumption will increase by 26 TJ by the end of the regulatory period due to the increased marketing allowance.

MMA has also updated its forecasts for the commercial and industrial sector of the volume customer class to take into account revised Gross State Product forecasts. MMA has forecast that commercial and industrial consumption will be 17 TJ higher than forecast in its November report.

The updated MMA forecasts for consumption in the volume customer class are provided in Table 14.4.

**Table 14.4: MMA forecasts for Envestra’s volume haulage service, 2005-06 to 2010-11 (TJ)**

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Brisbane – Residential	673	676	682	688	695	703
Northern – Residential	23	23	23	23	23	23
Brisbane - Commercial	1,058	1,088	1,125	1,165	1,202	1,229
Northern - Commercial	160	165	169	175	180	183
<b>Total</b>	<b>1,914</b>	<b>1,952</b>	<b>1,999</b>	<b>2,051</b>	<b>2,100</b>	<b>2,138</b>
<b>Growth (%)</b>		<b>2.0</b>	<b>2.4</b>	<b>2.6</b>	<b>2.4</b>	<b>1.8</b>

In its Draft Decision, the Authority accepted Envestra’s forecasts for volume customers. The Authority accepted that these forecasts were based on Envestra’s assumption that it would receive significantly more marketing expenditure than in the current access period. The Authority did allow a significant increase in marketing, although it did not allow the full amount that Envestra had asked for. Nonetheless, the Authority believed that Envestra should still be able to achieve significant growth in the market and, as such, accepted Envestra’s forecasts.

In its response to the Draft Decision, Envestra abandoned its forecasts for volume customers and suggested the Authority should accept the (lower) November MMA forecasts. Since the Draft Decision, MMA has revised its forecast to reflect more recent information. As Envestra’s original forecasts appear to no longer have any status, and Envestra has indicated its support for the methodology adopted by MMA, the Authority is of the view that MMA’s updated

consumption forecasts for volume customers represent a best estimate arrived at on a reasonable basis.

As such, the Authority has adopted the forecasts for volume customers proposed by MMA, in the calculation of reference tariffs for the next access arrangement period.

For the demand class of customers, MDQ is important from a pricing and network development perspective. In its initial report, MMA forecast MDQ for the demand class by forecasting changes to consumption and to the future load factor. MMA forecast consumption in the demand class to grow at 3.4 per cent per annum in the Brisbane zone and 4.3 per cent per annum in the Northern zone.

In its response to the Draft Decision, Envestra argued that load factors have been stable in recent times and provided further evidence to support this position. In its review of the original forecasts, MMA accepted that a few anomalous large customer movements did make it appear that load factors were declining. MMA adjusted for these customers and accepted Envestra's comment that it was appropriate to assume stable load factors going forward. MMA revised its forecasts and assumed a constant load factor.

MMA forecast MDQ in the Brisbane region to grow from 15.9 TJ in 2005 to 18.5 TJ in 2011 and for MDQ in the Northern region to increase steadily over the period.

**Table 14.5: MMA revised forecasts of MDQ for Envestra's demand haulage service, 2005-06 to 2010-11 (GJ)**

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Brisbane	15,250	15,858	16,532	17,293	17,982	18,492
Northern	339	356	375	396	415	430
<b>Total</b>	<b>15,589</b>	<b>16,214</b>	<b>16,907</b>	<b>17,689</b>	<b>18,397</b>	<b>18,922</b>
<b>Growth (%)</b>		<b>4.0</b>	<b>4.3</b>	<b>4.6</b>	<b>4.0</b>	<b>2.9</b>

The Authority accepts that MDQ is not easy to forecast accurately given that changes to MDQ can be significantly affected by a small number of large new users or curtailments by large existing users. However, the revised MDQ forecasts of Envestra and MMA are reasonably consistent in terms of the size of growth in MDQ over the forecast period.

In its Draft Decision, the Authority noted that some growth in MDQ was likely to persist over the access arrangement period. Envestra's revised forecasts have incorporated growth in MDQ over the period and, as such, the Authority is of the view that they are best estimates arrived at on a reasonable basis.

In summary, the Authority has accepted Envestra's revised forecasts of MDQ for demand customers but has not accepted Envestra's proposed forecasts for volume customers.

#### **Amendment 14.1**

##### **In order for Envestra's access arrangement to be approved, Envestra must**

- **adjust its access arrangement to reflect MMA's revised forecasts for volume customers (see Table 14.4); and**
- **amend its access arrangement to include its updated forecasts for demand customers (as shown in Table 14.3).**

## 15. REFERENCE TARIFFS AND TARIFF PATHS

*The Authority has assessed Envestra’s proposed revenue targets and has forecast total revenue to be recovered over the next access period to be \$206.8 million. This compares with a total revenue forecast of \$165.9 million in the current access period.*

*The Authority has not accepted Envestra’s proposal of a single tariff path for all customers (combining volume and demand customers) that would rise at CPI+2% over the revised access arrangement period. The Authority has concerns that allowing greater flexibility in the pricing of tariffs would not promote cost reflectivity, a lingering problem with prices charged to many small customers. The Authority therefore requires Envestra to retain separate price paths for volume and demand customers.*

*When converted into reference tariffs, the revised revenue requirements for each group indicate that prices for the demand customer group will change on average by CPI+1.6% each year, while prices for volume customers will change on average by CPI+1.1% each year.*

*In its Draft Decision, the Authority required Envestra to provide additional information to assist it in evaluating the cost reflectivity of reference tariffs applied by Envestra to its different customer groups. The Authority’s assessment of the information provided by Envestra suggests that a significant cross subsidy is provided to small domestic customers. The Authority considers that Envestra should take more aggressive steps to remedy this situation over the next access period, or risk an adjustment to revenues or the capital base in the future.*

*The Authority requires Envestra to amend its proposed side constraint such that prices for individual volume customers will be capped at CPI+3% per year. However, the Authority will consider any request by Envestra for price increases of more than CPI+3% to individual customers, or group of customers, where this will assist prices to those customer(s) to become more cost reflective.*

*The Authority is satisfied that, on the whole, demand customers are paying prices that are cost reflective.*

*In revising its reference tariffs and tariff paths, Envestra is required to incorporate the various amendments required by the Authority in this Final Decision.*

### 15.1 Introduction

Reference tariffs are the price for the service made publicly available by the service provider, upon which potential users can rely in making consumption and investment decisions. The reference tariffs for services to particular users depend on a number of factors, including:

- the total revenue the service provider is entitled to receive from the regulated services;
- the demand forecasts for the regulated services;
- the distribution of costs between different services and between different users of the same service; and
- any side constraints on prices charged to particular groups of users.

This chapter discusses the way total revenue is determined and how it is then translated into tariffs.

### *Code Requirements*

The Code (section 8.1) requires that certain key principles be reflected in the reference tariff policy of the service provider and in the calculation of all reference tariffs. These principles were discussed in Chapter 10.

Specific code requirements pertaining to the allocation of revenues between customers and prudent discounts are discussed in the relevant sections below.

## **15.2 Determination of Total Revenue**

In its Draft Decision, the Authority accepted Envestra’s proposed ‘cost of service’ approach to determining annual revenue, coupled with a price cap approach to setting future prices.

Under the ‘cost of service’ approach proposed by Envestra, the total revenue requirement of a regulated business is determined by a number of factors, including:

- an appropriate rate of return on capital;
- a return of capital through depreciation; and
- non-capital costs of delivering the service, including tax and UAG.

The amounts proposed by Envestra for each of these factors have been discussed in previous chapters of this Final Decision. This section identifies the total revenue requirement for Envestra over the regulatory period 1 July 2006 to 30 June 2011.

### *Envestra’s proposal*

Envestra’s forecast total revenue is in line with the components of total revenue it has proposed, as outlined in earlier chapters, and is summarised in Table 15.1.

**Table 15.1: Envestra’s proposed total revenue targets, 2006-07 to 2010-11 (\$m, nominal)**

	<i>2006-07</i>	<i>2007-08</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>
Return on capital	15.6	17.0	18.6	20.3	21.9
Economic depreciation	2.6	2.8	3.2	3.5	3.7
Non-capital costs	20.4	20.7	21.5	22.2	23.0
Less ancillary service income	0.11	0.11	0.11	0.12	0.12
Less excluded asset revenue	0.09	0.09	0.10	0.10	0.10
<b>Total</b>	<b>38.4</b>	<b>40.4</b>	<b>43.1</b>	<b>45.7</b>	<b>48.4</b>

*Numbers may not add due to rounding.*

As discussed in Chapter 11, the approach Envestra has used to determine ‘economic’ depreciation over the next period begins by exogenously determining the rate of price increase that Envestra considers the market will bear. Envestra suggested that a 2 per cent real increase in prices would be acceptable by the market. Envestra then solved for the level of depreciation that would achieve this price outcome, setting aside remaining amounts of depreciation as ‘deferred depreciation’. The deferred depreciation would be recovered in a later regulatory period, adjusted for the time value of money.

### *Submissions from stakeholders*

In response to Envestra’s revised access arrangements, Energex Retail (2006) raised a general concern that, in its view, the market would not sustain significant price increases.

Origin Energy (2006) objected to Envestra’s proposed overall price increase of CPI+2%. Origin Energy considered that overall price increases for Envestra should be limited to CPI. Origin Energy also raised concerns about its ability to pass-through any increases in Envestra’s network tariffs.

### *QCA position*

Total revenue, in the post-tax nominal framework used by the Authority, is calculated as follows.

$$TR_t = ROA_t - \Delta DRAB_t + D_t + Opex_t + UAG_t + T_t - OI_t$$

where:

$$ROA_t = WACC_{\text{post-tax}} * (DRAB_{t-1} + 0.5 * Capex_t)$$

$$\Delta DRAB_t = CPI_t * (DRAB_{t-1} + 0.5 * Capex_t)$$

and:

TR	=	Total Revenue
WACC <sub>post-tax</sub>	=	Post Tax Nominal Weighted Average Cost of Capital
DRAB	=	Depreciated Regulatory Asset Base in nominal dollars
ΔDRAB	=	Nominal change in DRAB
ROA	=	Return on Assets
D	=	Depreciation
Capex	=	Capital Expenditure
Opex	=	Operating Expenditure
UAG	=	Unaccounted for Gas
T	=	Tax payable (net of imputation benefit)
OI	=	Other income (contributions from excluded assets & ancillary services)
t	=	End of current year of regulatory period.

In determining the ROA, in addition to a return on the opening value of assets, a return was also allowed on half the value of forecast capital expenditure for each year. This assumes that capital expenditure occurs evenly during the year.

The ΔDRAB component removes inflation-induced capital growth from the calculation of tariff revenues. It also assumes that capital expenditure occurs evenly throughout the year. As capital growth accrues to the service provider in the normal course of business, it is not included in the revenues used to determine reference tariffs. To do otherwise would constitute double counting and would be inconsistent with the Code.

Depreciation calculations also assume that capital expenditure occurs evenly throughout the year.

The Authority's calculation of the various components of the revenue requirement is discussed in the relevant chapters of this Final Decision.

Other income includes both ancillary services income (which was discussed in Chapter 13) and contributions from excluded assets.

The contributions from excluded assets were determined by the Authority at the last review.<sup>8</sup> The adjustment is required to prevent covered customers from meeting the higher cost of 'oversized' pipes required to serve both themselves and a small number of uncovered customers. This adjustment remains as previously determined, but is indexed for inflation.

Subsequent to the Draft Decision, Envestra has requested that its service to one particular customer be treated as a non-reference service and that the expected revenues from this customer be subtracted from the revenue requirement. The Authority has accepted this approach, as discussed later in this chapter. The expected revenue from this customer has been treated as 'other income' in the calculations.

Envestra's proposal to defer depreciation to achieve a tariff outcome of CPI+2% raises a number of concerns for the Authority, namely:

- Envestra did not achieve its revenue target for the current access period. Therefore, even without the impact of additional spending over the forecast period, there is a question mark over whether tariffs (for some customers at least) are too high compared to what the market can bear. This seems to be supported by the comments of Origin Energy and Energex Retail;
- There is a question of principle as to whether the Authority should effectively underwrite a particular outcome (Envestra's chosen CPI+2% general price rises) by varying the level of depreciation. While there are precedents relating to green-fields investments to tilt the depreciation schedule towards recovery of a greater proportion of funds in later years as demand increases, the Authority is unaware of a mature network where this has occurred. Regardless of the lack of precedent, there is considerable uncertainty as to whether demand will grow at a sufficient rate for Envestra to recover additional depreciation in later years;
- The percentage of depreciation deferred is highly sensitive to other variables in the revenue calculation, such as capital expenditure and non-capital costs. This is in part due to the exogenously determined rate of price increase that Envestra proposes of CPI+2%. For example, as detailed above, the Authority requires significant downward revisions to Envestra's forecast capital expenditure. However, if the Authority accepts Envestra's economic depreciation approach, price rises will remain CPI+2%, with the percentage of depreciation simply reducing, subject to the amount remaining not falling to below zero (although negative depreciation has occasionally been considered in regulatory decisions);
- It is possible that a deferred depreciation amount indexed for WACC could easily come to dwarf future revenue determinations, effectively removing any constraint on the business (beyond the point at which it considers customers will stop consuming or switch to other fuels). It is also not apparent that those customers, whose demand characteristics give rise to the need to defer depreciation, will be the ones who bear the price increases

---

<sup>8</sup> See p.153-155, QCA (2001).

necessary to recover this amount in the future. For example, if the deferral of depreciation arises because small domestic customers are unable/unwilling to bear price increases, it would be inappropriate for this deferred depreciation to be recovered from all customers at the next review. Envestra’s proposal includes no safe guards against this; and

- The Authority is not convinced that possible future price reductions in the wholesale price of gas will necessarily provide the opportunity to artificially inflate prices to recover deferred depreciation.

Given the above concerns, the Authority does not accept the proposal to defer depreciation to some future time.

In any case, the adjustments proposed by the Authority to capital expenditure and non-capital costs are such that there is no need to defer normal depreciation and still maintain a reasonable level of prices.

In its submission on the Draft Decision, Envestra raised concerns with the way the Authority dealt with capital contributions. As discussed in Chapter 11, the Authority has accepted Envestra’s proposed approach for dealing with capital contributions. Consequently, no adjustment has been made for capital contributions in either the current or next regulatory periods. Table 15.2 shows the breakdown of the component parts of total revenue for Envestra as determined by the Authority.

**Table 15.2: Total revenue targets, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
Return on capital	20.7	22.0	23.5	25.1	26.4
Return of capital (depreciation)	4.9	5.5	6.3	7.1	7.6
Non-capital costs	16.1	16.2	16.8	17.2	17.5
Unaccounted for gas	1.3	1.3	1.2	1.2	1.1
Tax (net of franking credits)	0.9	1.1	1.2	1.3	1.4
Disposals (2001-2006)	0.01	0.01	0.01	0.01	0.01
Less inflationary gain	6.5	6.9	7.4	7.9	8.3
Less other income	0.2	0.2	0.2	0.2	0.2
<b>Total</b>	<b>37.3</b>	<b>39.0</b>	<b>41.3</b>	<b>43.6</b>	<b>45.5</b>

*Numbers may not add due to rounding. Figures are end-year values.*

The Authority’s revenue requirements vary from those submitted by Envestra, as follows:

- the return on capital reflects a lower forecast level of capital expenditure than that sought by Envestra;
- depreciation charges reflect the revised opening capital base and a lower level of capital expenditure over the regulatory period, and excludes any deferral of depreciation;
- non-capital costs reflect the revised forecasts; and
- the increase in the cost of unaccounted for gas reflects a slower mains renewal program than that sought by Envestra.

**Amendment 15.1**

**In order for Envestra’s access arrangement to be approved, Envestra must revise its total revenue requirements for each year of the access arrangement period to those indicated in Table 15.2.**

**15.3 Determination of Tariffs**

Having determined total revenue over the next access period, the remaining task is to translate these revenues into tariffs.

The Authority considers that it would be against the incentive objectives of the Code for it to become involved in the establishment of specific tariffs for different customer groups. Instead, the Authority is concerned with examining whether the form of regulation the service provider proposes and the principles they apply to revenue allocation, are consistent with the Code. The Authority also focuses on the cost reflectivity of the prices proposed for broad groups of customers.

In general, the Authority considers a price cap should result in:

- volume risk being left with the service provider; and
- efficient price signals to users through cost reflectivity.

However, the specific details of a price cap’s operation can significantly affect the incentives facing service providers (and customers). For example, and as discussed further below, the use of Maximum Daily Quantities (MDQ) as a pricing measure can significantly reduce the amount of volume risk that a service provider is exposed to.

To achieve cost reflectivity, tariffs should ideally be determined for each group of customers, as defined by location and customer consumption characteristics within a location. However, there are significant difficulties in attributing costs to specific groups of customers supplied by gas networks and there would also be significant administration costs in creating many customer groups. In short, the cost effectiveness of the level of precision that can be achieved in cost reflective pricing needs to be recognised.

In assessing the current access arrangement, the Authority accepted two weighted average price paths for Envestra customers. One for large (demand) customers, with volumes measured by MDQ, and one for small (volume) customers, with volumes based on per GJ consumption. The Authority also investigated sub-groups within the small customer group to determine whether these were likely to be cost reflective.

*Code requirements*

Subject to section 8.40 (rebateable services) and 8.43 (prudent discounts), section 8.38 of the Code states that, to the maximum extent that is technically and commercially reasonable, the proportion of total revenue that a reference tariff should be designed to recover should include:

- a) all the total revenue that reflects costs incurred (including capital costs) that are directly attributable to the reference service; and
- b) a share of total revenue that reflects costs incurred (including capital costs) that are attributable to providing the reference service jointly with other services.

If the relevant regulator requires that a different methodology be used to determine the portion of total revenue to be recovered from particular reference tariff than that proposed by the service provider, the regulator shall in its decision on the access arrangement provide a detailed explanation of the method that it requires to be used to allocate costs.

Alternative approaches to allocating costs may be used provided they are consistent with the requirements of the Code.

#### 15.4 Tariff Paths for Demand and Volume Customers

##### *Envestra's proposal*

Envestra has proposed a single weighted average price path of CPI+2% over the revised access arrangement period, subject to a side constraint on price movements for individual haulage service of CPI+5%.

Subject to the price path and the side constraint, Envestra would have the ability to vary the tariffs within its discretion.

Envestra indicated that changes in the tariffs may be effected by:

- changes in the components, elements or variables comprised within any tariff (such as a change in the base charge or fixed charge within the tariff or a change in the steps, or the level of the steps, within the tariff);
- the introduction of a new tariff for any service (to apply in place of any pre-existing tariff, either in all circumstances or in certain circumstances);
- the withdrawal of any tariff; or
- any combination of these changes.

##### *Other jurisdictions*

ESCOSA (2006) rejected Envestra's proposed single tariff basket on the basis that it was inconsistent with the Code. Specifically, ESCOSA was concerned with cost reflectivity and the possibility that Envestra could exceed its total revenue allowance by rebalancing tariffs. ESCOSA required Envestra to apply separate tariff baskets to each of the three haulage services (demand, domestic, and commercial haulage).

ESCV (2002) accepted the use of a "balancing control formulae" to ensure that weighted prices for various customers stay within a single overall haulage price path.

##### *Submissions from stakeholders*

In response to the Draft Decision, the EUAA (2006) supported the Authority's requirement for separate price paths for volume and demand customers. EUAA believed this was important in promoting accurate cost allocation between users.

Origin (2006) considered the discipline of separate price paths to be appropriate, as it would promote cost reflectivity.

### *QCA position*

#### Weighted average price path

As noted in Chapter 10, the weighted average price path proposed by Envestra is not inconsistent with the pricing approach accepted by the Authority in the current access arrangement period

However, a key aspect of Envestra’s proposed revision is that it creates a single price path for both volume and demand consumers rather than having separate price paths for these customer classes.

The Authority accepts that Envestra’s single weight average price provides greater flexibility and would make it easier for Envestra to recover its costs. For example, Envestra would have more scope to respond to demand fluctuations and thereby reduce the risk of not fully recovering costs.

However, as discussed below, the Authority has significant concerns that cost reflectivity issues that were identified at the last review would not be addressed under such an approach and may indeed become worse. As a result, the Authority requires the retention of separate price paths for demand and volume customers and these are discussed below.

#### Demand and volume customer price paths

Envestra only considered a single price path in its revised access arrangements. In its Draft Decision, the Authority required Envestra to provide further information on how revenues should be allocated between demand and volume customers in the establishment of two separate price paths.

Envestra agreed with the revenue allocations used by the Authority in its Draft Decision for the next regulatory period, which reflected the split of revenues used in the 2001 review of access arrangement. Accordingly, total revenue has been allocated 77.9 per cent to volume customers and 22.1 per cent to demand customers for each year on the next regulatory period. The forecast revenue targets for demand and volume customers are shown in Table 15.3.

**Table 15.3: Forecast revenue targets, 2006-07 to 2010-11 (\$m, nominal)**

	2006-07	2007-08	2008-09	2009-10	2010-11
<b>Demand customers</b>	<b>8.6</b>	<b>9.0</b>	<b>9.6</b>	<b>10.1</b>	<b>10.5</b>
Percentage change	15.6%	4.4%	6.1%	5.5%	4.4%
<b>Volume customers</b>	<b>28.7</b>	<b>30.0</b>	<b>31.8</b>	<b>33.5</b>	<b>35.0</b>
Percentage change	6.2%	4.4%	6.1%	5.5%	4.4%
<b>Total</b>	<b>37.3</b>	<b>39.0</b>	<b>41.3</b>	<b>43.6</b>	<b>45.5</b>

*Numbers may not add due to rounding.*

On the basis of the revenue requirements for each customer class and the forecasts of gas demand discussed in Chapter 14, ‘raw’ prices can be determined for each year and for each customer class. To avoid price spikes that may be apparent in the ‘raw’ prices, the Authority has smoothed the ‘raw’ prices while maintaining the NPV of the total revenue across the period.

Based on this approach, the Authority has calculated that weighted average tariffs for demand customers will change by CPI+1.6% each year of the revised access arrangement period from an initial value of \$520.20 per GJ of MDQ in 2005-06. For volume customers, weighted average

tariffs will change by CPI+1.1% each year of the revised access arrangement period from an initial value of \$15.22 per GJ in 2005-06.

Envestra's proposed side constraint on tariffs for individual haulage services is assessed in the next section as it has implications for cost reflectivity.

#### **Amendment 15.2**

**In order for Envestra's access arrangement to be approved, Envestra must amend:**

- **the weighted average price path for demand customers to CPI+1.6% over the revised access arrangement period (with a value in 2005-06 of \$520.20 per GJ of MDQ); and**
- **the weighted average price path for volume customers to CPI+1.1% over the revised access arrangement period (with a value in 2005-06 of \$15.22 per GJ).**

### **15.5 Cost Reflectivity**

Characteristics of infrastructure intensive network industries include:

- a high proportion of costs cannot be attributed directly to individual users of the network, making it difficult to apportion costs accurately between different users;
- high fixed costs make pricing solely on volumes volatile; and
- if all users paid marginal cost, the service provider would not cover total costs, rendering the service unsustainable.

To be economically efficient, the allocation of costs amongst groups of users should result in prices which reflect:

- at least the incremental costs associated with the provision of a service (or other users of the network would be better off if that customer was not supplied); and
- no more than the stand-alone cost of providing the service (or the user could potentially bypass the network and other users would lose their contribution to fixed costs).

Where prices do not fall within these broad boundaries, a cross-subsidy is said to exist. However, these boundaries are relatively wide and prices may vary significantly before a cross-subsidy is found.

#### *Code requirements*

Section 8.42 of the Code states that, subject to section 8.43 of the Code, a reference tariff should, to the maximum extent that is technically and commercially reasonable, be designed so that a particular user's share of the portion of total revenue to be recovered from sales of a reference service (which may be on the basis of forecast) is consistent with the principles described in section 8.38.

#### *Envestra's proposal*

As noted earlier, Envestra did not propose separate price paths for volume and demand customers and consequently did not include a discussion of cost reflectivity in its revised access

arrangement. Prior to the Draft Decision, the Authority requested an analysis of the cost-reflectivity of the proposed reference tariffs and, in response, Envestra provided evidence to show that domestic customers were, on average, paying prices that were cost reflective. However, no information was provided regarding small domestic customers, large volume customers or demand customers. The Draft Decision required Envestra to provide this further information.

In response, Envestra clarified its interpretation of incremental costs and provided data in relation to the cost reflectivity of different customers groups as requested by the Authority.

Envestra defined incremental costs as those costs avoided by the distributor if an additional customer was not connected. Envestra argued that upstream (or shared) network assets should not be included as part of the definition of incremental costs as these assets could not be attributed to a single customer. Specifically, avoidable costs include the cost of providing the new customer with a meter and the service from a gas main to a customer's meter.

Envestra defined stand-alone cost as the total cost to the distributor of supplying a customer, as if all other customers on the network did not exist. These costs include all network assets involved in transporting gas to a customer, along with the costs of operating the distribution network. Envestra calculated the stand-alone cost by adding to the incremental cost an additional amount for the use of the upstream gas distribution assets. This additional amount was determined by allocating a share of the remaining upstream assets based on the share of total consumption in each customer group.

Envestra assessed whether its proposed tariffs fell between incremental and stand-alone costs of providing reference services to domestic, commercial and industrial and demand customers. The calculations in Envestra's analysis were based on its proposed price path and forecast demand.

Envestra converted the incremental and stand-alone costs from a 'per customer' basis to a 'per GJ' basis, by dividing the 'per customer' costs by the average consumption for each customer group.

#### Volume customer analysis

Envestra calculated the incremental cost of a domestic customer to be \$108.13 per customer in 2005-06. In estimating these costs, Envestra included the annualised cost of a meter, a service and related operating expenditure. Envestra calculated the average incremental cost on a per GJ basis to be \$11.03, based on average domestic customer consumption of 9.8 GJ in 2005-06.

Envestra expected average revenue per domestic customer to be \$18.21 per GJ in 2005-06, which is greater than Envestra's estimated incremental cost. Envestra also provided analysis showing that, if a customer was consuming below 4 GJ in 2005-06, incremental costs would not be covered.

Envestra calculated the average incremental cost of a commercial and industrial customer to be \$366.84 in 2005-06. This equates to an incremental cost of \$1.43 per GJ, based on average commercial and industrial customer consumption of 257 GJ in 2005-06. Envestra calculated the average stand-alone cost for commercial and industrial customers to be \$17.31 per GJ.

Envestra expected average revenue per commercial and industrial customer to be \$11.35 per GJ in 2005-06, which lies between the stand-alone and incremental costs estimated by Envestra.

### Demand customer analysis

According to Envestra, the average incremental cost of a demand customer was \$12,851.70 in 2005-06, based on incremental operating expenditure of \$11.60 and a capital cost of \$12,840.10, consistent with the range reported by ECG in the Draft Decision. This represents an incremental cost of \$0.24 per GJ, based on average commercial and industrial customer consumption of 53,374 GJ per year in 2005-06.

Envestra calculated stand-alone costs for demand customers by allocating all opex expenses to this group (\$219,746 per customer), adding the capital costs of connection (\$12,840), plus a return on capital and depreciation. On this basis, the stand-alone costs for demand customers were \$8.57 per GJ. Envestra expected average revenue per demand customer to be \$2.41 per GJ in 2005-06, which was between the average incremental and average stand-alone costs estimated by Envestra.

### *Other jurisdictions*

In its estimate of stand-alone costs for demand customers, ESCOSA (2006) required Envestra to recognise the economies of scale to be gained by connecting clusters of customers located together.

IPART (2005a) required Country Energy Gas to amend its proposed access arrangement to provide indicative price paths for each customer class and service, for each year of the proposed access arrangement period. Prices within these price paths were required to meet the weighted average price cap methodology and move tariffs towards cost reflective levels, while also managing customer impacts. In total, the cost reflectivity of prices charged to three groups of volume customers (industrial, commercial, residential and small business) and three groups of demand customers (Central, Bomen, Fringe) was investigated.

### *Submissions from stakeholders*

Energex Retail (2006) supported the need for cost-reflectivity of network charges and noted that the importance of this principle will increase under a full retail contestable (FRC) environment.

Origin (2006) considered that the Authority should investigate the question of cost reflectivity, not only between the volume and demand segments of the market, but also within the volume and demand segments.

Origin also suggested that, if the average new customer typically requires 5 metres of mains extension, then the total incremental capex cost for connection of a new domestic customer will be some \$1,500 (that is, excluding any allocation of costs for usage of the existing pipelines). Origin concluded that the majority of new connections would not be sustainable at such a cost. For example, the average haulage charge for a 5 GJ customer (cooker only) would be around \$125 to \$130 per year (GST exclusive) and would be unlikely to return \$1,500 incremental costs and ongoing capex and opex expenditure to the network operator.

### *QCA position*

As part of the 2001 review of Envestra's access arrangement, the Authority examined whether Envestra's prices were cost reflective. At that time, it appeared that cross subsidies from large volume customers to small volume customers were likely to exist.

In its Draft Decision, the Authority expressed its concern that cross subsidies may still be present within the volume customer class. Although Envestra had presented information prior

to the Draft Decision regarding the cost reflectivity of tariffs for domestic customers, its analysis was incomplete as large volume customers had not been considered and only averages were considered for domestic customers. An assessment and supporting information was also required by the Authority in relation to the cost reflectivity of demand customers.

As noted earlier, efficient prices will fall in the range between the incremental and stand-alone costs of providing a service. In practice, this range of efficient prices can be wide. In the Authority's experience, demand customers typically cover their incremental cost of supply, given their greater ability to pay. The concern for these customers is therefore whether the prices they pay exceed the efficient stand-alone costs of supply. If charges exceed stand-alone costs, inefficient bypass opportunities may emerge.

In contrast, volume customers often have a lower capacity to pay and therefore the key issue is whether the incremental cost of supply to individual consumers is being recovered. However, there will also be some larger commercial and industrial customers where stand-alone costs may be too high.

#### Volume customers

In response to requirements in the Draft Decision, Envestra provided a more comprehensive analysis of cost reflectivity. This analysis showed that, for small volume customers (typically domestic customers), cost reflectivity remained a problem in 2005-06. In particular, the Authority's analysis of the information provided by Envestra shows that 25 per cent of these customers did not cover their short run incremental costs.

The issue of cost reflectivity has persisted since the current access arrangement was approved in 2001. At that time, the Authority approved a provision that allowed Envestra to raise prices to domestic customers by a flat amount (\$7 per year) where this was greater than the general (CPI based) side constraint. This provision was intended to allow prices to rise more rapidly for small volume customers so that prices would become cost reflective by the end of the current regulatory period. Unfortunately, this provision was not used by Envestra and, not surprisingly, the problem of cost reflectivity remains for these customers.

While Envestra has taken some steps to ensure that new customers will consume sufficient gas to ensure that cost reflectivity is achieved, insufficient emphasis has been placed on existing customers that do not consume enough gas to be cost reflective at current tariff levels.

In considering the issue of cost reflectivity, the Authority must ensure that the reference tariffs proposed by Envestra comply with the requirements of the Code. In particular, the revenue requirement must be allocated to customer groups such that direct costs (Section 8.38(a)) and the shared costs for each customer group (Section 8.38(b)) are met. Furthermore, the Code requires that individual customers contribute sufficient revenue to offset the cost of providing the reference service to that customer (Section 8.42).

The Code also requires the Authority to consider the legitimate commercial interests of Envestra. Therefore, any reasonable undertaking by Envestra to address the issue of cost reflectivity that may take time to implement is a consideration that must be weighed against the immediate need to address cost reflectivity.

There are a range of means by which the Authority could require Envestra to address the outstanding issues of cost reflectivity. These include:

- reducing the asset base to bring prices into line with asset values. This could be done by removing the value of redundant capital associated with non-cost reflective customers from the capital base. Any capital expenditure directed towards these customers could

also be regarded as not prudent, consistent with the requirements of Code. This would reduce the return to Envestra of assets dedicated to non-cost reflective customers and thereby improve cost reflectivity at existing tariff rates;

- imposing minimum price increases for customers in non-cost reflective tariff bands; or
- providing Envestra with sufficient flexibility to adjust prices over the next regulatory period to achieve cost reflectivity.

Invoking the capital redundancy provisions contained in Envestra's current access arrangement would be effective in addressing the issue of cost reflectivity. However, while such action may be warranted in terms of the Code's requirements for all customers to be cost reflective, this could significantly affect future commercial decisions made by Envestra and, as such, capital redundancy is considered to be an instrument of last resort.

While cost reflectivity could be addressed through price mechanisms alone, greater use of gas by small consumers, which is at the heart of the problem, may be discouraged by higher prices. Furthermore, the specification of minimum tariffs would require the Authority to become involved in tariff approval at a level below the weighted average price path for volume customers. In principle, the Authority is of the view that service providers are best placed to determine tariffs and tariff bands at the individual customer level, as discussed in the next section. In addition, minimum price increases could result in some volume customers, who are already cost reflective, paying too much.

The Authority would prefer that Envestra decide and take the necessary steps to address the outstanding issues of cost reflectivity relating to small volume customers. This was the Authority's intent in approving the access arrangement in 2001, but unfortunately Envestra did not make best use of the opportunity provided. Nevertheless, the Authority will persist with this preferred approach. However, the significant and ongoing problem of cost reflectivity for small volume customers will have to be addressed by Envestra during this next regulatory period. If the situation has not been resolved by the end of the next regulatory period (by which time Envestra will have had 10 years to address the problem), Envestra should be aware that there is the very real possibility that there will be an appropriate reduction made in the value of the regulatory asset base.

In relation to commercial and industrial customers, the Authority has examined the data supplied by Envestra. Overall, the Authority considers that these customers are currently paying between their incremental and stand-alone costs of supply. The Authority accepts that, were individual consumers to be charged at higher than stand-alone costs, there would be a risk of bypass or substitution to other fuel sources and that this risk should be sufficient to discourage such pricing by Envestra.

The Authority has considered Envestra's side constraint for individual haulage services of CPI+5%, which was proposed to be applied to all reference services under a single weighted average price path. The Authority considers that side constraint should apply to individual customers rather than services. The Authority also considers the constraint should be appropriate for both small and large customers.

The Authority considers that a side constraint on tariffs of CPI+3% be appropriate for large volume customers prices. However, the Authority has determined that this would imply price rises for small customers that would prevent them from becoming cost reflective.

The Authority therefore requires Envestra to revise its side constraint for volume customers to be CPI+3% for individual customers. However, with respect to small volume customers, the Authority does not intend to indicate an additional side constraint as it did in 2001 (of \$7 per

year). Rather, in approving annual prices, the Authority will consider any request by Envestra for price increases of more than CPI+3% to individual customers, or group of customers, where this will assist prices to those customer(s) to become more cost reflective.

### **Amendment 15.3**

**In order for Envestra’s access arrangement to be approved, Envestra must revise its side constraint to be a maximum of CPI+3% or any higher amount approved by the Authority where this increase can be demonstrated to result in tariffs becoming more cost reflective.**

Demand customers

The Authority has examined the data supplied by Envestra on demand customers’ charges. Overall, the Authority considers that these customers are paying between their incremental and stand-alone costs of supply.

## **15.6 Tariff Structure**

Within customer groups, tariffs can be structured to recover the required revenue in a number of different ways. In general, reference tariffs relate to the number of end users (connections) and the consumption patterns of those end users (volume). Some proportion of the reference tariff is recovered as a flat fee, while the remainder is recovered through charges that vary depending on the volume of gas consumed by the end user or the amount of capacity reserved.

In addition, reference tariffs may vary according to the location of the customer, with those in different parts of the network charged on the basis of the costs of supplying that part of the network (zones).

Issues that arise in assessing a tariff structure include how reflective the proposed structure is of costs and the incentives the structure may create in terms of encouraging efficient use of the network. Prudent discounts may also be allowed where potential bypass threatens a customer’s continued consumption of the service and to lose that customer would make all customers worse off by requiring them to shoulder a greater share of fixed costs.

### *Envestra’s proposal*

The reference tariffs proposed by Envestra incorporate the following key features:

- fixed charges cover a proportion of the service and metering costs as well as a percentage of the administration servicing costs;
- nominated MHQ or demand charges reflect the average costs of shared network provision or contracted capacity;
- \$/GJ or \$/GJ of MDQ charges are used for the recovery of other costs; and
- \$/GJ or \$/GJ of MDQ charges are declining block tariffs to provide incentives to improve network utilisation.

The tariffs have been designed to ensure that there are no major pricing discontinuities at the boundary between tariffs. Such discontinuities can provide perverse incentives for users to change reference services.

Envestra proposed reference tariffs for volume customers as outlined in Table 15.5 and for demand customers in Table 15.6. Envestra differentiates tariffs between customers located in Brisbane and those located in the Northern region.

**Table 15.5: Envestra’s proposed Tariffs V – small customers (inclusive of GST)**

<i>Small customer service</i>	<i>Measure</i>	<i>Brisbane</i>	<i>Northern Region</i>
Service delivery charge	\$/day	0.204	0.204
Up to 0.2GJ of gas delivered per day	\$/GJ	13.86	15.22
Next 0.3GJ of gas delivered per day	\$/GJ	13.61	14.90
Next 0.5GJ of gas delivered per day	\$/GJ	13.29	14.59
Next 1.0GJ of gas delivered per day	\$/GJ	12.71	13.96
Next 5.0GJ of gas delivered per day	\$/GJ	11.35	12.46
All additional GJ	\$/GJ	9.57	10.50

**Table 15.6: Envestra’s proposed Tariffs D – large customers (inclusive of GST)**

<i>Small customer service</i>	<i>Measure</i>	<i>Brisbane</i>	<i>Northern Region</i>
50GJ or less	\$/month	6,357.41	6,880.16
Next 75GJ	\$/GJ of MDQ	63.78	72.14
Next 150GJ	\$/GJ of MDQ	37.22	42.66
Next 250GJ	\$/GJ of MDQ	16.83	20.13
Next 500GJ	\$/GJ of MDQ	7.74	9.20
Additional GJ	\$/GJ of MDQ	3.97	4.50

In its submission on the Draft Decision, Envestra raised an issue concerning the transition of customers from volume to demand tariffs. Envestra argued that the current tariffs in Queensland do not provide for a sensible transition for volume consumers moving to demand tariffs. For example, a volume consumer using 10,000 GJ each year on the 2005-06 volume tariff in Brisbane will pay an annual network charge of \$88,336 or \$8.83 per GJ (excluding GST). In contrast, consumers using 10,000 GJ each year or more on a demand tariff would have a MDQ of about 50 GJ, which implies an annual charge of \$66,335 or \$6.63 per GJ in 2005-06.

Envestra suggested that a consumer should not receive such a large reduction in tariff for consuming slightly more gas as it moves above the 10,000 GJ threshold. The cost of supplying the consumers will be almost the same, except that, as a demand tariff consumer, more advanced metering and telemetry would be required.

Envestra suggested a number of changes to the structure of the volume and demand tariffs that could be made to address this problem, namely:

- increasing the fixed charge for volume consumers;
- reducing the last step of the volume tariff; and/or
- increasing the first step of the demand tariff.

Envestra stated that the actual tariff charges required will depend on the final price path required to achieve the target revenue specified in the Final Decision. Envestra indicated it would take account of this issue when preparing the tariffs to apply following the Final Decision.

In its Draft Decision, the Authority encouraged Envestra to consider the establishment of a further price zone within the current Brisbane zone for demand tariff consumers.

In response, Envestra argued that separate tariff zones are appropriate where the cost to supply particular groups of consumers vary significantly due to the geographical location of the consumers. Envestra considered that, within the Brisbane area, there is no need to introduce separate zones for consumers supplied through the Murarrie city gate. However, Envestra has indicated that four demand tariff consumers in the Dinmore industrial estate require a separate tariff. These consumers are supplied from a separate gate station on the Roma-Brisbane pipeline via a short transmission pipeline. According to Envestra, a lower tariff to these consumers was justified both in terms of the lower cost of servicing these consumers as well as the risk of bypass if normal demand tariffs applied. These consumers are currently charged at individual negotiated tariffs based on the costs of constructing bypass pipelines, which have been approved by the Authority as prudent discounts. Envestra proposed the new demand charges for these consumers would apply when their existing contracts expire. Any other consumers that connect to the network within the Dinmore industrial estate would face the proposed new tariffs for this zone.

Envestra has also proposed, subsequent to the Draft Decision, that one Brisbane consumer who uses gas as a back-up power supply, should not pay the standard demand tariff. Envestra noted that, as this customer would consume gas for perhaps only one or two weeks per year, the standard MDQ basis for setting charges would be inappropriate. Envestra suggested this one customer should be treated as a non-reference service, with the expected revenue to be earned from that customer to be subtracted from the total revenue requirement.

#### Prudent discounts

Subsequent to the Draft Decision, Envestra proposed that two demand consumers warranted prudent discounts. The first prudent discount relates to a co-generation load for a hospital that is supplied under a long-term contract (25 year) which commenced in the mid 1990s. The tariff for this consumer, which is below the current reference tariff, was negotiated in order to secure the load onto the network.

The second prudent discount was sought for a consumer where the price of an alternate fuel would result in substitution if the consumer was required to pay the Brisbane demand reference tariff. A lower tariff has been negotiated, Envestra accepting a discount to the reference tariff in order to retain the load.

Envestra considered the discounts to both customers to be prudent and suggested that all the costs to all consumers are less than if these two customers disconnected from the network

#### *Other jurisdictions*

IPART (2005) investigated the cost allocation approach of AGLGN to various tariffs. It investigated how specific costs would be best allocated. It also investigated the overall structure of prices, for example, rejecting AGLGN's proposal to reduce the number of zonal tariffs from seven to five. IPART argued that greater cost reflectivity is achieved with more zones and believed that retaining pricing on seven zones remained technically feasible and commercially reasonable.

ACCC (2002) assessed GasNet's allocation of costs to 19 tariff zones. The ACCC investigated specific matters, such as the number of zones that would be desirable and whether specific costs would be best allocated directly to a particular group of users or allocated more generally.

IPART (2005) accepted AGLGN's proposed prudent discounts for two customers. IPART considered that alternative energy sources posed a real threat of bypass for these customers as required by the Code. IPART also considered that the revenue received by AGLGN from the two customers was above the marginal cost of providing the service and hence, the inclusion of revenue from these users would lower the costs for other users of the network as required by the Code.

#### *Submissions from stakeholders*

Energex Retail (2006) supported the zonal tariff structures provided by Envestra, but had some concerns that Envestra had identified only one demand customer tariff to cover its regulated network in the Brisbane area. Energex Retail indicated that the cost of servicing different demand customers on the Envestra network would vary greatly with use of network assets and comparative distances from the transmission pipeline.

Energex Retail submitted that further consideration of zonal tariff structures is required given the current lack of differentiation between customer supply costs throughout Brisbane North and Ipswich.

Origin (2006) noted that the last step in Envestra's proposed V tariff was some 69 per cent of the first step in the tariff. Origin also observed that this ratio of 69 per cent was considerably higher than the ratio between the first and last step in network tariffs in both Victoria and South Australia. For Envestra's Victorian network tariff, the ratio is 18 per cent with the last step applying to consumption above 1.4 GJ per day. Origin concluded that it is in the interests of the gas market as a whole that growth in demand from the larger volume tariff customers should be encouraged.

#### *QCA position*

The Authority considers that the service being provided by gas distribution network owners relates to transportation of a product, that is, natural gas. The costs associated with providing this service generally do not vary significantly with throughput. Consequently, the service provider would generally have a strong incentive to sell capacity in the network, irrespective of the actual amount of gas transported.

In this regard, the Authority sees merit in the tariff structure for the demand (large) customer group, as charges relate to the amount of capacity reserved by the user of the network rather than gas volume transported.

Similarly, given that a high proportion of the costs of operating the network are fixed, the Authority is of the view that there is a strong argument for the amount of revenue recovered by way of fixed charges to be relatively high.

The Authority notes that Envestra has proposed a declining block tariff structure, with costs per unit sold declining as consumption increases. The Authority supports this approach as encouraging the development of the market for reference services, which should ultimately reduce costs to the benefit of Envestra and current and prospective users.

In terms of the zonal pricing structure proposed by Envestra, the Authority considered in its Draft Decision that there may be an economic argument in support of Energex Retail's

suggestion for further tariff differentiation within the Brisbane zone so that tariffs might better reflect costs incurred.

The Authority considers that Envestra should further investigate the transition from volume to demand tariffs. The options presented by Envestra to deal with this issue should be mindful of the concerns expressed by Origin regarding the large percentage difference between the last and the first step in the proposed volume tariffs. While Envestra does not believe there should be a significant fall in the top volume price (suggesting a possible rise in demand tariffs instead), the Authority considers that Envestra has not attached enough weight to the reduction in volume risk that occurs when a customer switches to MDQ pricing. These issues should be addressed by Envestra as it restructures its volume and demand tariffs.

The proposed Dinmore demand tariff is lower than current tariffs applied to the existing four customers. Given that the existing contracts are to be honoured (these contracts run from 10 years to 25 years), the only issue for the next regulatory period is whether this new tariff will be reasonable for new customers. The Authority accepts that the cost of delivering the reference service in this zone would be less than elsewhere in Brisbane and, on this basis, the creation of an additional pricing zone is warranted.

Regrading Envestra's proposal for a non-reference tariff to one customer, the Authority acknowledges the particular circumstances of this customer. As that customer uses the service irregularly, the Authority is concerned to ensure that the expected revenue paid by the customer must at least cover the long run incremental cost of supply. In response to a request from the Authority, Envestra has demonstrated that this is the case. On this basis, the Authority accepts Envestra's proposal and, accordingly, will remove the expected revenue for this service from Envestra's revenue requirement.

#### Prudent discounts

Section 8.43 of the Code provides that a regulator may, with effect from the commencement of an access arrangement period, permit a gas distributor to offer a prudent discount to an end user of the network. A prudent discount can arise where a shortfall in revenue that results from one user not paying the full reference tariff is recovered from other users of the reference services. The criteria for assessing whether the discount is prudent requires that the discount results in the retention of the end user, who would otherwise leave the network, and that this results in lower reference tariffs for remaining end users compared to the reference tariff that would need to be charged if the user left the network. Put another way, a prudent discount may be approved by the regulator where there is a threat of bypass and as long as the end user is making some contribution to the fixed costs of the network.

The Authority has assessed the two prudent discounts proposed by Envestra. Based on the data supplied by Envestra, the revenue to be recovered from each of these customers is greater than the incremental cost of supply. Therefore the discounted charges include a contribution to the shared network and the Authority accepts the discounts proposed by Envestra are prudent.

#### **Amendment 15.4**

**In order for Envestra's access arrangement to be approved, Envestra must revise its tariff schedules so that they are consistent with the revenue requirement amendments of this Final Decision.**

## **LIST OF SUBMISSIONS**

### ***Draft Decision***

Energy Users Association of Australia

Envestra

Origin Energy

TRUenergy

Queensland Government

### ***2006 Revised Access Arrangement***

Energex Retail

Origin Energy

---

**REFERENCES**

- ACCC (2002), *Final Decision, GasNet Australia: Access Arrangement Revisions for the Principal Transmission System*, November 2002.
- ACCC (2003), *Final Decision, East Australian Pipeline Limited: Moomba to Sydney Pipeline System Access Arrangement*, October 2003.
- Allen Consulting Group (2005), *Cost of Capital for Queensland gas distribution*, December 2005.
- Allen Consulting Group (2006), *Gas Distribution in Queensland: Network Charges Collection*, May 2006.
- Allgas Energy Pty Ltd (2005), *Access Arrangement for the Queensland Network*, October 2005.
- Energy Consulting Group (2005), *Envestra Limited Capital and Operating Expenditure Review for Queensland Competition Authority*, December 2005.
- Energy Consulting Group (2006), *Envestra Limited Capital and Operating Expenditure Review for Queensland Competition Authority*, April 2006.
- Energex Retail (2005), *Submission on Allgas Energy Pty Ltd and Envestra Limited revised Access Arrangements*, November 2005.
- Energy Users Association of Australia (2006), *Response to the Queensland Competition Authority's Draft Decision on the Revised Access Arrangements for Allgas and Envestra*, February 2006.
- Envestra Limited (2005), *Access Arrangement for the Queensland Gas Distribution System*, September 2005.
- Essential Services Commission Victoria (2000), *Electricity Distribution Price Determination 2001-02: Volume 1 Statement of Purpose and Reasons*, September 2000.
- Essential Services Commission Victoria (2002), *Final Decision, Review of Gas Access Arrangements*, October 2002.
- Essential Services Commission Victoria (2005), *Final Decision, Overview, Electricity Distribution Price Review 2006-10*, October 2005.
- Essential Services Commission Victoria (2005a), *Final Decision Volume 1, Electricity Distribution Price Review 2006-10, Statement of purpose and Reasons*, October 2005.
- Essential Services Commission of South Australia (2006), *Draft Decision, Proposed Revisions to the Access Arrangement for the South Australian Gas Distribution System*, March 2006.
- Essential Services Commission of South Australia (2005), *2005-10 Electricity Distribution Price Determination*, April 2005.
- Essential Services Commission of South Australia (2005a), *Gas Standing Contract Price Path: Final Inquiry Report and Final Price Determination*, June 2005.
- Essential Services Commission of South Australia (2005b), *2006 Review of Envestra's Access Arrangement: Guidance Paper*, August 2005.
- Hathaway N and Officer B (2004), *The Value of Imputation Tax Credits*, November 2004.

Independent Competition and Regulatory Commission (2004), *Final Decision, Review of access arrangement for ActewAGL natural gas system in ACT, Queanbeyan and Yarrowlumla*, October 2004.

Independent Pricing And Regulatory Tribunal (2005), *Final Decision, Revised Access Arrangements for AGL Gas Networks*, April 2005.

Independent Pricing And Regulatory Tribunal (2005a), *Final Decision, Revised Access Arrangements for Country Energy Gas*, November 2005.

Lally, M (2005) *The Value of Imputation Credits for Regulatory Purposes*, December 2005.

Lally, M. (2006) *Review of Comments on the Review by Martin Lally of "The Value of Imputation Credits for Regulatory Purposes"*, April 2006.

McLennan Magasanik Associates (2005), *Demand forecasts for Envestra*, November 2005.

McLennan Magasanik Associates (2006), *Update demand forecasts for Envestra*, April 2006.

Officer, R. (1994), *The Cost of Capital of a Company under an Imputation Tax System*. Accounting and Finance. 34(1): 1-17

Origin Energy (2005), *Queensland Envestra Gas Access Arrangement Review – Submission to QCA*, November 2005.

Origin Energy (2006), *Envestra Gas Access Arrangement Review Queensland – Submission to QCA*, February 2006.

Queensland Competition Authority (2001a), *Final Decision, Proposed Access Arrangements for Gas Distribution Networks: Allgas Energy Limited and Envestra Limited*, October 2001.

Queensland Competition Authority (2001b), *Final Approval, Access Arrangements for Gas Distribution Networks: Allgas Energy Limited and Envestra Limited*, December 2001.

Queensland Competition Authority (2004a), *General Pricing Principles for Infrastructure Investments made in Response to Extraordinary Circumstances, Draft for Comment*, March 2004.

Queensland Competition Authority (2004b), *Draft Decision re: DBCT Draft Access Undertaking*, October 2004.

Queensland Competition Authority (2005), *Final Determination, Regulation of Electricity Distribution*, April 2005.

Queensland Government (2006), *Queensland Competition Authority: Draft Decision: Revised Access Arrangements for Gas Distribution Networks – Submission to QCA*, February 2006.

TRUenergy (2006), *Draft Decision: Revised Access Arrangements for Gas Distribution Networks: Envestra*, February 2006.