Access Arrangement for the ActewAGL Gas Distribution System

Proposed Revisions

Submission to the
ACT Independent Competition
and Regulatory Commission

December 2003

ActewAGL is Australia's first genuine multi-utility, combining electricity and gas network and retail operations with interests in water and wastewater services management. The $800 million Joint Venture partnership provides services to close to 140,000 electricity, water and wastewater customers and just over 97,000 natural gas customers in the Canberra region.

Ownership of ActewAGL is shared equally between AGL, the nation's largest energy provider, and the ACT Government, through ACTEW Corporation. ActewAGL is organised as two partnerships—distribution and retail. ActewAGL Distribution partners are ACTEW Distribution Limited and AGL Gas Company (ACT) Ltd.

ActewAGL

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1 Introduction

1.1 Purpose of the submission

The purpose of this submission is to explain the proposed revisions to the Access Arrangement for ActewAGL's gas distribution system in the ACT, Queanbeyan and Yarrowlumla. The explanations and supporting arguments presented in the submission are intended to be read in conjunction with the revised Access Arrangement and the Access Arrangement Information. The submission follows the same structure as the revised Access Arrangement, so that each proposed revision and the basis for it can easily be identified.

1.2 Background

ActewAGL's current Access Arrangement, effective since January 2001, specifies that ActewAGL must submit proposed revisions to the Independent Competition and Regulatory Commission (ICRC) by 30 June 2003. In April 2003, ActewAGL requested an extension of the revisions submission date to 31 December 2003. The basis for the request was that the National Gas Code was being reviewed by the Productivity Commission during 2003. The ICRC agreed to ActewAGL's request. The proposed revisions are now being submitted as agreed.

The proposed revisions are submitted against the backdrop of several significant changes in the gas market and network. Since the start of the first Access Arrangement in January 2001:

- full retail contestability has been introduced, and with it a new set of rules which ActewAGL must comply with;
- the Eastern Gas Pipeline has been connected;
- ActewAGL has contracted out the operation and management of its network assets;
- the network has grown substantially – from 3480 kilometres of main in 2001 to around 3700 kilometres in 2004;
- customer numbers have also increased sharply – from 84 715 in 2001 to 97 146 projected by 30 June 2004; and,
- while the size of the network and the number of customers served have both increased, significant efficiencies have been achieved, reducing real operating costs per customer from $150 in 2001 to $119 in 2004.

Further changes in the regulatory framework and the gas market are likely over the second Access Arrangement period. For example, the Gas Code is currently being reviewed by the Productivity Commission. Recommendations are to be released in

June 2004. The *Utilities Act*, which provides a regulatory framework for utilities in the ACT, is also expected to be reviewed in 2004. The ACT Government has also asked the Gas Technical Regulator's Committee to review network standards following the Canberra bushfires. The review is currently being carried out by the Natural Gas Distribution Standards Committee.

The revised Access Arrangement must recognise the changed and changing environment in which ActewAGL provides its services. ActewAGL's proposed revisions do this in several ways.

Several revisions to terms and conditions and other non-pricing matters are proposed. The revisions are designed to clarify processes and the rights and obligations of ActewAGL and users in the changing market. For example, a new reference service – interconnection of an embedded network – has been added, recognising that in a growing market potential new supply arrangements need to be accommodated. The revisions also include new mechanisms for responding to changes, say in the regulatory framework, in a clear and predictable way. This is particularly important given that ActewAGL's gas distribution business operates in two jurisdictions and is subject to a complex and changing set of regulatory arrangements.

A new set of reference tariffs, based on new forecasts of capital costs, operating costs and demand in the tariff and contract markets is also proposed. The new forecasts recognise that the situation over the current Access Arrangement period, where the network has expanded and the market has grown yet ActewAGL has been able to reduce real costs per customer and per kilometre of main, cannot continue indefinitely. To maintain current standards of service (which have been judged by customers to be currently at the right level, in a recent survey of willingness to pay (NERA 2003)), and attract new customers in a maturing market, expenditures must increase.

1.3 Gas Code requirements

Section 2.29 of the Gas Code states that a revised Access Arrangement may cover any relevant matter, but must include at least the elements described in sections 3.1 to 3.20 of the Gas Code. These elements are covered in the 2001 Access Arrangement and include:

- The terms and conditions and reference tariffs for each reference service that the service provider offers; and
- The service provider's policies on services offered, reference tariffs, trading, queuing, extensions/expansions and capacity management.

Some elements may remain unchanged from the first Access Arrangement. For example, there may be no need to revise the capacity management policy. However, changes to the market and regulatory setting mean that many elements of the first Access Arrangement must be revised, to ensure that the objectives of the Gas Code are met.

1.4 Overview of proposed revisions

Proposed changes to the structure of the Access Arrangement, terms and conditions and other non-pricing matters, and reference tariffs are summarised in the following sections.

1.4.1 Structure of the revised Access Arrangement

- ActewAGL's revised Access Arrangement contains the same parts as the 2001 Access Arrangement. All the required components listed in section 3 of the Gas Code are covered.
- Some changes have been made to the structure within each part of the Access Arrangement and the attachments. The changes are intended to make the document easier to use.
- The general terms and conditions that apply to all services have been combined in part 3 of the revised Access Arrangement. In the 2001 Access Arrangement these were partly in section 2, partly in schedule 2A.
- The detailed terms and conditions and reference tariffs for each reference service have been shifted to the attachments in the revised Access Arrangement.
- All clauses have now been numbered, to make the document easier to read and reference.

1.4.2 Terms and conditions and other non-pricing matters

- The proposed duration of the revised Access Arrangement is 5 ½ years, from 1 January 2005 to 30 June 2010. The proposed date for submission of revisions is 30 June 2009.
- A new service has been proposed – interconnection of embedded network service. This is a non-reference service.
- The obligations and rights of ActewAGL and users are set out in greater detail in the revised Access Arrangement. For example, procedures and requirements for the suspension of supply have been added (clauses 3.54 to 3.58).
- The roles of the Business Rules and Minimum Network Standards, introduced since the commencement of the 2001 Access Arrangement, are spelt out and references to the pending introduction of full retail contestability have been deleted.
- The arrangements for gas balancing have been expanded, to provide an alternative to the current arrangement where ActewAGL needs to be involved in buying and selling operational balancing gas when there is no operational balancing agreement in place.

- The procedures for load shedding (in the curtailment of supply attachment) have been expanded, to allow ActewAGL to suspend delivery where the user fails to comply with the policy and to limit ActewAGL's liability for damages arising out of actions to implement the load shedding procedures.

1.4.3 Reference tariffs

- Total real revenue is projected to increase by 16 per cent over the Access Arrangement period. The proposed price path is CPI + 0.4 per cent. Proposed tariff market prices increase by 0.4 per cent each year, while proposed contract revenue remains constant in real terms.

- Underpinning these proposed revenue and tariff paths are the following key parameters:

  - Capital base to increase from $225.9 million on 1 July 2004 to $280.2 million by 30 June 2010;

  - Real rate of return on capital of 7.9 per cent (pre-tax real);

  - Real non-capital costs to increase by 2 per cent over the period;

  - Tariff market volumes to rise by an average 2.7 per cent a year over the period; and

  - Contract market volumes to fall by an average 1.7 per cent a year.

- The cost allocation procedures are the same as used for the 2001 Access Arrangement.

- The structure of reference tariffs remains unchanged, with one exception. The steps in the tariff service throughput charge have been adjusted so that they fall steadily as consumption rises. In the 2001 Access Arrangement the step charges fall, then rise, then fall again.

- For tariff customers, proposed meter charges fall slightly in the first year of the revised Access Arrangement period. In the new block structure, some charges fall slightly relative to current levels, some increase. On balance, most customers should face a lower charge in the first year of the revised Access Arrangement.

- For contract customers, fixed charges remain constant, in real terms, over the Access Arrangement period, while network unit charges and throughput charges increase slightly as projected volumes fall.

- Ancillary charges have been adjusted to account for inflation, and a mechanism for adjusting annually has been defined.

- A new mechanism for varying reference tariffs has been defined.

2 Services policy

The proposed services policy in the revised Access Arrangement defines the services to be provided then sets out the availability of the services, the procedure for requests for services and the procedure for connection to premises.

2.1 Services to be offered

As in the 2001 Access Arrangement, six reference services are to be offered. No changes to the definitions of reference services are proposed. Negotiated services are also to be offered, under the same definition as in 2001.

A new non-reference service is proposed – interconnection of embedded network service. The ICRC examined the issue of whether to include interconnection as a reference service in the Draft and Final Decisions for the 2001 Access Arrangement. In the Final Decision the ICRC concluded that while the Gas Code does not require the service provider to specify interconnection as a separate reference service,

> The Commission considers that it may be necessary for ActewAGL to specify technical and operational conditions in relation to interconnections (ICRC 2000, p. 157).

While interconnections were not included in the 2001 Access Arrangement, ActewAGL considers that in the developing gas market the option for interconnection should be covered. It is therefore included as a non-reference service and the technical and operational conditions referred to by the ICRC are set out in attachment 3G of the revised Access Arrangement.

Partial use of network service, one of the services listed in the 2001 Access Arrangement, has been removed. It is adequately covered by the definition of a negotiated service. The ICRC examined the issue of whether a partial use of network service should be included as a reference service in the Draft and Final Decisions for the 2001 Access Arrangement. In the Final Decision the ICRC concluded that:

> The Commission will not require ActewAGL to provide a partial use of network reference service. Such a service should be specified as a negotiated service (ICRC 2000, p. 156).

In the 2001 Access Arrangement, partial use of network service was listed as a separate non-reference service. However, consistent with the ICRC view that it is really a negotiated service, ActewAGL proposes to simply roll it into the negotiated service.

2.2 Requests for service

Some minor refinements have been made to the procedures for requests for service procedure and connection to premises.

3 Terms and conditions

In the revised Access Arrangement, terms and conditions that apply to all services have been consolidated into part 3. In the 2001 Access Arrangement general terms and conditions were partly in section 2, partly in schedule 2A. Terms and conditions that apply specifically to each reference service are in the separate attachment for each reference service. In the 2001 Access Arrangement the specific terms and conditions were spread through section 1 and schedules 2A to 2D.

The purpose of these proposed changes to the structure of the Access Arrangement is to make it easier to use, while ensuring that all the requirements of the Gas Code are met.

3.1 General terms and conditions

Several changes, mostly minor amendments, have been made to the general terms and conditions. These are primarily designed to set out more clearly the rights and obligations of ActewAGL and users. The main changes are as follows:

- Clauses on receipt points and delivery points (covering establishment, alterations, relocations, measuring consumption, estimating consumption and relocating measuring equipment – clauses 3.21 to 3.38) have been amended;
- Clauses 3.54 to 3.58 on suspension of supply (at a user's request or by ActewAGL) have been added;
- Clauses 3.62 and 3.63 on interruptions to supply have been added;
- Clauses 3.65 to 3.69 on terms implied by statute and exclusion of other implied terms have been added.

3.2 Attachments

The gas balancing arrangements in attachment 5 have been amended to take account of changing circumstances in the market. The amendments became necessary following the refusal of Duke Energy to sign the proposed Operational Balancing Agreement (OBA). Duke Energy has also withdrawn from the OBA in Wilton (Sydney) with AGL Gas Networks (AGLGN).

In the 2001 Access Arrangement, the arrangement for gas balancing when there is no OBA in place involves ActewAGL purchasing and selling operational balancing gas. This is not ActewAGL's preferred position, as it is a network owner, not a gas trader.

The balancing mechanisms in the revised Access Arrangement provide the flexibility for suppliers and their pipeline shippers to reach their own agreements, with agreement and overview from ActewAGL, without the need for ActewAGL to be involved in purchasing and selling gas.

The curtailment of supply policy (called operational principles, schedule 2F, in the 2001 Access Arrangement) has been revised with the addition of two clauses. The first says that ActewAGL may suspend delivery of gas if a user fails to comply with the load shedding procedure in the Access Arrangement. The second additional clause says that ActewAGL will not be liable for damages incurred by the user of users' customers arising from load shedding, and the user will be liable for and indemnify ActewAGL against any claims made by the user's customers arising out of load shedding procedures. Each of these additional clauses is consistent with the Gas Code requirement (section 2.24) that the legitimate business interests of the supplier be taken into account.

The gas quality specifications (attachment 6) have also been revised to make them consistent with the Network (Network Safety Management) Regulation in New South Wales. The Regulation is also currently being reviewed by the New South Wales Ministry of Energy and Utilities.

An attachment dealing with establishment of receipt points has been added to the revised Access Arrangement. It sets out the matters to be included in an agreement between ActewAGL and any user wishing to establish a new receipt point.

4 Reference tariff policy

The proposed reference tariff policy contains the elements in the reference tariff policy in the 2001 Access Arrangement:

- Principles;
- Incentive mechanism;
- Capital redundancy mechanism;
- New facilities investment;
- Review of the capital base after expiry of an Access Arrangement.

No changes are proposed to the principles, incentive mechanism or capital redundancy mechanism.

One minor change is proposed for the review of the capital base. The asset register and capital contributions register, which may be used in the review of the capital base, are now described within the review of the capital base section. In the 2001 Access Arrangement these registers were described in a separate section 9.

The proposed revision for new facilities investment involves adding some clauses to ensure that all possible cases envisaged by the Gas Code are covered. The 2001 Access Arrangement contained just one clause for new facilities investment, dealing with the case where the investment does not satisfy the requirements of section 8.16 of the Gas Code:

> ActewAGL may undertake New Facilities Investment that does not satisfy the requirements of section 8.16 of the Code. If ActewAGL incurs such New Facilities Investments, the Capital Base may be increased by that part of the New Facilities Investment which does satisfy section 8.16 of the Code (referred to in the Code as the "Recoverable Portion") (ActewAGL 2001a, p. 38).

For the revised Access Arrangement, additional clauses are added to explain:

- how new facilities investment which does satisfy section 8.16 will be treated (clause 4.9 says that the capital base may be increased); and,
- how the part of any new facilities investment which does not satisfy section 8.16 will be treated (clause 4.11 says that it will form part of the speculative investment fund, but may be added to the capital base if it subsequently satisfies section 8.16).

Three additional clauses are proposed for the reference tariff policy. Clause 4.13 says that a surcharge may apply, while 4.14 says that ActewAGL may charge users a capital contribution for new facilities investment – in both cases as permitted under the Gas Code. Clause 4.17 says that, consistent with section 8.47 of the Gas Code, the new facilities investment clauses of the reference tariff policy are fixed principles, not subject to periodic review.

5 Reference tariffs

5.1 Overview

The methodology used to determine reference tariffs for the revised Access Arrangement is the same as that used for the 2001 Access Arrangement.

Calculating reference tariffs involves the following steps:

1) Calculate the total revenue requirement using the cost of services building block approach;
2) Allocate the total revenue requirement to the contract and tariff markets;
3) Determine the revenue requirement and price paths for the contract and tariff markets; and,
4) Calculate the reference tariffs for each service to deliver the required revenue paths.

The structure of reference tariffs remains the same as in the 2001 Access Arrangement, with the exception that the steps in the tariff throughput charge have been changed.

The reference tariff values have been revised to take account of changes in capital costs, non-capital costs and demand forecasts. All values used in the calculation of reference tariffs are supplied in the Access Arrangement Information. The basis for the proposed values and methodologies is set out in the following sections.

5.2 Calculating total revenue requirement

In accordance with section 8.3 of the Gas Code, the total revenue requirement is calculated using the total cost of services approach. The cost of services is the total cost of providing all services, which is calculated as the sum of:

- the return on the capital base;
- depreciation of the capital base including redundant capital;
- the return on working capital; and,
- operating, maintenance and other non-capital costs.

ActewAGL's proposed cost of services is shown in table 5.1.

Table 5.1 Cost of services for ActewAGL's gas distribution network

2004/05 $ million

Year ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Return on capital base	18.2	18.5	18.6	18.7	18.8	19.0
Depreciation	7.4	7.9	8.2	7.7	7.9	7.8
Redundant capital	0.1	0.1	0.1	0.1	0.1	0.1
Return on working capital	0.5	0.6	0.6	0.7	0.8	0.8
Non-capital costs	13.5	13.6	13.8	13.8	13.8	13.8
Total cost of services	**39.7**	**40.7**	**41.3**	**41.0**	**41.4**	**41.5**

Note: Full year numbers are shown for 2004/05. It is expected that the revised AA will apply from January 2005.

Each of the cost of services components are explained in the following sections.

5.3 The capital base

5.3.1 The opening capital base

Section 8.9 of the Gas Code requires that the capital base at the start of each Access Arrangement period after the first is determined as the sum of:

- the capital base at the start of the immediately preceding Access Arrangement period; plus,
- new facilities investment in the immediately preceding Access Arrangement period; less,
- depreciation in the immediately preceding Access Arrangement period; less,
- redundant capital.

The values used to calculate the roll forward of the capital base to the start of the second Access Arrangement period are shown in table 5.2.

Table 5.2 Roll forward of the capital base from 1999/00 to 2003/04

nominal $ million

Year ending 30 June	*2000*	*2001*	*2002*	*2003*	*2004*
Opening Balance	175.0	182.4	198.6	209.6	219.6
Plus Capital Expenditure	8.6	12.7	10.9	9.3	7.4
Less Depreciation	5.5	5.8	5.8	6.3	6.7
Less Disposals	-	1.9	-	0.1	-
Plus Indexation	4.3	11.2	5.9	7.1	5.6
Capital Base Rolled Forward	182.4	198.6	209.6	219.6	225.9

Note: Capital expenditure is net of capital contributions.

Capital expenditure

In accordance with sections 8.16 and 8.17 of the Gas Code, the capital base has been increased by actual capital expenditure. The expenditure meets the requirements of section 8.16, in that it does not exceed the amount that would be invested by a prudent service provider acting efficiently and in accordance with accepted good industry practice.

The incentive structure in place since the start of the 2001 Access Arrangement has ensured that ActewAGL's costs are kept at efficient levels. As explained by the Essential Services Commission (ESC) in its Draft Decision for the Victorian distributors' revised Access Arrangements (ESC 2002b, p. 89),

> The most effective means of ensuring that distributors' capital expenditure meets the requirements of the Gas Code is to provide the distributors with the commercial incentives to achieve this outcome, which existed over the first regulatory period. Accordingly, the Commission considers it appropriate for the distributors to include in their regulatory asset bases their actual capital expenditure (net of customer contributions, or surcharges) over the period.

In its Final Decision on GasNet's revised Access Arrangement, the ACCC also concluded that providing effective efficiency incentives are the best way to ensure efficient performance. The ACCC stated that it 'prefers not to attempt to micro manage' GasNet with regard to its costs (ACCC 2002a, p. 294).

The ICRC's Final Decision on ActewAGL's 2001 Access Arrangement provided strong incentives for efficient performance. It required a significant efficiency adjustment of 3 per cent a year for all proposed capital expenditure, except that relating to the Eastern Gas Pipeline (ICRC 2000, p. 86). Further, the incentive mechanism in the reference tariff policy for the 2001 Access Arrangement rewards ActewAGL for keeping costs at or below the allowed levels. If ActewAGL achieves cost outcomes (operating and capital) below forecast levels, while maintaining service standards, it retains the benefits of the efficiency improvements over the Access Arrangement period.

Actual capital expenditure has deviated from the amounts allowed in the Final Decision, largely because growth related capital expenditure has been higher than forecast as customer numbers have exceeded the projections required by the Final Decision. Actual customer numbers over the 2001 Access Arrangement period exceeded the ICRC projection by 5 149. The capital cost associated with connecting new customers varies, depending on the type and location of the customer. It includes the costs of a new main from the distribution network (if this is required), a service pipe from the main to the customer's property and a meter.

Differences between actual and allowed capital expenditure are further explained by the fact that the actual timing of the Eastern Gas Pipeline connection expenditures and the Network Reinforcement Project has not matched that envisaged in the Final Decision.

A comparison of forecast capital expenditure allowed in the Final Decision and actual capital expenditure for 2001 to 2004 is shown in table 5.3.

Table 5.3 Allowed and actual capital expenditure 2001 to 2004

nominal $ million

Year ending 30 June	*2001*	*2002*	*2003*	*2004*
Final Decision	17.30	8.03	7.87	6.76
Actual	12.73	10.91	9.33	7.46
Difference	(4.57)	2.88	1.46	0.70

Depreciation

Depreciation for the roll forward to 2004/05 is calculated on a straight-line basis, as required in the 2001 Final Decision. Regulatory depreciation is based on the asset lives specified in the Final Decision.

Disposals

Disposals cover replacement or scrapping of aging and redundant capital, including assets affected by the January 2003 bushfires.

Inflation adjustment

Indexation for the roll forward to 2004/05 is at the actual CPI (All Groups index for the weighted average of eight capital cities) for the 2001 Access Arrangement period.

5.3.2 Roll forward of the capital base to 2009/10

The capital base at the start of the second Access Arrangement (January 2005) is rolled forward to the end of the second Access Arrangement period by adding forecast capital expenditure, subtracting forecast depreciation and any asset disposals and adjusting for inflation.

The roll forward of the capital base from 2004/05 to 2009/10 is shown in table 5.4. The components of the roll forward are discussed in the following sections.

Table 5.4: Projected roll forward of the regulatory capital base from 2004/05 to 2009/10

nominal $ million

Year ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Opening Balance	225.9	236.6	244.6	252.6	261.0	272.7
Plus Capital Expenditure	12.4	10.1	9.7	9.1	12.5	8.3
Less Depreciation	7.4	8.1	8.6	8.4	8.8	9.0
Less Disposals	0.1	0.1	0.1	0.1	0.1	0.1
Plus indexation	5.8	6.1	7.0	7.8	8.1	8.3
Capital Base Rolled Forward	236.6	244.6	252.6	261.0	272.7	280.2

Capital expenditure forecasts

In accordance with section 8.20 of the Gas Code, the capital base has been increased by forecast capital expenditure. The expenditure meets the requirements of section 8.16, in that it does not exceed the amount that would be invested by a prudent service provider acting efficiently and in accordance with accepted good industry practice. The forecast requirements for growth related capacity expansion, system reinforcement and replacement and renewal of assets are based on detailed engineering and design analysis together with market growth forecasts, as discussed in section 5.6. As part of its asset management services, Agility has established a capital prudency process which involves detailed evaluation, documentation and review for each type of capital expenditure.

The forecast average capital expenditure for the second Access Arrangement period is $9.76 million per year. The forecast average is lower than the average for the first Access Arrangement period, largely because the first period included capital expenditure of around $14 million for connection of the Eastern Gas Pipeline. A forecast slowing in the rate of growth of new customer connections has also contributed to the lower forecast capital expenditure.

Capital expenditure forecasts by asset type are shown in table 5.5.

Table 5.5 Forecast capital expenditure (by asset type)

2004/05 $ million

Year ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Distribution system capex						
Primary (HP) mains	-	2.72	2.14	-	2.33	0.53
HP Services	-	-	-	-	-	-
Medium pressure (MP) mains	2.87	2.65	2.72	2.71	3.02	2.81
MP services	2.75	2.49	2.39	2.30	2.30	2.22
Regulators, valves (TRS, SRS)	1.63	0.07	-	1.59	1.69	0.10
Contract meters	0.20	0.05	0.08	0.01	0.02	0.03
Tariff meters	2.87	1.92	1.95	1.85	1.91	1.55
Total distribution system	**10.32**	**9.90**	**9.28**	**8.46**	**11.27**	**7.24**
Non system capex						
Gas networks GIS system	0.50	-	-	-	-	-
Regulatory capitalisation costs	1.60	-	-	-	-	-
Total non-system assets	**2.10**					
Total capex	**12.42**	**9.90**	**9.28**	**8.46**	**11.27**	**7.24**

Note: 2004/05 numbers are for a full year while the AA is likely to start in January 2005.

A breakdown of forecast capital expenditure by type – growth related, system re-inforcement and renewal/replacement – is shown in table 5.6.

Table 5.6 Forecast capital expenditure (by expenditure type) 2004/05 to 2009/10

2004/05 $ million

Year ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Distribution system capex						
Growth market expansion	6.09	5.74	5.61	5.41	5.49	5.40
Growth capacity development	1.71	2.88	2.33	1.77	4.42	0.72
Stay in business	2.52	1.28	1.34	1.28	1.36	1.02
Total distribution system	**10.32**	**9.90**	**9.28**	**8.46**	**11.27**	**7.24**
Non system capex						
Gas networks GIS system	0.50	-	-	-	-	-
Regulatory capitalisation costs	1.60	-	-	-	-	-
Total non-system capex	**2.10**					
Total capex	**12.42**	**9.90**	**9.28**	**8.46**	**11.27**	**7.24**

Note: 2004/05 numbers are for a full year while the AA is likely to start in January 2005.

Market expansion costs account for the largest component on the forecast capital expenditure. Major projects include the connection of new housing estates in Gungahlin and other new residential developments within the ACT and Queanbeyan.

Depreciation

For the roll forward of the capital base to 2009/10, assets in the regulatory capital base are depreciated over their remaining economic useful lives, as set out in the Final Decision on the 2001 Access Arrangement.

Redundant capital

Some minor reductions in the capital base have been made to represent the estimated residual value of assets scrapped or disposed of as they fail, are replaced or become redundant (for example, due to service disconnections).

Inflation adjustment

The inflation adjustment for the roll forward to 2009/10 is based on forecasts of the CPI (All Groups index average for the 8 capital cities) published by Econtech in June 2003. Forecast values are shown in table 5.7.

Table 5.7 Forecast CPI

(%, All Groups, average 8 capital cities)

Year ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
CPI forecast	2.50	2.50	2.80	3.00	3.00	3.00

Source: Econtech, June

5.4 Rate of return

5.4.1 Calculating the Weighted Average Cost of Capital (WACC)

ActewAGL proposes a real pre-tax WACC of 7.9 per cent. The WACC estimate is based on an independent assessment by Network Economics Consulting Group (NECG). NECG adopted the forward (market) transformation in converting from a nominal post-tax WACC. Both ICRC and IPART have used the method in previous decisions on gas Access Arrangements. The parameters used to calculate the WACC are shown in table 5.8 and the basis for the proposed parameter values is outlined in the following sections.

Table 5.8: WACC parameters

Parameter	Value
Nominal risk free rate (%)	5.65
Forecast inflation (%)	2.33
Market risk premium (%)	6.50 – 7.00
Equity beta	0.98 – 1.09
Debt beta	0.00 – 0.06
Cost of equity (%)	12.05 – 13.31
Debt premium (%)	1.43
Cost of debt (%)	7.08
Tax rate (%)	30
Gearing ratio (%)	60
Franking credits (%)	40
Nominal post-tax WACC (%)	7.09 – 7.52
Nominal pre-tax WACC (%)	10.12 – 10.74
Real Pre-Tax WACC (%)	7.62 – 8.22

Risk free rate

The nominal risk free rate used in the WACC calculation is the 10 year Commonwealth bond rate at 19 November 2003. ActewAGL proposes that for the Final Decision the ICRC use the 20-day average of the yields on the 10 year Commonwealth bond rate.

Inflation

The expected inflation rate in table 5.8 is derived from the Fisher equation. The Fisher equation estimates inflation as (1+ nominal bond yield)/(1+ indexed bond yield)-1. The nominal bond yield used by ActewAGL is the 10 year Commonwealth bond rate and the indexed bond yield is the 10 year CPI indexed Commonwealth bond rate.

Market risk premium

The market risk premium (MRP) is the amount an investor expects to earn from an investment in the market above the return earned on a risk-free investment. The key difficulty in estimating the MRP arises from it being an expectation and therefore not being directly observable. Generally a range of plausible values is identified and the MRP is chosen within the range.

ActewAGL's proposed range for the MRP is 6.5 to 7 per cent. The proposal is based on an assessment of historical evidence together with a review of recent regulatory decisions. Based on a review of empirical studies of historical data, NECG concluded that the generally accepted range for the MRP among corporate finance professionals in Australia has been 6 to 8 per cent. Results from several studies are shown in table 5.9.

Table 5.9 Historical estimates of MRP

Source	*Market risk premium (%)*
Officer (1989) (based on 1882-1987)	7.9
Hathaway (1996) (based on 1882-1991)	7.7
Hathaway (1996) (based on 1947-91)	6.6
NEC (based on 1952-99)	6.6
AGSM (based on 1964-95, including October 1987)	6.2
AGSM (based on 1964-95, excluding October 1987)	8.1
Dimson, Marsh, Staunton (2002) (based on 1900-2000)	7.0

NECG also reviewed recent regulatory decisions, and found that most regulators have adopted a figure at the bottom end of this range, 6 per cent (see table 5.10).

Table 5.10 MRPs adopted in recent regulatory decisions

Regulator	Range/value applied	Notes
ICRC	5.0-6.0%	All decisions to date
IPART	5.0-6.0%	All decisions to date
ACCC	6.0%	All final decisions and outstanding draft decisions
ORG/ESC	6.0%	All final decisions and outstanding draft decisions
QCA	6.0%	All final decisions and outstanding draft decisions
Offgar	6.0%	All final decisions and outstanding draft decisions
Otter (Tas)	6.0%	All decisions to date
SAIPAR	6.0%	All decisions to date

Betas

ActewAGL has proposed a range for the equity beta of 0.98 to 1.09, with a debt beta of 0.00 to 0.06. NECG recommend that, given the inherent volatility of beta values, the beta values for a company such as ActewAGL should be based on a consideration of a number of factors and not rely exclusively on a limited number of current observations for listed utility businesses in Australia.

Regulatory precedent is consistent with a range for the equity beta for businesses with 60 per cent gearing of 1.00 to 1.20 for gas distribution[1], and 1.00 to 1.30 for gas transmission. If a debt beta of zero is assumed, this is equivalent to ranges for the asset beta of 0.40 to 0.48 for gas distribution and 0.40 to 0.52 for gas transmission (see table 5.11).

Table 5.11: Asset and equity beta - recent gas regulatory decisions

Year	Regulator	Decision	Asset beta	Debt beta	Equity beta
Gas distribution					
Oct-02	ESC	Vic gas distribution	0.40	0.00	1.00
Dec-01	SAIPAR	SA distribution system	0.50	0.12	1.06
Oct-01	QCA	Qld gas distribution	0.55	0.26	0.98
Dec-00	OffGAR	Alinta (Mid West/South West)	0.55	0.20	1.07
Nov-00	ICRC	ActewAGL	0.45	0.06	1.03
Jun-00	IPART	AGL Gas Network	0.40-0.50	0.06	0.90-1.14
Dec-99	IPART	Albury gas distribution system	0.40-0.50	0.06	0.90-1.14
Mar-99	IPART	Gt Southern energy gas network	0.40-0.50	0.06	0.90-1.14
Oct-98	ORG	Victorian gas distributors	0.55	0.12	1.19
Gas transmission					
May-03	Offgar	Dampier to Bunbury	0.60	0.20	1.19
Dec-02	ACCC	ABDP (NT Gas)	0.50	0.15	1.02
Nov-02	ACCC	GasNet	0.50	0.18	0.98
Sep-01	ACCC	Moomba to Adelaide	0.50	0.06	1.16
Dec-00	ACCC	EAPL	0.50	0.06	1.16
Jun-00	ACCC	Central West Pipeline	0.60	0.00	1.50
Oct-98	ACCC	TPA (GasNet)	0.55	0.12	1.19
Oct-01	Offgar	Tubridgi	0.65	0.20	1.32
Apr-01	Offgar	Goldfields (draft)	0.60	0.20	1.19
Oct-00	Offgar	Parmelia pipeline	0.65	0.20	1.32

NECG also examined estimated betas for Australian and international utilities. The estimated asset betas for four publicly listed Australian utilities range from 0.14 to 0.27. NECG identified several problems with the estimates and concluded that their usefulness was limited. An alternative approach is to consider the asset betas of gas distribution companies listed in overseas markets. This approach was implemented by using data obtained from Bloomberg, which calculates and publishes beta and financial analysis data on all publicly listed companies. The international data suggested that an asset beta of around 0.4 (or an equity beta of around 1.00, assuming 60 per cent gearing and debt beta equal to zero).

Debt premium

The proposed debt premium is 1.43 per cent, which is the rate accepted by the ICRC in the draft decision on prices for electricity distribution services. The proposed rate is also within the range for recent regulatory decisions on gas Access Arrangements.

1 This is based on adopting the mid range value of IPART's ranges.

Tax rate

ActewAGL proposes to use the statutory tax rate of 30 per cent in the WACC calculation. Adopting an effective tax rate would be more theoretically correct than adopting the statutory tax rate. However, the level of intrusion and costs associated with using an effective tax rate are likely to outweigh any potential benefits.

Gearing

ActewAGL proposes a gearing ratio of 60 per cent. Gearing of 60 per cent has been adopted in all gas distribution and transmission decisions in Australia to date, including ICRC's Final Decision for the 2001 Access Arrangement.

Dividend imputation credits (gamma)

ActewAGL proposes to use a gamma of 0.4 when calculating the WACC, and notes that this has been the approach adopted by other Australian regulators in the context of debate over whether the CAPM is based on a marginal domestic investor or a marginal international investor. A gamma of 0.4 is at the mid-point of the range adopted by the ICRC and the IPART in previous regulatory decisions in the ACT and NSW.

5.4.2 ActewAGL's WACC proposal

Using the parameters presented in table 5.8, the calculated range for pre-tax real WACC for ActewAGL's gas distribution networks is 7.62 per cent to 8.22 per cent.

ActewAGL proposes that a WACC of 7.9 per cent be applied to determine the return on the capital base.

Asymmetric risk/cost pass through

The WACC as calculated using the CAPM formula relates only to non-diversifiable risk. The CAPM approach assumes that all diversifiable risk is reflected in the expenditure projections, so that the projections represent the true expected value of the business's expenditure. To the extent that this assumption is incorrect, the allowed WACC would need to be adjusted upwards from the value derived under the CAPM, to account for the fact that it is compensating for both non-diversifiable *and* diversifiable risk. This is common commercial practice, where expenditure projections are considered to be below their true expected value.

Allowing a pass-through for unanticipated external cost changes is consistent with the approach adopted by other regulators (discussed further in section 5.8).

The WACC proposal presented in this section is based on the ICRC's acceptance of ActewAGL's proposal for expanded cost pass-through provisions. If the ICRC does not accept the provisions, ActewAGL would need to re-calculate and resubmit a commensurately higher WACC which would reflect the true risk it then faces. However, ActewAGL believes that the appropriate approach to uncertainty in relation to future external cost increases would be to reduce the asymmetric risk it faces through expanded pass-through provisions.

5.4.3 Working capital

The nominal return on working capital included in the cost of service is shown in table 5.12. The methodology used in the same as in the 2001 Access Arrangement.

Table 5.12 Net working capital

nominal $ million

Year ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Working capital	0.49	0.59	0.62	0.69	0.75	0.81

5.5 Non-capital costs

5.5.1 Background

Section 8.36 of the Gas Code states that a reference tariff may provide for the recovery of all non-capital costs (or forecast non-capital costs, as relevant) except for any such costs that would not be incurred by a prudent service provider, acting efficiently, in accordance with accepted and good industry practice, and to achieve the lowest sustainable cost of delivering the reference service.

The incentive structure in place for the 2001 Access Arrangement period has provided strong incentives for ActewAGL to deliver services at the lowest possible costs. The Final Decision required significant reductions in non-capital costs. The cumulative reduction in allowed total controllable operating costs was 20.9 per cent over the 4 years to 2003/04 (ICRC 2000, p. 103). An efficiency adjustment of 3 per cent per year was made to ActewAGL's operating and maintenance costs and overheads (ICRC 2000, p. 99). The incentive structure allowed ActewAGL to keep any savings where costs were below allowed levels.

A comparison of allowed and actual non-capital costs over the 2001 Access Arrangement period is shown in table 5.13.

Table 5.13 Allowed and actual non-capital costs 2001 to 2004

nominal $ million

Year ending 30 June	*2001*	*2002*	*2003*	*2004*
Final Decision	9.90	9.67	9.57	9.48
Actual	11.38	10.69	11.44	11.29
Difference	1.48	1.02	1.87	1.81

Actual non-capital costs exceeded allowed amounts for several reasons:

- higher than forecast growth in customer numbers and substantial growth in the size of the network;

- unexpected costs associated with bushfires;
- higher than forecast insurance costs;
- costs associated with setting up the new asset management arrangement with Agility, which establishes a framework to achieve an efficient ongoing non-capital cost path and is designed to deliver long term efficiency improvements; and,
- the 2001 AA and the prices and incentive structures associated with it did not become effective until 7 months into 2001, whereas the allowed levels assumed they would take effect from the start of 2001.

Despite these extra cost pressures, ActewAGL achieved an overall real reduction in non-capital costs over the first Access Arrangement period. Real non-capital costs per customer, per kilometre of main and per TJ of gas sold have all fallen over the period (table 5.14).

Table 5.14 Key performance indicators 2001 to 2004

real 2004/05 $

Year ending 30 June	*2001*	*2002*	*2003*	*2004*
Opex/customer	150.0	130.9	129.7	119.2
Opex/km main	3,611	3,235	3,311	3,117
Opex/TJ	1,908	1,751	1,793	1,630

The non-capital cost forecasts are therefore made from a base where substantial efficiency improvements have already been made.

In deciding on required efficiency improvements for the 2001 Access Arrangement, IPART (for the Draft Decision) and the ICRC (Final Decision) used a range of performance indicators to assess whether ActewAGL's costs were those 'incurred by a prudent service provider acting efficiently' (IPART 2000, p. 117). Updated values for some of the indicators used are provided in table 5.15. The values are taken from final Access Arrangement Information documents approved for various service providers over the past few years. The costs included in the indicators are therefore approved by the relevant regulators as being reasonable and efficient.

The simple comparison shows that ActewAGL's 2002/03 actual performance compares favourably by some measures and with some service providers, unfavourably with others. ActewAGL's non-capital costs per customer are high compared with the service providers with relatively dense networks (as measured by customers per kilometre of main), such as Envestra (Victoria), Multinet and Envestra Albury. However costs per customer are low compared with Envestra Queensland, which has the least dense network.

ActewAGL's non-capital costs per kilometre are among the lowest of those shown in table 5.15. ActewAGL's non-capital costs per TJ are relatively high, reflecting the fact that the customer base is predominantly small residential customers. There are 38 contract customers accounting for around 16 per cent of total volume. In contrast, for Envestra Albury, which has relatively low costs per TJ, the 10 tariff D customers account for around one-third of total volume.

Table 5.15: Comparisons of Key Performance Indicators

	Opex/ Customer	*Opex/ km main*	*Opex/TJ*	*Customers/ km main*
ActewAGL (2002/03 actual)	$130	$3,311	$1,784	24.8
Envestra Vic (2000/01)	$77	$4,192	$1,152	55.9
Multinet Vic (2000/01)	$63	$4,176	$633	65.9
Envestra SA (2001/02)	$109	$4,728	$1,310	49.8
Envestra Qld (2000/01)	$147	$5,071	$2,408	16.4
Allgas Qld (2000/01)	$121	$3,717	$764	30.7
Envestra Albury (2000/01)	$61	$2,934	$683	47.8
Country Energy Wagga	$108	$2,991	$99	27.6

Sources: Queensland Competition Authority 2001, Envestra SA AAI, Allgas AAI, Envestra (Vic) AAI Multinet AAI, Envestra Albury AAI.
Note: 'Opex' is total non-capital costs as reported in AAIs.

As noted by IPART (2000), as well as other regulators, these simple productivity measures do not alone provide an adequate measure of whether a service provider's costs are at efficient levels. A range of factors affect distributors' inputs, outputs and costs, and these should be taken into account when assessing efficiency. Density of the network is a key factor influencing unit costs. In table 5.15 for example, Envestra Queensland has the lowest number of customers per kilometre and the highest costs. The customer mix is also important – a high proportion of small customers will tend to make costs per TJ sold relatively high. The impact of differences in operating environment (particularly density of the network) must be taken into account when comparing performance.

Incentives are in place to ensure that ActewAGL continues to provide services at the most efficient sustainable cost. Like many other gas distributors in Australia (for example, Envestra in Victoria, Queensland and South Australia, Allgas in Queensland) ActewAGL has contracted out the management and operation of its network. The primary purpose of contracting out to a specialist network operator and manager is to deliver cost efficiencies.

The contracting out of specialist services and the incentives inherent in the proposed reference tariff policy together ensure that ActewAGL's operating costs will continue to be kept at efficient levels.

5.5.2 Non-capital cost forecasts

Forecast real non-capital costs are shown in table 5.16. Following an initial increase, costs increase by just 2 per cent (in real terms) over the 5 years to 2009/10. Factors contributing to the initial increase include: the inclusion of contestability costs (which had been allowed as a cost pass-through before 2004/05); higher government fees and levies; an increase in marketing costs (which had been below allowed levels over the 2001 Access Arrangement period); an increase in corporate overheads (as more legal and regulatory support services are provided by corporate areas); and an increase in asset services costs.

Forecast market growth over the period is reflected in increases in asset services costs and asset management costs (using the growth formula allowed in the Final Decision for the 2001 Access Arrangement). An efficiency improvement of 1.5 per cent per year is assumed.

The assumed annual efficiency improvement is lower than the 3 per cent required for the 2001 Access Arrangement, because significant improvements have already been made and such a high annual rate of improvement could not be sustained. The 1.5 per cent efficiency adjustment is however more onerous than required in recent revised gas Access Arrangement decisions (the comparison with other revised Access Arrangements, as opposed to initial Access Arrangements, is relevant because in the revised cases the businesses have already been operating in a regulated environment and have already achieved efficiency improvements). For example, the ESC required a 1 per cent a year efficiency improvement for the Victorian distributors (ESC 2002a, p. 107). The ACCC did not require a general efficiency improvement for GasNet's revised Access Arrangement (ACCC 2002, p. 141).

Table 5.16 Non-capital cost forecasts

2004/05 $ million

Year ending 30 June	*Actual 2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Controllable costs							
Asset services	4.18	4.46	4.52	4.75	4.80	4.84	4.87
Asset management	2.85	3.10	3.06	3.02	2.97	2.89	2.83
Corporate overheads	1.69	1.92	1.92	1.92	1.92	1.92	1.92
Non-system asset charge	0.48	0.48	0.48	0.48	0.48	0.48	0.48
Marketing	1.46	1.84	1.87	1.89	1.90	1.93	1.95
Other direct costs	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Total controllable costs	**10.90**	**12.04**	**12.09**	**12.30**	**12.31**	**12.30**	**12.29**
Other allowable costs							
Government levies	0.34	0.55	0.55	0.55	0.55	0.55	0.55
Contestability costs	0.00	0.45	0.46	0.46	0.46	0.46	0.45
Unaccounted for gas	0.10	0.26	0.26	0.28	0.29	0.29	0.31
Other	0.23	0.24	0.24	0.24	0.24	0.25	0.25
Total other	**0.67**	**1.50**	**1.51**	**1.53**	**1.54**	**1.55**	**1.56**
Total non-capital costs	**11.57**	**13.54**	**13.60**	**13.83**	**13.85**	**13.85**	**13.85**

Note: 2004/05 numbers are for a full year while the AA is likely to start in January 2005.

The breakdown of costs differs from that provided in the 2001 Access Arrangement Information because the organisation of ActewAGL's gas business has changed, with the contracting out of network operation and management to Agility. In table 5.16 asset services costs, asset management costs and non-system asset charges are all for services provided by Agility. ActewAGL directly incurs corporate overheads, marketing and other allowable costs.

The Gas Code (Attachment A) requires a breakdown of non-capital costs into operations and maintenance costs, overheads and marketing. Operations and maintenance costs are in the asset services and asset management components in table 4.1, overheads are in corporate overheads (for ActewAGL directly). The Gas Code also suggests a further breakdown of operations and maintenance into components such as labour and other costs, but says that this information may remain aggregated for commercial reasons. ActewAGL does not separately incur labour and other costs associated with operating and maintaining the network – these are incurred by Agility – and therefore cannot report them separately.

Asset services

Asset services costs cover field services for maintenance of network assets, network control operation expenses, project management, quality assurance and technical and engineering services. These services are outsourced to Agility as the service provider under a strict arms length contract arrangement.

A real increase in asset services costs is projected over the period. This is due mainly to forecast growth in customer numbers and throughput. A one-off increase in operations and maintenance costs is included in 2007 when the Hoskinstown metering station will be operated and maintained by ActewAGL. The station is currently operated and maintained by Duke Energy under an agreement with ActewAGL.

Asset management

Asset management costs are the costs of managing the maintenance and operations services, oversighting planning and strategic development of the network, contract management, data, systems and information services in relation to the network, network research and development costs and administration costs of the contractor. These services are outsourced to Agility as the service provider under a strict arms length contract arrangement.

Asset management services costs are projected to fall in real terms over the Access Arrangement period following an initial increase compared to represent a larger network and customer base compared to the 2001 Access Arrangement period.

Corporate overheads

Corporate overheads cover corporate services provided by ActewAGL and include finance services, legal services, business systems, audit, and chief executive and commercial executive costs. Following an initial increase (to take account of additional legal and regulatory support services), these costs are forecast to remain constant in real terms over the period.

Non-system assets charge

The non-system assets charge covers the costs of using non-system assets owned and used by Agility that were previously included in the regulatory capital base at the beginning of the 2001 Access Arrangement. These costs are forecast to remain constant in real terms over the period.

Marketing

Marketing costs cover market research and analysis to identify opportunities for growth and load retention, and incentives for users to connect to gas appliances. These costs are forecast to decline in real terms over the period.

Marketing is an essential activity for network owners as they must encourage use of the network. Encouraging load growth in the summer months, when capacity utilisation is relatively low, is a priority for ActewAGL.

ActewAGL's gas marketing strategy is guided by survey information compiled annually by Agility.

5.6 Demand forecasts

5.6.1 Overview

The demand forecasting methodology is basically the same as that approved for the 2001 Access Arrangement. For the residential and business tariff markets, growth in consumption is a function of:

- Changes in consumption by existing customers; and
- Consumption by incremental customers.

Consumption by incremental customers in turn depends on the net number of new customers and the average consumption by those customers.

Contract market consumption is also a function of changes in consumption by existing customers and consumption by new customers.

For both the tariff and contract markets, historical trends are important determinants of the forecasts, as they were for the 2001 Access Arrangement. The parameters used are discussed in the following sections.

The methodology has been refined in one way. An adjustment has been made to the tariff market forecasts for the effect of the trend to warmer weather. The effect of the trend to warmer weather is reflected in the declining trend of consumption per tariff customer over the 2001 Access Arrangement period.

The trend to warmer temperatures has been measured by heating degree days (HDDs). The HDD value for a day is the amount (in degrees Celsius) by which the average of the maximum and minimum temperatures for the day is less than 18ºC. The HDD value is zero if the average temperature is greater than or equal to 18ºC. This is an industry standard measure and reflects the fact that it is only when the average temperature falls below about 18ºC, that gas demand is significantly affected by temperature.

Analysis of historical temperature data shows that the number of HDDs per annum for the ACT (as measured at Canberra Airport) has been declining at an average rate of about 3.8 HDD per annum over the period since 1976. Declining HDDs mean warmer temperatures, which tend to reduce gas demand. Based on the estimated relationship between HDDs and gas demand and the trend in HDDs, tariff market demand was reduced by 4 TJ per year over the forecast period. This represents a small proportion (around 0.06 per cent in 2004/05) of total tariff demand. A one-off adjustment was also made to the base year for the forecasts, 2002/03, as temperatures were above the trend in that year.

5.6.2 Tariff market

Consumption in the residential tariff market is forecast to grow at an average rate of 3 per cent a year to 2009/10 (table 5.17).

Table 5.17 Residential tariff market consumption forecasts (TJ)

Yr ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Volume (TJ)	4839	5003	5162	5317	5469	5617

The forecast residential tariff market growth is a function of:

- Changes in consumption by existing residential customers; and,
- Consumption by new residential customers.

Consumption by existing residential customers is forecast to continue growing steadily at 0.45 per cent per year, which is the average growth rate over the past 4 years.

Consumption by new residential customers depends on forecasts of changes in residential customer numbers and the volume of gas consumed per new customer. Different types of residential customers tend to have different growth rates and different average levels of annual consumption, so the forecasts have been split into three groups:

- New dwellings – houses;
- New dwellings – medium/high density; and,
- Conversion of existing dwellings (electricity to gas).

Forecasts of customer numbers for new dwellings (both houses and medium/high density) are based on forecasts of growth in construction of new dwellings. For the ACT, forecasts of the underlying demand for new dwellings published by BIS Shrapnel (2003) are used as the basis for forecasting the number of new dwelling customers. BIS Shrapnel forecasts that the underlying demand for dwellings will increase from 1800, the level of the past few years, to 2100 in 2004/05 and remain at that level for the forecast period. Total dwelling completions are assumed to equal underlying demand, and the proportion of completed dwellings which are houses (as opposed to medium to high density dwellings) is assumed to remain stable at 67.8 per cent (the average over the past 4 years) over the period. BIS Shrapnel do not publish separate forecasts for Queanbeyan. Numbers of actual dwelling completions (based on information from the rates system) supplied by the Queanbeyan City Council provide the basis for the Queanbeyan new dwellings forecasts.

For the 4 years to 2002/03, ActewAGL connected an average of 90.2 per cent of new houses to gas, and this level of penetration is forecast to remain stable to 2009/10. For other dwellings, the penetration level of 82 per cent is forecast to remain stable.

Average annual consumption per customer in both new houses and new medium/high density dwellings is forecast to fall slightly over the period (from 53.1 GJ in 2003/04 to 47.6 GJ in 2009/10) as more energy efficient appliances, particularly water saving devices, are introduced.

The number of existing dwellings converting to gas is forecast to fall over the period, continuing the trend since the start of the 2001 Access Arrangement. Connections of existing houses fell from 2 691 in 1999 to 1 906 in 2003. The forecast continues this trend in an exponential relationship, as is typical of a market approaching maturity. The number of connections of existing dwellings in 2004 and 2005 is higher than the underlying trend due to the reconnection of houses that were disconnected during the bushfires.

Average annual consumption per customer converting to gas is forecast to remain stable over the period, at 38.6 GJ.

Business tariff market consumption is forecast to grow at an average rate of 1.4 per cent per year to 2009/10 (table 5.18).

Table 5.18 Business tariff market consumption forecasts (TJ)

Yr ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
Volume	1473	1494	1515	1535	1556	1577

For existing business tariff customers, average consumption is forecast to fall by 0.06 per cent a year, which is the growth rate for the past 4 years. This fall is due to businesses introducing energy saving measures.

Forecasts of growth in consumption by new business customers are based on forecasts of changes in customer numbers and average consumption per new customer. The net annual increase in business customers (new connections less disconnections) is forecast to remain at 46 customers (the average over the past 5 years). Average annual consumption by new business tariff customers is forecast to remain stable at 493 GJ.

5.6.3 Contract market

Annual consumption quantities (ACQs) for the contract market are forecast to fall over the period at an average rate of 1.7 per cent a year. Maximum daily quantities (MDQs) are also forecast to fall. The number of contract delivery points is forecast to increase by one to 39 sites over the forecast period.

Table 5.19 Contract market consumption forecasts

Yr ending 30 June	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*
ACQ (TJ)	1057	1040	1023	1007	990	973
MDQ Booked (GJ)	5695	5604	5512	5419	5327	5235

Growth rates for ACQ are based on historical growth rates in ACQ for each industry group in the contract market. Actual 2002/03 consumption for all sites in the customer list was used as the baseline for the forecast.

The contract market of 38 delivery sites (as at 30 June 2003) was split into 3 groups – health and education, offices and other). Customers within each group have similar consumption and load patterns. The offices group comprises mainly government offices, while the other group comprises mainly accommodation and other industry sites. The number of sites in each group has been stable in recent years – no new contract sites have been added since 2001. Consumption in each group has been declining steadily, largely due to measures to improve energy efficiency. Most government departments have introduced energy saving targets and energy audits. Replacement of aging plant and other energy efficiency measures has resulted in significant reductions in gas consumption for some contract customers.

For each of the three industry groups, the average load factor for the period from 2000/01 (when MDQ based charges were introduced) to 2002/03 was calculated then applied to the ACQ forecast to determine MDQ booked forecasts. The forecast decline continues the trend since 2000/01.

5.6.4 External review

The forecasting methodology has been reviewed by independent consultants ACIL. The forecasts incorporate responses to comments and suggestions provided by ACIL.

5.7 Reference tariffs

Reference tariffs are calculated in accordance with the principles set out in section 8 of the Gas Code. The tariff for each reference service is designed to cover those costs which can be directly attributable to providing the service plus a share of joint costs, where the share is determined in line with the objectives of section 8.1 of the Gas Code. As noted in the Gas Code (p. 48), the requirement is essentially that charges be cost reflective, although substantial flexibility is provided.

5.7.1 Allocating total revenue requirement

The methodology for allocating the total revenue requirement between the contract and tariff markets is the same as used for the 2001 Access Arrangement. Capital costs were first allocated to asset groups, and then split between the contract and tariff markets. Operating costs were allocated to the contract and tariff markets on the basis of activity based costing information. Details are provided in the revised Access Arrangement Information.

5.7.2 Key changes to reference tariffs

The methodologies for calculating each of the charges for the reference services are the same as used in the 2001 Access Arrangement. Details are provided in the revised Access Arrangement Information.

For the contract market, the revisions result in a slight change in reference tariffs, in real terms, for MDQ charges as a result of projected reductions in volumes. There are no changes in real terms in charges for provision of basic metering equipment and meter reading charges. The total revenue requirement for the contract market remains constant in real terms over the period, and the method for allocating costs between assets and activities are the same as in the 2001 Access Arrangement.

For tariff customers, one change to the structure of the reference tariff is proposed. The step charges in the throughput charge for the tariff service have been revised so that they now decline steadily as throughput increases. In the 2001 Access Arrangement, the steps fell, then increased, then fell again. The revised structure more accurately reflects costs and therefore meets the requirements of section 8 of the Gas Code.

The proposed charges for each block in the tariff throughput charge represent a slight increase at some levels, a decrease at others (compared with 2003/04 charges for each block, adjusted for inflation). The metering charges are lower, in real terms, than those for 2003/04. On balance, all tariff customers will face slightly lower tariffs, in real terms, at the start of the second Access Arrangement period.

5.7.3 Ancillary charges

Ancillary charges have also been adjusted to new levels and an escalation clause has been added. Ancillary charges had been fixed for the first Access Arrangement period, and have been increased for start of the revised Access Arrangement to take account of increased costs of providing the ancillary services. The charges are to be escalated by the CPI, as specified in part 6 of the Access Arrangement.

5.8 Variations to reference tariffs

In accordance with section 2.49 of the Gas Code, Part 6 of the revised Access Arrangement includes a new Approved Reference Tariff Variation Method. The mechanism sets out the procedures to be followed in variation applications. Variations may be allowed for changes in the CPI and defined cost pass-through events.

The CPI adjustment mechanism has been amended from that included in the 2001 Access Arrangement. In the 2001 Access Arrangement the CPI adjustment factor for escalating reference tariffs from 1 July each year used the sum of the quarterly CPI to March in the year of the adjustment. In the proposed revision, the CPI adjustment factor is instead based on the sum of the quarterly CPI to December of the previous year. The amendment should allow tariffs to be calculated and published well before 1 July each year. The proposed mechanism is the same as the ICRC's mechanism in the draft decision for ActewAGL's electricity distribution services.

5.8.1 Cost pass-through

ActewAGL's proposed cost pass-through arrangements in the revised Access Arrangement extend and refine the mechanism contained in the 2001 Access Arrangement.

Cost pass-through mechanisms are designed to recognise and address the risk that a regulated business faces as a result of unexpected cost changes which are beyond its control. Cost pass-through has been approved in recent Final Decisions on revised gas Access Arrangements (ACCC 2002a and ESC 2002a). The ACCC and regulators in South Australia and Victoria have also approved cost pass-through arrangements for electricity businesses. ActewAGL has also proposed a cost pass-through mechanism for its electricity distribution network services.

ActewAGL's 2001 Access Arrangement allows for reference tariffs to be adjusted to pass-through costs associated with changes in imposts and other statutory charges, heating value measurement requirements and the *Utilities Act* and the introduction of retail contestability. The mechanism for pass-through of these unexpected costs is set out in Part 3D, Variations to Reference Tariffs, of the 2001 Access Arrangement.

The new pass-through proposal recognises that the current arrangements for varying reference tariffs need to be amended to reflect the complicated and changing business and regulatory environment ActewAGL faces. The definitions of the types of events which can trigger cost pass-through in the 2001 Access Arrangement do not cover all reasonable possibilities. For example, the potential for material costs to be imposed on ActewAGL by any new regulations or safety, design or operational standards imposed in the aftermath of the bushfires of January 2003 need to be recognised. The possibility of changed insurance costs as a result of unforeseen events such as major bushfires also needs to be recognised in the Access Arrangement. Similarly, with the Gas Code currently under review, the possibility of regulatory reforms which result in material changes in costs for regulated gas businesses needs to be taken into account.

The proposal aims to cover the range of possible outcomes by defining five categories of pass-through events:

- A capital cost event;
- A change in tax event;
- A regulatory event;

- An insurance event; and
- An unforeseen external event.

The proposed pass-through mechanism differs from the mechanism in the current Access Arrangement in that it allows the ICRC to initiate the pass-through process. ActewAGL's electricity proposal also includes this feature, as do the approved mechanisms for GasNet and the Victorian gas distribution businesses. The proposal also differs from the current mechanism in that it specifies that applications should be made annually. Compared with the current arrangements which do not specify allowed times for pass-through applications, the proposal should involve a lower administrative burden for the ICRC and lower costs for consumers, as they face only one price change each year.

5.8.2 Cost pass-through versus alternatives for addressing uncertain cost changes

There will always be some aspects of a businesses' costs which are difficult, or even impossible, to project. Cost pass-through is just one option for addressing the risks of uncertain cost changes which are beyond the regulated businesses' control. The options include:

(a) A projection of likely costs can be incorporated into the expenditure forecasts;

(b) The business can be compensated for the risk it faces through being allowed a higher WACC;

(c) An allowance could be made at the next regulatory review for differences between projected and actual costs resulting from external cost drivers (including an allowance for the financing cost of additional expenditure required); or

(d) A pass-through mechanism can be adopted which allows the regulated business to pass-through the costs of certain defined events during the regulatory period, if and when such events occur.

Under approaches (a) and (b), regulated prices would be higher than they would otherwise be, if the uncertain event does occur. This is because an allowance is made for the higher costs which may eventuate from the event, even if the event does not occur. Customers are in effect paying an insurance premium to protect them from paying higher charges in the case that the event does occur.

Approach (c) avoids this outcome, but has the potential to lead to cash flow issues for the regulated business and may also result in substantial 'price-shock' for customers, since the cumulative impact of all external cost changes over the period would be passed-through in one go.

ActewAGL therefore proposes that the risk associated with uncertain changes in costs which are beyond its control be addressed by the adoption of a pass-through mechanism (approach (d)). Such an approach allows tariffs to remain lower if the uncertain costs are not incurred and avoids customers being exposed to a cumulative price impact.

ActewAGL's WACC proposal is predicated on the ICRC's acceptance of the proposal for expanded cost pass-through provisions. If the ICRC does not accept the proposal, ActewAGL would need to re-calculate and resubmit a higher WACC which would reflect the true risk it then faces. However, ActewAGL believes that the appropriate approach to uncertainty in relation to future external cost increases would be to reduce the asymmetric risk it faces through expanded pass-through provisions.

6 Other policies

6.1 Extensions/expansions policy

The Gas Code (section 3.16) requires an extension/expansion policy to include policies on:

- Coverage – that is, which extensions/expansions are covered; and,
- Effect on reference tariffs.

The proposed revisions affect both of these elements.

6.1.1 Coverage

The 2001 Access Arrangement specified:

- All extensions and expansions carried out by ActewAGL normally will be treated by ActewAGL as part of the existing Covered Pipeline and will automatically be included within it.
- A duplicate pipeline will not be included as part of the existing Covered Pipeline unless, prior to the completion of its construction, ActewAGL reasonably regards the duplicate pipeline as having system benefits and gives the Relevant Regulator written notice of the reasons for its view. 'Duplicate pipeline' is a new pipe or pipeline constructed by or for ActewAGL which will be used to supply natural gas to Users who, at the time construction is to commence, are being supplied by or may readily obtain supply from another pipe or pipeline.

ActewAGL proposes deleting the first clause and replacing it with the option to exclude some extensions/expansions from coverage. The approach of removing the blanket coverage is consistent with the policies in other revised gas AAs. For example, GasNet's revised Access Arrangement contains a very similar clause (GasNet 2003, p. 8). Envestra (Victoria, Queensland and South Australia) also have the flexibility to not automatically cover some extensions/expansions. As noted by the ESC in its Final Decision on the Victorian distributors' revised Access Arrangements (ESC 2002a, p. 41), the decision on whether to automatically cover all pipelines involves trade-offs between a number of factors. Automatic coverage of all extensions may reduce uncertainty and regulatory costs, but it may not be in the distributor's legitimate business interests to have all new pipelines with different risk profiles covered by the initial Access Arrangement. ActewAGL agrees with recent decisions that, on balance, some limits on coverage may be warranted.

The reference to duplicate pipelines is deleted in the revised Access Arrangement. The ICRC considered the issue of duplicate pipelines in the Final Decision on the 2001

Access Arrangement (ICRC 2000 pp. 172-173). It noted that there are two options for dealing with duplicate pipelines:

- To treat 'duplicate pipeline' like all other new facilities investment by applying the prudent investment test under section 8.16 of the Code; or

- To amend ActewAGL's extensions/expansions policy so that duplicate pipelines may not be automatically rolled in as part of the covered pipeline.

ActewAGL considers that the first option is the most appropriate. The requirements of section 8.16 of the Gas Code are sufficient to ensure that only prudent pipeline investments with system-wide benefits will be covered by the extensions/expansions policy. The separate reference to duplicate pipelines is therefore removed.

6.1.2 Effect on reference tariffs

Section 3.16 of the Gas Code says that the extensions/expansions policy must specify how an extension/expansion will affect reference tariffs. It provides examples of policies. One example says that reference tariffs will not be affected but a surcharge may be levied on incremental users where permitted under sections 8.25 and 8.26. Under the second example, reference tariffs may be reviewed (and then increased if the regulator approves).

In the 2001 Access Arrangement ActewAGL followed the first example – reference tariffs are not to be affected, but a surcharge may apply.

In the revised Access Arrangement, ActewAGL proposes using the flexibility that the Gas Code provides for determining how extensions/expansions may affect reference tariffs. Clause 7.5 says that, in accordance with the reference tariff policy in part 4 of the revised Access Arrangement, a surcharge or capital contribution may apply or the capital base may be increased.

6.2 Trading policy

Changes to trading policy are minimal.

6.3 Queuing policy

The revised policy sets out queuing procedures and rights and obligations of users and ActewAGL in more detail than the 2001 Access Arrangement.

The requirements for a Transport Services Agreement have been expanded. In the 2001 Access Arrangement, a user is allowed a fixed 30 days after an offer is made to enter into a Service Agreement (conditional if necessary on ActewAGL entering into Service Agreements with other users), failing which the request will lapse or lose priority. In the revised Access Arrangement, additional flexibility has been added. ActewAGL may agree to reserve capacity for a nominated time to allow a Transport Services Agreement to be finalised.

The requirement in the 2001 Access Arrangement that users compensate ActewAGL for costs of holding capacity has been changed slightly. Users must re-imburse

ActewAGL within 30 days of receipt of a notice setting out the details specified in the Access Arrangement.

In terms of priority of requests for services, the 2001 Access Arrangement said that reference services would have priority over negotiated services. In the proposed revisions, this has been expanded to say that reference services would also have priority over the interconnection of embedded network service. Furthermore, a clause has been added to say that of the reference services, a request for short term capacity has the lowest priority.

6.4 Capacity management policy

The capacity management policy is unchanged from the 2001 Access Arrangement.

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