FINAL DECISION

Access Arrangement

for

ActewAGL

Natural Gas System

in ACT, Queanbeyan and Yarrowlumla

November 2000

INDEPENDENT COMPETITION AND REGULATORY COMMISSION

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Foreword

This is the Commission's final decision on the proposed Access Arrangement submitted by ActewAGL for the natural gas distribution system in the ACT, Queanbeyan and Yarrowlumla. The Commission has made its decision under the National Third Party Access Code for Natural Gas Pipeline Systems (the Code). As well as considering submissions from ActewAGL and other interested parties, the Commission has held a public hearing and pricing forum on the proposed Access Arrangement.

In assessing the proposed Access Arrangement submitted by ActewAGL, the Commission has applied the Code. The Commission has decided to not accept the proposed Access Arrangement as submitted. The Commission requires ActewAGL to revise its Access Arrangement in respect of matters relating to revenue and price outcomes, non-price terms, and conditions for access.

The Commission does not accept the initial capital base proposed by ActewAGL nor the rate of return underpinning the annual revenue requirement and resultant prices proposed in ActewAGL's Access Arrangement. Furthermore, the Commission believes ActewAGL's non capital cost projections are too high and should be revised downward.

The Commission has formed its views on ActewAGL's proposed Access Arrangement on the basis of careful analysis of those arrangements, the Code and the various submissions made. The Commission has also conducted extensive economic and financial analysis which covered operating expenditure, capital expenditure, rate of return, the initial asset base, and depreciation.

The revenue caps proposed by the Commission in this final decision will bring a real reduction in network revenues of around 15.5 per cent between the period 2000-2004. This compares with the real increase of 4.2 per cent sought by ActewAGL in its proposed Access Arrangement. Real network charges will fall by over 40 per cent for the contract market, and by over 25 per cent for tariff customers under the final decision. This compares with a fall of 3.9 per cent for each of tariff and contract customers under ActewAGL's proposal over the period 2000-2004.

Paul Baxter
Senior Commissioner
November 2000

PART I

FINAL DECISION

EXECUTIVE SUMMARY

FINAL DECISION

The Independent Competition and Regulatory Commission (the Commission) considers that ActewAGL's proposed Access Arrangement does not satisfy all the elements and principles set out in sections 3.1 to 3.20 of the National Third Party Access Code for Natural Gas Pipeline Systems (the Code). The Commission's assessment is based on information provided by ActewAGL and submissions received from interested parties.

Under section 2.16(b) of the Code, the Commission decides not to approve ActewAGL's proposed Access Arrangement. The amendments (or the nature of the amendments) which would have to be made to the Access Arrangement in order for the Commission to approve it are listed below, 'Summary list of required amendments'.

Summary list of required amendments

Amendment 1 – Access Arrangement information

ActewAGL is required to amend its Access Arrangement to include:

a) consolidation of the information in its original AAI , RAAI and SAAI, consistent with this final decision

b) amendments required by this final decision

c) actual results for 1998/99 including capital costs, non-capital costs, system capacity, sales volume, MDQ, and key performance indicators

d) cost allocation information consistent with the revisions required by this final decision.

Amendment 2 – Rate of return

ActewAGL must amend its Access Arrangement so that the rate of return it uses in the methodology employed to determine Total Revenue and Reference Tariffs does not exceed 7.75 per cent in real pre tax terms.

Amendment 3 – Initial capital base at 1 July 1999

The initial capital base for ActewAGL's covered pipeline must be set at a value no higher than $175m at 1 July 1999.

Amendment 4 – Depreciation

ActewAGL is required to amend its economic asset lives as follows:

Asset class	Economic asset Life (years)
Trunk main	80
Primary main	80
Secondary network	80
Medium pressure network	50
Secondary services	50
MP/LP services	50
ALB valves	50
TRS/POTS	50
PRS	50
Primary valves	50
SRS	50
Contract meters	15
Lump meters - I&C tariff	15
GASS Meters - domestic	15
Non system assets	To be consistent with the categories and asset lives adopted for financial reporting.

Amendment 5 – Forecast capital expenditure

For the purpose of calculating reference tariffs during the Access Arrangement period, ActewAGL is required to:

- use the actual capex for 1999/2000 to roll forward the ICB to 1 July 2000,
- revise its forecast capital expenditure (2000/01 $m) as follows

Year ending June	**2001**	**2002**	**2003**	**2004**
Renewal/replacement				
High pressure	0.0	0.0	0.0	0.0
M/L pressure tariff	0.0	0.0	0.0	0.0
Meters/regs/filters	0.8	0.9	1.3	0.5
Non system assets	0.5	0.4	0.5	1.2
Subtotal	1.3	1.3	1.8	1.7
Growth related				
M/L pressure tariff	2.6	3.0	3.3	3.3
System reinforcement	2.8	3.5	2.3	1.2
EGP connection	10.6	0.0	0.0	0.0
Total	**17.4**	**7.8**	**7.4**	**6.2**

Note: Total may not add due to rounding.

Amendment 6 – Requirement to connect to the EGP

ActewAGL is required to connect to the Eastern Gas Pipeline and allow for third party access by 1 July 2001. This date may be extended by ActewAGL notifying the Commission that delay has been caused through factors beyond ActewAGL's control, and the nature of these factors.

Amendment 7 – EGP connection capital expenditure

In calculating its Reference Tariffs, ActewAGL is required to recover the allowed capital expenditure relating to the EGP lateral from all the gas users in the ACT, Queanbeyan and Yarrowlumla.

Amendment 8 – Projected capital base from 1 July 1999 to 30 June 2004

For the purpose of calculating reference tariffs during the Access Arrangement period, ActewAGL is required to use the projected capital base for the distribution assets as follows:

Projected capital base – ActewAGL's pipeline (nominal $m)

Year ending June	2000	2001	2002	2003	2004
Year end closing value	182.1	204.6	212.3	219.6	225.6

Note:
1. The projected capital base for 2000/01 allows for indexation inclusive of GST effect.
2. Inflation is assumed to be 2.4 per cent in 1999/2000, 6 per cent in 2000/01 (inclusive of GST effect) and 3 per cent per annum from 20001/02 to 2003/04.
3. The rolled forward capital base at the commencement of the next review will be determined under the relevant provisions of the Code.

Amendment 9 – Capital redundancy mechanism

In its Access Arrangement, ActewAGL must include in its Reference Tariff Policy a capital redundancy mechanism that permits the Relevant Regulator, with effect from the commencement of the next Access Arrangement Period, to reduce the Capital Base by an amount representing:

a) any assets that in the reasonable opinion of the Relevant Regulator, have ceased to contribute to the delivery of Services;

b) any assets that in the reasonable opinion of the Relevant Regulator, are likely to cease to contribute to the delivery of Services;

c) any assets that have been transferred by ActewAGL or in relation to which ActewAGL has entered into a binding agreement for its transfer;

d) any assets that in the reasonable opinion of the Relevant Regulator have decreased in value because of a decrease in its utilisation resulting from a decline or likely decline in the volume of sales of the Service; or

e) any assets that in the reasonable opinion of the Relevant Regulator have decreased in value because of a likely decrease in its utilisation resulting from a decline or likely decline in the volume of sales of the Service.

In assessing the reduction in the Capital Base due to a decreased utilisation of assets resulting from a decline in the volume of sales of a Service, the Relevant Regulator may take into account the reduction in Total Revenue and any possible increase in Tariffs paid by Users resulting from the decline in utilisation of assets.

ActewAGL must include the following statement in its Access Arrangement:

"ActewAGL will establish and maintain an asset register during the Access Arrangement period. The asset register will (without limiting the matters that may be included) include information on:

- economic asset lives and remaining asset lives underlying the initial capital base at 1 July 1999
- asset components (ie asset types, unit rates and asset quantities) consistent with the initial Capital Base at 1 July 1999 in the final decision. The asset components should be consistent with those used in ActewAGL's depreciated optimised replacement cost valuation in its Access Arrangement Information
- new capital expenditure incurred after 1 July 1999 including information on economic asset lives, unit rates and asset quantities.

The asset register must be established in a manner reasonably acceptable to the Relevant Regulator and consistent with the final decision of the Commission in 2000. The asset register will be established no later than six months from the date that the revisions to the Access Arrangement lawfully takes effect, by virtue of a decision under section 2 of the Code."

Amendment 10 – Review of regulatory capital base after the expiry of an Access Arrangement

In its Access Arrangement, ActewAGL must include a statement in its Reference Tariff Policy as follows:

"The Capital Base at the commencement of the next Access Arrangement Period and each Access Arrangement Period thereafter will be assessed by the Relevant Regulator using, among other things, information in relation to those assets contained in:

a) the Asset Register required to be maintained under Amendment 9; and

b) the database required to be maintained on capital contributions under Amendment 20."

Amendment 11 – Non capital costs

ActewAGL must amend the controllable costs and other costs (ie government levies and unaccounted for gas) of its forecast Non Capital Costs in its Access Arrangement as follows:

Forecast non capital costs – 2000/01 $m

Year ending June	**2001**	**2002**	**2003**	**2004**
Controllable costs	8.5	8.1	7.7	7.4
Other (provisional only)	1.4	1.4	1.3	1.3
Total	**9.9**	**9.4**	**9.0**	**8.7**

Note:
1. Forecast non capital costs are before the impact of GST.
2. Excludes costs associated with retail contestability.
3. Figures may not add up to total due to rounding.

Amendment 12 – Retail contestability costs

ActewAGL must include the following statement in its Access Arrangement:

"Costs associated with the introduction of retail contestability in the gas industry in the Australian Capital Territory, Queanbeyan or Yarrowlumla Shire ("Retail contestability costs"), as required by the *ACT Gas Supply Act* and / or the *NSW Gas Supply Act*, will initially be excluded from the costs of services and the calculation of Reference Tariffs.

Except for those costs that may have been recovered through authorisation fees as permitted in Amendment 16, ActewAGL may recoup some or all of the Retail contestability costs through Reference Tariffs only if it first complies with the following conditions:

(a) ActewAGL will notify the Relevant Regulator in writing of its desire to recover the costs through Reference Tariffs and provide the Relevant Regulator with any information it may reasonably require including without limitation:
- (i) the nature of the costs;
- (ii) the amount of the costs it seeks to recover;
- (iii) the amendments it proposes to the Reference Tariffs in order to recoup those costs and the basis on which those amendments were calculated;
- (iv) the impact or likely impact of the proposed Reference Tariffs on Users or classes of User; and
- (v) the date on which it is proposed that the new Reference Tariffs commence; and

(b) ActewAGL will give the Relevant Regulator a reasonable time from the date it notifies the Relevant Regulator under paragraph (a) to appoint an independent person suitably qualified (if the Relevant Regulator wishes) and to have that person review and report to the Relevant Regulator, (on the basis of the information given to the Relevant Regulator under (a)) on the following:
- (i) the impact of these costs on Reference Tariff, were they to be recouped through Reference Tariffs; and
- (ii) any other matters that the Relevant Regulator may reasonably require; and

(c) ActewAGL may recoup through Reference Tariffs only those Retail contestability costs:
- (i) that are permitted by any law relating to retail contestability in the gas industry in the Australian Capital Territory, Queanbeyan or Yarrowlumla Shire, or its implementation; and / or
- (ii) stipulated (consistent with the Code) in a direction of the relevant Minister for the purpose of the Access Arrangement; and / or
- (iii) stipulated, (consistent with the Code) by any person or group of people appointed by Government or industry to inquire into or implement retail contestability in the gas industry in the Australian Capital Territory, other than those costs, if any, that have been permitted or stipulated under (i) and (ii); and / or
- (iv) as verified by an independent person appointed by ActewAGL as being those costs that may properly be recoverable under the Code, other than those costs, if any, that have been permitted or stipulated under (i) (ii) and (iii),

and that have not already been recovered under this Access Arrangement or otherwise; and

(d) ActewAGL may not amend its Reference Tariffs to recoup the Retail contestability costs permitted by paragraph (c) earlier than 14 days from the date that those costs are permitted, stipulated or verified, as the case may be, under paragraph (c); and

(e) the costs that ActewAGL is permitted to recoup through amended Reference Tariffs must be allocated on the same basis as ActewAGL allocated costs in developing the Reference Tariff, immediately prior to its proposed amendment."

Amendment 13 – Additional heating value costs and the Utilities Act

ActewAGL must include the following statement in its Access Arrangement:

"Additional costs (both capital and non capital) for:

- heating value measurement, eg associated with the introduction of a second receipt point on the ActewAGL network; and
- compliance with requirements in the ACT Utilities Act

may be recovered by ActewAGL through Reference Tariffs only if it first complies with the following conditions:

(a) ActewAGL will notify the Relevant Regulator in writing of its desire to recover the costs (which have not already been recovered under this Access Arrangement or otherwise) through Reference Tariffs and provide the Relevant Regulator with any information it may reasonably require including without limitation:
  - (i) the nature of the costs;
  - (ii) the amount of the costs it seeks to recover;
  - (iii) the amendments it proposes to the Reference Tariffs in order to recoup those costs and the basis on which those amendments were calculated;
  - (iv) the impact or likely impact of the proposed Reference Tariffs on Users or classes of User; and
  - (v) the date on which it is proposed that the new Reference Tariffs commence; and

(b) ActewAGL will give the Relevant Regulator a reasonable time from the date it notifies the Relevant Regulator under paragraph (a) to appoint an independent person suitably qualified (if the Relevant Regulator wishes) and to have that person review and report to the Relevant Regulator, (on the basis of the information given to the Relevant Regulator under (a)) on the following:
  - (i) the impact of these costs on Reference Tariff, were they to be recouped through Reference Tariffs; and
  - (ii) any other matters that the Relevant Regulator may reasonably require; and

(c) ActewAGL may not amend its Reference Tariffs to recoup the additional costs earlier than 14 days from the date that those costs are confirmed by the auditor, or if no auditor is appointed, 30 days from the date of notification under (a), and

(d) the costs that ActewAGL is permitted to recoup through amended Reference Tariffs must be allocated on the same basis as ActewAGL allocated costs in developing the Reference Tariff, immediately prior to its proposed amendment."

Amendment 14 – Pre GST price and revenue

ActewAGL is required to amend its Access Arrangement so that its Reference Tariffs, (if applied over the whole year 2000/01, and subsequent years to 2003/04) are consistent with Total Revenue as follows, plus the net impact of GST (see amendment 17):

Revenue path in 2000/01 $m (pre GST) [(1)]

Year ending June	2001	2002	2003	2004
Contract revenue	1.4	1.4	1.4	1.4
Tariff revenue	30.1	30.2	30.4	30.6
Total	31.5	31.7	31.9	32.1

Note:

1. The allowed contract revenue in 2000/01 is based on the full year effect as if the Access Arrangement has been implemented from 1 July 2000. The allowed revenue is expressed before the net impact of GST.
2. Figures may not add up to total due to rounding.

The Reference Tariffs may be varied on 1 July of each year during the Access Arrangement Period of this Access Arrangement.

On 1 July 2001, Reference Tariffs may be adjusted by $\mathbf{CPI_1^{-GST}}$, which means the number derived from the application of the following formula:

$$CPI_1^{-GST} = \left(\frac{CPI_{Jun2000} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}}{CPI_{Jun1999} + CPI_{Sep1999} + CPI_{Dec1999} + CPI_{Mar2000}} - 1 \right) \times 100\%$$

and

On 1 July 2002, Reference Tariffs may be adjusted by $\mathbf{CPI_2^{-GST}}$, which means the number derived from the application of the following formula:

$$CPI_2^{-GST} = \left(\frac{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}}{CPI_{Jun2000} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}} - 1 \right) \times 100\%$$

and

On 1 July 2003, Reference Tariffs may be adjusted by $\mathbf{CPI_3^{-GST}}$, which means the number derived from the application of the following formula:

$$CPI_3^{-GST} = \left(\frac{CPI_{Jun2002}^{-GST} + CPI_{Sep2002}^{-GST} + CPI_{Dec2002}^{-GST} + CPI_{Mar2003}^{-GST}}{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}} - 1 \right) \times 100\%$$

where:

CPI means the consumer price index, All Groups index number for the weighted average of eight capital cities as published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Commission that is its best estimate of the index.

CPI^{-GST} means the CPI exclusive of the net cumulative impact since 1 July 2000 of:

a) the GST; and

b) changes to any other Commonwealth, State or Territory taxes or charges, consequent upon the introduction of the GST,

as calculated and published by the Australian Bureau of Statistics from time to time. If the Australian Bureau of Statistics does not, or ceases to, calculate and publish it then CPI^{-GST} will mean:

(i) an index published by Commonwealth Treasury which is its best estimate of the CPI^{-GST}; or

(ii) if Commonwealth Treasury does not, or ceases to, publish an index then an index published by the Reserve Bank of Australia which is its best estimate of CPI^{-GST}; or

(iii) if the Reserve Bank of Australia does not, or ceases to, publish an index, then at the Commission's discretion, either:

  (A) an index published by a person appointed by the Commission which is that person's best estimate of CPI^{-GST}; or

  (B) an index published by the Commission that is its best estimate of CPI^{-GST}.

CPI is as defined and where the corresponding subtext (for example $_{Jun2000}$) means the CPI for the quarter and of the year indicated (in the example the June quarter for the year 2000);

CPI^{-GST} is as defined and where the corresponding subtext (for example $_{Jun2001}$) means the CPI for the quarter and of the year indicated (in the example, the June quarter for the year 2001).

Amendment 15 – Reference tariff policy

ActewAGL must amend the Reference Tariff Policy in its Access Arrangement by:

(a) ensuring that it is consistent with this final decision;

(b) removing any statements regarding the treatment of New Facilities Investment (including any such statements in Section 4 of the Access Arrangement) except as required or permitted by this final decision;

(c) adding the following statement:

"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 Investment, 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')".

Amendment 16 – Variations in reference tariffs

ActewAGL must amend the proposed revisions to ensure Section 3 of the Access Arrangement headed ‘Impost and other Statutory Charges’ includes statements to the following effect:

ActewAGL may vary Reference Tariffs:

(a) by the amount of any change in the authorisation fee paid by ActewAGL for a reticulator’s authorisation under the *ACT Gas Supply Act*, new Utilities Act and/or *NSW Gas Supply Act* applying to the ActewAGL distribution system, provided that the change is implemented at the time that ActewAGL annually varies its Reference Tariffs;

(b) by the amount of any change in the level of any government fees, taxes or charges provided that ActewAGL first:

  (i) notifies the Relevant Regulator of the proposed change; and

  (ii) gives the Relevant Regulator a reasonable opportunity to appoint an independent auditor (at ActewAGL’s expense) if the Relevant Regulator chooses, to ascertain and report on the impact on Reference Tariffs before the change is implemented; and

(c) as soon as practicable by that amount of any authorisation fee in paragraph (a) that relates solely to the implementation of retail contestability in the gas industry in the ACT, Queanbeyan or Yarrowlumla Shire.

Any proposed variation to a Reference Tariff that ActewAGL is permitted to make under the above criteria must be allocated on the same basis as ActewAGL allocated costs in developing the Reference Tariff, immediately prior to its proposed variation.

Amendment 17 – Variations in pre GST reference tariffs

ActewAGL may amend the Reference Tariffs in its Access Arrangement by an increase of 9.62 per cent from 1 July 2000 to include the net impact of:

(a) the GST; and

(b) changes to any other Commonwealth, State or Territory taxes or charges, consequent upon the introduction of the GST.

Reference Tariffs presented in the Access Arrangement must be expressed post the GST adjustments in an Addendum.

Amendment 18 – Cost allocation

In its Access Arrangement, ActewAGL must adopt the following cost allocation methodology:

In allocating capital costs (including return on capital base and depreciation of capital base), the value of the initial Capital Base at 1 July 1999 for the Covered Pipeline permitted in Amendment 3 must be used and allocated by ActewAGL between:

(a) the asset groups comprising the Capital Base; and

(b) contract and tariff customers

as set out in the following table and consistent with this amendment:

1999 ICB allocation ($m)

	Total	Contract customers	Tariff customers
Primary mains	5.6	0.7	4.9
Secondary mains	22.1	2.7	19.4
Other system assets			
Regulators, valves	0.4	0.0	0.4
Meters	7.0	2.1	4.9
MP&LP	136.9	0.1	136.8
Non Network Assets	3.0	0.1	2.9
TOTAL	**175.0**	**5.7**	**169.3**

Note: due to rounding, figures may not add up to total.

In allocating Non-Capital Costs in its Access Arrangement between those asset groups comprising the Capital Base for the Covered Pipelines, ActewAGL must base its allocation on activity based costing information.

In allocating costs (including return on Capital Base, Depreciation and Non Capital costs) in its Access Arrangement between contract customers and tariff customers, ActewAGL must base its allocation using a fully distributed cost methodology that is well recognised.

Amendment 19 – Reference tariffs for network services to contract customers: capped rates

ActewAGL must amend its proposed Access Arrangement to state the capped rates applicable to contract customers. The capped rates must form part of the Reference Services available to all contract customers.

Amendment 20 – Capital contributions in respect of New Facilities Investment

ActewAGL must include the following statement in its Access Arrangement:

“Where ActewAGL receives capital contributions, it will establish and maintain during the Access Arrangement Period a database that records the following information in relation to Capital Contributions made to ActewAGL:

(a) the amount of a capital contribution made by a User in respect of a New Facility;

(b) the amount of any charge paid by a User 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) where the excess is paid by the User in relation to the funding of a New Facility;

(c) the date that the Capital Contribution is made under paragraph (a) or the charge is paid under paragraph (b);

(d) the name of the User and the User’s contact details; and

(e) a description of the New Facility in relation to which the Capital Contribution is made under paragraph (a) or the charge is paid under paragraph (b)”.

Amendment 21 – Contract market Reference Tariffs

ActewAGL's Reference Tariffs in its Access Arrangement applying to contract customers must be calculated based on:

(a) the price and revenue caps in amendment 14;

(b) the cost allocation in amendment 18; and

(c) the demand forecasts in amendment 24.

Amendment 22 – Overrun charges

ActewAGL is required to state that overruns of MHQ are not counted for the purposes of overrun payments. A statement to this effect should be placed in schedule 2B of the Access Arrangement, in the overrun section on pages 45 and 46.

Amendment 23 – Pricing for tariff customers

ActewAGL's Reference Tariffs in its Access Arrangement applying to tariff customers must be calculated based on:

(a) the price and revenue caps in amendment 14;

(b) the cost allocation in amendment 18; and

(c) the demand forecasts in amendment 24.

Amendment 24 – Demand forecasts

In its Access Arrangement, ActewAGL must apply the following demand forecasts:

Contract market

Year ending 30 June	**2001**	**2002**	**2003**	**2004**
Volume (ACQ TJ)	1,120	1,114	1,109	1,103
MDQ (TJ)	5.527	5.445	5.365	5.286
Customer numbers	41	41	41	41

Business tariff market

Year ending 30 June	**2001**	**2002**	**2003**	**2004**
Volume (ACQ TJ)	1,359	1,359	1,359	1,359
Customer numbers	1,943	1,943	1,943	1,943

Residential tariff market

Year ending 30 June	**2001**	**2002**	**2003**	**2004**
Volume (ACQ TJ)	3,989	4,228	4,482	4,751
Customer numbers	81,570	85,073	88,924	92,787

ActewAGL is required to include an outline of its forecasting methodology in the Access Arrangement Information.

Amendment 25 – Services policy

ActewAGL must, as part of its Capacity Reservation Service, provide the following capacity options in accordance with the terms and conditions set out in chapter 16 of this final decision:

(a) a summer tranche service;

(b) a short term capacity service for small and medium customers; and

(c) a short term capacity service for larger customers.

Partial use of assets should be specified as a negotiated service.

Amendment 26 – Interconnections

ActewAGL must amend its Access Arrangement by:

(a) defining for Prospective Users the minimum engineering standards required for interconnection;

(b) specifying that ActewAGL will provide Connection Point facilities up to a “flanged connection valve” as part of its Network Services; and

(c) providing a detailed outline of the approval and time periods for an interconnection agreement.

Amendment 27 – Gas balancing

ActewAGL must amend the gas balancing provisions in its Access Arrangement to accurately reflect Attachment 6 of this final decision.

Amendment 28 – Metering charges

ActewAGL must amend its Access Arrangement as follows:

(a) set metering charges based on a Capital Base of $7.0m at 1 July 1999

(b) allocate Non-Capital Costs to metering services applying a well recognised fully distributed cost methodology reconciled using ActewAGL’s activity based costing information.

(c) establish a Reference Tariff for each of the following Services:

 (i) the provision of meter reading;

 (ii) the provision of basic metering equipment; and

 (iii) the provision of on-site data and communication equipment

(d) state in its Access Arrangement that the Reference Tariffs applying to each Service in paragraph (c)(i) and (c)(iii) will cease on the enactment of any law, or any code or any instrument that permits the Service to be provided by a person other than ActewAGL

(e) amend Schedule 2C of its Access Arrangement to include a statement in reasonable detail that some aspects of metering will become contestable, that is, will be permitted to be provided by persons other than ActewAGL.

Amendment 29 – Gas specifications

In its Access Arrangement, ActewAGL must amend Schedule 3, Gas Quality Specifications by adding a statement at the beginning of the Schedule to the effect that:

"Gas delivered to a Receipt Point by a User must comply with the specifications prescribed by any ACT or NSW law that extends to that gas. Such a law may include, without limitation, any regulation made under the *Gas Supply Act 1998* or a new Utilities Act. For any period during this Access Arrangement in which there in no such law, the gas must comply with:

- specifications determined by ActewAGL from time to time
- failing such a determination, the table set out in Schedule 3 described as the *default specification*."

Amendment 30 – Unaccounted for gas (UAG)

ActewAGL must amend its Access Arrangement to provide that the UAG level will be set at 0.7 per cent for the Access Arrangement Period.

Amendment 31 – Trading policy

ActewAGL must amend the Trading Policy in its Access Arrangement by including the following statement:

"ActewAGL will reply to any request from a User for ActewAGL's consent to a transfer (other than a Bare Transfer), or for a change of Receipt Point or Delivery Point, within 14 business days of receiving the request accompanied by information which is reasonably necessary to enable ActewAGL to consider the request.

If at the time the request is made, the User informs ActewAGL that due to hardship the User requires an urgent reply to its request, ActewAGL will use reasonable endeavours to respond to the request within two business days of receiving the request."

Amendment 32 – Extensions/expansions policy

ActewAGL must include the following statement in its extensions/expansions policy in Section 7 of its Access Arrangement:

"All expansions and extensions will normally 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. A '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."

Amendment 33 – Reference tariffs after 30 June 2004

The clause on reference tariffs after 30 June 2004 on pages 24 and 25 of the Access Arrangement must be amended as follows:

- the clause should relate to all terms and conditions of reference services, not just prices; and
- the proposed CPI adjustment to the 2004 reference tariffs must be deleted.

Amendment 34 – Commencement and review of Access Arrangement

ActewAGL is required to set the revisions submission date at or before 30 June 2003. The revisions commencement date will be 1 July 2004 or the date specified in the final approval of ActewAGL's revised Access Arrangement, whichever is the later.

EXECUTIVE SUMMARY

The following executive summary is provided for the assistance of interested parties and other readers of the Commission's detailed report of its final decision. It outlines the Commission's decisions, reasons for those decisions and analysis applied in the course of the Commission's assessment of ActewAGL's proposed Access Arrangement. This summary should not be used as a substitute for and does not form any part of the Commission's detailed report. The detailed report shall prevail to the extent of any inconsistencies between the executive summary or any other summary and the detailed report.

1 Introduction

In January 1999, AGL Gas Company (ACT) Limited and AGL Gas Networks Limited (together referred to as AGL(ACT) in the draft decision) submitted to the Commission its proposed Access Arrangement relating to the natural gas distribution system in the ACT, Queanbeyan and Yarrowlumla. The Access Arrangement describes the terms and conditions under which ActewAGL proposes to provide third parties with access to its gas distribution system.

Since the submission of the proposed Access Arrangement, a joint venture has been formed in the ACT between Actew Distribution Pty Limited and AGL Gas Company (ACT) Limited. Under this joint venture, the gas and electricity businesses of the two utilities have been combined in the ACT as ActewAGL Distribution (ActewAGL). The gas network assets of AGL Gas Company (ACT) Limited and the Queanbeyan and Yarrowlumla gas network assets of AGL Gas Networks Limited have been transferred to ActewAGL. The proposed Access Arrangement and the Commission's final decision now relate to the joint venture body, ActewAGL.

This executive summary provides an overview of the Commission's assessment of the proposed Access Arrangement. The required amendments and reasons for the Commission's final decision, are provided in this report, as required by section 7.7 of the Code.

In reaching its final decision, the Commission has considered: the requirements of the Code, ActewAGL's proposal, public submissions, the interests of users and prospective users, business interests of ActewAGL, and the implications for efficiency and competitive outcomes.

The commencement date for the revised Access Arrangement is anticipated to be late in January 2001.

2. Key outcomes - revenue and price caps

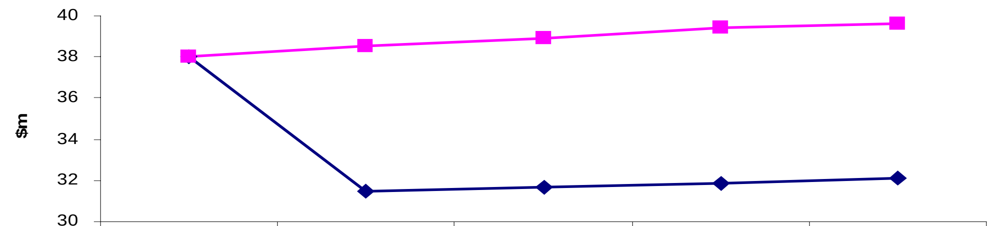
The Commission's final decision sets out a price path for ActewAGL's reference tariffs from the commencement date on which revisions come into effect to 30 June 2004.

The revenue caps for 1999/00-2003/04[1] set out in the final decision will reduce real network revenue by 15.5 per cent in contrast to the real price increase of 4.2 per cent sought by

[1] Note that the Access Arrangement does not begin until 2000/01, hence the actual revenue reduction begins in 2000/01. The 1999/2000 revenue is a notional amount based on the actual results for that year.

ActewAGL over this period (Figure 1). The overall revenue reduction will translate into lower prices for contract and tariff customers.[2]

Figure 1 Allowed revenue in real 2000/01 $m (pre GST)



	1999/00	2000/01	2001/02	2002/03	2003/04
Final decision	38.0	31.5	31.7	31.9	32.1
ActewAGL proposal	38.0	38.5	38.9	39.4	39.6

Notes:

1. Revenue for 1999/2000 reflects the transportation prices recorded within ActewAGL between the distribution and retail businesses. Revenue for 2000/01 reflects full year effect of the price cap. The part year effect of new charges from January 2001 for 2000/2001 is $35.6m.
2. Costs associated with retail contestability are excluded from the allowed revenue in the final decision, but included in the ActewAGL proposal.

Table 1 compares annual price caps for the final decision and ActewAGL's proposal.

Table 1 Final decision – annual movements in real prices 2000/01 to 2003/04 (%)

Year ending June	2001	2002	2003	2004	Average
Final decision (1)					
Contract	-42.7	0.0	0.0	0.0	-10.7
Tariff	-19.2	-3.7	-3.7	-3.7	-7.6
ActewAGL proposal					
Contract	-1.0	-1.0	-1.0	-1.0	-1.0
Tariff	-1.0	-1.0	-1.0	-1.0	-1.0

Note:

1. The price cap for 2000/2001 assumes full year effect of new charges. The commencement date on which the revisions will come into effect is expected to be January 2001.
2. The average percentage change is before the net impact of GST and is based on projected pricing outcomes between 1999/2000 and 2003/04.

The size of real price reductions differs for the contract and tariff markets as a result of a combination of factors including level of current cost recovery, cost allocation and growth assumptions. In determining the price path, the Commission has accepted ActewAGL's preferred option of immediate price reduction to achieve cost reflectivity over the Access Arrangement period.

2.1 Pricing outcome - contract market

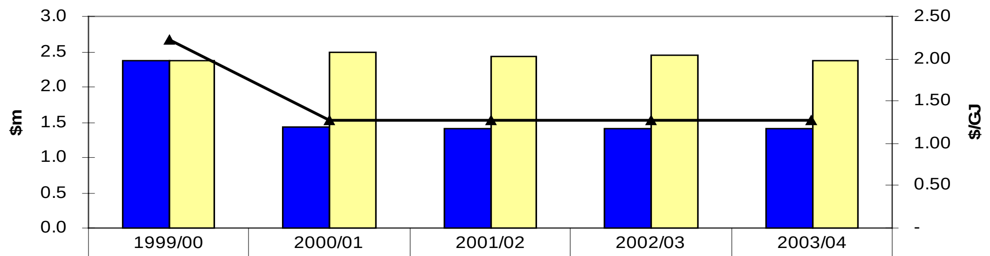
The Commission has not accepted ActewAGL's proposed contract revenue. The final decision on the contract revenue path is as follows: actual revenue will fall from $2.4m in

2 Contract customers are customers whose gas consumption is equal to or more than 10 TJ a year. Tariff customers consume less than 10 TJ a year.

1999/2000 to $1.4m[3] in 2000/01 in real terms. The revenue is to remain at $1.4m per annum over the Access Arrangement to 2003/04 (2000/01 dollars and before the net impact of GST).

Real average network prices will fall from $2.23/GJ in 1999/00 to an expected $1.28/GJ in 2003/04 (Figure 2). Prices are now set on a cost reflective basis. This represents a substantial benefit to contract customers under the national gas reform process.

Figure 2 Trend in real contract revenue and average network prices (2000/01$)



	1999/00	2000/01	2001/02	2002/03	2003/04
Final decision	2.4	1.4	1.4	1.4	1.4
ActewAGL proposal	2.4	2.5	2.4	2.5	2.4
Av price - final decision	2.23	1.28	1.28	1.28	1.28

Notes:
1. Revenue for 1999/2000 are notional, based on the actual results for the year.
2. Revenue and average figures for 2000/01 assume full year effect of new charges.
3. Revenue figures for 2000/01-2003/04 are before the net impact of GST.

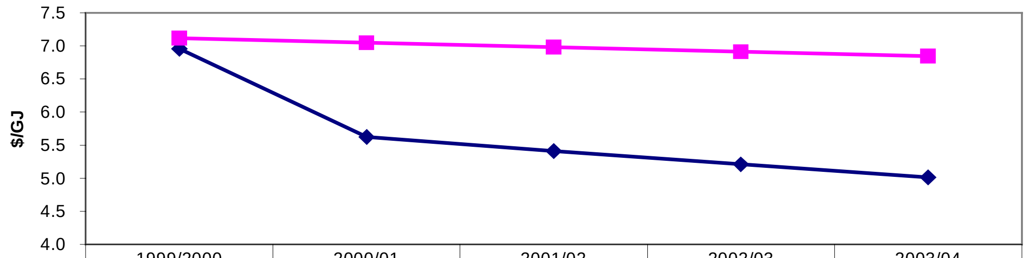
2.2 Pricing outcome - tariff market

The Commission has not accepted ActewAGL's proposed CPI-1 real price increases in the tariff market.

The Commission considers that the benefit accruing from forecast tariff growth (6 per cent per annum for the residential market) should be passed on to tariff customers. Having considered the costs of services allocated to this market, the Commission has concluded that the tariff reference price is to reduce to $5.62/GJ in 2000/01. A price cap of CPI-3.7 per cent per annum will apply to the tariff reference prices from 2001/02. Average network prices in the tariff market are shown in Figure 3.

3 Assumes full year revenue effect.

Figure 3 Tariff customers - real average network price (pre GST, 2000/01 $/GJ)



	1999/2000	2000/01	2001/02	2002/03	2003/04
Final decision	6.96	5.62	5.41	5.21	5.02
ActewAGL proposal	7.12	7.05	6.98	6.91	6.84

Note:

1. The nominal average price for 1999/00 is $6.71/GJ. This is converted to real 2000/01 dollars on the basis of assumed inflation of 3.0 per cent in 2000/01.
2. ActewAGL's proposal represents its original proposal submitted in early 1999. It has not been updated for 1999/2000 actuals.

The Commission's final decision on network charges will have a favourable effect on delivered gas tariffs. The gas market is expected to be fully contestable from 1 July 2001. The future level of delivered tariff prices will depend on the effectiveness of competition and the innovation of retailers in developing and promoting their services.

2.3 Determinants of revenue

Key determinants of the final decision on ActewAGL's total revenues and price caps are:

- ActewAGL's distribution revenues are determined based on a cost of service methodology which is the sum of:
  - allowed operating costs incorporating an overall unit cost reduction of 31 per cent over the five year period to 2003/04 (before allowing for growth)
  - an allowance for the depreciation of the regulatory capital base
  - a 7.75 per cent real pre tax return on the regulatory capital base (or an expected nominal post tax return on equity of around 12 per cent) and
  - a nominal return on net working capital
- ActewAGL's initial capital base (ICB) has been determined at $175m as at 1 July 1999
- the Commission has used ActewAGL's actual capex for 1999/2000, but has adjusted ActewAGL's forecast capex over the period 2000-2004
- in determining total revenue the Commission has excluded costs (both operating and capital) associated with retail contestability. The recovery of these costs will be allowed through a tariff variation mechanism.

3. The review process and key issues considered

The Commission's review process has involved extensive consultation, research, and analysis. The Commission considers that this final decision meets the objectives and specific requirements of the Code, delivering a balanced outcome which has regard to the interests of all stakeholders.

3.1 Rate of return

The Commission has considered the capital asset pricing model (CAPM) and weighted average cost of capital (WACC) framework. This suggests a rate of return in the range of:

- 10.7-13.0 per cent nominal post tax return on equity
- 7.1-7.3 per cent nominal cost of debt
- 5.2-8.0 per cent pre tax real rate of return on capital.

The Commission has concluded that a real pre tax rate of return of 7.75 per cent is appropriate for ActewAGL. This decision has been made after examining: CAPM and WACC, the risks faced by ActewAGL, evidence on market expectations of the rate of return, the regulatory return allowed by local and overseas regulators, and other matters including the objectives of the Code.

3.2 Regulatory capital base

The Commission has decided to set ActewAGL's initial capital base (ICB) for its ACT, Queanbeyan and Yarrowlumla pipelines at $175m at 1 July 1999 (including system and non system assets). The ICB is $5m higher than the level proposed in the draft decision. This amendment is made after conducting further analysis of impacts on ActewAGL and pricing outcomes.

In reaching its decision on the ICB, the Commission considered the requirements of the Code and the particular circumstances of the ActewAGL's system. Among other factors, the Commission considered various outcomes applying well-recognised asset valuation methodologies:

Table 2 Asset values at 1 July 1999 using alternative methodologies ($m)

Capital assets (system and non system assets)	ActewAGL proposal	Final decision (October 2000)
DAC	90	90
DORC[1]		
- system assets	252	252
- non system assets	3	3
- total	255	255
Agility approach to construct DORC from ORC	294-314	Not accepted
ODV	245 (stand alone allocation)	Subject to allocation methodology and uncertainty re DORC valuation
DIHC	148.5	130-148
Feasible range	NA	90-255

Note:
1. This is an estimate of 'new entrant' DORC.

In its final decision, the Commission has maintained its assessment of depreciated actual cost (DAC) and depreciated optimised replacement cost (DORC) for ActewAGL's system assets, along with depreciated indexed historical cost (DIHC) and optimised deprival value (ODV). The Commission has decided to accept the DORC value of $255m as proposed by ActewAGL and used in the draft decision.

Under section 8.11 of the Code, the ICB normally should not fall outside DAC ($90m) and DORC ($255m).

In deciding the most appropriate ICB for ActewAGL, the Commission has assessed the effects of prices and financial impacts on ActewAGL.

ICB issues

The Commission has also considered issues relating to ICB and decided to:

- include capital assets (ie system and non system assets) and net working capital in the regulatory capital base
- allow a real return on the regulatory value of capital assets and a nominal return on net working capital
- adopt the approach to net working capital stated in the draft decision,[4] but amend ActewAGL's forecast net working capital to reflect the allowed revenues and expenditure in the final decision
- calculate depreciation on the regulatory asset base by applying straight line depreciation and economic asset lives of assets.

The Commission concludes that ActewAGL's forecast capex should be adjusted to:

- exclude capex associated with retail contestability
- reflect actual capex for 1999/2000
- reflect the revised growth and system reinforcement forecasts as required by the Commission
- include the revised Eastern Gas Pipeline interconnection capex proposal of $14.17m.

The Commission has considered ActewAGL's responses to the issues raised in the draft decision, undertaken further analysis/review, and asked ActewAGL for additional information on capital expenditure. Overall, ActewAGL's forecast capex over the 5 years 1999-2004 is $47.4m (2000/01 $).

3.3 Operating costs and scope for cost reduction

After considering the requirements of the Code and its analysis of ActewAGL's proposed operating costs, the Commission decided to amend ActewAGL's non capital cost forecast as follows:

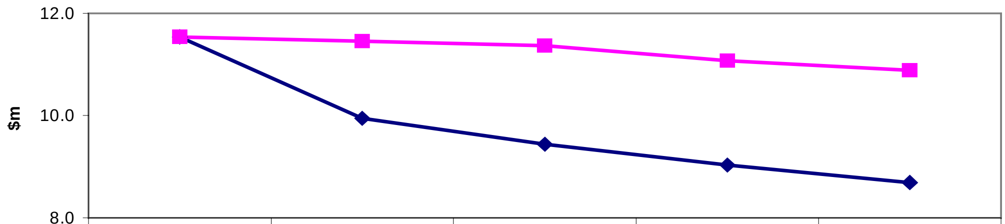
- apply a cost reduction (before allowing for growth) of 31.2 per cent in controllable costs over the five year course of the Access Arrangement (1999/2000-2003/04). Controllable non capital costs include operation and maintenance, corporate

[4] IPARC draft decision on ActewAGL's Access Arrangement, section 4.4.1.

overheads and marketing expenditure, but exclude government levies, unaccounted for gas and costs associated with retail contestability

- for O&M and corporate overheads, allow for growth with an equal 50 per cent weighting applied to both total volume load growth and total customer growth
- for marketing expenditure, allow for growth with an equal 50 per cent weighting applied to both tariff volume load growth and tariff customer growth
- initially exclude costs associated with retail contestability, but include a mechanism to allow pass through of these costs.

Figure 4 Comparison of allowed operating costs and ActewAGL's projections (pre GST, real 2000/01$m)



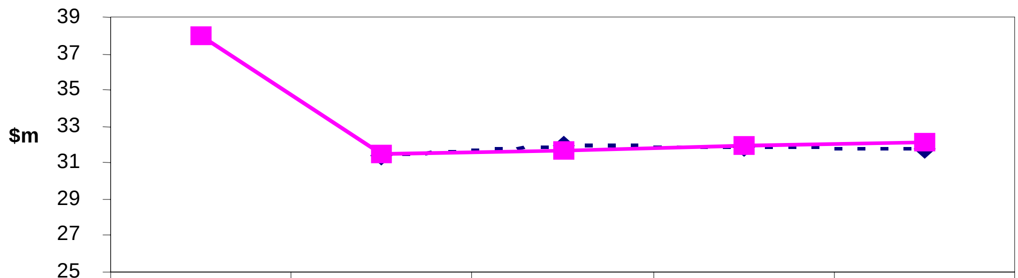
	1999/2000	2000/01	2001/02	2002/03	2003/04
Final decision	11.5	9.9	9.4	9.0	8.7
ActewAGL proposal	11.5	11.5	11.4	11.1	10.9

Note: This graph shows controllable costs (ie operation and maintenance, overhead and marketing costs), and unaccounted for gas and government levies, but excludes contestability costs.
The value for 1999/2000 is notional, based on the actual results for the year.

3.4 Total revenue vs costs of service

The Commission has compared the net present value (NPV) of the revenue stream under the final decision with the allowed cost of services for ActewAGL. Figure 5 shows the cost of service and total revenue outcomes under this final decision.

Figure 5 Final decision - total revenue vs costs of service (pre GST, real 2000/01 $m)



	1999/2000	2000/01	2001/02	2002/03	2003/04
Cost of service	not applicable	31.4	31.9	31.9	31.8
Total revenue	38.0	31.5	31.7	31.9	32.1

Note: In 2000/01, total revenue reflects full year effect of new reference tariffs.

The financial indicators analysis suggests that overall, ActewAGL will be able to maintain a satisfactory credit rating for its borrowings equivalent to an investment grade rating under the final decision.

3.5 Incentive mechanisms

The Commission has decided to accept ActewAGL's proposal to use price cap regulation in the form of CPI-X. The price cap will be expressed as average price per GJ in real terms. This approach provides the service provider with incentives for efficiency gains and incentives to grow the market by retaining the benefit of lower cost outcomes and stronger demand growth.

3.6 Cost allocation

The Commission does not accept ActewAGL's proposal. Under the final decision, capital costs are to be allocated first to asset groups. Within each asset group, costs are allocated to contract and tariff customers. The Commission has determined the allocation of operating costs to the contract and tariff markets.

Allocation to asset groups

The Commission has concluded that capital costs should be allocated to asset groups based on the final decision on ICB.

Allocation to contract and tariff markets

Fully distributed costs (FDC) methodology is to be used to allocate costs to the contract and tariff markets:

- *capital cost:* assets serving the contract market are to be valued at FDC ORC. This means capital costs are based on ORC, and are allocated between markets on a fully distributed basis. Shared capital costs are to be allocated based on the capacity required at the system maximum daily quantity. The asset write down is to be applied uniformly to both the contract and tariff markets

- *operating costs:* the allocation between market segments is to be made on the basis of activity costs.

The Commission's decision on cost allocation to the contract and tariff markets is shown in Table 4.

Table 4 Cost allocation for contract markets

	AGLGN's original proposal	Final decision
Asset base to serve the contract market	Stand alone system to serve the contract market (SAC)	Fully distributed cost which allocates shared assets based on capacity required at the system MDQ
Asset valuation base	Optimised replacement cost (ie undepreciated asset value)	ICB
Depreciation	SAC system	ICB
Operating costs	Operating cost to run the SAC system	Fully distributed
Total cost allocation (pre GST, real 2000/01$m)		
2000/01	2.5	1.4
2003/04	2.4	1.4

3.7 Demand forecast

After considering ActewAGL's demand forecasts, submissions to the draft decision, and historical growth trends, the Commission has decided to:

- accept ActewAGL's growth forecast for the contract market
- adjust ActewAGL's demand forecasts for the residential and business tariff markets.

Further changes to the gas market in the ACT are expected with impending competition in retail supply and the Eastern Gas Pipeline project (EGP).[5] The Commission has also considered the incentive to ActewAGL to develop the market.

3.8 Reference tariff issues

In broad terms, the Commission has accepted the price structure and tariff design ActewAGL has proposed. However, the reference tariffs must be recalculated to reflect the final decision on total revenue and cost allocation.

The Commission has decided to accept ActewAGL's single zonal price structure and its reference tariff structure for tariff customers.

The Commission has decided that ActewAGL is permitted to recover all of any discount given to capped contact customers from other contract customers. However, ActewAGL must amend its revised Access Arrangement to state that capped rates are part of contract market reference services / tariffs and will be available to all customers.

3.9 Services policy

ActewAGL is required to include the following additional services in the Access Arrangement as negotiated services:

5 A new transmission pipeline is being built by Duke Energy to bring gas from Victoria to NSW. This will facilitate upstream (gas production) and downstream (retail) competition in the gas market. ActewAGL is be constructing a lateral from the EGP to its network.

- interconnection
- partial use of assets.

As part of its capacity reservation service, ActewAGL must provide the following capacity options:

- summer tranche service
- short term capacity service for small and medium customers
- short term capacity service for larger customers.

3.10 Other terms and conditions

Having reviewed ActewAGL's proposed changes to other terms and conditions, the Commission requires amendments, including:

- *unaccounted for gas*: the Commission has adjusted ActewAGL's proposed level of unaccounted for gas (UAG) to 0.7 per cent for each year of the Access Arrangement period.
- *gas balancing*:
  - a default operational balancing arrangement is to be included
  - participants balancing (for users/retailers) is to be excluded from the Access Arrangement as this will become a retail market service.
- *interconnections*: a separate reference service is not required. However, some technical/operational aspects of the service must be included in the Access Arrangement.
- *extensions and expansions policy*: new facilities investment relating to 'duplication of pipelines' may not be automatically rolled in as part of the covered pipeline.

4. Duration of the Access Arrangement

ActewAGL proposed a five year Access Arrangement from 1 July 1999 to 30 June 2004. Some submissions have suggested that a shorter period should be adopted due to the relative infancy of the regulation of access prices for monopoly infrastructure in Australia.

The Commission has decided that the new Access Arrangement will commence after the final approval and expire on 30 June 2004. This implies that new reference tariffs will apply for approximately 3½ years. The revisions submission date will be 12 months prior to the expiry date on 30 June 2003.

Summary of the final decision

	ActewAGL proposal	Commission's final decision/ required amendments
Information disclosure	AAI, RAAI, SAAI, together with corrections and various submissions.	ActewAGL to amend its AAI to provide a consistent and complete compilation of all information provided.
Determining total revenue and capital base		
Nominal post tax return on equity	12-16%	10.7-13.0%
Rate of return	8% (real pre tax)	7.75% (real pre tax)
ICB – base date	At 1 July 1999	Accepted.
ICB expressed as funds employed	Real rate of return applied to the regulatory capital base expressed as funds employed.	Nominal rate of return allowed on net working capital (NWC) as part of regulatory capital base.
ICB – capital assets	$244.6m at 1 July 1999	$175m at 1 July 1999
Depreciation	Depreciation based on its proposed ICB. Straight line depreciation using economic asset lives.	Lower depreciation based on regulatory capital base. Straight line depreciation using economic asset lives.
Rolling forward capital base at next review	CCA approach	ICB + prudent new facilities investment – depreciation – redundant capital + inflation adjustment
Indexation of regulatory capital base	Sydney CPI	National CPI (inclusive of GST effects)
Capital expenditure	Actual and forecast revised during the review process.	Accepted actual capex for 2000, and adjusted proposed capex for 2001-2004.
Operating cost	Projected increase in nominal terms.	Real cost per unit to reduce by 31% over the AA period. Costs to be adjusted to reflect growth.
Cost implications of retail contestability	Proposed to include operating and capital expenditure relating to contestability.	Excluded from allowed costs. To be recovered separately through a tariff variation mechanism.
Form of regulation	Contract – CPI-X price cap Tariff – CPI-X price cap	Incentive based CPI-X price cap in both markets.
Indexation of reference tariffs	Some prices are expressed in nominal terms and adjusted by actual inflation.	Real prices will be adjusted by national CPI exclusive of effect of GST.
Company tax issue	Irrelevant at time of submission.	Included in rate of return consideration.

Issue	ActewAGL proposal	Commission's final decision/ required amendments
Reference tariff issues		
Services policy	- capacity reservation - managed capacity - throughput service - multiple delivery point - tariff - negotiated	Additional services: - summer tranche - short term services Partial use assets and interconnection as negotiated services.
Cost allocation	Based on stand alone contract market system.	Fully distributed cost methodology for both opex and capital costs.
Structure of reference tariffs	Contract – TRS charges and local network charges. Tariff – fixed charge plus a declining block tariff volume based charge.	Generally, structure of ActewAGL's reference tariffs is acceptable.
Growth	Declining demand in the contract and business tariff markets. Growth in the residential tariff market	Require amendments to demand forecasts for the tariff market.
Other non tariff issues		
Gas balancing	Users required to stay in daily balance.	Revisions required to address issues relating to contestability.
Separation of metering charges	Metering charges cover meter reading only.	Metering costs to be separately identified. Telemetered information to be disclosed to users.
Gas specifications	Maintain current specifications.	Default specification.
Unaccounted for gas	2.3% as part of network costs.	Allowance to be 0.7%.
Trading policy	Bare transfers allowed following notification of ActewAGL.	Amendment to include ActewAGL's response time etc.
Inter connections	Receipt stations to comply with ActewAGL specifications.	Amendment to specify ActewAGL's requirement.
Reference tariffs after 30 June 2004	CPI adjustment between revisions commencement date and 2004.	Not accepted. All prices and conditions to remain the same.

PART II

INTRODUCTION

1 INTRODUCTION

Honouring commitments made by the Council of Australian Governments (CoAG) in 1994, and more recently in the Natural Gas Pipelines Access Agreement dated November 1997, the ACT Government is introducing competition into the supply of natural gas. Reforms have paved the way for new suppliers of gas to enter the ACT gas market. A third party access regime has been developed for natural gas pipelines. Third party access to pipeline networks enables suppliers to gain access to existing reticulation systems and compete for customers.

Under the National Third Party Access Code for Natural Gas Pipeline Systems (the Code), third party access to a distribution network requires the development and approval of an Access Arrangement. An Access Arrangement details operating procedures and rights in respect of access to a network, including reference prices for the use of relevant services. Developed by the network operator, it must be submitted to the relevant regulator for approval.

The ACT Independent Competition and Regulatory Commission is assessing the Access Arrangement originally submitted by AGL Gas Company (ACT) Limited and AGL Gas Networks Limited (collectively referred to as AGL(ACT) in the draft decision). The Access Arrangement covers the Canberra - Queanbeyan - Yarrowlumla Distribution System. NSW has cross-vested responsibility for areas of the distribution system located in NSW (Queanbeyan and Yarrowlumla) to the Commission as the relevant regulator for the ACT.

Since the submission of the proposed Access Arrangement, a joint venture has been formed in the ACT between Actew Distribution Limited and AGL Gas Company (ACT) Limited. Under this joint venture, the gas and electricity businesses of the two utilities have been combined in the ACT as ActewAGL Distribution (ActewAGL). The gas network assets of AGL Gas Company (ACT) Limited and the Queanbeyan and Yarrowlumla gas network assets of AGL Gas Networks Limited have been transferred to ActewAGL. The proposed Access Arrangement and the Commission's final decision now relate to the joint venture body, ActewAGL.[6]

1.1 Review process

The ACT Government's *Gas Pipelines Access Act 1998* (the Act) introduces the national gas access arrangements. This consists of the Gas Pipelines Access (ACT) Law and the National Third Party Access Code for Natural Gas Pipeline Systems (the Code).

ActewAGL's Access Arrangement must be assessed under the Code. Upon receiving ActewAGL's proposed Access Arrangement on 5 January 1999, the Commission assessed ActewAGL's Access Arrangement Information (AAI) to determine whether it meets the requirements set out in sections 2.6 and 2.7 of the Code. Submissions regarding the adequacy of the information disclosure were also received and considered. As a result of that assessment, the Commission requested changes be made to enable the AAI to meet the minimum requirements of the Code. ActewAGL duly amended the AAI. However, the Commission considered further information disclosure was required to fully satisfy Code requirements. As a consequence, ActewAGL issued a *Revised AAI* on 15 February 1999, and a *Supplementary AAI* on 22 April 1999. Further submissions have since been made by

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6 It should be noted that historical references have been changed from AGL(ACT) to ActewAGL.

ActewAGL. A full list of submissions made by ActewAGL (and other stakeholders) can be found in attachment 2.

As part of the Commission's consultation process, a public hearing and a pricing forum were held in Canberra on 11 May 1999 and 22 September 1999 respectively. The Commission's draft decision was released on 9 March 2000. Further submissions have since been received from ActewAGL and other interested parties. The Commission has considered these submissions in making its final decision.

1.2 Criteria for assessment (the "balance of interests" approach)

Under section 2.24 of the Code:

> The Relevant Regulator may approve a proposed Access Arrangement only if it is satisfied that the proposed Access Arrangement contains the elements and satisfies the principles set out in sections 3.1 to 3.20. The Relevant Regulator must not refuse to approve a proposed Access Arrangement solely for the reason that the proposed Access Arrangement does not address a matter that sections 3.1 to 3.20 do not require an Access Arrangement to address. In assessing a proposed Access Arrangement, the Relevant Regulator must take the following into account:
>
> (a) the Service Provider's legitimate business interests and investment in the Covered Pipeline;
>
> (b) firm and binding contractual obligations of the Service Provider or other persons (or both) already using the Covered Pipeline;
>
> (c) the operational and technical requirements necessary for the safe and reliable operation of the Covered Pipeline;
>
> (d) the economically efficient operation of the Covered Pipeline;
>
> (e) the public interest, including the public interest in having competition in markets (whether or not in Australia);
>
> (f) the interests of Users and Prospective Users;
>
> (g) any other matters that the Relevant Regulator considers are relevant.

Section 8 of the Code sets out the principles by which reference tariffs and a reference tariff policy included in an Access Arrangement are assessed as part of the Commission's approval process.

Section 8.1 of the Code states that the service provider's reference tariff and reference tariff policy should be designed with a view to achieving the following objectives:

> (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 any of these objectives conflict in their application with a particular Reference Tariff determination, the Relevant Regulator may determine the manner in which they can be reconciled or whether a particular objective should prevail.

Factors about which the regulator must be satisfied in determining whether to approve a reference tariff and reference tariff policy are listed in section 8.2 of the Code:

(a) the revenue to be generated from the sales (or forecast sales) of all Services over the Access Arrangement Period (the ***Total Revenue***) should be established consistently with the principles and according to one of the methodologies contained in section 8;

(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 consistently with the principles contained in this 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 consistently with the principles contained in this 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 this section 9; and

(e) any forecasts required in setting the Reference Tariff represent best estimates arrived at on a reasonable basis.

These matters are addressed throughout this final decision. Where relevant, references to the draft decision are made.

In reaching its final decision the Commission has applied the provisions of the Code. To assist the Commission in this process, several consultancies were authorised:[7]

- Ewbank Preece (now known as Connell Wagner), an engineering consultancy, conducted a technical review of ActewAGL’s DORC valuation and capital expenditure, and ActewAGL’s proposal to connect to the Eastern Gas Pipeline
- ACIL, a consultancy with expertise in economics, policy and strategy, reviewed ActewAGL’s growth forecasts
- KPMG, an accounting firm provided advice on ActewAGL’s working capital proposal. The Commission also obtained a general financial opinion from KPMG.

Copies of the Ewbank Preece and ACIL reports are available from the Commission.

In assessing some of the technical aspects of the proposed revisions, the Commission has considered work undertaken by the NSW Ministry of Energy and Utilities’ (MoEU) Gas Retail Project. The MoEU has established several broadly representative working groups. They are establishing procedures and systems required for retail contestability in NSW. An ACT Government officer participates in these working groups.

The findings of the draft and final decisions for Access Arrangements for networks in NSW and other jurisdictions have been taken into account in preparing this report.

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7 These consultancies were managed by IPART on behalf of the Commission.

1.3 The final decision

The Commission is not satisfied that ActewAGL's proposed Access Arrangement contains the elements and satisfies the principles set out in sections 3.1 to 3.20 of the Code. The Commission therefore *does not approve* ActewAGL's proposed Access Arrangement in accordance with section 2.16(b) of the Code.

The amendments (or the nature of the amendments) which would have to be made to the Access Arrangement in order for the Commission to approve it are listed in Part 1 of this report under "Summary list of required amendments".

A revised Access Arrangement must be submitted by ActewAGL to the Commission no later than 22 December 2000. If ActewAGL complies with the final decision, a final approval will be issued in January 2001. The likely commencement date on which the Access Arrangement comes into effect is late January 2001.

Copies of this final decision will be sent to ActewAGL, any person who has made a submission on this matter, and any other person who requests a copy. Copies of this final decision may be obtained from the Commission's website – www.icrc.act.gov.au

1.4 Structure of the final decision

Generally, where amendments are required, this final decision lists the ActewAGL's proposal, the Commission's draft decision, responses to the draft decision, the Commission's assessment of the ActewAGL proposal and submissions where relevant, and amendments necessary for the Commission to approve the Access Arrangement. This report is structured as follows:

PART I – FINAL DECISION AND EXECUTIVE SUMMARY

The Commission's final decision on ActewAGL's proposed Access Arrangement and an executive summary of the decision. A list of all amendments required by the Commission is provided.

PART II – INTRODUCTION
Background to the report and description of ActewAGL's gas distribution system.

PART III – DETERMINATION OF TOTAL REVENUE

The Commission's approach is explained and provides final decisions on factors and issues determining the appropriate allowed revenue for ActewAGL's provision of distribution transportation services.

PART IV – REFERENCE TARIFFS AND COST ALLOCATION
The Commission's assessment of ActewAGL's proposed reference tariffs, cost allocation, and associated pricing issues.

PART V – CONTENT AND OPERATION OF THE ACCESS ARRANGEMENT

Mandatory non-tariff requirements, such as gas balancing, unaccounted for gas, and trading policy, and the Commission's assessment of the terms and conditions of ActewAGL's proposed Access Arrangement and other issues relevant to this final decision.

GLOSSARY AND ABBREVIATIONS, ATTACHMENTS

2 THE ActewAGL DISTRIBUTION SYSTEM

Canberra's natural gas is drawn from the Moomba-Sydney pipeline via a 58 km lateral pipe running from Dalton, NSW to the custody transfer station at Watson in the northern suburbs of Canberra, ACT. The lateral pipe was completed in 1981. Around that time, the distribution network was installed using plastic pipe and high pressure steel primary mains. ActewAGL's network was extended to allow for reticulation to Queanbeyan and the Yarrowlumla Shire region.

ActewAGL's gas network consists of approximately 3,252km of gas pipeline. Approximately 76,055 customers are served by the ActewAGL network (60,000 of these within the ACT). They represent the following market segments:

- contract customers (>10TJ pa) 41
- industrial and commercial customers 1,943
- residential customers 74,071

These three groups of customers together consumed approximately 6,011TJ of gas in 1998/99. Although residential customers account for 97 per cent of the total number of customers, they consume only 60 per cent of the total load. Commercial and industrial customers account for 3 per cent of customer numbers and consume about 24 per cent of gas sold. Although contract customers represent less than 1 per cent of customer numbers, they consume 17 per cent of total gas consumed in the ActewAGL network.

ActewAGL has experienced strong growth in its residential tariff market since natural gas was first made available in 1982. Whilst trend is expected to continue, the rate of growth is expected to slow. Most of the ACT urban areas are now reticulated (gas pipelines run down 88 per cent of ACT streets). Of this market, ActewAGL has achieved a penetration rate of 61 per cent (this represents 'on line of main' penetration). Total market penetration is 54 per cent.[8]

Gas prices in the ACT are currently aligned with AGL Retail Energy Limited charges to NSW domestic, commercial and industrial tariff consumers using comparable amounts of gas. ACT customers pay a bundled price to ActewAGL Retail (the separate retail partnership of the ActewAGL joint venture) for gas delivered to their point of use. Prices to large users are based on the volume of gas used, with a minimum charge. Prices often do not reflect the location of the user or the pipes used. Prices to other tariff customers are also based on the volume of gas used plus either a fixed 'standing' charge or a minimum charge.

8 ActewAGL, Presentation at Public Hearing, 11 May 1999.

3 ASSESSMENT OF THE ACCESS ARRANGEMENT PROPOSAL – OVERVIEW

3.1 Criteria for assessing ActewAGL's Access Arrangement

The Code sets out provisions with which an Access Arrangement must comply. It also sets out the criteria and procedures that the Commission, as the regulator, must follow in assessing ActewAGL's Access Arrangement proposal.

Under section 2.24 of the Code:

> The Relevant Regulator may approve a proposed Access Arrangement only if it is satisfied that the proposed Access Arrangement contains the elements and satisfies the principles set out in sections 3.1 to 3.20. The Relevant Regulator must not refuse to approve a proposed Access Arrangement solely for the reason that the proposed Access Arrangement does not address a matter that sections 3.1 to 3.20 do not require an Access Arrangement to address. In assessing a proposed Access Arrangement, the Relevant Regulator must take the following into account:
>
> (a) the Service Provider's legitimate business interests and investment in the Covered Pipeline;
>
> (b) firm and binding contractual obligations of the Service Provider or other persons (or both) already using the Covered Pipeline;
>
> (c) the operational and technical requirements necessary for the safe and reliable operation of the Covered Pipeline;
>
> (d) the economically efficient operation of the Covered Pipeline;
>
> (e) the public interest, including the public interest in having competition in markets (whether or not in Australia);
>
> (f) the interests of Users and Prospective Users;
>
> (g) any other matters that the Relevant Regulator considers are relevant.

Section 8 of the Code sets out the principles with which reference tariffs and a reference tariff policy included in an Access Arrangement must comply.

Section 8.1 of the Code states that the service provider's reference tariff and reference tariff policy should be designed with a view to achieving the following objectives:

> (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 any of these objectives conflict in their application with a particular Reference Tariff determination, the Relevant Regulator may determine the manner in which they can be reconciled or whether a particular objective should prevail.

Section 8.2 of the Code lists factors with which the regulator must be satisfied in approving a reference tariff and reference tariff policy:

> (a) the revenue to be generated from the sales (or forecast sales) of all Services over the Access Arrangement Period (the ***Total Revenue***) should be established consistently with the principles and according to one of the methodologies contained in section 8;
>
> (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 consistently with the principles contained in this 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 consistently with the principles contained in this 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 this section 9; and
>
> (e) any forecasts required in setting the Reference Tariff represent best estimates arrived at on a reasonable basis.

The Commission wishes to emphasise that a degree of conflicting interests may arise concerning the matters in sections 2.24 and 8 of the Code. After assessing available information, the Commission has reached its final decision, which aims to achieve an appropriate balance between the various matters, objectives and factors referred to in the Code.

3.2 Overview of the Commission’s approach to determining total revenue

The preamble to section 8 of the Code describes the principles for determining total revenue. Reference tariffs are to be set on the basis of the sales of all services provided by the covered pipeline delivering (or be forecast to deliver) a certain amount of revenue (total revenue) over the period for which the reference tariffs remain in effect.

The Commission is required to assess a total revenue requirement for ActewAGL’s covered pipelines. Return *on* and return *of* capital represent a significant proportion of the costs of the network service. Over 60 per cent of ActewAGL’s gas distribution costs relate to capital costs.

The revenue requirement of ActewAGL is intrinsic to issues associated with efficiency, competition, service quality and customer impacts. The determination of an appropriate capital base and rate of return is often controversial. Inevitably, there is tension between the various matters, factors and objectives bearing on the Commission’s assessment.

In accordance with the objectives and requirements of the Code, the Commission has adopted a process which involves:

- assessing operational and capital expenditure

- analysing financial indicators, including rate of return, and assessing the service provider's past, current, and future commercial performance
- considering the impact on consumers and service standards
- providing appropriate signals for efficient new investments
- implementing incentive based regulation to encourage ongoing efficiency gains by the network service provider, thereby ultimately delivering lower prices to customers
- enhancing economic efficiency and competition (including upstream and downstream competition).

3.3 Proposals and responding submission from ActewAGL

ActewAGL's 1999 Access Arrangement proposal outlines the key components underlying revenue, cost allocation, structure of transport charges, and terms and conditions.

Responding to the draft decision, ActewAGL stated that it did not agree with the proposed amendments regarding total revenue required by the Commission. However, ActewAGL agreed to some amendments on non revenue issues including the allocation costs between contract and tariff markets using a non discriminatory methodology. In arriving at its final decision, the Commission has considered ActewAGL's responding submission and further submissions.

3.4 Public submissions

Other stakeholders also responded to the draft decision. Issues that attracted most attention were the initial capital base, cost allocation approach, proposed connection to the Eastern Gas Pipeline, operating costs and pricing structure.

3.5 Broad issues

To arrive at its final decision on ActewAGL's Access Arrangement, the Commission considered new information and developments since the draft decision. Key aspects of the Commission's final decision are:

- initial capital base
- demand forecasts
- operating costs
- capital expenditure
- allocation of the capital base write down
- services policy.

These matters are addressed throughout this final decision. The Commission has modified some of the amendments required in the light of further analysis and considerations of submissions.

3.6 Issue of information disclosure

3.6.1 AGLGN's information disclosure

During the review process, ActewAGL submitted a revised Access Arrangement Information (RAAI) and supplementary AAI in response to two s2.9(a) notices. ActewAGL also provided further information in response to s41 requests issued by the Commission.

3.6.2 Draft decision

ActewAGL was required to amend its Access Arrangement so that it included the following:[9]

a) consolidation of the information in its original AAI , its RAAI and its SAAI, consistent with the draft decision

b) amendments required by the draft decision

c) actual results in 1998/99 including capital costs, non-capital costs, system capacity, sales volume, MDQ, and key performance indicators

d) cost allocation information consistent with the revisions required by the draft decision.

3.6.3 Responses to the draft decision

ActewAGL's response

In April 2000, ActewAGL submitted its submission in response to the draft decision. In relation to the above amendment, ActewAGL stated that it would provide appropriate information in the documents to be submitted with the response Access Arrangement for approval.

ActewAGL has since made further submissions to the Commission. A full list of non confidential submissions made by ActewAGL and matters these covered is contained in attachment 2.

Public submissions

No submission received following the draft decision specifically comments on the issue of information disclosure.

3.6.4 Commission's assessment

In March 2000 the Commission published its draft decision not to approve the Access Arrangement submitted by ActewAGL. The Commission required that 23 amendments be made to AGL(ACT)'s AA and AAI in order for it to be approved. The Commission also required ActewAGL to meet three information requests to assist the Commission in assessing the proposed Access Arrangement.

The Commission has decided to maintain its amendment regarding the AAI as set out in the draft decision.

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9 See the draft decision report section 3.3.

Amendment 1 – Access Arrangement information

ActewAGL is required to amend its Access Arrangement to include:

a) consolidation of the information in its original AAI , RAAI and SAAI, consistent with this final decision

b) amendments required by this final decision

c) actual results for 1998/99 including capital costs, non-capital costs, system capacity, sales volume, MDQ, and key performance indicators

d) cost allocation information consistent with the revisions required by this final decision.

PART III

DETERMINATION OF TOTAL REVENUE

4 RATE OF RETURN

4.1 ActewAGL's proposal

Initially, ActewAGL proposed a rate of return of 8.0 per cent (real pre tax), including a nominal cost of equity in the range 12.0 - 16.0 per cent.

4.2 Draft decision

In its draft decision, the Commission required the following amendment to be made to the rate of return:[10]

> The rate of return used in the proposed cost of service methodology for calculating total revenue must not exceed 7.75 per cent in real, pre tax terms. This is consistent with a nominal post tax return on equity of approximately 12-13 per cent.

4.3 Responses to the draft decision

4.3.1 ActewAGL's response

ActewAGL responded that the real, pre tax weighted average cost of capital (WACC) of 8.0 per cent it included in its proposed Access Arrangement was moderate and conservative, and should be applied in the final decision.[11]

4.3.2 Public submissions

Public comment on the rate of return allowed in the draft decision has been mixed. BHPP comments that it is too high while Envestra regards the WACC as low.[12]

Envestra has made various comments about the adopted parameters in the WACC. The main comments are: [13]

- the indexed bond market is relatively illiquid, so using it to derive an inflation forecast may be more theoretically 'correct' but the accuracy is debatable. Instead, an economic forecast consistent with the Reserve Bank of Australia (RBA) and Commonwealth Treasury estimates should be used
- a market risk premium less than 6.0 - 7.0 per cent is inconsistent with the required return to shareholders investing in the energy distribution business.
- debt margins at the time of the Victorian privatisations were about 100 basis points above the swap rate, while the swap margin was approximately 45 basis points. This yields a total debt margin of about 145 basis points, which is consistent with ActewAGL's proposal.

10 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 58.
11 ActewAGL, *Submission to the ActewAGL Access Arrangement review*, 18 April 2000, p 15.
12 BHP Petroleum, *Submission to the ActewAGL Access Arrangement review*, 17 April 2000, p 5.
13 Envestra, *Submission to the ActewAGL Access Arrangement review*, 27 April 2000, p 1.

4.4 Commission's assessment

The Commission has considered ActewAGL's submissions and analysis, and current market conditions. It has also reviewed the parameters of the WACC. These are discussed below. Where the reasons for a particular conclusion are the same as those in the draft decision, a reference to the draft decision is made.

WACC parameters

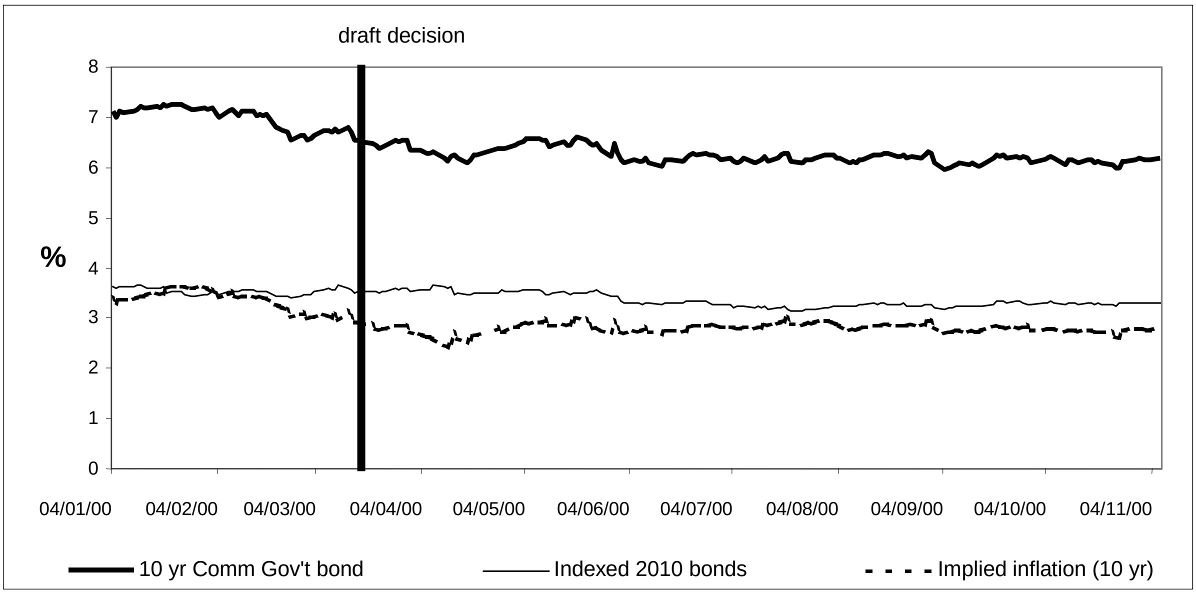
In this final assessment, the parameters that have changed since the draft decision are: risk free rate, implied inflation rate, and tax rate.

Risk free rate

ActewAGL has accepted the Commission's method of adopting a 20 day average of the 10 year Commonwealth bond rate to determine the risk free rate. However, it comments that the expected inflation derived from the current 10 year bond and indexed bond rates should not be relied on if it falls outside the RBA's target inflation band of 2.0 - 3.0 per cent.

Envestra has suggested that an economic forecast of inflation consistent with the RBA and Commonwealth Treasury estimates be used instead of taking the implied inflation.

Figure 4.1 10 year bonds, 2010 indexed bond and implied inflation



Source: RBA, August 2000.

The Commission notes that there may be circumstances under which the bond rates are volatile and other inflation forecasts should be considered. Following the draft decision the Commission has considered the implied inflation using the nominal and indexed bond rates. The Commission notes that the latest trend is generally consistent with the RBA and Treasury's target inflation range. Therefore, the method used in the draft decision has been retained for the final decision. Table 4.1 presents the final decision on the risk free rate and inflation parameters.

Table 4.1 Bond rates

Date		10 year bond	2010 indexed bond	Implied inflation
Jan 1999[1]	Original submission of AA	4.90	3.33	1.52%
Mar 2000[2]	Draft decision	7.13	3.42	3.59%
Nov 2000[3]	Final decision	6.16	3.30	2.77%

Note:
1. 20 day average as at 5 January 1999.
2. Assessment carried out in January 2000.
3. Assessment made in October 2000.

Market risk premium

ActewAGL proposes that the market risk premium (MRP) should be 6.0 - 7.0 per cent. It argues that a useful proxy for the long term expected MRP may be found in the estimates of the long term arithmetic mean of historically observed MRPs. In its response to the draft decision, ActewAGL presents the following table to support their argument.

Table 4.2 Support information submitted by ActewAGL

Estimates of MRP based on the difference between market returns and 10 year bond returns		
Study	**Period of measurement**	**Arithmetic mean**
Officer (1989) updated	1900 - 1996	7.1%
Hathaway (1996)	1882 - 1991	7.7%
Hathaway (1996)	1947 - 1991	6.6%
Centre for Research in Finance, AGSM	1974 - 1998	4.8%

The Commission notes IPART's final decision on AGL Gas Networks (AGLGN) Access Arrangement, which highlight the problems of using a long study period:[14]

> Using a period from 1890 implicitly assumes that the market risk premium has remained constant over a 100 year period that includes two world wars, a depression, a stockmarket crash, and more recently the globalisation of capital markets. A shorter period (at least post second world war) is appropriate because of structural shifts in the economy, possible shifts in market risk aversion and fewer impediments to international diversification.

The Commission has also considered more recent studies by Ibbotson, Twite, and Davis, all of which are based on Australian data. The findings are summarised below:

Table 4.3 MRP estimates

	Period measured	Australian MRP (%)
Ibbotson (1999)	1970-1998	3.4
Garry Twite (1999)	1974-1998	4.3 and suggests range of 4 - 7
Kevin Davis (1999)	WACC for Envestra AA	4.5 - 7.0

14 IPART, *Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW*, July 2000, p 63.

The Commission notes that CS First Boston has estimated the cost of capital for both Origin Energy and AGL using a MRP of 4.5 per cent.[15]

The more recent studies suggest that the current MRP should be within the range of 3.4 - 7.0 per cent. After considering the information in the draft decision[16] and all of the above studies, the Commission concludes that a MRP of 5.0 - 6.0 per cent is reasonable.

Asset beta

ActewAGL submits that an asset beta of 0.5 - 0.6 is more appropriate than the Commission's draft decision of 0.4 - 0.5. It argues that risk associated with market concentration and competition has not been fully accounted.

In arriving at its draft decision and final decision, the Commission has considered the risks faced by ActewAGL. These risks relate to: volume, price, market concentration and competition. The Commission has compared ActewAGL's risks with those of other distributors in Victoria and NSW and considered the published asset betas for these utilities, each of which have been determined after consideration of a range of comparable market equity beta factors with adjustments for differences in gearing and risk profiles.

Table 4.4 Comparison of asset beta

Regulator	Decision	Date	Asset beta
ORG	Victorian Gas Networks – Final decision	Oct 1998	0.45 - 0.60
ACCC	Victorian Gas Transmission	Oct 1998	0.55
IPART	GSN Access Arrangement final decision	Mar 1999	0.4 - 0.5
IPART	AGC Access Arrangement final decision	Dec 1999	0.4 - 0.5
IPART	Electricity Determination	Dec 1999	0.35 - 0.5
ACCC	NSW & ACT Transmission Network Revenue Caps final decision	Jan 2000	0.35 - 0.5
IPARC	AGL (ACT) Access Arrangement Draft Decision	Jan 2000	0.4 - 0.5
IPART	AGLGN Access Arrangement Final Decision	July 2000	0.4 - 0.5
ORG	Electricity distribution Price Determination final decision	Sep 2000	0.4

In the draft decision the Commission concluded that an asset beta of 0.4 - 0.5 was appropriate.

Currently in the ACT no effective competition in gas distribution is anticipated in the short to medium term. The main competition could arguably be from electricity as an alternative energy source. A major event since the draft decision is the joint venture to form ActewAGL, to which this final decision now relates. The Commission considers that the risk profile of the joint venture vehicle is at this time not materially different from that for AGL(ACT) as assessed in the draft decision. Therefore an asset beta of 0.4 - 0.5 is appropriate for the final decision.

15 Credit Suisse First Boston, *Origin Energy Equity Research*, 10 April 2000, and *Australian Gas Light Company Equity Research*, September 2000.

16 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, pp 45-46.

Equity beta

ActewAGL proposes an equity beta of 1.1 - 1.4. This is higher than was allowed in the draft decision and is a result of the higher asset beta and debt premium adopted by ActewAGL.[17] The results are shown below in Table 4.5.

Table 4.5 Equity betas

	Draft decision	ActewAGL proposal
Asset beta	0.4 - 0.5	0.5 - 0.6
Equity beta	0.9 - 1.1	1.1 - 1.4

The Commission notes that an equity research study of Origin Energy by CS First Boston comments:[18]

> We use an equity beta of 0.9, implying an equity risk premium of 405 basis points. By way of comparison, we use an equity beta of 0.8 for AGL.

The equity beta is derived from the asset beta using the Monkhouse formula.[19] The Commission maintains its view that the asset beta allowed in the draft decision is reasonable. Hence the Commission considers that an appropriate equity beta for ActewAGL is 0.9 - 1.1.

Cost of equity

The Commission has estimated the nominal post tax return on equity to be 10.7 - 13.0 per cent based on the parameters noted above, ie:

- a nominal risk free rate of 6.16 per cent
- a risk premium on equity in the range 5.0 - 6.0 per cent
- a range for the asset beta of 0.40 - 0.50
- a derived equity beta of 0.9 - 1.1.

Debt margin

ActewAGL submits that the debt premium in the draft decision of 0.9 - 1.1 per cent is too low. It argues that a premium of 1.2 - 1.4 per cent is reasonable. To support its argument, ActewAGL quotes premiums from some corporate debt issues.[20]

The Commission has considered the corporate debt issues put forward by ActewAGL as well as more recent corporate bond raisings, for an indication of the current premium on long term debt. These are listed below.

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17 The Commission has calculated the equity beta based on the final decisions on the other WACC parameters and the Monkhouse formula, Be=Ba+(Ba-Bd(1-rd)/(1+rd)T)D/E.

18 Credit Suisse First Boston, Origin Energy, Equity Research, 10 April 2000.

19 Assuming 60 per cent debt gearing and a debt beta of 0.06.

20 ActewAGL submission, 28 April, pp 22-23.

Table 4.6 Margins at issue date from corporate debt issues

Company	Date	Details	Basis points	
			Margin over the 10yr Swap rate	Margin over the 10 Year bond rate
Duke Energy[1]	Oct 99	Medium term notes (MTN)	73	86
Austran[2] - Issue 1	Oct 99	MTN 2 yr maturity	35	92.5
- Issue 2	Jul 99	MTN 3 yr maturity	44	
AGL[3]	Jun 99	corporate bonds	41	91
Citipower[4]	Jan 00	seven year bond	45	83.5
Telstra[5]	Mar 00	ten year bond	35	98
ETSA Utilities[6]	Mar 00	seven year bond	50	108.5
		ten year bond	58	124.0

Source:
1. AFR, 11 October 1999, p 46.
2. AFR, 7 October 1999, p 38.
3. AFR, 15 June 1999, p 46.
4. AFR, 24 January 2000, p 37.
5. AFR 31 March 2000, p 79. This is the margin it has reported to have traded at recently.
6. Calculated based on information in 'SG Fixed Income Credit Analysis, March 2000' and bond and swap rates on the day of issue.

The above market data indicates that current market conditions do not support ActewAGL's proposed debt margin of 1.2 - 1.4 per cent. In light of the above data, the Commission has decided that the 0.9 - 1.1 per cent debt margin allowed in the draft decision is reasonable and consistent with current market data.

Company tax rate

In previous submissions there have been arguments for and against using the effective tax rate to calculate the WACC. The changes to taxation will impact on both the statutory and effective tax rates. These changes include:

- a reduction in corporate tax rate to 34 per cent in 2000/01 and 30 per cent thereafter
- personal income tax reductions
- abolition of accelerated depreciation. Plant and equipment acquired after 21 September 1999 will be depreciated based on their effective life.

The Commission acknowledges that the parameter of gamma may be lower as a result of tax rate reductions. A full assessment of the tax implications should consider changes in both the tax rate and the gamma. However, the change to gamma cannot be observed as yet.

The 36 per cent statutory tax rate is no longer relevant from 1 July 2000. The Access Arrangement is a medium term decision. In the medium term, the tax rate will be 30 per cent.

ActewAGL concurs with the Commission that the net impact of the tax and gamma parameters on the WACC is not significant.

In the draft decision the Commission decided that the statutory tax rate would be applied due to difficulties in estimating the effective tax rate for the industry as a whole. The

Commission maintains this view. As the Access Arrangement is a medium term decision, and the impact of the tax parameter on the WACC is small, the Commission concludes that the statutory tax rate of 30 per cent should be applied in the WACC calculations.

Post tax vs pre tax regime

The draft decision adopted a pre tax real WACC to be applied to a regulatory capital base indexed by inflation.

In its determination for Transgrid[21] the ACCC adopted a post tax nominal framework. In its discussion, the ACCC points out two main problems of the pre tax real framework:

- conversion of the post tax to a pre tax rate of return
- the ability of the pre tax WACC to ensure the correct return on equity over multiple regulatory periods where the tax and inflation environment is likely to change.

The ACCC also points out that the post tax regime has the problems of:

- intergenerational equity arising from the utilisation of tax concessions, and
- additional revenue that may be earned from early tax allowances/prepayments in the revenue stream.

The ACCC suggests that proposals from the Ralph Business Taxation Review should reduce the first problem, which can be addressed by normalising the post tax revenue profile. The second problem is to be addressed by adjusting the initial capital base (ICB) roll forward for tax prepayments.

In its draft decision on the Electricity Distribution Price Review,[22] the Office of the Regulator General states that continued controversy concerning conversion methods and the transparency in choosing the “correct” method has led it to adopt a post tax regime.

Changes to the tax system are being implemented. These reforms will impact on various areas either directly or indirectly. The Commission considers that given the significance of the tax reforms and the relative experience to date, the current pre tax regime should be maintained. The use of an alternative approach (post tax regime) will be considered at the next review.

4.4.1 Feasible range for the rate of return

In the Commission’s assessment, the use of the CAPM/WACC model suggests a rate of return in the range of either:

- 10.7 - 13.0 per cent nominal post tax return on equity, which equates to
- 5.2 - 8.0 per cent pre tax real rate of return on capital.[23]

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21 ACCC, *NSW and* ACT *Transmission Network Revenue Caps 1999/00-2003/04*, Decision, January 2000, pp 37-39

22 The Commission notes that a final decision was released in September 2000. ORG adopts a post tax regime as in its draft decision.

23 This range is based on various transformation methods. These include the:

- market practice: nominal post tax →nominal pre tax→real pre tax
- K. Davies formula: nominal post tax →real post tax→real pre tax
- alternative method: nominal post tax →real post tax→gross up to real pre tax.

Table 4.7 WACC estimates based on final decision

Parameters	Draft decision Mar 2000	ActewAGL response Apr 2000	Final decision Nov 2000
Nominal 10 year bond rate (%)	7.13	6.66	6.16
2010 CPI indexed bond rate (%)	3.42	Na	3.30
Inflation (%)	3.59	3.0	2.77
Tax rate (%)	30 - 36	36	30
Dividend imputation utilisation rate (%)	30 - 50	30 - 50	30 - 50
Debt margin (%)	0.9 - 1.1	1.2 - 1.4	0.9 - 1.1
Market risk premium (%)	5.0 - 6.0	6.0 - 7.0	5.0 - 6.0
Debt beta	0.06	0.06	0.06
Asset beta	0.4 - 0.5	0.5 - 0.6	0.4 - 0.5
Equity beta	0.9 - 1.1	1.1 - 1.4	0.9 - 1.1
Gearing (%)	60	60	60
Nominal pre tax cost of debt (%)	8.03 - 8.23	7.86 - 8.06	7.06 - 7.26
Nominal post tax cost of equity (%)	11.62 - 13.98	13.5 - 16.4	10.7 - 13.0
Pre tax real WACC (%)	5.0 - 8.5	6.4 - 10.3	5.2 - 8.0
Proposed real pre tax WACC (%)	7.75	8.0	7.75

The Commission is required to determine the allowed rate of return for ActewAGL, within the feasible range of 5.2 - 8.0 per cent. The Commission has done this after considering:

- general risks faced by the gas distribution businesses
- risks faced by ActewAGL
- other regulatory outcomes.

4.4.2 Risk assessment of ActewAGL

Gas distribution utilities are regarded as relatively low risk operations. However, they are considered to be slightly more risky than electricity distribution utilities as they are considered to be an energy source of choice. An assessment of the general risk of gas distribution utilities is presented in chapter 5 of the draft decision.

Market concentration

In its response to the draft decision, ActewAGL argues that risks from market concentration have not been fully accounted. The Commission has considered these risks, which are briefly summarised below:

- diversification of the customer base would tend to reduce the risk of volume fluctuation, and hence revenue collection
- residential tariff customers are generally considered to be less risky than business tariff customers and contract users as their demands are subject only to weather effects, whereas the other two groups are also subject to business cycles
- the contract market contributes about 5 per cent of ActewAGL's revenue. Compared to AGLGN and GSN, ActewAGL is relatively less risky as a larger proportion of its

revenue comes from the less volatile tariff market. ActewAGL is more comparable to the Victorian distributors and AGC.

Under the final decision, growth in the tariff market is forecast to come from residential users only, with no growth forecast for the business tariff market. Currently, ActewAGL's customer base comprises mostly residential tariffs. Over the Access Arrangement period it is forecast that the residential load will increase as a percentage of total load. Therefore, it is arguable that ActewAGL's risk will reduce over the Access Arrangement period.

Pipe-on-pipe competition

It is a generally accepted industry view that pipeline duplication is uneconomic. The risk from such competition is manageable by ActewAGL through negotiations to avoid bypass. The lower revenue allowed in this Access Arrangement should reduce prices, making bypass options less feasible.

Currently there are no immediately known cases of pipe-on-pipe competition in the ACT. However, future developments may yield this possibility. Pipeline competition has implications for asset stranding. The experience of the AGLGN access review in NSW has shown that a regulator is unable to address the issue of redundant capital unless a redundant capital mechanism is in place in the preceding Access Arrangement. As a result, the Commission has reconsidered ActewAGL's redundant capital mechanism and its associated risks.

Risk of redundant capital

Asset redundancy can occur through events such as bypass or plant closure. In the draft decision, the Commission considered the issue of redundant capital and accepted ActewAGL's proposed redundant capital mechanism in its reference tariff policy:[24]

> With effect from the commencement of the subsequent Access Arrangement Period, Redundant Capital will be removed from the Capital Base.

The Commission considers that the risk from capital redundancy will depend on the depth and diversity of the utility's customer mix, service area, network prices, and the characteristics of the network itself. In making its draft decision on the allowed rate of return for ActewAGL, the Commission considered the risk of capital redundancy. At the time of the draft decision, the Commission allowed for risk resulting from the acceptance of ActewAGL's redundant capital mechanism by setting a rate of return close to the top end of the feasible range.

The capital redundancy mechanism in the draft decision was intended to ensure that assets no longer contributing to the network would be excluded from the asset base. However, the Commission also wanted a mechanism that provided flexibility and did not bind the future regulator to any prescribed method at the next review. At the time, the Commission considered that ActewAGL's proposed mechanism met those objectives.

After reviewing this issue in the light of new information, the Commission has decided to further amend ActewAGL's capital redundancy mechanism (chapter 8, *Rolling forward the capital base*, details the redundant capital mechanism amendment). The amendment to the capital redundancy mechanism clarifies the circumstances under which an adjustment to the

[24] ActewAGL Access Arrangement, January 1999, p 35.

capital base may be made. The required amendment does not change the Commission's position regarding capital redundancy.

Risk resulting from the capital redundancy mechanism eventuates only at the commencement of the next review. As the rate of return is determined for this Access Arrangement period only, it can be argued that no margin for that risk is required ahead of the next review.

The Commission has examined the implications of the required amendment relating to the capital redundancy mechanism for ActewAGL's rate of return. It concludes that the risk margin allowed in the draft decision is adequate.

4.4.3 Other regulatory outcomes

The Commission notes recent regulatory decisions by other Australian and UK regulators.

Table 4.8 Weighted Average Cost of Capital

Parameters	**Offgar AlintaGas decision** Jun 2000	**ACCC Transgrid decision** Jan 2000	**IPART Electricity decision** Dec 99	**OFGEM[1] final decision** Dec 99	**OFWAT Final decision** Nov 99
Nominal risk free rate (%)	6.27	6.81	6.62		
Real risk free rate (%)	3.40	3.55	3.52	2.25 - 2.75	2.5 - 3.0
Inflation (%)	2.78	3.15	3.0		
Tax rate (%)	31.4	30	30 - 36		
Dividend imputation rate (%)	50	50	30 - 50		
Debt margin (%)	1.20	1.0	0.8 - 1.0	1.8[3]	1.5 - 2.0
Market risk premium (%)	6.00	6.0	5.0 - 6.0	3.5	3.0 - 4.0
Debt beta	0.20	0.00 - 0.06	0.06		
Asset beta	0.55	0.35 - 0.50	0.35 - 0.5		
Equity beta	1.08	0.78 - 1.25	0.78 - 1.14	1.0	0.7 - 0.8
Debt to equity ratio (%)	60	60	60	50	50
Nominal pre tax cost of debt (%)	na	7.81	7.4 - 7.6		
Nominal post tax cost of equity (%)	12.7	11.5 - 14.25[2]	10.5 - 13.5		
WACC (post tax real)					4.25 - 5.25[4]
WACC (real pre tax) (%)					
- range	7.5	7.35	5.0 - 8.5	6.0 - 6.9	Na
- allowed rate			7.5		

Note:

1. Electricity distribution price control review.
2. The ACCC has allowed a post tax nominal return on equity of 13.85 per cent.
3. This is made up of a debt risk premium of 1.4 per cent and a premium for long term debt of 0.4 per cent.
4. This is the post tax real WACC. It excludes embedded debt and the small company premium, which are 0 - 0.4 per cent and 0.4 - 0.75 per cent respectively.

4.5 Final decision

Having regard to section 8.30 of the Code, the Commission has determined the allowed rate of return for ActewAGL. The Commission has also reviewed current market conditions and assessed the risk that ActewAGL faces.

At the time of making the draft decision, the indexed 10 year bond rate was at about 3.40 per cent. In recent months it has fallen by about 10 basis points to the current level of around 3.30 per cent. Movement in real interest rates is one factor which was considered when determining the rate of return under the current regulatory regime. The Commission also considered the impact of recent tax reforms on the use of tax rate in the WACC model. The Commission has now adopted a tax rate of 30 per cent as the statutory and effective tax rate.

From evidence currently available on the cost of equity at the time of making the final decision, the use of CAPM suggests that the **nominal post tax return on equity should be within 10.7 - 13.0 per cent**. Applying this approach, and on the basis of alternative transformation methodologies, the WACC for the regulated gas distribution network should be **5.2 - 8.0 per cent (real pre tax)**.

The Commission's final decision is that a real pre tax rate of return within the range 7.0 – 8.0 per cent is appropriate for gas utilities. Within this range, the Commission must decide the most appropriate rate of return for ActewAGL. This decision has been made after examining the initial capital base, the implications for prices, new investments, competition, ActewAGL's cashflow positions, ActewAGL's financial projections for the next 10 years, and risks including revenue risk due to supply interruptions, the capital redundancy mechanism, stranded investments and other matters including the objectives of the Code. These are discussed in the following chapters.

The Commission concludes that **a real pre tax rate of return of 7.75 per cent** is appropriate for ActewAGL for this Access Arrangement period. This is consistent with **a nominal post tax return on equity of approximately 12 per cent**.

Amendment 2 – Rate of return

ActewAGL must amend its Access Arrangement so that the rate of return it uses in the methodology employed to determine Total Revenue and Reference Tariffs does not exceed 7.75 per cent in real pre tax terms.

5 INITIAL CAPITAL BASE

5.1 ActewAGL's proposal

In its proposed Access Arrangement, ActewAGL presents an initial capital base (ICB) of $244.6m expressed as funds employed at 1 July 1999. In September 1999, ActewAGL's consultant, Arthur Andersen, submitted revisions to the ICB on behalf of ActewAGL. These revisions exclude provisions for tax liabilities in net working capital. ActewAGL's proposal is summarised below:

Table 5.1 ActewAGL's proposal for the 1996 initial capital base ($m)

	ActewAGL's original proposal (January 1999)	ActewAGL's revised proposal (August 1999)
Capital assets	254.6	240.6
Net working capital	-10	6.0
Funds employed	244.6	246.6

Note: Capital assets include system and non-system assets.

5.2 Draft decision

The Commission decided:

- the regulatory capital base should comprise capital assets (ie fixed assets including system and non-system assets) plus net working capital
- a real return should be allowed on the regulatory value of capital assets whereas a nominal return should be allowed on net working capital
- the level of net working capital should exclude taxation assets and liabilities (ie taxation provisions, deferred income tax liabilities and future income tax benefits)
- ActewAGL must amend its net working capital forecast and disclose the assumptions and parameters underlying such forecasts
- the depreciated actual cost (DAC) should be $90m (capital assets) and a depreciated optimised replaced cost (DORC) value should be $255m (including system assets of $252m)
- the ICB for ActewAGL, including natural gas distribution system in ACT, Queanbeyan and Yarrowlumla, should be set at a value no higher than $170m at 1 July 1999.

Following the release of its draft decision, the Commission sought submissions on a report titled "technical review of AGL(ACT)'s DORC and Capex".[25]

[25] Ewbank Preece (now called Connell Wagner), *Report to IPARC on Technical Review of AGL(ACT)'s DORC and Capex for ACT, Queanbeyan and Yarrowlumla*, May 2000.

5.3 Responses to the draft decision

5.3.1 ActewAGL's response

In its responding submission,[26] ActewAGL did not agree with the Commission's assessment of ICB. ActewAGL's comments on the feasible range of asset values based on a number of asset valuation methodologies are summarised as follows:

Table 5.2 ActewAGL's comment on ICB valuation

Valuation methodology	Draft decision	ActewAGL's response
DAC	$90m	Agreed
DORC	Accepted ActewAGL's estimate of $252m but suggested possible downside uncertainty	Neither uncertain nor overstated. Incumbent owner is not a DORC.
ODV	$242m - $245m seems high given uncertainty in DORC	Correction to ActewAGL submission. Essentially equal to DORC. ICB value should be consistent with ODV.
DIHC	$130m - $148m	The lower end is unsubstantiated
CCA WDV	$140m - $190m	Minimum value at $184m

At the end of August, ActewAGL submitted a paper entitled '*The Construction of DORC from ORC*'.[27] If Agility's approach to the DORC valuation in that paper was applied to ActewAGL, the ratio of DORC to ORC for the ACT system was most likely to be in the range 90 - 96 per cent.

5.3.2 Public submissions

In its submission, BHPP comments that:

- the ICB is 1.9 times DAC
- in determining the ICB, the Commission should put more weight on economic efficiency, the public interest and the interests of users
- an ICB of $170m gives ActewAGL an extra $80m (above DAC) which is transferred from the users to the shareholders. The ICB should be set at DAC.[28]

In response to the technical review report, BHPP made further submissions on the assessment of DORC.[29]

5.4 Issues in the final decision assessment

The Commission has considered the views expressed in comments and submissions made in response to its draft decision on the ICB. In light of new information and submissions to the

26 ActewAGL submission in response to the draft decision, 18 April 2000.

27 The Construction of DORC from ORC, Agility Management, August 2000.

28 BHPP, *Submission to the ActewAGL Access Arrangement Review*, 17 April 2000.

29 BHPP, *Submission to the ActewAGL Access Arrangement Review*, 2 June 2000 and 27 October 2000, and presentation to the Commission in October 2000.

draft decision, the Commission has undertaken additional analysis and updated its modelling.

Key issues considered in the final decision process include:

- assessing ActewAGL forecast net working capital
- reviewing new information and submissions particularly on DORC valuation
- reviewing the historical return analysis
- establishing and rolling forward the ICB to 1 July 2000.

The ICB issues are discussed in the following sections. Asset allocation between customer segments is discussed in chapter 12.

5.5 Funds employed approach and net working capital

In the draft decision, the Commission decided to allow a real return on an indexed capital base (ie system assets and non system assets) and a nominal return on net working capital.[30] Based on ActewAGL's 1998/99 financial statement, ActewAGL's net working capital at 1 July 1999 is estimated at $6m.

The Commission notes that in their recent decisions, ORG[31] and ACCC[32] proposed that no return should be allowed on net working capital.

In its draft decision, ORG comments that when the revenue benchmark is calculated for each year, the calculation makes an implicit assumption about the timing of costs and revenue over each year. Hence, for a working capital requirement to be justified, it would need to be demonstrated that the actual timing of costs and revenues over the year is likely to differ significantly from that assumed implicitly by the building block approach, causing a shortfall for the distributor. In its final determination, ORG states:[33]

> The analysis undertaken by the Office suggests that it would be appropriate for the Office to reduce the revenue benchmarks to remove the net timing advantage discussed above. However, the Office has decided not to make this adjustment in this Determination, given the insufficient time available to adequately examine this issue.

ORG has maintained its draft decision that no return on working capital should be included in the price controls.

The ACCC has not explicitly modelled the timing of Epic's cashflows throughout the year. Rather, the ACCC's cashflow analysis assumes that all costs and revenues are incurred on the last day of the financial year. In reality, Epic's cashflows would occur at regular intervals throughout the year, giving the company a benefit over and above the regulated revenue. That benefit is equal to the time value of money on all cashflows prior to 30 December each year. The ACCC considers that this benefit more than compensates Epic for any 'gap' between payments and collections that may occur throughout the year.

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30 The reasons are set out in the draft decision section 4.4.1.

31 ORG's draft and final decision on electricity network pricing in Victoria released in May and September 2000 respectively.

32 ACCC's draft decision on the Access Arrangement for Epic's Moomba to Adelaide transmission pipeline.

33 Office of Regulator General, Electricity distribution Price Determination 2001-2005, Volume 1, p117.

The Commission notes that:

- the issue of working capital is the subject of a KPMG consultancy report completed during the AGLGN access review in NSW. The report suggests that a nominal return on net working capital should be allowed.
- in the US, return on net working capital is allowed, but the regulatory regime is nominal return on DAC (the actual investment incurred by the pipeline owner).
- in the UK, no return on working capital is expressly provided under a regime where a real return is allowed on the regulatory capital base.

The Commission acknowledges that there are alternative regulatory approaches to treating net working capital under a cost of service methodology. The Commission considers that further research and consultation should be undertaken. In light of the timing implications for this review, the Commission has decided that the approach in the draft decision should be maintained. However, the issue of net working capital will be reconsidered at the next review.

ActewAGL has provided the Commission with its forecast of net working capital. Overall, the Commission considers ActewAGL's assumptions underlying its forecast net working capital are reasonable. The Commission has modified the forecast on the basis of its final decision on allowed revenue and expenditure.

Table 5.3 Final decision – forecast net working capital 2001 - 2004 (nominal $m)

Year ending June	**2001**	**2002**	**2003**	**2004**
Current assets				
- Debtors	1.2	1.3	1.3	1.3
- Unbilled gas	3.7	3.8	4.0	4.1
- inventories	0.2	0.2	0.2	0.2
- prepayment	0.4	0.4	0.4	0.4
Total current assets	5.5	5.7	5.9	6.1
Current liabilities				
- creditors	0.5	0.5	0.6	0.6
Final decision	5.0	5.1	5.3	5.5
Comparison: ActewAGL's forecast	6.0	6.3	6.6	6.9

5.6 Review of ICB

For its final decision, the Commission has reviewed various asset valuation methodologies. It has also considered the requirements and objectives of the Code, including the requirements under section 2.24.

5.6.1 Additional information on ORC and DORC estimates

The Commission notes that the DORC valuation has implications for:

- establishing the ICB under 8.10 of the Code

- asset and cost allocation if optimised replacement cost or DORC is used as an allocator.[34]

Prior to the draft decision, the Commission considered the following DORC estimates:

- ActewAGL's original estimate for its system assets of $252m at 1 July 1999
- a DORC value of $251m within a sensitivity range of $234 - $270m in a further study prepared by PPK
- Connell Wagner's review, which suggests variability in asset valuation which is affected by unit rates and optimisation

Since the draft decision, the Commission has received additional estimates of DORC:

- in a report prepared for BHPP, GCI/Kenny concludes that $100m - $116m is appropriate for the ActewAGL gas distribution network.[35] The GCI/Kenny report finds that:
  - the DORC estimate could be overstated by 37 per cent in the constrained approach to optimisation adopted by AGL/PPK
  - if an unconstrained approach to network optimisation is adopted, the true DORC of the network could be reduced by a further 20 per cent
  - any DORC value is significantly affected by assumed asset lives[36]
  - the scope of the review by Ewbank Preece is too narrow
- under a new approach to constructing DORC from ORC, ActewAGL considers that the DORC is in the range $294m - $314m.

The Commission notes the considerable range in estimates of the DORC value of ActewAGL's assets (Table 5.4).

Table 5.4 ORC and DORC values (1999/2000 $m)

	Date of valuation	ORC	DORC
Pre draft decision			
ActewAGL proposal	1998	325	252
PPK/Kinhill	1999	323.8	251 (Sensitivity range 234 - 270)
Post draft decision			
GCI-Kenny (1)	May 2000		100 - 116
ActewAGL	Aug 2000	324	294 - 314

Note: See ActewAGL's comment in footnote 11.

The Commission has considered the arguments and comments expressed in submissions by ActewAGL and BHPP, notably on the issues of optimisation and unit rates:

- *network optimisation*: BHPP questions ActewAGL's decision to adopt an engineering design with mains laid on both sides of street. ActewAGL argues that the choice of

34 For example, allocation of operating costs between customer groups.

35 In response, ActewAGL comments that:
- the GCI-Kenny report has not shed any new light on the DORC valuation for the ACT network
- the GCI/Kenny report was a desk top study which does not arrive at a DORC valuation.

36 BHPP's letter to the Commission of 2 June 2000.

whether to use mains on one or both sides of the street must consider a range of factors including costs, local authority approval requirements, and technical constraints

- *unit rates*: ActewAGL and GCI/Kenny (on behalf of BHPP) have expressed different views on the unit rates that should be adopted in the valuation.

The Commission acknowledges controversy surrounding these issues. The range shown in Table 5.4 is indicative of the uncertainties associated with this approach, including assumptions of optimisation and unit rates which appear to involve some degree of engineering judgement.

The Commission has considered ActewAGL's new estimate of DORC using a new approach involving construction of DORC from ORC. In a paper prepared by Agility Management:[37]

> "… the DORC for existing assets must be constructed as the net present value of the future income from those assets, where the income is consistent with the prices that would be charged by an efficient new entrant, but recognising that the income stream for the DORC valuation will have a life equal to the remaining life of the existing assets.
>
> The common assumption, that DORC equals ORC less depreciation, is incorrect and significantly understates the proper value of DORC. This is true regardless of whether depreciation is determined as straight line, or as competitive depreciation."

After considering the paper submitted by ActewAGL and a report prepared by King,[38] the Commission considers that:

- the approach and its assumptions represent a current asset valuation methodology and an ongoing methodology for depreciation which replicates the perfectly contestable income flow. This approach to DORC asset valuation is reasonable and internally consistent *provided* the methodology is used not only for initial valuation, but also for ongoing depreciation. That is, the approach is consistent only if it is matched with the relevant (slow) depreciation schedule.

- it may be argued that this approach is the only valuation method that is consistent with the 'contestability' justification for DORC. However, the standard arguments justifying DORC on the basis of contestable market theory are themselves questionable. It may not be desirable to replicate the fictitious path of revenues resulting from the restrictive assumptions of the contestability model.

- the paper's assumptions in combination with a perfectly contestable market, result in a constant revenue stream over time. This outcome is limiting in the real world. In reality, a new entrant's revenue stream depends on the extent of competition (eg competition between pipelines as in the case of the newly completed Eastern Gas Pipeline and the Moomba-Sydney pipeline).

The Commission notes the alternative methodology for estimating DORC presented by Agility. As the Commission has stated previously, this indicates the difficulties inherent in estimating DORC and the range of possible values that DORC may take.

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[37] The Construction of DORC from ORC, Agility Management, August 2000.

[38] The Commission sought independent advice from Professor S King in respect of Agility's approach to DORC valuation.

The Commission considers there are significant implications for regulatory depreciation under Agility's approach to DORC valuation (see chapter 6). Until this issue has been fully examined and explored with public consultation, the Commission cannot accept the new estimate of DORC.

The Commission has considered all submissions and the new entrant DORC. The Commission concludes that there is insufficient evidence to move from the estimate of DORC of $252m proposed by ActewAGL in the Access Arrangement proposal and used in the draft decision. This estimate has therefore been used to establish the ICB.

5.6.2 Assessment of feasible range for asset valuation

Depreciated actual cost (DAC)

ActewAGL agrees with the Commission's assessment of DAC at $90m for capital assets.

Optimised deprival value (ODV)

The draft decision explains that the current profitability of the ACT network is such that the ODV will equal DORC. Hence uncertainty in the ODV is a result of the uncertainty in the DORC.

ActewAGL has responded that the PPK/Kinhill DORC is appropriate and has amended its ODV analysis. The corrected ODV should be within the range $252 - $255m, consistent with PPK/Kinhill DORC.

After considering further information and submissions, the Commission's view of DORC remains unchanged. The Commission maintains the view that ODV is subject to uncertainty with the DORC valuation.

Depreciated inflation adjusted historical cost (DIHC)

The DIHC is based on the Commission's analysis of a range of assumptions. This analysis was reviewed by the Commission's independent consultant, KPMG.

The Commission has maintained its estimate of DIHC in the final decision.

Economic written down value assuming CCA depreciation and CCA return

In its draft decision, the Commission estimates the economic written down value (WDV) to be in the range $140m - $190m. In its responding submission, ActewAGL argues that a minimum value of $184m should be used.

In its draft decision, the Commission notes that the parameters used in ActewAGL's WACC calculations are higher than those adopted in recent regulatory decisions. The Commission maintains its original assessment of economic WDV in the final decision.

Revised range for ICB consideration

In establishing the ICB, the Commission has decided to consider various asset valuation methodologies. The range of asset values adopted for the draft decision has been maintained in the final decision.

Table 5.5 Revised asset values at 1 July 1999 using alternative methodologies ($m)

Capital assets only	ActewAGL (original proposal)	ActewAGL responses (Apr 2000)	Final decision (Nov 2000)
DAC			
- system assets	87	Agreed	87
- non system assets	3		3
- total	90		90
DORC			
- system assets	252	252	252
- non system assets	3		3
- total	255		255
DORC constructed from ORC using new entrant's income stream	NA	294 - 314	Not accepted
ODV	239 (stand alone allocation)	255	Subject to allocation methodology and uncertainty re DORC valuation
DIHC	148.5		130 - 148
Economic written down value assuming CCA depreciation and CCA return		279.6 (using ActewAGL's estimate of WACC) 204.1 (using cost of equity=LTBR plus 3% up to 1991, then ActewAGL's WACC estimate	A range of 140 - 190 is estimated after adjusting for actual 98/99 CPI, capex and using alternative assumptions on rate of return
Feasible range	90 - 255		90 - 255

In the draft decision, the Commission provides an evaluation of asset valuation methodologies, including implications for economic efficiency, equity, transparency and practicality.

The Commission acknowledges that there are advantages and disadvantages in using DAC and DORC for price regulatory purposes. Different approaches to establishing the regulatory capital base have been adopted in countries like the USA, Canada and UK. Economic principles do not provide an unambiguous answer regarding the most appropriate asset valuation methodology.

Having considered the submissions received, the Commission:

- questions the argument for using DAC, which appears to assume that a certain methodology was adopted for setting tariffs and financial reporting in the past
- concludes that there is no significant economic argument requiring an ICB to be founded on a DORC valuation for sunk assets, especially considering the consequences of a high initial asset base for economic efficiency.

In this final decision the Commission attempts to balance the interests of users and the interests of ActewAGL, as the service provider, within the requirements and objectives of the Code. The Commission concludes that neither DAC nor DORC should be adopted for ActewAGL's access pricing.

5.6.3 Other issues and considerations relating to the ICB

In the draft decision, the Commission considered other considerations required by the Code.[39] The Commission examined ActewAGL's responding submissions and other submissions. New issues arising from this process are discussed below.

Historical returns and depreciation

Under section 8.10(f) of the Code, the Commission should consider the basis on which tariffs have been (or appear to have been) set in the past, economic depreciation of the covered pipeline, and historical returns to the service provider from the covered pipeline.

In its draft decision, the Commission compares actual returns with the notional allowed return on DAC. The Commission concludes that:

- whilst there is under recovery of past return during the period 1981-1989, the return since 1990 is above the level that would be earned by ActewAGL if it were to recover its WACC
- there is no firm evidence to support ActewAGL's claim of significant under recovery of capital
- in past years ActewAGL appears to have depreciated some asset categories based on asset lives which are less than economic asset lives

ActewAGL's comments on the historical return analysis are:

- the bond rate has no relevance as a basis for comparison in the analysis. The regulated return on equity in the years prior to 1991 was the semi-government bond rate (SGBR) plus 3 per cent, and a WACC based on this rate is correct datum for those years
- the SGBR+3 per cent was the permitted *post tax* return on equity, rather than a pre tax return
- the basis for estimating ActewAGL's historic WACC in the draft decision is inconsistent with that adopted in other places in the draft decision, including the discount rate in the forward looking economic value (EV) calculation for determining ODV.

The Commission has reviewed ActewAGL's comments and conducted additional analysis. Its findings are summarised below:

39 See section 6.10 of the draft decision.

Whether SGBR+3 per cent is a pre tax or post tax return

The proposition underlying the CAPM is that the required rate of return on any risky asset is equal to the risk free rate plus a risk premium. Viewed from this perspective, the historical practice of requiring a return (dividend component only) equal to SGBR+3 per cent from AGL implies that the risk premium (measured over the SGBR) regarded as appropriate for AGL is 3 per cent. This is an arbitrary way of assessing the required return for a business such as AGL.

The Commission notes that in estimating its economic WDV value, ActewAGL has modelled the impact of a pre tax return based on LTBR plus a margin of 3 per cent to 1991.[40] This suggests that the long term bond rate plus a margin is an acceptable approach to assess the return of a business.[41]

The difference between the bond rate and the ActewAGL WACC using SGBR+3 per cent as a post tax return on equity between 1981-1991 is shown below:

Table 5.6 Risk margin based on ActewAGL's estimate of WACC using post tax return on equity=SGBR+3%

	Risk premium/margin above bond rates	
	Above SGBR	**Above LTBR**
1981	6.8%	8.6%
1982	7.5%	9.8%
1983	6.7%	9.3%
1984	7.5%	7.9%
1985	7.4%	8.0%
1986	8.4%	7.0%
1987	5.1%	5.9%
1988	3.9%	4.1%
1989	2.9%	4.1%
1990	2.9%	4.0%
1991	3.5%	3.3%

The risk premium is higher for the early 1980s than in the late 1980s. This is basically driven by the conversion of the post tax equity return of SGBR+3 per cent to pre tax, using the corporate tax rate at the time. In reality, the level of shareholder capital/equity in the early years is minimal and no tax was payable. This raises a question about using SGBR+3 per cent as a post tax return as it may overstate the 'under-recovery' in the early 1980s.

Actual vs notional cost of capital

CAPM model introduces judgmental assumptions, particularly for the earlier part of the period. ActewAGL has not provided any evidence to support its 'actual' cost of capital.

Gearing and tax rates are two of the main determinants of CAPM/WACC. The Commission considers that the assessment of historical return is a backward looking analysis. *Actual*

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40 Review of financial and valuation models prepared by AGL Gas Company (ACT) Limited, Arthur Andersen, 6 September 1999, p23.

41 For its draft decision on the Victorian distribution businesses, ORG undertook a financial analysis of economic written down value. In this analysis, Commonwealth bond rates together with a market risk premium of between 0-3 per cent, were used to calculate the implied rate of return prevalent over the period under review.

gearing and effective rate should be considered along with WACC parameters. The Commission notes that:

- in the early years, gearing was very high. Issued share capital was less than 10 per cent of total investments
- in the early years, there were no tax payments. In some years, there were tax credits rather than payment. The first tax year was 1987.

The historical return results (ie under/over recovery of capital) are sensitive to the rate of return WACC assumptions. Under ActewAGL's claim that its *post tax* return of equity should equal SGBR+3 per cent, the amount of under recovery is significant. However, if the WACC is adjusted for actual gearing and effective tax rate, the level of deficit reduces substantially.

Comparison of return on equity

The executive summary of the report, "Gas Regulation in the Australian Capital Territory" prepared by the Board of Enquiry (BOE) in June 1990 notes:[42]

> A detailed examination by the BOE's financial advisers of AGL(Canberra)'s activities over the past four years concluded the following:
>
> The 1987 draft ACT Gas Ordinance allowed a greater return than that allowed under the NSW Gas Act, 1986 and AGL(Canberra)'s return, if interpreted as an after tax return (as has been applied in NSW), is excessive, particularly considering the benefit in operating a sole franchise gas distributing company. In 1988-89 for example, the allowed return on shareholders' funds under the draft ACT Gas Ordinance was 15.69% compared with 13.8% allowed under the NSW Gas Act. AGL(Canberra)'s return on share capital, based on the criteria in the draft Ordinance was 17.46%
>
> The level of risk undertaken by a gas company is relatively low in comparison to other "industrial" companies, as defined by the Australian Stock Exchange, and investment in risk free long term bonds.
>
> The existing informal gas pricing arrangement has permitted AGL(Canberra) to enjoy a greater return on investment than that achieved by the average of "all industrial" companies. For example, AGL(C)'s 17.46% return on share capital in 1988-89 compares with a return on shareholders funds for "all industrials" of 9.9%.
>
> The current gas price charged by AGL(C) is 7.65% higher than the price required to provide a "reasonable" return on shareholders invested funds.
>
> AGL(C)'s June 30 1990 estimated result will generate an excess profit of $1,116,000 or 3.54% more revenue from gas sales than is required to provide a reasonable profit under the criteria specified in the NSW Gas Act, 1986.

Based on the findings of the BOE report, it may be argued that ActewAGL's claim for historical under recovery of capital may be built upon a relatively 'high' return compared with that of an average industrial company.

[42] Board of Inquiry, Report to the Chief Minister on Gas Regulation in the Australian Capital Territory, June 1990 pp iv-v.

Dividends and issued capital

SGBR+3 per cent was the maximum annual ordinary dividend that ActewAGL was permitted to pay. SGBR+3 per cent was applied to nominal share capital. Because returns accrue in the form of dividends, capital gains and imputation credits, it does not necessarily follow that a dividend payment is a valid measure of the total return to shareholders. The payment of a dividend represents a cashflow which distributes only part of the total return accruing to shareholders. The total historical return to shareholders is represented by increases in net assets provided by profits after tax (and other financing costs).

The Commission notes that:

- $26.5m of share capital was issued during 1980-1990
- since then, the ACT business has continued to grow with no injection of equity investment
- new capital investment of over $55m has been made since 1990
- the total dividend provided / paid during the period 1980-1999 was over $65m.

Based on the above information, it is questionable that ActewAGL's equity holders have suffered from poor returns.

Uncertainty about historical data in such analysis

The Commission considers that there is uncertainty regarding the use of ActewAGL's historical analysis in the analysis, given that:

- the bundling of regulated and non-regulated businesses in the past. The Commission notes that sales of gas appliances represent up to 20 per cent of ActewAGL's sales revenues in the 1980s
- historical return is measured by earnings before interest and tax, but after depreciation (EBIT). The draft decision notes that depreciation of fixed assets has been charged on the diminishing value method. Customers' connections had been amortised using asset lives less than economic lives. If depreciation was charged using the economic asset lives adopted in the draft decision, it would be lower than accounting depreciation reported in the annual accounts. This would imply a higher EBIT than the level used in the present historical return analysis.

Summary and conclusion

Under section 8.10(f) of the Code, the Commission is required to consider ActewAGL's claims. It has done so and concludes that:

- the historic data for ActewAGL's business operations has some limitations
- there is uncertainty as to whether there is any under recovery of capital in the recent history. In present value terms, the size of under recoveries in the early years is very sensitive to the WACC. As discussed above, under ActewAGL's claim that its post tax cost of equity = SGBR+3 per cent, the margin above bond rates for the early 1980s appears very high.

5.6.4 Financial indicator analysis

The Code expressly permits the regulator to have regard to financial performance indicators (sections 8.6 and 8.7):

> In view of the manner in which the Rate of Return, Capital Base, Depreciation Schedule and Non Capital Costs may be determined (in each case involving various discretions), it is possible that a range of values may be attributable to the Total Revenue. In order to determine an appropriate value within this range, the Relevant Regulator may have regard to any financial and operational performance indicators it considers relevant in order to determine the level of costs within the range of feasible outcomes under section 8.4 that is most consistent with the objectives contained in section 8.1.
>
> If the Relevant Regulator has considered financial and operational performance indicators for the purposes of section 8.6, it must identify the indicators and provide an explanation of how they have been taken into account.

The Commission's consideration of ActewAGL's total revenue has involved analysing the utility's financial viability and considering its rate of return, initial capital base and the composition, level and funding of expenditure. This approach was adopted for the draft decision process, including the determination of the ICB for ActewAGL.

In response to the draft decision, BHPP has commented that details of the financial indicators used by the Commission are not provided. The Commission believes its explanation of the approaches adopted in the draft decision was adequate. Nevertheless, the Commission has provided detail definitions of the financial indicators (see attachment 4).

In its submission, Envestra comments that the cashflow based financial indicators used by credit rating agencies have been updated.

The Commission notes that Standard & Poors has revised the four principal financial targets it uses to analyse all investor-owned electric, natural gas, and water utilities in the USA. It has created a single set of financial targets which can be applied across the different utility segments. The new financial targets, like the previous benchmarks, pertain to risk-adjusted ratios that distinguish between low risk and high risk activities. It is understood that S&P Australia still uses the ranking adopted in the Commission's draft decision analysis. The Commission notes that those ratings are consistent with the new ratings for US utilities.

In the final decision process, the Commission has modelled ActewAGL's financial outcomes under its decision on rate of return, capital expenditure and non-capital costs. If an ICB of $170m is maintained, there will be a large reduction in profits compared with current revenue in 1999/00.

In light of its assessment of revised financial projections for ActewAGL, the Commission considers it appropriate to review its draft decision on ICB.[43] The Commission has therefore assessed alternative scenarios using an ICB of $170m - $180m. After considering the objectives and requirements of the Code, the Commission considers that an ICB towards the middle of this range represents a more balanced outcome for ActewAGL.

5.7 Final decision

In reviewing ActewAGL's Access Arrangement, the Commission has considered submissions it has received. In its final decision, the Commission has maintained its assessment of DAC, DORC, DIHC and ODV. The Commission has undertaken further

43 See chapter 10 for further details.

analysis to address ActewAGL's comment on historical return analysis. The Commission's conclusions are:

- the estimate of DIHC in the draft decision is below DORC
- a range of feasible asset values for ActewAGL's assets is $90m - $255m
- it is not possible to reach a conclusion whether ActewAGL has under-recovered its capital in the past.

The Commission has modelled ActewAGL's revenue and financial outcomes under alternative revenue/price cap scenarios using a range of ICB within $170m - $180m. This assessment is necessary to ensure the financial interests of the service provider are adequately considered. The financial analysis shows that there will be a significant reduction in ActewAGL's revenue in 2000/01 and 2001/02, compared with current revenues, resulting in a deterioration of financial performance in those years. However, the trend suggests that the revenue reduction is sustainable in the medium and long term.

Having considered submissions since the draft decision, and made a further assessment of financial impact, the Commission has decided to amend its draft decision on ActewAGL's ICB. The Commission concludes that ActewAGL's ICB at 1 July 1999 should be $175m, ie $5m higher than the level proposed in the draft decision.

This ICB and other amendments required by the Commission will mean real price reductions in network costs for all customers. The adoption of $175m as the ICB will reduce ActewAGL's revenue stream and profits. However, its revenue will be sufficient to allow ActewAGL to continue to operate and maintain the network while earning a reasonable return.

The Commission's required amendment is:

Amendment 3 – Initial capital base at 1 July 1999

The initial capital base for ActewAGL's covered pipeline must be set at a value no higher than $175m at 1 July 1999.

6 DEPRECIATION

6.1 ActewAGL's proposal

ActewAGL has used current cost accounting methods and economic lives to calculate its proposed depreciation.

ActewAGL's original proposed regulatory capital base at 1 July 1999 ($240.6m) is equivalent to 100 per cent of DORC.[44] Depreciation values proposed by ActewAGL in January 1999 are shown in Table 6.1.

Table 6.1 ActewAGL's proposed depreciation (nominal $m)

Year ending June	2001	2002	2003	2004
Depreciation	8.0	8.3	8.6	8.9

Source: ActewAGL, RAAI p 6.

6.2 Draft decision

In its draft decision, the Commission required the following amendments:[45]

(a) the depreciation component must be calculated based on the regulatory capital base only, thus reflecting the initial capital base at 1 July 1999 as determined by the Commission

(b) depreciation must be calculated using a straight line method based on economic lives by asset category.

6.3 Responses to the draft decision

6.3.1 ActewAGL's response

ActewAGL agreed to incorporate the required amendments in its revised Access Arrangement and Access Arrangement Information. However, it did not agree with the draft decision on ICB.

6.3.2 Public submissions

In its submission, BHPP comments that DORC values can be substantially affected by differences in assumed asset lives.

As discussed in chapter 5, Agility, on behalf of ActewAGL, submits an alternative approach to the DORC valuation. In applying this approach to the ACT network, Agility concludes that:[46]

> The ratio of DORC to ORC for the ACT is most likely to be in the range 90% to 96%.

Agility's paper does not expressly address the calculation of regulatory depreciation.

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44 Capital assets only.

45 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla,* Draft Decision, March 2000, p 105.

46 Correspondence with Agility.

6.4 Commission's assessment

In the final decision, the Commission has:

- considered Agility's paper and the implications for determining regulatory depreciation
- defined asset classes, economic asset lives and remaining asset lives at 1 July 1999
- recalculated depreciation based on the allocation of ICB to asset classes required in the final decision
- considered the implications of the capital redundancy mechanism for economic asset lives.

6.4.1 Depreciation under Agility's proposed approach to DORC valuation

In the Commission's final decision, the ICB is determined after considering a range of matters set out in the Code, including the DORC valuation. Although the Commission has not accepted the new DORC valuation proposed by Agility, it has considered the depreciation method implied under Agility's proposed approach to DORC valuation.

In his advice to the Commission, King concludes that:[47]

> The *Agility* approach to asset valuation however cannot be separated from the depreciation regime that it implies. This form of depreciation regime is "back weighted" in the sense that long-lived assets have little depreciation in the early year of operation. The appropriateness of the *Agility* approach depends critically on whether this depreciation methodology can be used on an on-going basis under the Code. If this form of depreciation cannot be used on an ongoing basis, then the *Agility* approach is not appropriate. The consistency of the Agility approach can only be maintained with its associated form of depreciation. Using an alternative form of depreciation, such as straight line depreciation on an ongoing basis would lead to *Agility* approach being meaningless and inconsistent with the contestable revenues that are used to construct the valuation.

In its draft decision, the Commission decided to calculate regulatory depreciation based on a schedule of remaining lives for existing assets and economic asset lives for new assets. It is not clear how Agility's approach to depreciation can be implemented under the Commission's decision on the ICB. The assets are part way through their asset lives, ie the existing assets have already been depreciated using a largely straight line method. As the ICB is set at a value other than DORC, complex issues would require further analysis if Agility's approach to calculating depreciation was to be adopted.

The Commission notes that straight line depreciation is a generally accepted method of determining regulatory depreciation. Any move from the straight line depreciation method proposed in the draft decision requires further consultation. Given the current timeframe and the information available, the Commission has decided to maintain its method of calculating regulatory depreciation in the final decision.

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[47] Advice prepared by Professor S King to comment on Agility's approach to DORC valuation, October 2000.

6.4.2 Asset classes and economic depreciation

The draft decision provides in broad categories a schedule of economic asset lives for ActewAGL's system assets. In its final decision, the Commission concludes that:

- in the DORC assessment, economic asset lives should be stated for each category of assets. These asset lives are used to calculate regulatory depreciation for the ICB and new capital investment
- remaining asset lives should also be specified by asset groups
- the schedule of economic asset lives will be used in calculating regulatory depreciation
- asset lives must be recorded as part of an asset register to be developed by ActewAGL in consultation with the Commission. This will facilitate monitoring of the regulatory capital base for the next review. The asset register must be developed following the asset categories shown in attachment 5.

6.4.3 Calculation of regulatory depreciation

In the draft decision, the Commission assumes a "single" depreciation rate which was to be applied to the whole regulatory capital base. The draft decision does not specify the detail of asset classes under the ICB. The final decision on ICB allocation requires depreciation defined by asset categories and pipelines to be provided, eg high pressure, medium & low pressure and meters.

The Commission has recalculated regulatory deprecation for the capital base at 1 July 1999. Table 6.2 provides a summary of the ICB allocation and depreciation by pipeline/major asset category.

Table 6.2 Regulatory depreciation under the 1999 ICB ($m)

	Final decision - ICB	Final decision - depreciation
Distribution system		
County packaged off take stations	0.43	0.01
Contract meters	2.11	0.28
Tariff meters	4.86	0.78
HP mains	27.72	0.57
MP mains	113.09	3.03
HP services	0.77	0.02
MP services	23.03	0.64
Total system assets	**172.00**	**5.34**
Non systems assets	3.00	0.57
Total regulatory asset base	**175.00**	**5.91**

Note depreciation in the final decision is for the year 2000/01. HP mains depreciation includes depreciation on the EGP connection assets.

In the draft decision, the Commission accepted ActewAGL's proposal to implement a current cost approach which involves indexing the capital base in line with inflation and providing a real rate of return on capital. In the final decision, the Commission has decided to maintain this approach. Consistent with this, depreciation is calculated on the capital base adjusted for inflation. This approach has been adopted in other access decisions.[48]

Depreciation in the final decision varies from ActewAGL's original proposal. The difference between ActewAGL's original depreciation and the values calculated by the Commission stem from:

- the lower ICB (from $241m to $175m)
- different capital expenditure forecasts.

Table 6.3 Depreciation comparison (2000/2001 $m)

Year ending June	2001	2002	2003	2004
Final decision	5.9	6.3	6.5	6.8
ActewAGL proposal	8.0	8.1	8.1	8.2

Note:
ActewAGL's original proposed depreciation for the year 2001/02-2003/04 has been deflated to 2000/01 values using an inflation rate of 2.5 per cent, which is consistent with the assumed inflation rate in the original AA. Depreciation for 1999/2000 has been translated to 2000/01 assuming inflation of 3 per cent in 1999/2000.

6.4.4 Effect of capital redundancy mechanism on the economic asset life of assets

The Commission has adopted a mechanism for capital redundancy (see section 8.4.1). As required by the Code,[49] the Commission has assessed the uncertainty that such a mechanism would cause and the impact on ActewAGL, users, and prospective users. These effects have been taken into account in determining the rate of return.

The prospect of assets becoming stranded and the risks associated with this, have already been taken into account in determining the rate of return. The risk effects would be double counted if adjustments were to be made to the economic asset lives. The Commission has concluded that no adjustment is required to the economic life of assets.

6.4.5 Other issues

Accounting depreciation and regulatory depreciation

The Code allows depreciation to be recovered once only. However, the calculation of depreciation may change with time. In such cases, it is difficult to assess whether depreciation has been doubled counted or not, and the quantum involved.

The Commission requires ActewAGL to develop an asset register. The asset register will provide details relating to assets including when it was purchased and for how much, when sold, scrapped and depreciation based on the asset lives allowed by the Commission. This will assist the regulator to ensure that assets are written off only once from the time when they were first included in the capital base.

48 Decisions on the Access Arrangements for Stratus, Multinet and Westar in Victoria, GSN, Albury Gas and AGLGN in NSW.

49 Section 8.27 of the Code.

Depreciation for non system assets

Asset lives for non-system assets vary from 3 - 5 years (for motor vehicles) to over 10 years (for some computer hardware and buildings). In the asset register depreciation and asset lives for components of non-system assets should be shown separately. This will assist the Commission to assess future capital expenditure on replacing non-system assets.

6.5 Final decision

The depreciation schedule must be calculated based on:

- the regulatory capital base as established by the Commission at 1 July 1999 and subsequently rolled forward according to the procedures set out in the final decision
- the economic asset lives adopted by the Commission
- the capital expenditure allowed by the Commission in this final decision.

Amendment 4 – Depreciation

ActewAGL is required to amend its economic asset lives as follows:

Asset class	Economic asset Life (years)
Trunk main	80
Primary main	80
Secondary network	80
Medium pressure network	50
Secondary services	50
MP/LP services	50
ALB valves	50
TRS/POTS	50
PRS	50
Primary valves	50
SRS	50
Contract meters	15
Lump meters - I&C tariff	15
GASS Meters - domestic	15
Non system assets	To be consistent with the categories and lives adopted for financial reporting.

7 CAPITAL EXPENDITURE

7.1 ActewAGL's proposal

ActewAGL's forecast capital expenditure (capex) is expressed in nominal dollar terms.[50] During the review process, ActewAGL made adjustments to its forecast capex. The revised figures (excluding capex to connect to the Eastern Gas Pipeline (EGP)) considered in the draft decision are shown below:

Table 7.1 ActewAGL's actual and forecast capital expenditure[1]

Year		$m of the year	2000/01 $m
1999/00	Actual	5.5	5.7
2000/01	Forecast	6.3	6.3
2001/02	Forecast	4.9	4.8
2002/03	Forecast	5.3	5.1
2003/04	Forecast	5.3	4.9

Source: ActewAGL.

Note:

1. The forecast figures are the revised capital expenditure in ActewAGL's financial model which were submitted to the Commission in August 1999.
2. ActewAGL's nominal forecasts are converted into real dollars based on its inflation assumption of 2.5 per cent pa from 1999/00 to 2003/04 and the estimated inflation for 2000/01 of 3.0 per cent.

In a later submission,[51] ActewAGL proposed additional capex to connect to the EGP. The reasons for this capex include assuring gas supply for the 2000 winter, increased security of supply to the ACT network, and increased opportunities for competitive gas supply.

In this submission, the proposed capex totalled $12m (+/-10 per cent). Subsequently, ActewAGL submitted another proposal valuing the capex for the EGP connection at $14.2m. Reasons for the increase included environmental, licensing and metering issues (these are covered in more detail in section 7.5 below).

The main components of ActewAGL's capex are:

- growth related/market expansion
- system reinforcement
- renewal/replacement
- contestability.

7.2 Draft decision

In its draft decision, the Commission stated that based on the information available it was not possible to determine the prudence of ActewAGL's historical and forecast capex, though

50 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 107.

51 ActewAGL, *Submission to the ActewAGL Access Arrangement Review*, 20 December 1999.

the findings in the draft engineering capex review report were generally favourable. The draft decision contained the following information requirement:[52]

> ActewAGL is required to provide further information and explanation concerning:
>
> a) the downward revision in the capital expenditure forecasts submitted in August, prior to the new proposal on the Eastern Gas Pipeline connection, compared to the April submission
>
> b) whether the capital expenditure per connection includes or excludes mains costs.

7.3 Responses to the draft decision

The Commission's draft decision was released in March 2000. At that stage, the Commission had not received its consultant's final report on ActewAGL's capital expenditure. This report was submitted to the Commission in May 2000[53], and subsequently released publicly.

ActewAGL made an additional submission in regard to its capital expenditure forecasts. On 23 August 2000, ActewAGL submitted revised (higher overall) capex forecasts associated with connection to the EGP. ActewAGL has also responded to a number of information requests from the Commission.

7.3.1 ActewAGL's response

The following details ActewAGL's response to the Commission's information request in the draft decision.

Downward revision of capex in August 1999 submission

ActewAGL has explained that the reduction in proposed capex in the August submission was an error. The August submission was revised to adopt Arthur Andersen's recommendations that capex should be inflated by the full CPI. In doing so ActewAGL inadvertently left out the shallow capex for the business tariff customers. The table below presents the various capex proposals:

Table 7.2 ActewAGL capex proposals (2000/01 $m)

Year ending June	2001	2002	2003	2004
April 1999 submission	6.8	5.2	5.5	5.2
August 1999 submission	6.3	4.8	5.1	4.9
Corrected August 1999 submission	7.0	5.5	5.7	5.6

Source: ActewAGL letter dated 19 May 2000.

Note:

1. The Corrected August values exclude the EGP to allow for comparison with the earlier submissions.
2. ActewAGL's nominal forecasts are converted into real dollars based on its inflation assumption of 2.5 per cent pa from 1999/00 to 2003/04 and the estimated inflation for 2000/01 of 3.0 per cent.

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52 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 113.

53 Connell Wagner, Report to IPARC on Technical Review of ActewAGL's DORC and Capex for ACT, Queanbeyan and Yarrowlumla, May 2000.

The Commission has assessed ActewAGL's response and is satisfied that the correction to the August submission reflects the change in inflation assumptions between the April and August models.

Capex per connection – mains costs

ActewAGL has clarified that the average capex per connection presented in Table 9.6 of the draft decision does include mains costs. ActewAGL has explained that whether a mains extension is required or not depends on the type of customer connection. Those connecting to line-of-main do not require a mains extension, as opposed to those connecting in new estates.

7.3.2 Public submissions

BHPP has expressed that the final decision on capex to be included in the Access Arrangement period should be subject to section 8.22 of the Code rather than section 8.21.[54] BHPP's concern is that the regulator and stakeholders are still learning about the capital requirements of the network, and that an assessment of the reasonableness of forecast capital expenditure cannot be made until volume forecasts are finalised.[55]

7.4 Key issues for the final assessment

The Code has specific provisions covering actual and forecast new facilities investment. These must pass a "prudent investment" test to be rolled into the capital base or to be included in the determination of total revenue and reference tariffs. The tests are set out in section 8.16 (a) and (b) of the Code. The assessment criteria are:

- whether the amount represents the level that would be invested by a prudent service provider acting efficiently in accordance with accepted good industry practice, and aiming to achieve the lowest sustainable cost of delivering services; and
- that one of the following conditions be satisfied:
  - the economic viability test, ie the anticipated incremental revenue generated by the capex exceeds the investment; or
  - the capex has system wide benefits; or
  - the capex is necessary to maintain the safety, integrity or contracted capacity of services.

In its draft decision, the Commission considered ActewAGL's forecast capex were not fully substantiated in terms of the requirements set out in the Code. However, the Commission notes that in a review report, Ewbank Preece (now called Connell Wagner, CW) made favourable comment on ActewAGL's capital expenditure decision process.

In the final assessment, the key issue is whether ActewAGL's actual capex for the year 1999/2000 and its forecast capex for 2000/01 – 2003/04 should be included in determining total revenue and reference tariffs, and if so, at what level.

54 BHPP, *Submission to ActewAGL Access Arrangement Review*, 17 April 2000, p 5.

55 Among other things, section 8.22 of the Code essentially allows the regulator to account for differences between forecast and actual capital expenditure during the existing Access Arrangement period for the purpose of calculating the capital base at the commencement of the subsequent Access Arrangement period. This has been the approach taken by the Commission. Capital expenditure between 1999/2000 – 2003/04 will be re-assessed for prudency at the next Access Arrangement review.

7.5 Commission's assessment

During the process of the review, ActewAGL has submitted information and/or has been requested by the Commission to submit information. On occasions, ActewAGL has subsequently amended information originally provided to the Commission. The Commission has had due regard to all submissions and has considered the final report on the capex review.

7.5.1 Information considered by the Commission

Capital expenditure review by Connell Wagner

As mentioned earlier, at the time of the draft decision CW had not completed its final report on its review of ActewAGL's historical and forecast capex. A final report was submitted in May 2000.

Generally the findings on ActewAGL's capital expenditure decision making process are favourable. However, in assessing the actual capital expenditure for the past five years, from 1993-1998, it commented that the records system of ActewAGL does not produce the information in the manner required for the regulator to assess prudence. CW also commented that the data available was not sufficient to enable meaningful unit rates to be calculated, hence making the overall capex process (from planning to ex-post reconciliation) neither readily auditable nor transparent.

Table 7.3 Historical capex (2000/01 $m)

Year ending June	1994	1995	1996	1997	1998	1999	2000
Total capex (incl EGP)	7.4	5.9	9.4	7.7	7.9	4.1	8.6
Total capex (excl EGP)	7.4	5.9	9.4	7.7	7.9	4.1	4.9

Source: ActewAGL letter dated 16 August 2000 and CW final report, p 51.
ActewAGL's nominal forecasts are converted into real dollars based on the actual inflation of 2.4 per cent for 1999/00 and the estimated inflation for 2000/01 of 3.0 per cent.

As a result, CW was not able to confirm the prudence of the historical capex relating to system upgrade and market expansion. CW comments that the "Other capital expenditure" category is within the expected range and not material to the overall capex.

CW concludes that the Watson to Phillip extension and the establishment of the TRS at Phillip were prudent, but there was insufficient information to comment on the prudence of the Gungahlin Supply Infrastructure project.

Though CW was unable to comment on the prudence of all the historical capex, they have found the decision making process to be sound and that overall, historical capex has achieved a prudent internal rate of return.

It should be noted that the Commission is not required to undertake a 'prudency test' of ActewAGL's historical capex. This is because the ICB for ActewAGL is set at 1 July 1999. Historical capex is not relevant in this case. However, the findings on historical capex may be considered when assessing forecast capex.

Assessment of ActewAGL's actual 1999/2000 capex

The Commission has determined ActewAGL's ICB at 1 July 1999. Given the extended time of the review, the actual capex for 1999/2000 is now known. The Commission does have the option of assessing capex prudency in this year as a means of setting the ICB at 1 July 2000, rather than 1 July 1999. The Commission has decided not to do this as the actual 1999/2000 capex includes some expenditure associated with the EGP connection. The Commission considers that the assessment of the whole EGP project should be made at the next review.

However, the Commission has determined that the actual 1999/2000 capex figure will be used for the purposes of setting reference tariffs for this Access Arrangement period. At the subsequent Access Arrangement review, the Commission (or relevant regulator) will assess the prudency of capital expenditure between 1999/2000 – 2003/04 to determine the roll forward of the ICB.

ActewAGL forecast capex

Table 7.4 presents ActewAGL's original capex proposal and its proposal under the draft decision demand growth requirements.

Table 7.4 ActewAGL capex proposals (2000/01 $m)

Year ending June	**2001**	**2002**	**2003**	**2004**
Original proposal (Jan 99)				
Renewal/replacement/other	1.3	1.2	1.9	1.6
Growth related	4.2	4.0	3.6	3.1
System reinforcement	1.3	0.0	0.0	0.4
EGP[1]	9.0	0.0	0.0	0.0
Total	15.9	5.3	5.5	5.2
ActewAGL proposal under DD demand growth				
Renewal/replacement/other	1.3	1.2	1.9	1.6
Growth related	7.6	8.1	8.5	9.3
System reinforcement	4.0	4.0	4.0	4.0
EGP	9.0	0.0	0.0	0.0
Total	21.9	13.4	14.4	14.9

Source: ActewAGL original AA submission and responding submission to the draft decision.
Note:
1. ActewAGL's original EGP proposal has been included in the January 1999 capex values to allow for comparison with its proposal under the draft decision.

In its responding submission to the draft decision, ActewAGL argues that growth related capex is driven by the market expansion forecasts. Thus in order to meet the growth in amendment 16 of the draft decision, the proposed level of capex must be adjusted. The Commission acknowledges that with higher demand forecasts, there may be an argument to increase growth and/or system reinforcement capex.

ActewAGL has calculated capex as follows:

- growth capex is based on customer number growth and the unit cost to connect a customer. Customer number growth is derived from volume growth
- system reinforcement capex has been calculated based on an engineering design and analysis.

Connection to the EGP

Following the original January 1999 proposal, ActewAGL proposed to connect to the EGP. This project was initially estimated to cost $12m.[56] Recently, ActewAGL submitted that the project cost had been revised due to various issues, including environmental and licensing requirements. The new proposal for the cost of the EGP connection is $14.2m.[57]

Commission's assessment of ActewAGL's revised capex

Growth related capex

The Commission has assessed the methods used by ActewAGL to forecast growth capex. In summary, ActewAGL estimates growth capex by:

- applying the forecast demand growth to the 2000 actual volume
- converting the volume growth to customer growth based on average household demand
- applying a set of unit rates which include metering facilities, services and mains.

The Commission considers this general method of estimating growth capex to be reasonable. However, the Commission has used alternative figures to ActewAGL in some cases.

The Commission has decided to calculate the growth capex by:

- applying the final decision demand growth to the 2000 actual residential load volume
- converting the volume growth to customer growth based on average household demand information submitted in June 2000[58]
- adopting the unit rates for metering facilities, services and mains that were published in the CW report.

The connection costs provided in the May 2000 CW final report over the period 2000-2004 are within the range $975-1095 per customer. ActewAGL did not specifically comment on this range at the time, but submitted a revised (higher) estimate in September 2000. The Commission notes that the unit rates in the CW report are in line with IPART's allowance of $1,156 for Great Southern Networks' Access Arrangement and $1,200 for Albury Gas Company's Access Arrangement in NSW. The Commission is not convinced of ActewAGL's revised unit costs and decided to adopt the connection costs in the CW final report.

System reinforcement capex

In its response to the draft decision, ActewAGL proposed that under draft decision amendment 16, system reinforcement capex would need to be increased in order to support the higher growth.

The Commission assessed the cumulative growth and capex proposal under ActewAGL's original proposal and its revised proposal based on the higher demand forecasts. ActewAGL was requested to provide more information on how it estimated system reinforcement capex. In its October response, ActewAGL stated that they had

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56 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 20 December 1999.

57 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 23 August 2000.

58 This information was submitted by ActewAGL to support its response to the draft decision and a presentation it made to the Commission. ActewAGL subsequently submitted another set of demand information in September 2000. The average consumption data is lower than that submitted in June.

underestimated capex as presented in its proposed Access Arrangement. ActewAGL states it only presented the major projects in the capex forecasts. The table below presents the various system reinforcement capex proposals put forward by ActewAGL during the review process.

Table 7.5 System reinforcement capex proposals by ActewAGL (2000/01 $m)

Year ending June	2001	2002	2003	2004	Total
Residential load growth (%)					
Original proposal	5.1	4.5	3.9	3.2	17.8
Draft decision	8.0	8.0	8.0	8.0	36.0
Final decision	6.0	6.0	6.0	6.0	26.2
Original proposal	1.3	0.0	0.0	0.4	1.8
Response to draft decision [1]	4.0	4.0	4.0	4.0	16.1
Revised estimate to meet 6% tariff load growth [2]	2.9	3.6	2.4	1.2	10.1

Note:
1. The $16.1m is the engineering estimate for the year 2004, which is then prorata over the interim years.
2. The capex is based on detail design for each year.

ActewAGL submitted project details underlying the system reinforcement capex. The proposed system reinforcement capex is designed to cater for the forecast demand during and beyond the Access Arrangement.[59]

Table 7.6 ActewAGL's revised capex on system reinforcement (October 2000) – 2000/01 $m

Year ending June	2001	2002	2003	2004	4 year total
Medium pressure system					
Belconnen	0.5	0.0	0.1	0.2	0.8
Gungalhlin	0.0	0.0	0.0	0.0	0.0
North Canberra	0.3	0.1	0.1	0.0	0.5
South Canberra	0.0	0.0	0.0	0.0	0.1
Tuggeranong	0.1	0.1	0.1	0.3	0.6
Woden	0.0	0.0	0.1	0.1	0.2
Weston Creek	0.1	0.1	0.0	0.1	0.3
Queanbeyan	0.3	0.0	0.1	0.0	0.4
High pressure system	1.6	3.3	2.0	0.5	7.3
Total reinforcement capex	2.9	3.6	2.4	1.2	10.1

The Commission notes that in the capex review, CW commented that:[60]

> The AGL(ACT) gas distribution HP steel network, which was constructed in the early 1980s is performing very close to its original design capacity. The load growth that was forecast in 1981 has been exceeded earlier than originally anticipated.

59 Email correspondence with ActewAGL on 30 October 2000.
60 Connell Wagner Technical report, p 15.

The Commission conducted a net present value analysis of growth related and system reinforcement capex. A sensitivity analysis has also been conducted by varying the growth rate and network charges. The analysis shows that the incremental revenue generated from the capex exceeds the cost of the new facility investment, over the life of the asset. The Commission is satisfied that the growth related and system reinforcement capex meets the requirements of section 8.16 (b) of the Code.

The Commission has considered additional capex estimates by ActewAGL and conducted its own assessment. The Commission notes that if the new estimate were subject to a new independent review, the process may be further extended. On balance, the Commission has decided to accept ActewAGL's revised October forecasts but with an 'efficiency' adjustment of 3 per cent. The efficiency factor is in line with general forecast industry productivity growth (refer to chapter 9 on operating costs).

Renewal/replacement capex

The amount of this capex is relatively small compared to the growth and system reinforcement. CW finds that overall, the forecast level of renewal/replacement capex is reasonable and at the level it expects. Having considered CW's findings, the Commission has decided to accept ActewAGL's forecast for renewal/replacement capex.

Contestability capex

The Commission has decided that there is a great deal of uncertainty relating to contestability costs and hence will deal with it in a separate mechanism (refer to chapter 9), rather than including it in the forecast capex.

Connection to the EGP

To assist the Commission in its review, CW were engaged to assess ActewAGL's proposed capex in relation to the connection to the EGP.[61] In summary, the findings are:

- action is needed to ensure gas supply over the 2000 winter
- the connection to the EGP is a sound long term solution to meet winter demands for the next 20 years
- the budget estimate of the costs are within the range expected.

BHPP has raised concerns over the EGP connection project.[62] BHPP presents two cases:

1. lateral not built – if ActewAGL does not go through with the second stage of the project, which is to actually connect to the EGP, then it would be unlikely that a bypass lateral will be built. Given ActewAGL's incumbent position, the retail arm of the ActewAGL joint venture will maintain its monopoly position.
2. low capacity lateral constructed - ActewAGL should be required to construct the lateral as suggested in its submission, ie the only lateral to be included in the asset base is an interconnected 250mm diameter main capable of accepting gas at 13MPa.

The Commission notes that if the capex is approved and ActewAGL does not connect to the EGP, then tariffs over the Access Arrangement period will be calculated as if there was

[61] This report was released publicly in March 2000.

[62] BHPP, *Submission to ActewAGL* Access *Arrangement Review*, 17 April 2000, pp 8-9.

interconnection, hence they would be higher than otherwise. BHPP's concerns have been raised with ActewAGL. In a letter to the Commission dated 13 October 2000, ActewAGL responds to public comments and indicates its clear intent to connect to the EGP, as proposed.

The Commission acknowledges the intent of ActewAGL in this regard. Given this, the Commission has decided to include an amendment requiring ActewAGL connect to the EGP and allow for third party access by 1 July 2001.

Another issue relating to the EGP interconnection capex is the recovery of the costs. ActewAGL has identified a number of significant system wide benefits associated with the EGP connection. It is users of the ACT network in general that benefit from the lateral, not particular users. Under such circumstances, the costs of the connection should be borne by all users.

In a subsequent submission[63] to the Commission, ActewAGL has revised its estimate of the cost of building the connection to the EGP. The reasons are summarised below:

- environmental constraints – the Environmental Impact Statement (EIS) has identified various issues. These include preserving and minimising the disturbance to the areas along the construction path which are home to recently discovered and rediscovered species of flora and fauna.
- licensing issues – the NSW section of the pipeline is to be laid under the NSW Pipelines Act, as recommended by the NSW Ministry of Energy Utilities. Originally it was assumed that the pipeline would be laid under the ACT and NSW Gas Supply Acts. This change has imposed additional costs and led to the project to be split into two stages.
- EGP offtake/metering facilities – Duke will operate the metering facility at the offtake. The costs to meet Duke's metering facility specifications are higher than the original estimates, based in AGL's specifications.

The budget cost estimate of the EGP project has been revised from $12m (+/- 10 per cent) to $14.17m (+/- 5 per cent)[64]. ActewAGL has further submitted an independent assessment by Coraldeen. The findings of the report suggest that these costs are reasonable, given the above listed constraints imposed on the project.

After assessing the new information and submission, the Commission has decided that:

1. EGP interconnection capex of $14.17m be included in the calculation of reference tariffs for the current Access Arrangement period. This does not mean that the capex forecast will be automatically rolled into the capital base at the start of the next review. The total capex incurred on the EGP project will be subject to a prudency test at the next review and only the prudent amounts will be rolled into the asset base. This also applies to all other forecast capex
2. the total cost of the EGP project is to be recovered from all customers using the ACT network, not just EGP users.

63 ActewAGL, Extension of the ACT Network tot he Eastern Gas Pipeline (EGP), 23 August 2000.

64 Note that these estimates of $12m and $14.17m are in real 1999/2000 dollars, exclusive of the GST.

Efficiency factor adjustments

The Commission has decided that an efficiency factor adjustment will be applied to all capex, ie. renewal, replacement, non-system assets, growth related and system reinforcement, except the EGP capex. General industry productivity growth is around 3 per cent. This efficiency factor is applied to both capex and opex (refer to chapter 9 on operating costs).

7.5.2 ActewAGL's forecast capital expenditure 1999/2000 – 2003/04

Given the above assessment of ActewAGL's historic and forecast capex, the Commission's final decision is:

- historical capex for 1999/2000 and the Commission's allowed capex (see Table 7.7) will be used to roll forward the capital base and to set reference tariffs in this Access Arrangement period
- growth capex based on the final decision on demand/customer growth
- system reinforcement capex as revised by ActewAGL
- renewal/replacement and non system capex be as per ActewAGL's original proposal
- EGP interconnection capex of $14.17m be allowed, and be recovered from all users of the ACT system
- an efficiency adjustment of 3 per cent to apply to all capex proposed, except the EGP.

Table 7.7 Final decision forecast capital expenditure (2000/01 $m)[1,4]

Year ending June	**2000[2]**	**2001**	**2002**	**2003**	**2004**	**Total**
Renewal/replacement						
High pressure	0.0	0.0	0.0	0.0	0.0	0.0
M/L pressure tariff	0.0	0.0	0.0	0.0	0.0	0.0
Meters/Regs/Filters	0.0	0.8	0.9	1.3	0.5	3.5
Non system assets	0.3	0.5	0.4	0.5	1.2	2.9
Subtotal	0.3	1.3	1.3	1.8	1.7	6.4
Growth related						
M/L pressure tariff	4.0	2.6	3.0	3.3	3.3	16.3
System reinforcement	0.6	2.8	3.5	2.3	1.2	10.5
EGP connection	3.7	10.6	0.0	0.0	0.0	14.3
Final decision capex[3,5]	**8.6**	**17.4**	**7.8**	**7.4**	**6.2**	**47.4**
Original Proposal[6]	6.3	6.8	5.2	5.5	5.2	29.0
Corrected August 99 proposal[6]	6.5	7.0	5.5	5.7	5.6	30.3

Note:

1. Figures may not add up to subtotals and totals due to rounding.
2. The values for the year 2000 are the actual level of capex.
3. The final decision capex includes an efficiency reduction of $0.84m over the four years from 2001-2004.
4. The capex forecast is before the net impact of the GST.
5. For tariff setting purposes the Commission has decided to use the 2000 actual capex.
6. ActewAGL's original and corrected proposals do not include capex associated with the EGP connection.

7.6 Conclusion and final decision

The Commission concludes that ActewAGL's original forecast capex should be adjusted to:

- exclude capex associated with contestability (real 2000/01 $0.72m in 1999/2000)
- reflect the actual capex for 1999/2000
- reflect the revised growth and system reinforcement forecasts as per Table 7.7 above
- include the revised EGP connection capex proposal.

The Commission stresses that investment expenditure consistent with the adjusted forecast on new facility investment will not be included automatically in the capital base at the beginning of the next Access Arrangement period. Consistent with the Code, the Commission will consider whether the investment decision is prudent at the next review.

Amendment 5 – Forecast capital expenditure

For the purpose of calculating reference tariffs during the Access Arrangement period, ActewAGL is required to:

- use the actual capex for 1999/2000 to roll forward the ICB to 1 July 2000,
- revise its forecast capital expenditure (2000/01 $m) as follows

Year ending June	**2001**	**2002**	**2003**	**2004**
Renewal/replacement				
High pressure	0.0	0.0	0.0	0.0
M/L pressure tariff	0.0	0.0	0.0	0.0
Meters/regs/filters	0.8	0.9	1.3	0.5
Non system assets	0.5	0.4	0.5	1.2
Subtotal	1.3	1.3	1.8	1.7
Growth related				
M/L pressure tariff	2.6	3.0	3.3	3.3
System reinforcement	2.8	3.5	2.3	1.2
EGP connection	10.6	0.0	0.0	0.0
Total	**17.4**	**7.8**	**7.4**	**6.2**

Note: Total may not add due to rounding.

Amendment 6 – Requirement to connect to the EGP

ActewAGL is required to connect to the Eastern Gas Pipeline and allow for third party access by 1 July 2001. This date may be extended by ActewAGL notifying the Commission that delay has been caused through factors beyond ActewAGL's control, and the nature of these factors.

Amendment 7 – EGP connection capital expenditure

In calculating its Reference Tariffs, ActewAGL is required to recover the allowed capital expenditure relating to the EGP lateral from all the gas users in the ACT, Queanbeyan and Yarrowlumla.

8 ROLLING FORWARD THE CAPITAL BASE

8.1 ActewAGL's proposal

ActewAGL has proposed adopting a current cost accounting (CCA) approach under which assets are revalued each year in line with inflation, and depreciation is calculated on a straight line basis on the revalued capital base.

8.2 Draft decision

In its draft decision, the Commission required the following amendments:[65]

> For the purpose of calculating reference tariffs during the Access Arrangement period, ActewAGL is required to roll forward the regulatory capital base by:
>
> (a) including forecast capital expenditure which meets the prudency test for the period 1999/2000 to 2003/04
>
> (b) deducting forecast regulatory depreciation
>
> (c) indexing the regulatory capital base annually from 1 July 1999 using the CPI defined as the All Groups Consumer Price Index (weighted average of eight Australian capital cities) published by the Australian Bureau of Statistics.

8.3 Responses to the draft decision

8.3.1 ActewAGL's response

ActewAGL has stated that it will incorporate the Commission's proposed amendments into its Access Arrangement and Access Arrangement Information subject to the resolution of questions concerning the time at which prudence is to be determined, and the impact of the new tax system on the CPI.[66]

8.3.2 Public submissions

Few submissions comment on the method of roll forward. However, BHP recommends that the EGP interconnect be rolled into the capital base for recovery and that ActewAGL be required to build and interconnect to the EGP by September 2000.[67]

8.4 Commission's assessment

Consistent with section 8.9 of the Code, the roll forward of the capital base can be expressed as follows:

Regulatory capital base = initial capital base + new facilities investments – depreciation – redundant capital.

As stated in chapters 6 and 7, the Commission has assessed ActewAGL's depreciation and capital expenditure. These will be used in projecting ICB movements over the Access

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65 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 99.

66 ActewAGL, *Submission to the ActewAGL Access Arrangement Review*, April 2000, p 7.

67 BHPP, *Submission to the ActewAGL Access Arrangement Review*, 17 April 2000, p 9.

Arrangement period, 1999-2004 for the purposes of calculating reference tariffs and total revenue.

After considering submissions, the Commission has maintained its approach to rolling forward ActewAGL's capital base. However, the final decision addresses the following issues:

- treatment of capital redundancy associated with load reduction and competition
- projection of the capital base over the Access Arrangement period for the purpose of calculating total revenue and reference tariffs.

8.4.1 Capital redundancy

In its draft decision, the Commission accepts ActewAGL's proposed treatment of redundant capital in its reference tariff policy:

> With the effect from the commencement of the subsequent Access Arrangement Period, redundant capital will be removed from the capital base.

However, experience from the NSW AGLGN review has highlighted difficulties in dealing with redundant capital where the previous Access Arrangement does not have such a mechanism. In order to ensure that future regulators are equipped to deal with the issue comprehensively, an amendment to the redundant capital mechanism is required.

The Commission has decided to put in place a capital redundancy mechanism that will allow the relevant regulator to deal with lost load and asset stranding at the commencement of the next Access Arrangement period.

Optimising the pipeline size to reflect loss of load would normally result in a small reduction in asset valuation because the majority of costs remain fixed, no matter what the size of the pipeline. The impact of the lost load on DORC is therefore likely to be minimal.

The Commission considers that an effective capital redundancy mechanism should enable the regulator to have regard to both revenue resulting from the loss of load, and the extent of utilisation of assets.

The Commission has considered the risks associated with the capital redundancy mechanism and determined what allowance be made for these risks in ActewAGL's allowed rate of return. As discussed in chapter 4, the Commission has concluded that a rate of return of 7.75 per cent (real pre tax) is reasonable.

At the present time, ActewAGL does not have an asset register providing details of the composition of the ICB. The Commission considers that an asset register must be established by ActewAGL at a sufficiently detailed and disaggregated level, ie size of main, services and regions. This will enable future regulators to assess the extent of capital redundancy.

The Commission has revised its decision on the redundant capital mechanism in this final decision (see section 8.5 below).

8.4.2 Projected capital base from 1 July 1999 to 2003/04

The 1999 value is rolled forward for the purpose of calculating the total revenue requirement over the proposed Access Arrangement period, 1999/2000 - 2003/04. ActewAGL may index its regulatory capital base over the period 2000 - 2004 by the CPI inclusive of the goods and services tax (GST). This is consistent with the concept of financial capital maintenance. However, the impact of the GST is assumed to have a once off effect for the financial year 2000/01.

Assumptions for projecting the capital base from 1999 - 2004 are:

- CPI assumption inclusive of GST is used[68] for the year 2000/01

Year ending June	2000	2001	2002	2003	2004
CPI inclusive of ANTS impact	2.4	6.0	3.0	3.0	3.0

Note:

1. The CPI for the year 2000/01 includes the GST as a once off impact on prices. The 6.0 per cent CPI figure for 2000/01 has been derived as a result of considering general market expectations and the economic modelling of the impact from "A New Taxation System" (ANTS).
2. The CPI for the remaining years of the Access Arrangement, years 2001/02 - 2002/03 is exclusive of the impact of GST and based on general market expectations about long term inflation.

- forecast capex as adjusted by the Commission (see chapter 7)
- no adjustment for asset disposal
- no adjustment for capital redundancy (see discussion in section 8.4.1)
- economic asset lives and remaining asset lives as determined in chapter 6.

Table 8.1 Projected regulatory capital base from 1999 - 2004 (nominal $m)

Year ending June	2000	2001	2002	2003	2004
Opening balance	175.0	182.1	204.6	212.3	219.6
- add revaluation of assets	4.2	10.9	6.1	6.4	6.6
- add capital expenditure	8.4	17.4	8.0	7.9	6.8
- less depreciation	5.4	5.9	6.5	6.9	7.4
- less disposal	0.0	0.0	0.0	0.0	0.0
Indicative capital base rolled forward	182.1	204.6	212.3	219.6	225.6
Comparison with ActewAGL proposal(1)	245	250	254	257	261

Note:

1. This is based on ActewAGL's RAAI by considering the proposed funds employed capital base adjusted by net working capital.

It should be noted that asset values in this section are indicative only. After the expiry of this Access Arrangement period, the rolled forward capital base will be considered under relevant provisions of the Code.

68 At the time of the draft decision, the indexation effect of CPI inclusive of GST was not modelled in projecting the revenue requirement.

8.4.3 Other issues

Net working capital

The Commission has decided to maintain its decision to allow a nominal return on ActewAGL's net working capital (see section 5.5).

Asset register

As discussed in the section on capital redundancy, an asset register containing allocation of ICB to assets must be established and approved by the Commission within six months of the date of final approval.

8.5 Conclusions and final decision

The Commission concludes that:

- under the cost of service model, the capital base (including future new facilities investment) and depreciation are to be indexed by the CPI and a real rate of return is to be allowed on the regulatory capital base
- ActewAGL is required to amend its capital redundancy mechanism as determined by the Commission. This mechanism enables the regulator to deal with individual circumstances, including consideration of revenue effects on the service provider, and tariffs paid by users
- subject to the provisions of the Code, and provided that safe and reliable operation of the pipeline is achieved, actual prudent capital expenditure is to be included in the regulatory capital base over the next regulatory period
- the capital base at the commencement of next Access Arrangement will be determined using an asset register approved by the regulator.

Amendment 8 – Projected capital base from 1 July 1999 to 30 June 2004

For the purpose of calculating reference tariffs during the Access Arrangement period, ActewAGL is required to use the projected capital base for the distribution assets as follows:

Projected capital base – ActewAGL's pipeline (nominal $m)

Year ending June	2000	2001	2002	2003	2004
Year end closing value	182.1	204.6	212.3	219.6	225.6

Note:

1. The projected capital base for 2000/01 allows for indexation inclusive of GST effect.
2. Inflation is assumed to be 2.4 per cent in 1999/2000, 6 per cent in 2000/01 (inclusive of GST effect) and 3 per cent per annum from 20001/02 to 2003/04.
3. The rolled forward capital base at the commencement of the next review will be determined under the relevant provisions of the Code.

Amendment 9 – Capital redundancy mechanism

In its Access Arrangement, ActewAGL must include in its Reference Tariff Policy a capital redundancy mechanism that permits the Relevant Regulator, with effect from the commencement of the next Access Arrangement Period, to reduce the Capital Base by an amount representing:

a) any assets that in the reasonable opinion of the Relevant Regulator, have ceased to contribute to the delivery of Services;

b) any assets that in the reasonable opinion of the Relevant Regulator, are likely to cease to contribute to the delivery of Services;

c) any assets that have been transferred by ActewAGL or in relation to which ActewAGL has entered into a binding agreement for its transfer;

d) any assets that in the reasonable opinion of the Relevant Regulator have decreased in value because of a decrease in its utilisation resulting from a decline or likely decline in the volume of sales of the Service; or

e) any assets that in the reasonable opinion of the Relevant Regulator have decreased in value because of a likely decrease in its utilisation resulting from a decline or likely decline in the volume of sales of the Service.

In assessing the reduction in the Capital Base due to a decreased utilisation of assets resulting from a decline in the volume of sales of a Service, the Relevant Regulator may take into account the reduction in Total Revenue and any possible increase in Tariffs paid by Users resulting from the decline in utilisation of assets.

ActewAGL must include the following statement in its Access Arrangement:

"ActewAGL will establish and maintain an asset register during the Access Arrangement period. The asset register will (without limiting the matters that may be included) include information on:

- economic asset lives and remaining asset lives underlying the initial capital base at 1 July 1999
- asset components (ie asset types, unit rates and asset quantities) consistent with the initial Capital Base at 1 July 1999 in the final decision. The asset components should be consistent with those used in ActewAGL's depreciated optimised replacement cost valuation in its Access Arrangement Information
- new capital expenditure incurred after 1 July 1999 including information on economic asset lives, unit rates and asset quantities.

The asset register must be established in a manner reasonably acceptable to the Relevant Regulator and consistent with the final decision of the Commission in 2000. The asset register will be established no later than six months from the date that the revisions to the Access Arrangement lawfully takes effect, by virtue of a decision under section 2 of the Code."

Amendment 10 – Review of regulatory capital base after the expiry of an Access Arrangement

In its Access Arrangement, ActewAGL must include a statement in its Reference Tariff Policy as follows:

"The Capital Base at the commencement of the next Access Arrangement Period and each Access Arrangement Period thereafter will be assessed by the Relevant Regulator using, among other things, information in relation to those assets contained in:

a) the Asset Register required to be maintained under Amendment 9; and

b) the database required to be maintained on capital contributions under Amendment 20."

9 OPERATING COSTS (NON CAPITAL COSTS)

9.1 ActewAGL's proposal

ActewAGL's proposed operating costs are shown below:

Table 9.1 ActewAGL's operating costs (nominal $m)[1]

Year ending June	1998 (actual)	1999 (actual)	2000	2001	2002	2003	2004
Marketing	5.1	4.3	4.0	4.0	4.0	3.8	3.7
New customers[2]			0.1	0.2	0.3	0.4	0.5
UAG	0.3	0.1	0.2	0.2	0.2	0.2	0.2
Contestability	-	0.1	0.6	0.7	0.7	0.7	0.7
Government levies	1.1	1.0	1.1	1.2	1.2	1.2	1.2
Other O&M	6.8	5.0	5.8	5.8	5.8	6.0	6.0
Total	**13.3**	**10.4**	**11.8**	**12.1**	**12.3**	**12.3**	**12.4**

Source: ActewAGL, information provided in September 1999. This differs from that contained in ActewAGL's RAAI and *SAAI for ACT, Queanbeyan and Yarrowlumla Network*.
Note:
1. Figures for 2000 onwards are forecasts.
2. New customers' costs relate to incremental costs associated with the connection of new users.

9.2 Draft decision

In its draft decision the Commission required the following amendments:[69]

> ActewAGL is required to amend its non capital cost (operating cost) forecast to:
>
> a) allow for a cost reduction of 30 per cent in controllable costs, phased in over the five year course of the Access Arrangement (ie 1999/2000 to 2003/2004). Controllable non capital costs are: operation and maintenance, marketing and overheads, and exclude government levies, unaccounted for gas and costs associated with retail contestability
>
> b) allow for growth with an equal 50 per cent weighting applied to both volume load growth and customer growth
>
> c) the allowed controllable costs and the Commission's provisional allowance for non controllable costs (ie government levies and new costs associated with retail contestability) plus UAG are:

Forecast non capital costs - real 1999/2000 $m

Year ending June	2000	2001	2002	2003	2004
Controllable costs	9.1	8.7	8.4	8.0	7.6
Other	1.9	2.0	2.0	2.0	2.0
Total	11.0	10.7	10.4	10.0	9.6

69 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 135.

9.3 Responses to the draft decision

9.3.1 ActewAGL's response

In its submission dated 18 April 2000, ActewAGL states that:[70]

- cost reduction targets for the Victorian distributors were set by the Victorian Government's agents as part of that Government's asset sale program. These operating cost targets were established with a view to maximising sale proceeds and may have little relationship with actual or achievable operating costs
- some of the key performance indicators published in the draft decision provide little, if any, insight into the efficiency of operating costs
- the data envelopment analysis used in assessing ActewAGL's performance relative to other Australian and US gas distributors should not be relied upon in the final decision
- if we (ActewAGL) believed there was 'natural growth' in the market which justified the elimination of significant marketing expenditure, we would have ceased such expenditure under the CPI-X regulation and kept that amount as profit. The fact that marketing expenditure continued illustrates the long term view that marketing expenditure is essential to grow the market.

9.3.2 Public submissions

BHPP has commented on the level of operating costs allowed under the Commission's draft decision, and the manner in which these costs have been reduced:[71]

> BHP does not agree with the Commission that the Code only provides for the Relevant Regulator to form a view on the total level of operating costs to be awarded to the Service Provider. We believe that the test required under the Code of 'acting efficiently, in accordance with accepted and good industry practice…' requires the Regulator to dig deeper and determine efficient costs across a number of categories, ie O&M, overheads and marketing.
>
> The concern over marketing costs is a good example of why the Commission must get involved in the elements of efficient operating costs rather than just setting a single opex amount…
>
> The DEA analysis performed by IPART and used by the Commission to assist it in determining the allowed opex costs for ActewAGL clearly shows that ActewAGL's technical efficiency is (worst in class) and its managerial efficiency is bettered by all other Australian distributors except AGLGN… There is a clear case for ActewAGL's allowed opex to be reduced by a substantial amount immediately and then be subject to ongoing reductions for the remainder of the access arrangement period.

9.4 Commission's assessment

In determining its decision on ActewAGL's non capital costs, the Commission has considered issues and comments presented in submissions. The Commission's assessment should be read in conjunction with the draft decision. For example, in reaching this final decision, the Commission's assessment has considered the key performance indicators and the conclusions made from those indicators as presented in chapter 10 of the draft decision.

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70 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 18 April 2000, pp 40-44.

71 BHPP, *Submission to ActewAGL Access Arrangement Review*, 17 April 2000, pp 9-10.

9.4.1 Benchmarking report

In December 1999 IPART released '*Benchmarking the Efficiency of Australian Gas Distributors*', the 'benchmarking report'. This report applies various benchmarking approaches to the local gas distribution industry, and makes comparisons with US operators.

In its draft decision the Commission presents the findings of the benchmarking report, and considered the results in assessing the efficiency of ActewAGL. The Commission notes that IPART has received submissions on the benchmarking report. Commissioned by AGLGN to provide an assessment of the report, Oxford Economic Research Associates (Oxera) argues that:[72]

- there is not an appropriate output measure to reflect the input of marketing expenditure
- it appears that the finding that O&M costs are not affected by climate has been used to infer that efficiency measures are not affected by climate, even when those measures include deliveries as an output, which contradictorily are acknowledged to be affected by climate
- the proposed DEA model does not satisfy the requirement that the inputs, outputs and variables provide for appropriate trade offs. Therefore, it is unlikely to result in robust efficiency comparisons.

The Energy Markets Reform Forum states:[73]

> We have found the research useful and congratulate the author for what appears to be a rigorous and well-researched study. The conclusions of the study that 'there is scope for most local gas distributors to improve performance' do not come as a surprise to major gas users, especially those in New South Wales.
>
> We note the DEA analysis and in particular, the sensitivity tests conducted 'did not suggest that climate or network age have a significant influence on efficiency…' and 'may be counter-intuitive to some industry participants.' We believe that this is an important finding and puts to rest the arguments used by some industry participants to assert a correlation between cooler climates and lower operating costs.

The Commission has considered the submissions received by IPART in relation to the benchmarking report, and notes IPART's own assessment of these submissions as presented in the final decision on AGLGN's Access Arrangement.

As stated in the draft decision, the Commission is aware that subjective judgements and assumptions are required in applying such techniques as data envelopment analysis (DEA). However, on balance, the Commission considers that the benchmarking report does provide useful information to assist in the assessment of ActewAGL's non capital costs.

The Commission has maintained its position in the draft decision, by neither focussing on any individual performance indicators to assess ActewAGL's performance, nor relying on any particular technique. The Commission has considered information from partial performance indicators and global techniques such as DEA.

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72 AGLGN / Oxera, *Submission on Benchmarking the Efficiency of Australian Gas Distributors report*, 1 February 2000, p 1, see IPART, *Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW*, Final Decision, July 2000, p 129.

73 Energy Markets Reform Forum, *Submission on Benchmarking the Efficiency of Australian Gas Distributors report*, 25 January 2000, pp 1-2, see IPART, *Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW*, Final Decision, July 2000, p 130.

9.4.2 Phasing in cost reductions

The Commission's draft decision stipulated a 30 per cent reduction to ActewAGL's controllable costs. This reduction was to be phased in over the five year course of the Access Arrangement. A similar approach is presented in IPART's draft decision on AGLGN's proposed Access Arrangement. IPART's decision prompted several submissions questioning whether the approach was allowed under the Code.

The Commission has considered these submissions and examined the relevant provisions of the Code. In its view:

- at each point in time along the glide path the non capital costs which can be recovered must pass the requirements of section 8.37 of the Code ('prudent service provider test')
- it is permissible for the Commission to consider how a prudent service provider would implement cost savings. For example, if the Commission concluded that an immediate implementation of a cost reduction might jeopardise the secure operation of the system, then under the prudent service provider test, the Code would permit the Commission to pass on less than the full cost reduction today, effectively phasing in the cost reduction
- section 8.37 of the Code requires the Commission to identify and allocate cost savings to categories of non capital costs. The extent of this categorisation is a matter of judgement.

It is the Commission's assessment that a phasing in of cost reductions is permissible only where non capital costs for each year of the Access Arrangement period are consistent with section 8.37 of the Code, and cost savings are allocated to categories of non capital costs. The Commission has included these factors in the final decision.

9.4.3 Identification of cost savings

The Commission has reconsidered ActewAGL's cost categories. Attachment A of the Code sets out information disclosure requirements for the service provider. Category 3 of attachment A requires information on operations and maintenance (O&M) costs, and category 4 requires information on overhead and marketing costs.

On the basis of requirements under attachment A of the Code, the Commission has chosen to separate controllable costs into O&M, corporate overheads and marketing. The Commission's draft decision defines controllable costs as total non capital costs excluding government levies, unaccounted for gas, and costs associated with retail contestability. These other costs are now dealt with separately (see discussion below under 'Other costs').

The next stage of the Commission's assessment involved assessing non capital costs for each of the identified cost categories under section 8.37 of the Code. The Commission considered the results of the KPI analysis presented in chapter 10 of the draft decision, and also additional analysis included in the ActewAGL draft decision.

The Commission's analysis indicates that there is considerable scope for ActewAGL to reduce its costs. Compared with Australian and US operators, ActewAGL generally rates unfavourably on a range of indicators. Under the Code requirements, the Commission may allow an operator to raise only sufficient revenue to recover the costs incurred by a prudent service provider, acting efficiently. Thus, there is a need to align ActewAGL's costs with the current costs of efficient operators.

It is reasonable to regard any cost reduction applied to ActewAGL as comprising two parts: an 'inefficiency' component, and an industry trend component. The inefficiency component indicates the extent to which ActewAGL varies from efficient operators. The industry trend component reflects industry trends in productivity growth assumed to be 3 per cent.[74]

The KPIs suggest that ActewAGL is broadly comparable with other Australian operators when marketing expenditure is excluded from the analysis. The Commission believes ActewAGL can achieve productivity growth in line with industry trends. Therefore, it is reasonable to first apply a 3 per cent reduction to non capital costs net of marketing costs, ie to O&M and corporate overheads.

The Commission has considered the potential effect that any cost reductions may have on the safe and reliable operation of ActewAGL's system. It has concluded that any cost reductions in O&M that are in line with industry trends will not have adverse effects on the operation of the system.

A key component of the Commission's determination of prudent non capital costs is the assessment of marketing costs. The KPI analysis suggests that ActewAGL's marketing costs are relatively high. Thus, much of the cost reduction attainable comes about through decreases in marketing costs. The issue of marketing costs was highlighted in the BHPP submission discussed above.

The following points were considered by the Commission in assessing ActewAGL's prudent marketing costs:

- the draft decision states that network marketing costs for operators in other states (excluding AGLGN in NSW) range from 2 to 17 per cent of adjusted operating costs. If this range is applied to ActewAGL's 1998/99 adjusted operating cost total of $8.8m, marketing costs would range between $0.2m and $1.5m compared to the actual figure of $4.3m
- the draft decision notes that for 1997/98, network marketing costs ranged from 2 to 5 per cent of operating costs for most US operators, implying a range for ActewAGL of $0.2m to $0.6m; if ActewAGL achieved a network marketing cost ratio equal to the highest for a US distributor, ActewAGL's network marketing costs would be $1.4m
- the draft decision includes an analysis by BHPP of marketing costs per GJ of growth. BHPP concludes that best practice marketing budgets are 1 - 4 $/GJ of tariff market growth. Applying this benchmark provides an upper limit for ActewAGL's marketing expenditure of $1.6m for 1998/99
- the following table shows nominal and real percentage changes in ActewAGL's marketing expenditure – forecast figures are those of ActewAGL.

Year ending June	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Nominal	-15.7%	-7.0%	0.0%	0.0%	-5.0%	-2.6%
Real	-16.7%	-9.2%	-2.4%	-2.4%	-7.3%	-5.0%

74 The benchmarking report includes detailed discussion of productivity and efficiency trends for gas distribution. It concludes that past performance indicates productivity growth rates of around 3 per cent.

Based on the factors discussed above, it could be argued that prudent marketing costs for AGLGN range between $0.2m and $1.6m. However, if it is considered that particular factors impact adversely on the level of ActewAGL's marketing expenditure relative to other operators, a higher level of marketing expenditure may be warranted. Further, it could be argued that a progressive reduction in marketing expenditure is a prudent strategy to manage any effect on growth that may arise.

Having considered the above, the Commission has decided that ActewAGL's marketing costs should be reduced by 20 per cent per annum to $1.8m in 2003/04.

Other costs

Unaccounted for gas

In the draft decision the Commission removed unaccounted for gas (UAG) from ActewAGL's controllable operating costs, and hence the 30 per cent cost reduction was not applied to UAG. The Commission maintains this approach in the final decision. Given the nature of UAG, it is not appropriate to target efficiency gains in the same way that cost reduction targets have been identified for O&M, corporate overheads and marketing expenditure. However, the Commission requires ActewAGL to amend its UAG figure for the purposes of its Access Arrangement (see chapter 17 for further discussion).

Retail contestability

The ACT's retail contestability timetable is the same as for NSW. Full retail contestability was scheduled to begin on 1 July 2000. The NSW Minister for Energy recently announced that systems to support retail contestability will not be in place until 1 July 2001. Under the draft decision, retail contestability costs were included in ActewAGL's operating costs for the purpose of calculating reference tariffs. They were included as provisional allowances based on ActewAGL's estimates and their values were neither assessed nor approved by the Commission.

There is considerable uncertainty associated with both the effective timing of, and the costs associated with, retail contestability. This uncertainty raises issues of what level of retail contestability costs should be included in the Access Arrangement and how they should be included. Given this uncertainty, the Commission will initially remove contestability costs (both non capital and capital) from ActewAGL's forecasts. An automatic adjustment mechanism will be included in ActewAGL's Access Arrangement to allow for these costs.

ACT Utilities Bill

ActewAGL has written to the Commission regarding the proposed Utilities Bill currently being considered by the ACT Legislative Assembly.[75] ActewAGL notes that the proposed Bill contains provisions to implement codes and subsidiary documents, eg a network code, boundary code and standard customer agreement.

ActewAGL states that the development of these documents and compliance with them will involve expenditure which cannot reasonably be anticipated by ActewAGL during this Access Arrangement process. ActewAGL proposes that the final decision include a mechanism which enables ActewAGL to recover additional costs incurred in complying with these new legislative obligations.

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75 ActewAGL, *Submission to ActewAGL Access Arrangement review*, 17 August 2000.

The Commission agrees that prudent costs imposed on ActewAGL through the Utilities Bill should be recoverable and will allow for this in an amendment.

Heating value measurement

ActewAGL has written to the Commission in regard to costs associated with heating value measurement.[76] When ActewAGL submitted its proposed Access Arrangement, it assumed that arrangements for measuring heating value would continue as they had since gas distribution commenced in the ACT in 1982. Those arrangements use the daily declared heating value at Wilton at the end of the Moomba to Sydney pipeline as representing the heating value for the ACT.

Since it submitted the proposed Access Arrangement, ActewAGL has decided to connect its network with the Eastern Gas Pipeline (EGP). With this second receipt point, an additional heating value measurement will be required.

ActewAGL proposes that the heating value measured at Wollongong from the EGP be used to determine the heating value of gas delivered to the ACT network from the EGP, and that a single volume weighted average heating value be calculated daily and used to determine the withdrawal quantities for all delivery points in the ActewAGL network.

If such proposals are accepted by the relevant authorities, no additional costs will be imposed on ActewAGL. However, ActewAGL states that there remains some possibility that the ACT Department of Urban Services may require additional measurement. If this eventuates, ActewAGL states it will incur additional costs (both operating and capital) which have not been included in the Access Arrangement.

ActewAGL asks that a mechanism be included in the Access Arrangement to allow for such additional costs, subject to an audit of those costs.

The Commission considers it reasonable that ActewAGL be able to recoup such additional costs if they arise. The Commission has included a mechanism in the Access Arrangement, allowing ActewAGL to apply to the Commission to have such costs recovered, subject to an independent audit of the costs as the Commission determines.

Amended operating costs

Under the draft decision, the calculation of cost reduction was adjusted for growth, with an equal weighting of 50 per cent each applied to volume load growth and customer growth. The Commission favours this approach rather than using only one measure because:

- measuring cost reductions in terms of $/GJ encourages the connection of relatively higher use, profitable customers
- the Commission's analysis has shown that customer numbers is a key cost driver.

This approach has been varied slightly to account for individual non capital cost categories identified by the Commission. In applying load and customer growth weightings to marketing expenditure, *tariff* load growth and *tariff* customer growth is applied. This reflects the fact that ActewAGL's marketing expenditure is associated with tariff customers. Weightings for O&M and corporate overheads are based on total load growth and total customer growth.

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76 ActewAGL, *Submission to ActewAGL Access Arrangement review*, 18 October 2000.

The following table shows the basis for the Commission's operating cost (opex) calculations and the overall result of these decisions over the Access Arrangement. These are compared with ActewAGL's original proposal.

Table 9.2 Amended operating costs (pre GST, 2000/01 $m)

Year ending June	2001	2002	2003	2004	Cumulative %
Unit cost reductions					
Operation and maintenance	-3%	-3%	-3%	-3%	-11.5%
Corporate overheads	-3%	-3%	-3%	-3%	-11.5%
Marketing	-20%	-20%	-20%	-20%	-59.0%
Real controllable opex before growth	**7.9**	**7.1**	**6.5**	**6.0**	**-23.5%**
Final decision – opex after growth					
Operation and maintenance	3.7	3.7	3.7	3.8	2.8%
Corporate overheads	1.7	1.7	1.8	1.8	2.8%
Marketing	3.1	2.6	2.2	1.8	-41.6%
Real controllable opex after growth ($m)	**8.5**	**8.1**	**7.7**	**7.4**	**-13.6%**
ActewAGL proposal	**10.0**	**9.9**	**9.8**	**9.5**	**-5.3%**
Other costs					
Government levies	1.2	1.2	1.1	1.1	
Contestability	adjustment mechanism to allow for such costs				
Unaccounted for gas	0.2	0.2	0.2	0.2	
Real other opex ($m)	1.4	1.4	1.3	1.3	
Allowed opex ($m)[1,2]	**9.9**	**9.4**	**9.0**	**8.7**	**-12.7%**
ActewAGL proposal	**11.5**	**11.3**	**11.1**	**10.8**	**-5.5%**

Note:
1. Allowed opex = real controllable opex after growth plus real other opex.
2. Figures may not add up to total due to rounding.

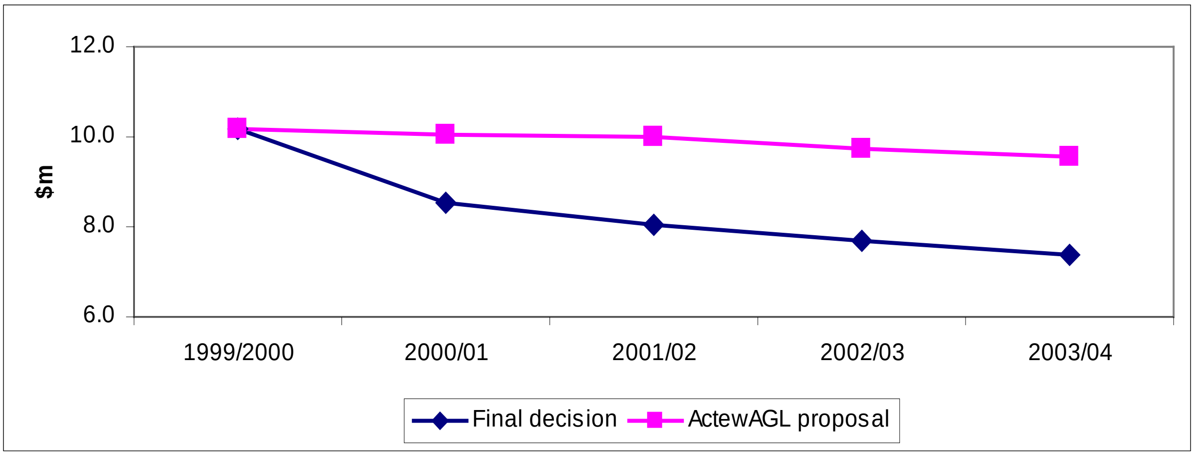
The process of assessing prudent operating costs for each year of the Access Arrangement and identifying areas where cost savings can be made, has resulted in a cumulative cost reduction of 31.2 per cent before weighting for growth between 1999/2000 and 2003/04. This compares with the 30 per cent reduction targeted under the draft decision. As the table indicates, the bulk of cost savings are identified under marketing expenditure. The Commission's analysis suggests that after allowing for growth, marketing expenditure can be cut by 41.6 per cent between 2000/01 and 2003/04.

As mentioned above, public submissions have raised concerns at the level of ActewAGL's marketing expenditure. However, it is important to note that the Commission's final decision does not mandate to ActewAGL how non capital costs should be apportioned between O&M, corporate overheads and marketing expenditure. The final decision sets total operating costs to be included in the calculation of reference tariffs, and identifies cost categories where cost savings can be made. ActewAGL is free to spend more or less on any of the cost categories identified. However, it may recover through reference tariffs only the total of non capital costs specified in the Commission's final decision.

The Commission's final decision results in a cumulative decrease in operating costs (including government levies and UAG) of 20.9 per cent over the five years to 2003/04. This compares with ActewAGL's proposal of a real decrease of 1.4 per cent.

The following figure compares real controllable operating costs under the Commission's final decision and ActewAGL's proposal.

Figure 9.1 Real controllable operating costs (2000/01 $m)



Note:

1. Excludes government levies, UAG and contestability costs.
2. The opex for the year 1999/2000 is a notional value based on the actual results for that year.

9.5 Conclusions and final decision

Having considered the requirements of the Code and its analysis of ActewAGL's proposed operating costs, the Commission has decided to amend ActewAGL's non capital cost forecast as follows:

- allow for a cost reduction before allowance for growth of 23.5 per cent in controllable costs over the four years 2000/01 - 2003/04. Controllable non capital costs include operation and maintenance, corporate overheads and marketing expenditure, but exclude government levies, UAG and costs associated with retail contestability
- for O&M and corporate overheads, allow for growth with an equal 50 per cent weighting applied to both total volume load growth and total customer growth
- for marketing expenditure, allow for growth with an equal 50 per cent weighting applied to both tariff volume load growth and tariff customer growth
- initially exclude costs associated with retail contestability, but include a mechanism to allow such costs to be passed through to users/customers.

Amendment 11 – Non capital costs

ActewAGL must amend the controllable costs and other costs (ie government levies and unaccounted for gas) of its forecast Non Capital Costs in its Access Arrangement as follows:

Forecast non capital costs – 2000/01 $m

Year ending June	**2001**	**2002**	**2003**	**2004**
Controllable costs	8.5	8.1	7.7	7.4
Other (provisional only)	1.4	1.4	1.3	1.3
Total	**9.9**	**9.4**	**9.0**	**8.7**

Note:
1. Forecast non capital costs are before the impact of GST.
2. Excludes costs associated with retail contestability.
3. Figures may not add up to total due to rounding.

Amendment 12 – Retail contestability costs

ActewAGL must include the following statement in its Access Arrangement:

"Costs associated with the introduction of retail contestability in the gas industry in the Australian Capital Territory, Queanbeyan or Yarrowlumla Shire ("Retail contestability costs"), as required by the *ACT Gas Supply Act* and / or the *NSW Gas Supply Act*, will initially be excluded from the costs of services and the calculation of Reference Tariffs.

Except for those costs that may have been recovered through authorisation fees as permitted in Amendment 16, ActewAGL may recoup some or all of the Retail contestability costs through Reference Tariffs only if it first complies with the following conditions:

(a) ActewAGL will notify the Relevant Regulator in writing of its desire to recover the costs through Reference Tariffs and provide the Relevant Regulator with any information it may reasonably require including without limitation:
   (i) the nature of the costs;
   (ii) the amount of the costs it seeks to recover;
   (iii) the amendments it proposes to the Reference Tariffs in order to recoup those costs and the basis on which those amendments were calculated;
   (iv) the impact or likely impact of the proposed Reference Tariffs on Users or classes of User; and
   (v) the date on which it is proposed that the new Reference Tariffs commence; and

(b) ActewAGL will give the Relevant Regulator a reasonable time from the date it notifies the Relevant Regulator under paragraph (a) to appoint an independent person suitably qualified (if the Relevant Regulator wishes) and to have that person review and report to the Relevant Regulator, (on the basis of the information given to the Relevant Regulator under (a)) on the following:
   (i) the impact of these costs on Reference Tariff, were they to be recouped through Reference Tariffs; and
   (ii) any other matters that the Relevant Regulator may reasonably require; and

(c) ActewAGL may recoup through Reference Tariffs only those Retail contestability costs:

(i) that are permitted by any law relating to retail contestability in the gas industry in the Australian Capital Territory, Queanbeyan or Yarrowlumla Shire, or its implementation; and / or

(ii) stipulated (consistent with the Code) in a direction of the relevant Minister for the purpose of the Access Arrangement; and / or

(iii) stipulated, (consistent with the Code) by any person or group of people appointed by Government or industry to inquire into or implement retail contestability in the gas industry in the Australian Capital Territory, other than those costs, if any, that have been permitted or stipulated under (i) and (ii); and / or

(iv) as verified by an independent person appointed by ActewAGL as being those costs that may properly be recoverable under the Code, other than those costs, if any, that have been permitted or stipulated under (i) (ii) and (iii),

and that have not already been recovered under this Access Arrangement or otherwise; and

(d) ActewAGL may not amend its Reference Tariffs to recoup the Retail contestability costs permitted by paragraph (c) earlier than 14 days from the date that those costs are permitted, stipulated or verified, as the case may be, under paragraph (c); and

(e) the costs that ActewAGL is permitted to recoup through amended Reference Tariffs must be allocated on the same basis as ActewAGL allocated costs in developing the Reference Tariff, immediately prior to its proposed amendment.

Amendment 13 – Additional heating value costs and the Utilities Act

ActewAGL must include the following statement in its Access Arrangement:

“Additional costs (both capital and non capital) for:

- heating value measurement, eg associated with the introduction of a second receipt point on the ActewAGL network; and
- compliance with requirements in the ACT Utilities Act

may be recovered by ActewAGL through Reference Tariffs only if it first complies with the following conditions:

(a) ActewAGL will notify the Relevant Regulator in writing of its desire to recover the costs (which have not already been recovered under this Access Arrangement or otherwise) through Reference Tariffs and provide the Relevant Regulator with any information it may reasonably require including without limitation:

(i) the nature of the costs;

(ii) the amount of the costs it seeks to recover;

(iii) the amendments it proposes to the Reference Tariffs in order to recoup those costs and the basis on which those amendments were calculated;

(iv) the impact or likely impact of the proposed Reference Tariffs on Users or classes of User; and

(v) the date on which it is proposed that the new Reference Tariffs commence; and

(b) ActewAGL will give the Relevant Regulator a reasonable time from the date it notifies the Relevant Regulator under paragraph (a) to appoint an independent person suitably qualified (if the Relevant Regulator wishes) and to have that person review and report to the Relevant Regulator, (on the basis of the information given to the Relevant Regulator under (a)) on the following:

(i) the impact of these costs on Reference Tariff, were they to be recouped through Reference Tariffs; and

(ii) any other matters that the Relevant Regulator may reasonably require; and

(c) ActewAGL may not amend its Reference Tariffs to recoup the additional costs earlier than 14 days from the date that those costs are confirmed by the auditor, or if no auditor is appointed, 30 days from the date of notification under (a), and

(d) the costs that ActewAGL is permitted to recoup through amended Reference Tariffs must be allocated on the same basis as ActewAGL allocated costs in developing the Reference Tariff, immediately prior to its proposed amendment."

10 FORM OF REGULATION AND TOTAL REVENUE

10.1 ActewAGL's proposal

ActewAGL proposes to adopt a price path approach to the determination of reference tariffs. ActewAGL's proposed price paths for contract and tariff customers are as follows:

Table 10.1 ActewAGL's original price path proposal (nominal $m)

Year ending June	2001	2002	2003	2004
Revenue path				
Contract market	2.5	2.5	2.6	2.6
Tariff market	36.5	38.3	40.2	42.0
Contract price path	CPI - 1	CPI - 1	CPI - 1	CPI - 1
Tariff price path	CPI - 1	CPI - 1	CPI - 1	CPI - 1
EBIT/funds employed (%)	7.1	7.6	8.1	8.5

Source: ActewAGL, *RAAI for ACT, Queanbeyan and Yarrowlumla Network*, 15 February 1999, p 17.
Note: In September 1999, following revised tariff growth forecasts, ActewAGL submitted minor adjustments to its proposed tariff revenue path.

10.2 Draft decision

The Commission's draft decision is summarised below:

(a) ActewAGL is required to submit reference tariffs which, if applied over the whole year 1999/2000 and subsequent years to 2003/04, are consistent with total revenue as follows:

Real 1999/2000 $m(1)

Year ending June	2001	2002	2003	2004
Contract revenue	2.1	2.0	1.8	1.7
Tariff	29.4	28.4	27.4	26.3
Total	31.4	30.3	29.2	28.1

Note:
1. Subject to the Commission's final decision on new facilities investment on connecting to the Eastern Gas Pipeline (EGP). The revenue paths shown in this table exclude capex on connection to the EGP.

(b) within this revenue cap, ActewAGL is required to establish reference tariffs in each of the years, 1999/2000 to 2003/04, expressed in real 1999/2000 dollars. The reference tariffs are to be adjusted by the change in CPI (EX-GST) over the year to March quarter immediately preceding the start of the relevant financial year.

(c) reference prices are to apply from 1 July 2004 or two weeks after the final approval of ActewAGL's revised Access Arrangement, whichever is the latter.

10.3 Responses to the draft decision

10.3.1 ActewAGL's response

ActewAGL did not agree with this proposed amendment and submitted that price paths be revised to reflect:

- an ICB set at $240.6m and rate of return of 8.0 per cent
- operating costs revised to account for:
  - an appropriate level of controllable operating costs
  - incremental costs of growth to reflect an achievable level of forecast load growth
- capital expenditure revised to reflect the achievable level of forecast load growth
- forecast demand levels that are achievable.

10.3.2 Public submissions

BHPP has commented on cost of services underlying ActewAGL's total revenue:

- the draft decision on ICB of $170m is too high, with some submissions suggesting an ICB equal to DAC is more appropriate[77]
- WACC parameters used by the Commission should be revised to align with commercial reality.[78]

10.4 Issues considered by the Commission in making its final decision

After considering submissions received in response to the draft decision, the Commission has concluded that the price path approach and the cost of service methodology should be adopted for ActewAGL. The key steps are to establish a revenue stream for ActewAGL over the Access Arrangement period, and then to allocate revenue between (a) market segments and (b) asset groups (as appropriate). This process involves:

- establishing the cost of services for ActewAGL over the Access Arrangement period
- considering the revenue that should be raised from the contract market
- considering the revenue that should be raised from the tariff market and prices that should be paid by tariff market users for network services
- comparing cost of services with total revenue
- considering the implications of the updated indicator analysis to establish the projected financial position of ActewAGL under the final decision.

In terms of assessing and implementing the new reference tariffs, the Commission has decided to:

1. make initial financial projections based on actual results in 1999/2000
2. express reference tariffs for 2000/01 - 2003/04 in 2000/01 dollars

77 Submission by BHPP, 17 April 2000 and University of Canberra, 6 April 2000.
78 Submission by BHPP, 17 April 2000.

3. assume that the reference tariffs calculated under (1) apply from the date of final approval of the Access Arrangement.

10.5 Assessment of cost of services

Under the cost of service model, the Commission has decided that ActewAGL's total revenue should cover:

- ActewAGL's forecast of operating costs, adjusted for efficiency improvement and allowing for growth (see chapter 9)
- a rate of return of 7.75 per cent (real, pre tax) on the capital base (see chapter 4). After considering various asset valuation methodologies and the requirements of the Code, the initial capital base has been set at $175m at 1 July 1999 (see chapter 5)
- depreciation of the regulatory capital base (see chapter 6)
- a nominal return on net working capital.

Table 10.2 provides a breakdown of the total cost of service allowed for ActewAGL.

Table 10.2 Breakdown of total cost of services and revenue allowed for ActewAGL (pre GST, 2000/01 $m)

Year ending June	**2001**	**2002**	**2003**	**2004**	**NPV**[2]
Final decision					
Return on capital base[1]	15.0	15.7	15.8	15.8	48.3
Depreciation	5.9	6.3	6.5	6.8	19.8
Return on working capital	0.6	0.5	0.5	0.5	1.7
Operating costs	9.9	9.4	9.0	8.7	28.5
Total	31.4	31.9	31.9	31.8	98.2
AGLGN's proposal[3]					
Return on capital base	18.4	19.3	20.0	20.6	60.8
Depreciation	8.0	8.1	8.1	8.2	25.2
Return on working capital	0.0	0.0	0.0	0.0	0.0
Operating costs [4]	11.5	11.4	11.1	10.9	34.5
Total	37.9	38.8	39.2	39.7	120.4

Note:
1. Return on capital base is calculated using the average capital base for each year.
2. The NPV is for the 3½ years, 1 January 2001 - 30 June 2004, calculated using a real discount rate of 7.75 per cent.
3. ActewAGL's proposed nominal figures are translated into real 2000/01 figures based on its assumed 2.5 per cent inflation and the forecast 3 per cent inflation for 2000/01.
4. For comparison with the final decision, ActewAGL's proposed operating cost is adjusted to exclude contestability cost.
5. Due to rounding, figures may not add up to total.

Having determined the total costs of ActewAGL's service and revenue requirement, the Commission is required to determine the allocation of these costs and revenues between asset groups and between users. Chapter 12 presents the Commission's assessment of ActewAGL's proposed cost allocation methodology.

10.6 Contract market revenues

In accordance with the final decision, revenue from the contract market will recover the following costs:

- operating costs allocated to the contract market using the fully distributed cost (FDC) methodology
- return on and depreciation of assets is to be shared between contract and tariff customers.

Costs allocated to the contract market are $1.4m per annum for the period 2000/01 - 2003/04 (2000/01 $). This represents a significant reduction in ActewAGL's contract revenue compared with the current level for 1999/2000.

The Commission has considered three price path options:

1. immediate reduction to reflect costs
2. gradual reduction over the Access Arrangement period. Under this option, contract market revenue would be lower than the projected cost of service in 2004 in order to achieve a zero net present value over the Access Arrangement
3. a combination of (1) and (2).

In August, the Commission sought ActewAGL's comments on the above options. In response, ActewAGL states:

> ActewAGL sees no benefit from a gradual reduction in contract revenues to the contract costs (based on the Commission's preferred FDC allocation methodology). Since the Total Revenue will be the same regardless of price paths chosen and prices will reduce in all scenarios a move to the prices which reflect the Commission's view of costs is to be preferred. This approach has the further benefit of prices for Tariff and Contract being close to their allocated costs at the time of the next Access Arrangement Review minimising the possibility of price shocks under that review. We would suggest that the Commission adopt an immediate reduction in the contract revenue to its calculation of the costs for the contract market.[79]

The Commission has modelled the financial projections on the alternative options. The financial projections are based on an anticipated commencement date of the Access Arrangement of 1 January 2000. In 2000/01, total revenue (contract and tariff) reflects six months' effect of reference tariffs (see section 10.9).

Having considered ActewAGL's views and its own analysis of financial impact, the Commission has decided to adopt a price path which reflects the costs of services for ActewAGL's contract and tariff customers. This results in an immediate price reduction in 2000/01. The price cap during the period 2001/02 - 2003/04 is then smoothed to achieve cost of service in the final year of this regulatory period.

10.6.1 Final decision on contract revenue

The contract revenue path is shown in Table 10.3:

[79] ActewAGL's letter of 22 August 2000.

Table 10.3 Contract revenue paths and average contract price allowed for ActewAGL (pre GST, 2000/01 $m)

Year ending June	2001[2]	2002	2003	2004	NPV[3]
Final decision					
Contract revenue	1.4	1.4	1.4	1.4	4.4
Real average price $/GJ	1.3	1.3	1.3	1.3	
Real price change %	-42.7	-0.0	-0.0	-0.0	
Comparison with ActewAGL proposal					
Contract revenue[4]	2.5	2.4	2.5	2.4	7.5
Average price $/GJ	2.4	2.3	2.3	2.3	
Real price change %	-1.0	-1.0	-1.0	-1.0	

Notes:

1. Actual contract revenue was $2.3m in nominal terms in 1998/99 and 1999/2000.
2. This reflects the full year effect of new charges. As the commencement date for the Access Arrangement is expected to be January 2001, ActewAGL's contract revenue in 2000/01 under the final decision is projected to be $1.9m.
3. The NPV is for the 3½ years, 1 January 2001 - 30 June 2004 calculated using a real discount rate of 7.75 per cent.
4. ActewAGL's proposed nominal figures are translated into real 2000/01 figures based on its forecast for 1999/2000 and assumed 2.5 per cent inflation, and the forecast 3 per cent inflation for 2000/01. The proposed revenue is based on a commencement date of the Access Arrangement of at 1 July 1999.
5. Figure may not add up to the total due to rounding.

10.7 Tariff revenue and price path

The Commission's draft decision includes a CPI-11 per cent price cap for the tariff market prices path in 1999/2000, followed by a CPI-6 per cent cap for the remainder of the Access Arrangement period. This price path excludes capex associated with ActewAGL's connection with the EGP.

In its submission, BHPP comments on the price effect of the draft decision. In particular, BHPP states that the Commission should be involved in setting tariffs, not just target revenue.

In its final decision, the Commission has:

- revised forecast inflation for the period 2000 - 2004 (exclusive of GST) from 2.5 per cent to 3.0 per cent per annum reflecting current market expectations
- considered that the current pricing structure for tariff customers can be simplified from the existing four price schedules to the single multiple block structure which ActewAGL has proposed, while minimising any price shocks.

Under the Commission's final decision on cost of services and demand forecasts, will introduce a significant reduction in tariff revenue. As discussed in section 10.6, the Commission has considered ActewAGL's views on alternative options for tariff/contract price paths. The Commission has decided that tariffs for the tariff service to reflect the cost of services. As a result, there will be a large price reduction in 2000/01. Average tariff market prices will reduce by 19.2 per cent in 2000/01, followed by a CPI-3.7 per cent cap over the Access Arrangement period. It is expected that this reduction in network revenue will be passed on to end tariff customers in the ACT.

Prices are to be determined in real 2000/01 dollars. To avoid double counting the effect of GST, prices are to be indexed by the increase in the CPI, exclusive of GST.

A comparison of price paths is shown below in Table 10.4:

Table 10.4 Tariff price path (pre GST, 2000/01$)[1]

Year ending June	2001	2002	2003	2004
Average price ($/GJ)				
ActewAGL proposal	7.05	6.98	6.91	6.84
Draft decision	6.01	5.71	5.42	5.15
Final decision	5.62	5.41	5.21	5.02
Price change (%)				
ActewAGL proposal	-1.0%	-1.0%	-1.0%	-1.0%
Draft decision	-5.0%	-5.0%	-5.0%	-5.0%
Final decision[2]	-19.2%	-3.7%	-3.7%	-3.7%

Note:
1. The ActewAGL and the draft decision figures include the connection to the EGP for comparison with the final decision.
2. Price changes in 2000/01 are based on actual load in 1999/2000.

Under the Commission's final decision, revenue raised from the tariff market is expected to equal the costs allocated to this market in 2003/04.

10.8 Revenue vs cost of services

Revenue determined in the Commission's final decision is compared with ActewAGL's proposal in Table 10.5:

Table 10.5 Comparison of revenue path and cost of services (pre GST, 2000/01 $m)

Year ending June	2001	2002	2003	2004	NPV
Final decision					
Total revenue	31.5	31.7	31.9	32.1	98.2
Total cost of services	31.4	31.9	31.9	31.8	98.2
ActewAGL's original proposal[(1)]					
Total revenue	38.5	38.9	39.4	39.6	121.0
Total cost of services	37.9	38.8	39.2	39.7	120.4

Note:
1. Excludes provisions for costs associated with retail contestability.
2. ActewAGL's NPV are not equal because they submitted a 5 year proposal where the NPV of costs and revenue equal, however the NPV in the above table is based on 3 and a half years, hence they are slighlty out.
3. ActewAGL's proposed nominal figures are translated into real 2000/01 figures based on its assumed 2.5 per cent inflation and forecast inflation of 3 per cent for 2000/01. The proposed revenue is based on a commencement date for the Access Arrangement of 1 July 1999.

Under the Commission's final decision, total network revenue will fall by 16.8 per cent (in real terms) in 2000/01, with a price cap of CPI-3.0 per cent from 2000/01 - 2003/04.

10.9 Financial indicator analysis

The Commission's final decision regarding ActewAGL's total revenue has involved analysing its financial viability and considering the rate of return, along with the composition, level and funding of expenditure. In reaching its final decision on the determinants of cost of services and revenue paths for ActewAGL, the Commission has assessed the likely financial impact of the final decision on ActewAGL.[80]

The Commission considers that ActewAGL should receive a return on investment equal to the cost of capital. ActewAGL should be able to maintain an adequate level and trend in its key financial indicators. The projected outcomes should be consistent with maintaining an investment grade credit rating. They should provide ActewAGL with the capacity to finance any necessary capital investment in the debt markets.

The Commission notes that market practitioners have emphasised the trend of financial indicators rather than the level of any particular indicator in a particular year.

Rating agencies commonly assess an organisation's financial capacity and ability to service debt. In the final decision, the Commission has considered credit rating ratios and related ratings provided by Standard & Poors (S&P) for gas distributors:[81]

80 The Commission has used a financial model developed by KPMG to consider financial projections and impacts on ActewAGL under alternative cost and revenue scenarios.

81 The Commission notes that S&P has revised the four principal financial targets that it uses to analyse all investor-owned electric, natural gas, and water utilities in the USA. It has created a single set of financial targets that can be applied across the different utility segments. The new financial targets, like the previous benchmarks, pertain to risk-adjusted ratios that distinguish between low risk and high risk activities. S&P Australia has advised that it still uses the ranking in Table 10.9. The Commission notes that the ratings are consistent with the new ratings for US utilities.

Table 10.6 S& P ratio guidelines for gas distributors

Indicator and business risk	AA	A	BBB	BB
Pre tax interest coverage (x)				
Above average	3.75	3.00	2.00	1.50
Average	4.25	3.75	2.75	2.00
Below average	-	4.25	3.25	2.25
Total debt/total capital (%)				
Above average	46	51	58	64
Average	41	46	53	59
Below average	-	42	49	55
Funds from operations/interest coverage (x)				
Above average	4.25	3.50	2.50	2.00
Average	4.75	4.25	3.25	2.25
Below average	-	4.75	3.75	2.50
Funds from operation/total debt (%)				
Above average	27	20	15	12
Average	33	26	20	14
Below average	-	32	27	18
Net cashflow/capital expenditure (%)				
Above average	95	75	50	35
Average	115	90	65	45
Below average	-	100	75	55

Source: S&P Corporate Finance Criteria.
Note: These ratios were last published in 1995.

The financial indicators under this final decision are shown in Table 10.7. This analysis is based on the modelling of ActewAGL's regulatory accounts, rather than the projected financial accounts for financial reporting.

Table 10.7 Final decision on ActewAGL's pre GST total revenue – financial indicators analysis for price regulatory purposes 2000/01 - 2003/04

Year ending June	**2001**	**2002**	**2003**	**2004**
Total debt/total capital	21%	20%	16%	14%
Fund flow adequacy	61%	102%	113%	137%
Funds flow interest cover (x)	9.8	8.2	9.3	11.5
	AA	AA	AA	AA
Funds from operation/total debt	44%	42%	51%	67%
	>AA	>AA	>AA	>AA
Internal financing	39%	104%	123%	172%
	B	A	AA	AA

Source: ICRC's financial modelling.
Notes: In establishing this financial model, a number of assumptions were made by the Commission, including:

a. half year effect of revenue reduction in 2000/01
b. an inflation forecast of 2.4 per cent in 1999/2000 and 3.0 per cent per annum thereafter
c. a tax rate of 36 per cent in 1999/2000, 34 per cent in 2000/01, and 30 per cent from 20001/02
d. a dividend payout ratio of 70 per cent
e. based on actual debt level at 30 June 2000
f. expenditure forecasts and revenue as per this final decision.

Due to revenue reductions occurring under the Commission's final decision, ActewAGL will experience significant reductions in profitability in 2000/01 and 2001/02. Profitability will then improve for the remaining period of this Access Arrangement.

The Commission notes that ActewAGL's cashflow based indicators show a deterioration in 2000/01, driven by large capital expenditure outlays on the Eastern Gas Pipeline connection and the final decision on revenue reduction. The Commission has examined ActewAGL's financial projections for 2000/01, 2001/02 and longer term financial forecasts for 2004 and beyond. Having considered ActewAGL's future cashflows and longer term financial forecasts in each of this regulatory period and beyond 2004, the Commission considers that the trend of the financial projections is satisfactory. As noted above, credit rating agencies make financial assessments based on the trend of financial projections. The Commission considers ActewAGL will be able to maintain a satisfactory credit rating equivalent to an investment grade rating for its borrowings. It is expected that under the final decision, ActewAGL will have a satisfactory cashflow to fund its operation and to pay a dividend to its shareholders.

10.10 Final decision

The Commission is not satisfied that ActewAGL's proposed revenue and price paths are consistent with the principles and objectives contained in section 8 of the Code. The Commission requires ActewAGL to submit price and revenue paths consistent with the Commission's final decision.

Under the Commission's final decision:

- ActewAGL is to adopt a price path approach which predetermines the reference tariffs for the entire Access Arrangement period. ActewAGL must follow a path forecast to deliver a revenue stream consistent with the principles set by the Code. The allowed revenue is to be allocated between (a) asset groups and (b) the contract and tariff markets.
- ActewAGL is to adopt incentive mechanism in the form of CPI-X average price regulation. This will provide incentives for ActewAGL to be efficient and innovative, and to reduce the overall cost of its services. If ActewAGL reduces its operating costs below the level allowed, or achieves capital efficiency while maintaining agreed service standards, it will be able to retain the additional profits which will accrue over this Access Arrangement period.
- ActewAGL is to roll in prudent new investments only into the regulatory capital base at the next review.
- ActewAGL is to reduce its contract market revenue to $1.4m in 2000/01, to be maintained through the remainder of the Access Arrangment period (2000/01 $).
- ActewAGL is to reduce its tariff market revenue by 20 per cent to $30.1m in 2000/01 (full year effect). A price cap of CPI-3.7 per cent per annum will apply to ActewAGL's tariff reference price for 2001/02 - 2003/04.
- the Commission has compared the NPV of the revenue stream under the final decision with the allowed cost of services for ActewAGL.
- reference tariffs are to be determined before the net impact of the GST and are to be increased by the net impact of the GST (see chapter 11 and amendment 17). In the

revised Access Arrangement, reference tariffs must be shown inclusive of the net impact of GST.

Amendment 14 – Pre GST price and revenue

ActewAGL is required to amend its Access Arrangement so that its Reference Tariffs, (if applied over the whole year 2000/01, and subsequent years to 2003/04) are consistent with Total Revenue as follows, plus the net impact of GST (see amendment 17):

Revenue path in 2000/01 $m (pre GST) (1)

Year ending June	**2001**	**2002**	**2003**	**2004**
Contract revenue	1.4	1.4	1.4	1.4
Tariff revenue	30.1	30.2	30.4	30.6
Total	31.5	31.7	31.9	32.1

Note:

1. The allowed contract revenue in 2000/01 is based on the full year effect as if the Access Arrangement has been implemented from 1 July 2000. The allowed revenue is expressed before the net impact of GST.
2. Figures may not add up to total due to rounding.

The Reference Tariffs may be varied on 1 July of each year during the Access Arrangement Period of this Access Arrangement.

On 1 July 2001, Reference Tariffs may be adjusted by $\mathbf{CPI_1^{-GST}}$, which means the number derived from the application of the following formula:

$$CPI_1^{-GST} = \left(\frac{CPI_{Jun2000} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}}{CPI_{Jun1999} + CPI_{Sep1999} + CPI_{Dec1999} + CPI_{Mar2000}} - 1 \right) \times 100\%$$

and

On 1 July 2002, Reference Tariffs may be adjusted by $\mathbf{CPI_2^{-GST}}$, which means the number derived from the application of the following formula:

$$CPI_2^{-GST} = \left(\frac{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}}{CPI_{Jun2000} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}} - 1 \right) \times 100\%$$

and

On 1 July 2003, Reference Tariffs may be adjusted by $\mathbf{CPI_3^{-GST}}$, which means the number derived from the application of the following formula:

$$CPI_3^{-GST} = \left(\frac{CPI_{Jun2002}^{-GST} + CPI_{Sep2002}^{-GST} + CPI_{Dec2002}^{-GST} + CPI_{Mar2003}^{-GST}}{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}} - 1 \right) \times 100\%$$

where:

CPI means the consumer price index, All Groups index number for the weighted average of eight capital cities as published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Commission that is its best estimate of the index.

CPI^{-GST} means the CPI exclusive of the net cumulative impact since 1 July 2000 of:

a) the GST; and

b) changes to any other Commonwealth, State or Territory taxes or charges, consequent upon the introduction of the GST,

as calculated and published by the Australian Bureau of Statistics from time to time. If the Australian Bureau of Statistics does not, or ceases to, calculate and publish it then CPI^{-GST} will mean:

(i) an index published by Commonwealth Treasury which is its best estimate of the CPI^{-GST}; or

(ii) if Commonwealth Treasury does not, or ceases to, publish an index then an index published by the Reserve Bank of Australia which is its best estimate of CPI^{-GST}; or

(iii) if the Reserve Bank of Australia does not, or ceases to, publish an index, then at the Commission's discretion, either:

  (A) an index published by a person appointed by the Commission which is that person's best estimate of CPI^{-GST}; or

  (B) an index published by the Commission that is its best estimate of CPI^{-GST}.

CPI is as defined and where the corresponding subtext (for example $_{Jun2000}$) means the CPI for the quarter and of the year indicated (in the example the June quarter for the year 2000);

CPI^{-GST} is as defined and where the corresponding subtext (for example $_{Jun2001}$) means the CPI for the quarter and of the year indicated (in the example, the June quarter for the year 2001).

PART IV

REFERENCE TARIFFS AND COST ALLOCATION

11 REFERENCE TARIFFS AND REFERENCE TARIFF POLICY

11.1 ActewAGL's proposal

ActewAGL's proposed Access Arrangement includes reference tariffs for five reference services:

- capacity reservation
- managed capacity reservation
- multiple delivery point
- throughput
- tariff.

ActewAGL's reference tariff policy is included in section 4 of its proposed Access Arrangement, as submitted to the Commission 5 January 1999.

Section 3 of ActewAGL's proposed Access Arrangement includes, *Imposts and other statutory charges*. This details circumstances under which ActewAGL may vary its reference tariffs in recognition of changes in charges faced by ActewAGL.

11.2 Draft decision

In its draft decision, the Commission required ActewAGL to recalculate its reference tariffs to be consistent with allowed revenue. The Commission also required the following amendment:[82]

> ActewAGL is required to amend its reference tariff policy (section 4 of the Access Arrangement) by:
>
> a) modifying the policy to reflect the draft decision on revenues (Amendment 8) and cost allocation (Amendment 10)
>
> b) removing policy statements regarding treatment of new facilities investment.

In relation to the variation of reference tariffs, the draft decision required the following amendment:[83]

> ActewAGL is required to amend Section 3 of the proposed Access Arrangement, 'Impost and other statutory charges', to include statements to the following effect:
>
> ActewAGL may vary the reference tariffs from time to time, arising from any change in the level of any government charges or statutory fee or tax, and/or the introduction of new charges (eg the Goods and Services Tax). This statement must indicate that:
>
> (i) ActewAGL is required to make application to the Commission proposing a revision to the Access Arrangement to reflect the change
>
> (ii) the Commission has the discretion to appoint an independent auditor to ascertain the impact on reference tariffs. The approval of a change in reference tariffs will be based on the Commission's review of the independent auditor's advice

[82] IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 174.

[83] IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 193.

(iii) any burden or benefit of any adjustment to the reference tariffs to which ActewAGL is entitled will be allocated on the same basis as ActewAGL allocated the relevant costs or similar costs to develop the reference tariff or in the manner prescribed by law.

11.3 Responses to the draft decision

11.3.1 ActewAGL's response

In its submission of 18 April 2000, ActewAGL states the following in regard to its reference tariff policy and new facilities investment:

> ActewAGL agrees with the Draft Decision in its conclusion that any New Facilities Investment, to be included in the Capital Base, must pass the prudency tests. However, under the Code, unless a Service Provider exercises the discretion to include a statement in the Reference Tariff Policy that it will undertake New Facilities Investment that does not satisfy the Code, it may lose the right to include the Recoverable Portion in the Capital Base. The purpose of including this statement in the Reference Tariff Policy is to preserve that right.
>
> Accordingly, the exercise of the discretion given to ActewAGL by the inclusion of the statement in the Reference Tariff Policy is not intended to be inconsistent with the Code… For this purpose, ActewAGL suggests that the statement be retained, and expanded to refer to the inclusion of the Recoverable Portion in the Capital Base…

In relation to the variation of reference tariffs, ActewAGL states:

> ActewAGL submits that it is inappropriate to require a revision of the Access Arrangement to deal with such changes, as it opens the Access Arrangement within months of the Final Decision. Rather than a revision to the Access Arrangement, ActewAGL suggests that this variation to the Reference Tariff should be an automatic adjustment to Reference Tariffs, subject to the conditions specified in the Draft Decision.

11.3.2 Public submissions

The determination of reference tariffs is based on a range of factors, including the ICB, rate of return, cost allocation and operating costs. These issues are discussed in relevant chapters, as are submissions commenting on these issues. No specific comments on ActewAGL's reference tariff policy have been received.

11.4 Commission's assessment

The Commission has reviewed its draft decision on ActewAGL's reference tariff policy in the light of the Code. The Commission has decided to maintain the general intent of its required amendments.

Sections 8.1 and 8.2 of the Code set out the general principles a reference tariff and reference tariff policy should be designed to achieve. The Commission considers that reference tariffs consistent with this final decision will provide 'the Service Provider with the opportunity to earn a stream of revenue that recovers the efficient costs of delivering the Reference Service…' (section 8.1(a) of the Code), and ensure 'the safe and reliable operation of the Pipeline' (section 8.1(c) of the Code).

Other objectives of section 8.1 are to replicate the outcome of a competitive market and achieve efficiency in the level and structure of the reference tariff. The Commission considers there to be a degree of judgement involved in these considerations, subject to the provisions of the Code. The level of reference tariffs is determined by factors such as ICB, allowed rate of return, and capital and operating costs. Having considered these and other factors closely, the Commission is satisfied with the level of reference tariffs under the final decision. The Commission has also reviewed the structure of the reference tariffs. The structure proposed is reasonable and complies with the Code.

The Commission's assessment of ActewAGL's reference tariff policy and variation of reference tariffs over the Access Arrangement period is set out below. The Commission's assessment of cost allocation, pricing for contract and tariff markets, and demand forecasts is presented in chapters 12-14.

11.4.1 Reference tariff policy

The Commission has considered ActewAGL's response to the draft decision. Before final approval can be granted, the Commission requires ActewAGL to amend, in part, the reference tariff policy set out in its proposed Access Arrangement.

In response to the Commission's draft decision to remove policy statements regarding the treatment of new facilities investment from the reference tariff policy, ActewAGL has proposed wording based on section 8.18 of the Code (see ActewAGL's response under section 11.3.1).

Section 8.18 of the Code specifies the portion of new facilities investment that may be included in the capital base. It is that part of the investment that meets section 8.16 of the Code. The Commission accepts ActewAGL's argument, and has rewritten the draft decision amendment accordingly.

11.4.2 Variations in pre GST reference tariffs

The Commission's draft decision required ActewAGL to amend section 3 of its proposed Access Arrangement relating to the impost of statutory and other charges. Given approval from the relevant regulator, ActewAGL may vary its reference tariffs to take account of changes in charges, taxes or fees.

ActewAGL is concerned that the proposed amendment could act as a trigger, thereby opening up the whole Access Arrangement. This was not the intent of the Commission's draft decision amendment.

The Commission maintains its draft decision amendment 15, 'Variations in reference tariffs'. The Commission considers it reasonable that changes in imposts such as authorisation fees be passed on to users following Commission verification of such changes. However, in this final decision, the amendment has been redrafted to more clearly indicate that the variation in reference tariffs has been pre-approved by the Commission. Nevertheless, the process will allow the Commission to verify the proposed changes before they are passed through by ActewAGL.

Following the Commission's draft decision, the ACCC released its pricing guidelines in relation to the introduction of A New Tax System/GST (ANTS/GST). In line with these guidelines and the process of passing through the net effect of these tax changes, ActewAGL has provided modelling of ANTS/GST effects on its business. The Commission has reviewed ActewAGL's modelling and considers it to be consistent with the ACCC's pricing guidelines.

The Commission has approved an adjustment to reference tariffs from 1 July 2000 to account for the introduction of ANTS/GST. A net increase of 9.62 per cent has been approved. This will be added to the revenue and prices in this final decision.

11.5 Final decision

The Commission has decided that:

- ActewAGL's reference tariff policy must be revised to be consistent with the final decision
- variations in reference tariff will be allowed to reflect changes in authorisation fees, government charges, and levies.

Amendment 15 – Reference tariff policy

ActewAGL must amend the Reference Tariff Policy in its Access Arrangement by:

(a) ensuring that it is consistent with this final decision;

(b) removing any statements regarding the treatment of New Facilities Investment (including any such statements in Section 4 of the Access Arrangement) except as required or permitted by this final decision;

(c) adding the following statement:

"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 Investment, 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')".

Amendment 16 – Variations in reference tariffs

ActewAGL must amend the proposed revisions to ensure Section 3 of the Access Arrangement headed 'Impost and other Statutory Charges' includes statements to the following effect:

ActewAGL may vary Reference Tariffs:

(a) by the amount of any change in the authorisation fee paid by ActewAGL for a reticulator's authorisation under the *ACT Gas Supply Act*, new Utilities Act and/or *NSW Gas Supply Act* applying to the ActewAGL distribution system, provided that the change is implemented at the time that ActewAGL annually varies its Reference Tariffs;

(b) by the amount of any change in the level of any government fees, taxes or charges provided that ActewAGL first:

   (i) notifies the Relevant Regulator of the proposed change; and

   (ii) gives the Relevant Regulator a reasonable opportunity to appoint an independent auditor (at ActewAGL's expense) if the Relevant Regulator chooses, to ascertain and report on the impact on Reference Tariffs before the change is implemented; and

(c) as soon as practicable by that amount of any authorisation fee in paragraph (a) that relates solely to the implementation of retail contestability in the gas industry in the ACT, Queanbeyan or Yarrowlumla Shire.

Any proposed variation to a Reference Tariff that ActewAGL is permitted to make under the above criteria must be allocated on the same basis as ActewAGL allocated costs in developing the Reference Tariff, immediately prior to its proposed variation.

Amendment 17 – Variations in pre GST reference tariffs

ActewAGL may amend the Reference Tariffs in its Access Arrangement by an increase of 9.62 per cent from 1 July 2000 to include the net impact of:

(a) the GST; and

(b) changes to any other Commonwealth, State or Territory taxes or charges, consequent upon the introduction of the GST.

Reference Tariffs presented in the Access Arrangement must be expressed post the GST adjustments in an Addendum.

12 COST AND REVENUE ALLOCATION

12.1 ActewAGL's proposal

ActewAGL originally proposed allocating costs to the contract market by reference to stand alone costs. Total costs less contract costs were allocated to the tariff market. To determine the stand alone cost of serving the contract market, ActewAGL considered a hypothetical system built to serve the contract market only. Return, depreciation and operating costs were calculated for the reference point, ie the hypothetical stand alone system.

ActewAGL estimated the total cost of serving the contract market to be $3.5m based on ORC, and $3.0m based on DORC (in nominal terms). ActewAGL chose to allocate only $2.5m to the contract market. ActewAGL justified this reduced allocation on the basis that it minimises prices shocks to the contract market.

The following table shows the cost/revenue allocation between contract and tariff markets:

Table 12.1 ActewAGL's proposed allocation of costs/revenues (nominal $m)

Year ending June	2001	2002	2003	2004
Total revenue	39.0	40.8	42.8	44.6
Contract market revenue	2.5	2.5	2.6	2.6
Tariff market revenue	36.5	38.3	40.2	42.0

12.2 Draft decision

The Commission rejected ActewAGL's proposed cost allocation methodology. In particular, the Commission considered that the nature of the market served by ActewAGL limited the applicability of the stand alone methodology. This conclusion was supported by profitability analysis which indicated that the return from each of the tariff and contract markets on a fully distributed cost basis was reasonable (see chapter 6 of draft decision). In the draft decision the Commission required the following amendment:[84]

> ActewAGL is required to apply a non discriminatory cost allocation methodology to the contract and tariff markets.

12.3 Responses to the draft decision

12.3.1 ActewAGL's response

In its submission of 18 April 2000 ActewAGL agrees to incorporate the required amendment into its response Access Arrangement.

The Commission has since requested from ActewAGL specific details of how it intends to implement the non discriminatory cost allocation methodology. ActewAGL has responded to the information request by stating that if the intention of the non discriminatory cost allocation methodology is to implement fully distributed costs, the most readily available methodology would be similar to that used by AGLGN in NSW. This suggests that

[84] IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 184.

ActewAGL would implement activity based costing information to allocate operating costs, and MDQ to allocate capital costs.

12.3.2 Public submissions

BHPP has made the following comments in regard to cost allocation:[85]

> BHP strongly supports the Commission in its rejection of ActewAGL's standalone/marginal cost allocation approach. We believe that standalone/marginal cost allocation does not comply with the Code and that the Commission requirement that ActewAGL adopt a non-discriminatory approach to cost allocation and therefore Target Revenue is fair and Code compliant.

12.4 Commission's assessment

Under the draft decision the Commission requires costs to be allocated between contract and tariff markets on a non discriminatory basis. The draft decision amendment is general in nature and does not specify the exact basis for allocating costs. In this final decision, the Commission has specified the basis upon which costs should be allocated between assets and markets. The Commission has maintained the draft decision to allocate costs on a non discriminatory basis.

The Commission's assessment is presented under the following headings:

- operating cost allocation
- capital cost allocation.

12.4.1 Allocation of operating costs

The Commission's approach allocates operating costs to customer segments. The Commission generally considers that it is appropriate to use activity based costing information to allocate operating costs. Activity based costing is one approach to implementing a fully distributed cost methodology. Chapter 14 of the draft decision discusses cost allocation methodologies, and arguments in favour of allocating operating costs on a fully distributed basis.

The Commission has considered ActewAGL's activity based costing information for 1997/98 and 1998/99. This information will be used to allocate operating costs to customer segments. The Commission's final decision on the allocation of operating costs is presented in section 12.5 below.

12.4.2 Allocation of capital costs

The Commission's approach is first to allocate capital costs to assets, and then to split assets' capital costs to contract and tariff markets.

The allocation of capital costs to assets partly depends on the process of allocating the ICB to those assets. The Commission has decided to allocate the ICB to assets based on the DORC relativities of those assets. In establishing the capital base below DORC, the Commission has pro rated the ICB allocation to assets. This issue is discussed in greater detail in chapter 5.

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85 BHPP, *Submission to ActewAGL Access Arrangement Review*, 17 April 2000, p 6.

As stated in the draft decision, the Commission rejects ActewAGL's proposal to allocate costs (capital and operating) to the contract market based on the stand alone costs of serving that market. The Commission requires a non discriminatory approach to be applied. In this final decision, the Commission requires ActewAGL to allocate capital costs between its contract and tariff markets based on FDC ORC. In reaching its final decision, the Commission has considered a range of issues, including:

- the use of fully distributed costs for operating costs
- the extent of revenue impact and customer impact
- submissions
- practices generally adopted for other covered pipelines.

The Commission's final decision on operating cost allocation is presented in section 12.5 below.

12.5 Conclusion and final decision

The Commission has determined the cost allocation methodologies to be applied by ActewAGL, and regards these as fair and reasonable. However, the Commission notes that the methodologies adopted are not the only ones that would be 'otherwise fair and reasonable' under the Code.

The Commission concludes that:

1. capital costs allocated between asset groups are to be based on the final decision on ICB
2. fully distributed costs methodology will be used to allocated costs between contract and tariff markets:
   - capital costs based on FDC ORC
   - operating costs based on the activity based cost information.

Table 12.2 Contract market costs allocation (pre GST, 2000/01 $m)

For the year 2000/01	**Final decision**
Operating costs	0.5
Capital costs	1.9
Contract market cost	**1.4**

Note: due to rounding, figures may not add up to total.

The overall cost allocation outcomes are:

Table 12.3 ICB allocation ($m)

	Final Decision		
	Total	Contract	Tariff
Primary mains	5.6	0.7	4.9
Secondary mains	22.1	2.7	19.4
Other system assets			
Regulators, valves	0.4	0.0	0.4
Meters	7.0	2.1	4.9
MP&LP	136.9	0.1	136.8
Non network assets	3.0	0.1	2.9
TOTAL	175.0	5.7	169.3

Note: due to rounding, figures may not add up to total.

Table 12.4 Final decision opex allocation for 2000/01 (pre GST, 2000/01 $m)

	Final decision		
	Total	Contract	Tariff
Total	9.9	0.5	9.5

Note: due to rounding, figures may not add up to total.

Table 12.5 Final decision capital cost allocation for 2000/01 (2000/01 $m)

	Final decision		
	Total	Contract	Tariff
Total	21.5	0.9	20.6

Note: due to rounding, figures may not add up to total.

Amendment 18 – Cost allocation

In its Access Arrangement, ActewAGL must adopt the following cost allocation methodology:

In allocating capital costs (including return on capital base and depreciation of capital base), the value of the initial Capital Base at 1 July 1999 for the Covered Pipeline permitted in Amendment 3 must be used and allocated by ActewAGL between:

(a) the asset groups comprising the Capital Base; and

(b) contract and tariff customers

as set out in the following table and consistent with this amendment:

1999 ICB allocation ($m)

	Total	Contract customers	Tariff customers
Primary mains	5.6	0.7	4.9
Secondary mains	22.1	2.7	19.4
Other system assets			
Regulators, valves	0.4	0.0	0.4
Meters	7.0	2.1	4.9
MP&LP	136.9	0.1	136.8
Non Network Assets	3.0	0.1	2.9
TOTAL	**175.0**	**5.7**	**169.3**

Note: due to rounding, figures may not add up to total.

In allocating Non-Capital Costs in its Access Arrangement between those asset groups comprising the Capital Base for the Covered Pipelines, ActewAGL must base its allocation on activity based costing information.

In allocating costs (including return on Capital Base, Depreciation and Non Capital costs) in its Access Arrangement between contract customers and tariff customers, ActewAGL must base its allocation using a fully distributed cost methodology that is well recognised.

13 PRICING FOR THE CONTRACT AND TARIFF MARKETS

13.1 ActewAGL's proposal

ActewAGL's proposed pricing structure for the contract market includes capacity based charges or throughput based charges, metering charges, and capped pricing. ActewAGL treats its network as a single zone for pricing purposes. Users pay the same unit rate regardless of their location on the network.

For the tariff market, ActewAGL has proposed a single, multiple block tariff comprising fixed and throughput charges.

The Commission's draft decision includes detailed discussion of ActewAGL's pricing proposal.

13.2 Draft decision

In its draft decision the Commission required that ActewAGL amend its pricing for the contract market as follows:[86]

> Amendment 11 – ActewAGL is required to recalculate its contract reference tariffs on the basis of non discriminatory cost allocation between contract and tariff markets, and revised contract demand forecasts.
>
> Amendment 12 – ActewAGL is required to ensure that no existing customer will face a real increase in transportation charges over the Access Arrangement period from the current prices as at 30 June 1999.
>
> Amendment 13 – ActewAGL is required to state that overruns of MHQ are not counted for the purposes of overrun payments. A statement to this effect should be placed in schedule 2B of the Access Arrangement, in the overrun section on pages 45 and 46.

The draft decision required the following amendment in relation to pricing for the tariff market:[87]

> Amendment 14 – ActewAGL is required to recalculate its reference tariffs for the tariff service on the basis of non discriminatory cost allocation between contract and tariff markets and revised demand forecasts as stipulated by the Commission in amendment 16.

13.3 Responses to the draft decision

13.3.1 ActewAGL's response

ActewAGL responded to the draft decision with its submission of 18 April 2000. ActewAGL has agreed to incorporate draft decision amendments 12 and 13 into its revised Access Arrangement. ActewAGL does not agree with draft decision amendments 11 and 14 insofar as they relate to the calculation of total revenue and contract and tariff demand forecasts. In

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86 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, pp 188-189.

87 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 191.

particular, ActewAGL states the price paths should be revised to take account of the following:[88]

- ICB set at $240.6m
- rate of return set at 8.0 per cent
- operating costs revised to account for appropriate level of operating costs, and incremental costs of growth set to reflect achievable level of forecast load growth
- capital expenditure revised to reflect achievable level of forecast load growth
- forecast demand levels that are achievable.

ActewAGL's submission on these issues is discussed in more detail in the relevant chapters of this final decision, as is the Commission's assessment.

13.3.2 Public submissions

BHPP has commented on the setting of reference tariffs and ActewAGL's proposed single zone pricing structure:[89]

> BHP believes that the Code requires the Relevant Regulator to go further than setting a Target Revenue figure for each segment of the ACT market. In its draft decision the Commission has left the setting of actual tariffs up to ActewAGL. Recent experience in NSW has demonstrated that this approach does not work…
>
> ActewAGL's proposal for a single zonal tariff for contract customers requires too much averaging across the system. We believe that, depending on the geographic spread of contract customers, that the network should be broken down into at least four pricing zones, particularly if the EGP lateral is to provide a second entry point into the network at a significantly different geographic location that the current entry point.

AGL Energy Sales and Marketing and AGL Retail Energy have commented on the proposal to restructure the existing four tariff schedules into a single, multiple block pricing structure:[90]

> The draft decision expresses some concerns with the complexity of the ActewAGL price structure proposed for the tariff market… ES&M acknowledges the advantages of simplified block structures, but notes the tariff market in the range 0TJ to 10TJ covers a very diverse spectrum of customer types and usage patterns. The proposal is, however, simpler than the existing price structure which is linked to appliance types. Overall, ES&M believes that the proposed tariff price structure would allow retailers to design retail tariff structures which are attractive to the market.

13.4 Key issues for the final decision

In making its final decision, the Commission has identified several key issues for consideration. For the contract market, these issues relate mainly to the single zone pricing structure and factors influencing the determination of contract revenue. Contract market issues discussed below are:

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88 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 18 April 2000, p 49.

89 BHPP, *Submission to ActewAGL Access Arrangement Review*, 17 April 2000, p 6.

90 AGL Energy Sales and Marketing and AGL Retail Energy, *Submission to ActewAGL Access Arrangement Review*, 18 May 2000, pp 2-3.

- the proposed single zone price structure
- capped pricing
- treatment of future capital contributions.

The key issue for the tariff market is ActewAGL's proposal to restructure the existing four tariff schedules into a single, multiple block tariff.

The Commission has also considered BHPP's concerns in regard to the setting of reference tariffs. This issue is discussed in chapter 11 of this final decision.

13.5 Single zone price structure

Issues concerning ActewAGL's proposed pricing structure are dealt with in chapter 15 of the draft decision. Chapter 12 of the draft decision considers pricing structure in relation to ActewAGL's services policy. ActewAGL proposes establishing a single local network charge for the ACT, effectively adopting a single zone for its network.

13.5.1 Commission's assessment

ActewAGL's approach involves some averaging. Given that charges are derived by taking the revenue associated with the ActewAGL local network, and dividing this value by the level of demand, users pay the same price, regardless of assets used. Although this may be seen as 'fair' insofar as customers next door to each other pay the same price, in fact, customers utilising only some of the assets in the network contribute to all of them.

The Commission notes that one pricing structure is not intrinsically superior to the other. Further, the Commission is of the view that the form of price structure should not normally be decided for the service provider, as long as it can be demonstrated that the structure adopted does not result in adverse impacts for customers. The structure should serve as a positive signal to customers that any future change in price structure will not affect customers adversely.

The Commission has also considered the single zone pricing structure in terms of ActewAGL's services policy. As discussed in section 12.4.1 of the draft decision, the Commission questions the practicality of implementing multiple pricing zones in the ACT. The reasonableness of such a requirement is brought into question where ActewAGL constructs an interconnect with the Eastern Gas Pipeline. By requiring varying prices, the Commission may actually impose extra costs on ActewAGL, penalising it for making an appropriate investment decision.

These issues are closely related to those of an interconnection reference service, which some users have requested. As discussed in chapter 16, the Commission does not require ActewAGL to establish an interconnection reference service. However, the Commission believes users who have viable interconnect/bypass opportunities will be in a position to negotiate suitable tariffs with ActewAGL. For such customers, the single zone tariff will not be relevant.

Based on the above, the Commission accepts the single network/postcode based approach. It is satisfied that the structure is transparent, simple and predictable.

13.6 Capped pricing

ActewAGL's pricing model for its proposed Access Arrangement results in two contract customers being subject to a cap. In the absence of a cap, ActewAGL admits that prices generated from those customers would be unsustainable. Under ActewAGL's proposal, the revenue shortfall from capped customers accounts for less than 1 per cent of reference revenue in year 1 of the Access Arrangement.

13.6.1 Commission's assessment

Capped rates for contract customers are based on tariff rates and the price of alternative fuels. ActewAGL submits that for this group of customers, it is not commercially reasonable to charge more than the rates applicable to tariff market customers.

Sections 8.38 - 8.42 of the Code deal with the allocation of revenues/costs between services and users. Sections 8.38 and 8.42 include the following words:

> Section 8.38 – Subject to sections 8.40 and 8.43, to the maximum extent that is commercially and technically reasonable, the portion of the Total Revenue (referred to in section 8.4) that a Reference Tariff should be designed to recover (which may be based on forecasts) should include…
>
> Section 8.42 – Subject to section 8.43, 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 forecasts) is consistent with the principles described in section 8.38.

ActewAGL has not included capped rates as part of its Access Arrangement.[91] The Commission notes that during IPART's review of AGLGN's proposed Access Arrangement, AGLGN stated that the capped rates will form part of the relevant reference service/tariff, and, as such, will be available to all contract customers.

The Commission considers that unless ActewAGL implements a similar approach, it will be required to assess any roll in of foregone revenue from capped customers under section 8.43 of the Code.

The Commission has considered sections 8.38, 8.42 and 8.43 of the Code, and the approach of making capped rates a component of the relevant reference service/tariff. The Commission considers such an approach to be reasonable.

Amendment 19 – Reference tariffs for network services to contract customers: capped rates

ActewAGL must amend its proposed Access Arrangement to state the capped rates applicable to contract customers. The capped rates must form part of the Reference Services available to all contract customers.

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91 ActewAGL did provide details of its capped rates during its presentation at the Pricing Forum in Canberra, 22 September 1999 (see IPARC Draft Decision on ActewAGL review, p 164). The capped prices are aligned with those of AGLGN in NSW.

13.7 Future capital contributions

ActewAGL has indicated to the Commission that users have not provided capital contributions in the past.

13.7.1 Commission's assessment

The Commission has considered the treatment of future capital contributions, as covered in sections 8.23 and 8.24 of the Code. As these sections imply, ActewAGL should be free to negotiate capital contributions. These payments may be important where a project might otherwise prove uneconomic. Also, capital contributions provide a boost to short term cashflows.

IPART's review of AGLGN's proposed Access Arrangement in NSW highlighted some concerns in regard to AGLGN's record keeping. IPART considers that these should be rectified, and has required AGLGN to maintain a database on all capital contributions it receives.

The Commission considers that a similar approach should be applied to ActewAGL. This would avoid problems relating to the identification of capital contributions.

Amendment 20 – Capital contributions in respect of New Facilities Investment

ActewAGL must include the following statement in its Access Arrangement:

"Where ActewAGL receives capital contributions, it will establish and maintain during the Access Arrangement Period a database that records the following information in relation to Capital Contributions made to ActewAGL:

(a) the amount of a capital contribution made by a User in respect of a New Facility;

(b) the amount of any charge paid by a User 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) where the excess is paid by the User in relation to the funding of a New Facility;

(c) the date that the Capital Contribution is made under paragraph (a) or the charge is paid under paragraph (b);

(d) the name of the User and the User's contact details; and

(e) a description of the New Facility in relation to which the Capital Contribution is made under paragraph (a) or the charge is paid under paragraph (b)".

13.8 Pricing for the contract market – other issues

The Commission's draft decisions on contract charges (amendments 11-13) are dealt with earlier in this chapter. Apart from draft decision amendment 12, these amendments are essentially maintained under the final decision. In relation to draft decision amendment 11, the Commission maintains that contract tariffs must be recalculated based on allowed contract revenue and demand forecasts under the final decision. These issues are discussed under relevant chapters of the final decision. The Commission considers that under the final decision, reference tariffs must be calculated to allow for a reasonable balance between the interests of ActewAGL and those of users.

The Commission has removed draft decision amendment 12. This amendment stated "ActewAGL is required to ensure that no existing customer will face a real increase in transportation charges over the Access Arrangement period from the current prices as at 30 June 1999". The Commission has reconsidered its ability to require such price constraints. In the Commission's view, the regulator does not have the power under the Code to impose such a limitation on ActewAGL. The Code allows the Commission to set reference tariffs only.

Despite the removal of this amendment, the Commission is confident that a significant majority, if not all, contract users in the ACT, will face lower network charges under this final decision. The draft decision amendment acted as an additional safety net only, and the Commission is satisfied reference tariffs under the final decision are fair for both ActewAGL and users.

The Commission maintains that ActewAGL's proposed Access Arrangement was not clear on how overrun charges were to apply. Draft decision amendment 13 has been maintained to resolve this ambiguity.

Amendment 21 – Contract market Reference Tariffs

ActewAGL's Reference Tariffs in its Access Arrangement applying to contract customers must be calculated based on:

(a) the price and revenue caps in amendment 14;

(b) the cost allocation in amendment 18; and

(c) the demand forecasts in amendment 24.

Amendment 22 – Overrun charges

ActewAGL is required to state that overruns of MHQ are not counted for the purposes of overrun payments. A statement to this effect should be placed in schedule 2B of the Access Arrangement, in the overrun section on pages 45 and 46.

13.9 Pricing for the tariff market

At present, tariff customers may choose between four tariff schedules. ActewAGL has proposed restructuring the existing four tariffs schedules into a single, multiple block pricing structure. In the draft decision, the Commission requested ActewAGL to consider simplifying the number of blocks and block sizes.

13.9.1 Commission's assessment

In response to the draft decision, ActewAGL has maintained its proposal to restructure the existing four tariff schedules into a single, multiple block pricing structure. ActewAGL states:[92]

- under the present four tariff schedule environment, knowledge of customer appliances and usage profile are required to determine the best tariff for each customer. The new structure ensures that from a network perspective all users are on the appropriate tariff regardless of appliances used

[92] ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 18 April 2000, p 55.

- the number of blocks and block sizes have been designed to keep price variations in individual segments to a minimum while ensuring that natural gas remains a viable choice. It should be noted that tariff prices have been designed to cover a very large range of customers.

The Commission has considered the pricing impact analysis of ActewAGL's proposed tariff structure and the reason put forward by ActewAGL in support of the block structure. The Commission has also considered a submission from AGL Energy Sales and Marketing.

Overall, average tariff prices will fall in real terms under the final decision. The Commission notes that under ActewAGL's original proposal (in terms of revenue outcomes and price structure), some customers could have faced increases with the implementation of the single, multiple block tariff structure. However, the Commission is satisfied that under the final decision and the proposed block structure, impacts on customers will be reasonable.

13.9.2 Final decision

The Commission accepts ActewAGL's proposal to restructure the existing four tariff schedules into a single, multiple block tariff.

In addition, the Commission requires the following amendment to tariff market pricing:

Amendment 23 – Pricing for tariff customers

ActewAGL's Reference Tariffs in its Access Arrangement applying to tariff customers must be calculated based on:

(a) the price and revenue caps in amendment 14;

(b) the cost allocation in amendment 18; and

(c) the demand forecasts in amendment 24.

14 DEMAND FORECASTS

14.1 ActewAGL's proposal

Contract market

ActewAGL has forecast a steady decline in contract market volume and MDQ over the Access Arrangement period. MDQ is estimated to decline by 1.5 per cent per annum based on the assumption that customers moving to MDQ contracts will significantly improve their demand management.

Tariff market

ActewAGL forecasts total tariff market volume to grow by approximately 11 per cent over the period of the Access Arrangement. The business tariff market is forecast to decline by approximately 7 per cent over the period of the Access Arrangement. Customer numbers are forecast to grow by approximately 5 per cent as average consumption falls.

ActewAGL has forecast volume growth in respect of the residential tariff market of approximately 18 per cent over the period of the Access Arrangement. Customer numbers are forecast to grow by approximately 15 per cent.

14.2 Draft decision

In its draft decision, the Commission required the following amendment:[93]

> ActewAGL is required to amend its Access Arrangement and AAI to:
>
> a) revise its contract market forecasts based on the actual 1998/99 figure and load associated with the ACT urban bus fleet
>
> b) revise upwards its business tariff market forecasts consistent with the following figures:

Business tariff market forecasts (TJ)

1999	2000	2001	2002	2003	2004
1,430	1,459	1,488	1,518	1,548	1,579

Note:
Figures are for year ending June.
Figure for 1999 is actual.

> c) revise upwards its residential market forecasts consistent with the following figures:

Residential tariff market forecasts (TJ)

1999	2000	2001	2002	2003	2004
3,581	3,867	4,177	4,511	4,872	5,262

Note:
Figures are for year ending June.
Figure for 1999 is actual.

93 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 209.

Requirement 3 of the Commission's draft decision required ActewAGL to:

a) provide an adequate explanation of factors driving the contract market forecasts, and revise its methodology for the contract market to reflect factors in the ACT
b) provide a satisfactory outline of its forecasting methodology in the Access Arrangement Information.

14.3 Responses to the draft decision

14.3.1 ActewAGL's response

Contract market

ActewAGL has responded to the Commission's requirement for the contract market by submitting the following revised forecast:[94]

Table 14.1 ActewAGL revised contract market volume

Year ending June	1999	2000 Year 1	2001 Year 2	2002 Year 3	2003 Year 4	2004 Year 5
Revised Volume (TJ)	1,000	1,063	1,120	1,114	1,109	1,103
Sites	38	41	41	41	41	41
Original proposal (TJ)	1,000	1,063	1,057	1,052	1,047	1,042

Note: Figure for 1999 is actual.

As in ActewAGL's original forecast, contract MDQ has been projected to decrease by 1.5 per cent per annum to accommodate continuing improvements in energy management.

ActewAGL has stated that its contract market forecast is based on consideration of factors driving the ACT market, including:

- market domination by government sites
- government policy on energy saving to reduce green house emissions
- the slow-changing nature of the market
- low economic growth in the ACT.

ActewAGL has advised the Commission that Action Buses has decided not to power the ACT urban bus fleet with natural gas within the next five years.[95]

Tariff market

ActewAGL does not agree with the Commission's requirements for business and residential tariff market growth, stating that the required growth rates are not achievable.

Business tariff market

ActewAGL states that in order to achieve the Commission's requirement of 2 per cent per annum load growth, the following are required:

[94] ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 19 May 2000, p 5.
[95] ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 18 April 2000, p 65.

- immediate stabilisation of the long term decline in additions to customer numbers
- a slowing in the rate of decline in average consumption.

ActewAGL states that it does not have any evidence to suggest a stabilisation in the long term trend in decline of net additions of new business customers.

Residential tariff market

ActewAGL identifies the following growth components and factors limiting growth:[96]

Growth component	Key factor limiting growth
New connections:	
• new homes	• the number of new homes built
• existing non-gas homes	• the number of existing homes that can feasibly be connected
• increased average consumption	• the number and type of appliances that can be installed

Number of new homes built
Based on BIS Shrapnel's forecast of underlying demand for new dwellings, ActewAGL suggests that the number of new homes with gas connected required to meet the Commission's draft decision significantly exceeds the number of new homes projected to be built.

Number of existing homes that can be connected
Approximately 82 per cent of homes in the ACT have a gas main running pass them. Of these homes approximately 65 per cent are already connected to a gas main, ActewAGL asserts that of the remaining 35 per cent, only half will connect.

ActewAGL states that if connections were to continue at the same rate as in the mid-90s, this potential market could be connected within six years. However, ActewAGL cites 'saturation' as an impediment to the continuation of this connection rate.

Number and type of appliances that can be installed and used in previously connected homes
ActewAGL states that additional demand from existing gas users is constrained by the potential to install additional gas appliances. This potential is limited by the already high rate of installation of hot water and gas heating. Whilst there is scope to increase the penetration of gas cooking, ActewAGL believes the relatively low loads of these appliances would have little impact on the overall forecast.

14.4 Public submissions

BHPP supports the Commission's draft decision requiring ActewAGL to adopt revised volume forecasts. BHPP believes the decision fully complies with section 8.2(a) of the Code. BHPP supports the Commission's draft decision volume forecast. It suggests that the Commission should investigate the non-inclusion of the 200TJ/pa of contract load (20 per cent of the market) associated with the ACT urban bus fleet.[97]

96 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 19 April 2000, p 57.
97 BHPP, Submission to ActewAGL Access Arrangement Review, 17 April 2000, p 7.

14.5 Commission's assessment

Growth assumptions are a key part of an Access Arrangement. Demand forecasts underpin the derivation of reference tariffs from allowed revenue. Given that the costs of providing gas transportation services are largely fixed, the number of forecast units from which those costs can be recovered will affect the price charged for each service.

The Commission has given much thought to ActewAGL's responding submission. In particular, the Commission has considered:

- the reasonableness of factors underpinning ActewAGL's assumptions and methodology
- the qualitative arguments put forward by ActewAGL.

Contract market

In its draft decision, the Commission required ActewAGL to revise its contract market forecasts based on the actual 1998/99 figure and load associated with the ACT urban bus fleet. The Commission notes ActewAGL's advice that Action Buses does not intend to power its bus fleet with natural gas within the Access Arrangement period. The Commission also notes the revisions to contract market forecasts which ActewAGL's has submitted.

The Commission accepts ActewAGL's revised demand forecasts for the contract market.

Business tariff market

In assessing ActewAGL's response to the draft decision, the Commission has weighed:

- the reasonableness of ActewAGL's linear forecasting technique
- ActewAGL's interpretation of the Commission's draft decision requirements
- factors driving/constraining growth in the ACT business tariff market
- how the above factors influence attainable future growth rates.

The Commission notes the complexity involved in forecasting business tariff demand. This complexity relates primarily to the volatility of business demand, which is noted in the ACIL[98] review and discussed in the Commission's draft decision report.

For comparative purposes, the Commission considered the effect of moving away from ActewAGL's linear extrapolation technique for forecasting new customers.

The analysis in the draft decision suggests that 2 per cent annual growth for the business tariff market is reasonable. ActewAGL has presented new information and analysis following the draft decision. This information/analysis suggests that a 2 per cent target may be too high. However, the Commission's consideration/analysis of ActewAGL's response submission does not support ActewAGL's proposed forecasts, which indicates negative load growth for each year of the Access Arrangement.

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98 ACIL, *Review of AGLGN (ACT) Gas Demand forecasts,* July 1999, p 18. The ACIL report can be obtained from the Commission or the Independent Pricing and Regulatory Tribunal's web page *www.ipart.nsw.gov.au*

The Commission's final decision maintains business tariff market load at its 1999/2000 actual level. That is, a zero per cent per annum growth target.

The Commission has considered the reasonableness of customer and load growth assumptions and what these imply for average consumption rates. Applying a zero load growth assumption (and annual new customers equalling the average of the period 1995-1999), derives average consumption numbers slightly higher than those estimated by ActewAGL.

The Commission has also considered ActewAGL's interpretation of the draft decision. ActewAGL applied its forecasts of customer number growth to the Commission's load requirement. This has resulted in significantly higher average consumption numbers under the Commission's scenario compared with ActewAGL's proposal. The Commission considers ActewAGL's approach to be inappropriate. ActewAGL has assumed that underlying the Commission's decision was forecast growth in customer numbers identical to its own.

Nonetheless, issues of 'reasonable' customer number growth assumptions and similarly, 'reasonable' average consumption numbers, arise. The arguments put forward by ActewAGL suggest that a lowering of business tariff demand is warranted. The Commission's analysis also supports a lowering of the load growth requirement for business tariff customers.

Residential tariff market

ActewAGL's responding submission indicates a significant divergence between its proposal and the Commission's draft decision. Generally, this is not a new situation. The divergence between ActewAGL's proposal and the Commission's amendment was evident in the draft decision. Nonetheless, ActewAGL's submission has been appropriately considered.

In assessing ActewAGL's response to the draft decision, the Commission has considered:

- the reasonableness of ActewAGL's forecasting technique
- the reasonableness of ActewAGL's interpretation of the Commission's draft decision requirements
- key factors driving/constraining growth in the ACT residential market.

ActewAGL translated the Commission's draft decision volume numbers into required customer numbers. ActewAGL did this by applying its (or very similar) forecast average consumption numbers to the draft decision requirement. Given the increase in average consumption forecast by ActewAGL, this approach seems reasonable. However, it is noted by the Commission that ActewAGL has incentives to understate demand.

ActewAGL has applied a linear trend to forecasting new customers. The draft decision discusses this approach[99], noting that it is likely to ignore valuable information such as changing prices, economic behaviour and the influence of competition. The discussion also outlines recent empirical observations pointing to the limitation of linear extrapolation methodologies.

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99 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, pp 206-207.

For comparative purposes, the Commission has considered the effect of moving away from ActewAGL's linear extrapolation of new customers.

The Commission has also considered ActewAGL's assessment of the factors underlying new connections and the factors limiting them. The evidence and arguments put forward by ActewAGL support a lowering of the Commission's draft decision requirement. However, the Commission's analysis does not support the adoption of ActewAGL's proposed forecasts (in which ActewAGL originally proposes residential load growth of only 3.9 per cent per annum).

The Commission has decided to require 6 per cent annual growth for the residential market. This represents the midpoint between ActewAGL's proposal and the Commission's draft decision.

14.6 Final decision

Contract market

The Commission accepts ActewAGL's revised demand forecasts for the contract market and is also satisfied with ActewAGL's explanation of factors driving the market.

Business tariff market

On the basis of its assessment of ActewAGL's response to the draft decision and its own analysis and consideration of growth drivers, the Commission believes a lower load growth requirement should be determined for the business tariff market. The Commission has set business tariff market annual average load growth at 0 per cent per annum. This will be applied from 2000/01 as ActewAGL has submitted actual figures for 1999/2000.

Residential tariff market

After considering ActewAGL's arguments and alternative forecasting methodologies, the Commission has decided to lower its forecast requirement to 6 per cent annual load growth for the residential market. This will be applied from 2000/01 as ActewAGL has submitted actual figures for 1999/2000.

Amendment 24 – Demand forecasts

In its Access Arrangement, ActewAGL must apply the following demand forecasts:

Contract market

Year ending 30 June	2001	2002	2003	2004
Volume (ACQ TJ)	1,120	1,114	1,109	1,103
MDQ (TJ)	5.527	5.445	5.365	5.286
Customer numbers	41	41	41	41

Business tariff market

Year ending 30 June	2001	2002	2003	2004
Volume (ACQ TJ)	1,359	1,359	1,359	1,359
Customer numbers	1,943	1,943	1,943	1,943

Residential tariff market

Year ending 30 June	2001	2002	2003	2004
Volume (ACQ TJ)	3,989	4,228	4,482	4,751
Customer numbers	81,570	85,073	88,924	92,787

ActewAGL is required to include an outline of its forecasting methodology in the Access Arrangement Information.

15 PRICE IMPACTS

In assessing ActewAGL's proposed Access Arrangement, the Commission has considered the interests of users and prospective users. The Commission has undertaken analysis of customer impact by considering indicative pricing outcomes under the final decision as compared to ActewAGL's proposal.

In reaching its draft decision, the Commission assessed pricing impacts under ActewAGL's proposal for contract and tariff markets (see pages 211 to 213 of the draft decision report).

15.1 Price outcomes under the final decision

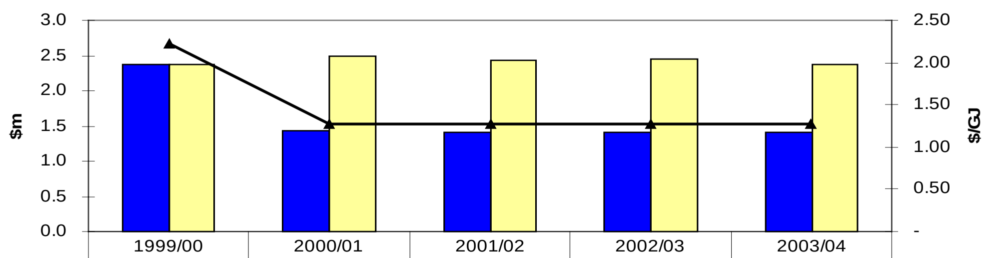
15.1.1 Contract customers

ActewAGL's proposed services policy introduces capacity based (MDQ) charging in the ACT. Customers in the ACT used to pay a bundled price for transportation on ActewAGL's network. Due to the change in price structure, the Commission is unable to conduct an analysis of the impact of the price change on individual contract customers.

The Commission's analysis below includes an indicative comparison of average prices per gigajoule (GJ) under the final decision and ActewAGL's proposal.

Under the Commission's final decision, real contract market revenue will be reduced by around 42 per cent, from $2.4m in 1999/2000 to $1.4m in 2003/04. By comparison, under ActewAGL's proposal, there is no reduction over the same period. Figure 15.1 below compares real contract revenues and average real prices under the Commission's final decision, with ActewAGL's proposal.

Figure 15.1 Trend in real contract revenue and average network prices



	1999/00	2000/01	2001/02	2002/03	2003/04
Final decision	2.4	1.4	1.4	1.4	1.4
ActewAGL proposal	2.4	2.5	2.4	2.5	2.4
Av price - final decision	2.23	1.28	1.28	1.28	1.28

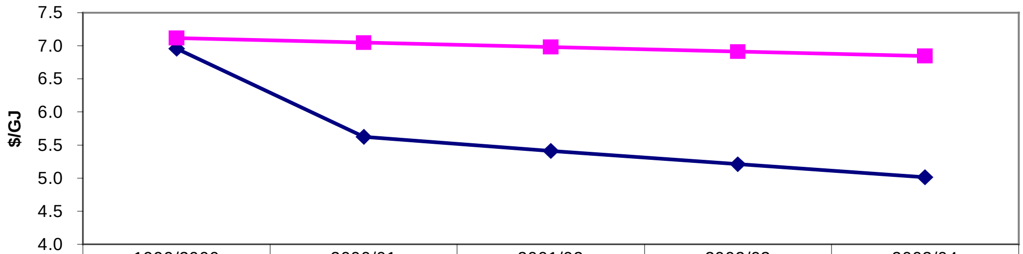
Notes:
Revenue for 1999/2000 are notional, based on the actual results for the year.
Revenue and average figures for 2000/01 assume full year effect of new charges.
Revenue figures for 2000/01-2003/04 are before the net impact of GST.

15.1.2 Tariff customers

For the tariff market, the Commission has decided on a CPI-19.2 per cent price reduction for 2000/01 of the Access Arrangement, followed by a CPI-3.7 per cent price path for the remainder of the Access Arrangement period.

Figure 15.2 below compares real average tariff network prices under the Commission's final decision with ActewAGL's proposal.

Figure 15.2 Average tariff network prices 1998/99 – 2003/04 ActewAGL proposal v final decision (real $/GJ)



	1999/2000	2000/01	2001/02	2002/03	2003/04
Final decision	6.96	5.62	5.41	5.21	5.02
ActewAGL proposal	7.12	7.05	6.98	6.91	6.84

Under the Commission's final decision, real average network prices will fall by over 27 per cent from 1999/2000 to 2003/04. By comparison, under ActewAGL's original proposal, average real tariff network would have reduced by only CPI-1 per cent for 4 years, or around 4 per cent over the same period.

As discussed in Chapter 13 of this final decision, the Commission has considered ActewAGL's proposed tariff structure. As indicated in Figure 15.2 above, real average tariff prices will fall under the final decision. The Commission is satisfied that under the final decision and the proposed block structure, impacts on customers will be reasonable.

PART V

CONTENT AND OPERATION OF THE ACCESS ARRANGEMENT

16 SERVICES POLICY

16.1 ActewAGL's proposal

ActewAGL's service policy proposal comprises a negotiated service and five reference services:

Negotiated service: an agreement to meet specific needs of users which are not met by reference services.

Capacity reservation service: a transport service from the receipt point to a single non-tariff delivery point. Charges are determined on the basis of capacity reserved ($/GJ of MDQ). Overrun charges are payable.[100] If new equipment is commissioned or daily metering has not been installed at the commencement of a service agreement, a user may increase the MDQ reserved within the first three months. The increased MDQ will be deemed to take effect from the commencement of the service agreement.

Managed capacity service: a transport service from the receipt point to a single non-tariff delivery point. Charges are determined on the basis of capacity reserved. No overrun penalties apply. However, the MDQ must be equal to or greater than the maximum quantity of gas withdrawn at the delivery point on any day in the previous 12 months.

Throughput service: a transport service from the receipt point to a single non-tariff delivery point. Charges are determined on the basis of $ per GJ of throughput. No overrun charges are payable. A minimum bill applies based on 10 TJ per annum.

Multiple delivery point service: a transport service from the receipt point to a number of non-tariff delivery points. Charges are based on the service provided at each delivery point.

Tariff service: a transport service from the receipt point to one or more tariff delivery points. Charges are determined on the basis of throughput.

16.2 Draft decision

In its draft decision, the Commission requested the following information from ActewAGL:[101]

> ActewAGL is required to present information on the appropriateness of:
> a) a partial use of assets reference service
> b) a summer tranche reference service
> c) a short term requirements reference service for small and medium users.

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100 Overrun charges apply when a user withdraws more than its reserved capacity on any day. Overruns may be authorised or unauthorised. When the overrun is authorised, the proposed charges are equal to the daily usage charge for capacity. When the overrun is unauthorised, a 50 per cent premium is proposed to be added to the daily usage charge. As the number of overruns increases, the penalty for overruns increases.

101 IPARC, *Draft Decision on Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, March 2000, p 160.

16.3 Responses to the draft decision

16.3.1 ActewAGL's response

Partial use of assets reference service

ActewAGL disagrees with the Commission's suggestion in the draft decision report that a partial use of assets service will facilitate bypass of the network. ActewAGL believes:

- such a service is not needed in the ACT
- this service could not coexist with the single zone price structure that it has proposed
- there are no bypass opportunities in the ACT network
- if a bypass opportunity was demonstrated to be viable, ActewAGL would negotiate with the relevant party to avoid construction of the bypass.

ActewAGL states that if a new receipt point was established, then under third party access on the pipeline, it would be available to the whole market. This would mean that if ActewAGL agreed to transport gas from that receipt point at a price other than the zone price, the pricing structure would effectively change from a single zone structure to a multiple zone price structure. ActewAGL claims that it is not possible to determine how such a rezoning would be performed without prior knowledge of the location and flow requirements.[102]

Summer tranche reference service

In its response to the draft decision, ActewAGL states that having reviewed all available MDQ data for the contract market in the ACT, it concludes that existing customers with current usage patterns do not need a summer tranche service. Nevertheless, ActewAGL is willing to offer a summer tranche service to all capacity reservation service customers to encourage any opportunities for use of capacity in off peak periods.

This service would be offered in periods of one or more whole months between 1 October and 30 April inclusive.

Short term reference service for small and medium users

ActewAGL does not believe a short term reference service is required or appropriate, given the nature in which prices have been set and the flexibility available to users.

ActewAGL has explained that a short term reference service compromises the basis of capacity reservation pricing. It explains that capacity pricing is appropriate as it is cost reflective, provides the lowest prices to the end customers with the best load factor, and gives all end customers an incentive to improve their load factor.

ActewAGL is concerned that if an unconstrained short term capacity option is available, customers will not reserve capacity for a 12 month period sufficient to meet their needs and will rely on the availability of short term capacity to meet peak requirements and additional production needs.

102 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 19 April 2000, p 51.

ActewAGL contends that the managed capacity service, throughput service and planned summer tranche service together provide sufficient flexibility in addition to the capacity reservation service, specifically:

- the **managed capacity service** has been designed for customers with uncertain production schedules, allowing them to use gas for a 12 month period without restrictions on MDQ, while ensuring that the pricing of 12 month reservation remains valid
- the **throughput service** allows for customers who wish to use gas without restriction to MDQ or regard to historical MDQ
- the **summer tranche service** will allow more flexibility for all customers by offering extra capacity in the warmer months.

16.3.2 Public submissions

BHPP suggests that the Commission require pipeline interconnection to be a reference service. BHPP does not accept the Commission's statement in the draft decision that there are no specific Code requirements concerning interconnections.[103]

16.4 Commission's assessment

Partial use of assets reference service

For the draft decision, the Commission divided its consideration of a partial use of assets service into two scenarios: no bypass and bypass.

Partial use of assets – no bypass[104]

The Commission considered this service based on the pre-draft decision submissions of Esso and BHPP, which questioned the appropriateness of a single pricing zone involving price averaging.

The Commission's draft decision notes the small size of the ACT network, the nature of its customers, and questions the practicality of breaking down charges into smaller regions. The administrative costs of implementing such a proposal would potentially outweigh any economic benefits arising from the separation of the network into separate zones.

Partial use of assets – bypass

In the draft decision, the Commission considered the scenario where a new receipt point is created through bypass. The Commission notes that bypass of monopoly networks should not normally be viable. This raises questions about the efficiency of reference services available.

The Commission has considered the arguments put forward by ActewAGL. The Commission does not agree with ActewAGL's statement that if a new receipt point was established, this would become available to the whole market through third party access on the pipeline.

If a bypass pipeline is constructed by a user, it is not necessarily available to third parties. This means ActewAGL's price structure would not effectively change from a single zone

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103 BHPP, *Submission to ActewAGL Access Arrangement Review,* 17 April 2000, p 9.

104 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla,* Draft Decision, March 2000, pp 158-9.

structure to a multiple zone structure. Rather, the bypass operator would pay a price different (lower) than the single zone price.

The Commission notes that no submissions have commented that bypass opportunities are currently being explored. The Commission recognises that a lower 'bypass' price cannot be known until the receipt point/load is known. Partial use of assets cannot be a reference service. The Commission will not require ActewAGL to provide a partial use of assets reference service. Such a service should be specified as a negotiated service.

Summer tranche service

ActewAGL have agreed to offer a summer tranche service which will provide users with flexibility and encourages off peak demand. The Commission welcomes this move and will require ActewAGL to include this service in its Access Arrangement.

Short term reference service for small and medium users

In preparing for the draft decision, the Commission questioned whether a short term reference service was appropriate for the ACT network. In order to form an opinion on the appropriateness of this service, the Commission sought information from ActewAGL and other stakeholders on why such a service should or should not be offered in the ACT.

The Commission has considered the industry orientation of ActewAGL's contract customers and found that the majority of volume in the ACT market is consumed by non-industrial customers. It is questionable whether these customers require a short term reference service.

However, an issue arises in relation to the potential requirements of any new customers entering the system during the period of the Access Arrangement. This service could benefit a future customer which may not have the power to receive such a service from ActewAGL through negotiation.

Following receipt of ActewAGL's responding submission, the Commission has discussed with ActewAGL the need for a short term capacity reservation service.[105] ActewAGL has indicated its belief that few, if any, contract customers in the ACT would seek a short term capacity reservation service. Nevertheless, ActewAGL has indicated its willingness to offer such a service on the same terms as it has been offered in NSW. These terms are detailed below:

For users supplying small – medium customers

- available to end use customers with an annual consumption of 30TJ or less
- the gas is to be used primarily for production of goods (not available where the gas is used primarily for space heating)
- in all other cases, MDQ reservation in any year of the Access Arrangement which is not the first year under a capacity reservation service must not be lower than 95 per cent of the MDQ reservation in the first year of the capacity reservation service
- each short term booking must reserve a single additional MDQ for a minimum of one week and a maximum of four weeks in weekly increments

105 Phone conversation between ActewAGL and Commission, July 2000.

- short term bookings cannot be made for consecutive periods - there must be a minimum separation of 30 days between the end of the short term booking and the commencement of the next short term booking
- the total time that short term capacity for any site may be booked is not to exceed eight weeks in any 12 month period
- the short term service is subject to available capacity. Where there is a queue for available capacity, requests for short term service have lowest priority
- a premium of 0 to 20 per cent (on a sliding scale) may be charged for short term bookings of four weeks to one week respectively
- users must provide evidence of a one off production requirement. A signed statement from the end use customer would be sufficient evidence
- requests may be made up to one month in advance of the proposed commencement date
- AGLGN must respond to requests for short term services within 5 business days, except where a request involves an increase in the contract MHQ level such that the total MHQ requirement would exceed the capacity of the metering facilities. In the later case the normal request for service process and timeframes will apply.

For users supplying above 30 TJ pa customers

In NSW, AGLGN proposed that a user could increase its MDQ to cover the customer's reasonable requirements during periods of equipment failure, commissioning or additional production following equipment failure. This has been extended to include:

- such events as the re-firing of furnaces after re-builds or at start-ups after non-scheduled plant maintenance, where such activity occurs less frequently than once ever year
- the capacity booking must reserve a single additional MDQ and should be for periods of one to four weeks in weekly increments.

Due to its limited application, the Commission considers that no premium should be charged for this service.

Interconnection

Referring to the Commission's statement on page 228 of the draft decision, BHPP disagrees that the Code does not specifically address interconnections.

The Commission reiterates that the Code contains no specific requirements concerning interconnections in regard to terms and conditions. What the Code does specify is the right to interconnect with the pipeline. This is covered under the definition of 'service' in the Code. The Commission is of the view that this does not by itself impose a requirement on the service provider to specify interconnection as a separate reference service. However, the Commission considers that it may be necessary for ActewAGL to specify technical and operational conditions in relation to interconnections.

Further, under section 3.2(a) of the Code the regulator could require interconnection be a reference service if it believed the service would be sought by a significant part of the market. The draft decision (see page 157) concluded that specification of an interconnection reference service may not be appropriate at this stage.

The Commission notes that similar issues were explored by IPART in its review of AGLGN's Access Arrangement. IPART sought independent advice from Connell Wagner on the interconnection issue. In regard to clarification of requirements for interconnections, Connell Wagner recommended:[106]

- AGLGN should define minimum engineering standards for prospective users. Better specifications would eliminate uncertainty about the applicable design, construction and measurement standards for interconnections
- in providing a 'service', AGLGN could specify that it would provide connection point facilities up to a 'flanged connection valve' as part of its network services. This service would be beneficial to both parties and would provide safety and mechanical guarantees to the interconnecting party
- AGLGN could also outline the approval process and timelines.

The Commission has considered the Code's requirements and the applicability of the Connell Wagner recommendations to the ActewAGL network. Given the general nature of the recommendations for NSW, the Commission considers that they may be applied to the ACT.

16.5 Final decision

Amendment 25 – Services policy

ActewAGL must, as part of its Capacity Reservation Service, provide the following capacity options in accordance with the terms and conditions set out in chapter 16 of this final decision:

(a) a summer tranche service;

(b) a short term capacity service for small and medium customers; and

(c) a short term capacity service for larger customers.

Partial use of assets should be specified as a negotiated service.

Amendment 26 – Interconnections

ActewAGL must amend its Access Arrangement by:

(a) defining for Prospective Users the minimum engineering standards required for interconnection;

(b) specifying that ActewAGL will provide Connection Point facilities up to a "flanged connection valve" as part of its Network Services; and

(c) providing a detailed outline of the approval and time periods for an interconnection agreement.

106 IPART, *Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW,* Final Decision, July 2000, p 241.

17 NON PRICING ISSUES

Code requirements for non pricing issues are addressed in the draft decision.[107] This section examines the responses to the draft decision including any new issues raised.

17.1 Gas balancing

17.1.1 ActewAGL's proposal

ActewAGL's original proposal is outlined in Schedule 2A, Part 2, gas balancing of the proposed revisions to the Access Arrangement. Provisions dealing with gas balancing for the tariff service are outlined in Schedule 2C, Clauses 14-20.

The detailed procedures in the proposed revisions are not reproduced in this report. In essence, they require contract users to stay in daily balance.[108] When users are out of balance by more than 6 per cent, they are required to pay a gas balancing incentive charge. This charge increases, the greater the imbalance. The net collection of gas balancing incentive charges is redistributed to users in proportion to the users' input for the day (ie the collection of gas balancing charges is revenue neutral to ActewAGL). Monthly cumulative imbalances that exceed 10 per cent may result in actions by ActewAGL to balance the network section. Users may trade their imbalances as a means of moving into balance.

For the tariff market, the costs of installing daily metering are currently considered to be prohibitive. To support gas balancing and retail competition in the ACT, it will be necessary to develop procedures for estimating daily withdrawals by tariff customers. This form of estimation is often referred to as 'load profiling'. ActewAGL states in clause 17 of schedule 2C that it intends to implement a tariff market daily load profiling system which will enable the daily allocation of tariff market volumes to be estimated.

The proposed gas balancing arrangements in NSW and the ACT are essentially the same.

17.1.2 Draft decision

In its draft decision, the Commission required the following amendment:[109]

> ActewAGL is required to amend Schedule 2A, Part 2, Gas Balancing and Schedule 2C, Clauses 14-20 by:
>
> - redrafting the provisions to indicate clearly that sites can be aggregated for the purpose of balancing on the network
> - redrafting the provisions to separate the allocation/apportionment, operational gas balancing and participant gas balancing processes
> - changing the gas balancing procedures to so that the following criteria are met:
>   - the level of incentives is sufficient to ensure safe and reliable operation of the ActewAGL system
>   - all users irrespective of size are treated equitably
>   - no artificial barriers to entry

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107 See chapter 18 of the draft decision.

108 The imbalance is measured by comparing the user's actual/allocated input to the network on the day with the user's aggregate quantity withdrawn by the user from the network for the day, adjusted for any change in the user's allocation share of linepack in the network.

109 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 222.

  - risks can be managed and / or can be allocated appropriately
  - procedures can be clearly understood and cost of administration to the network and the user is appropriate
  - market solutions are fostered to the greatest possible extent
- adopting a transitional approach with reduced balancing incentive charges for the first 12 months of the new Access Arrangement period. The level of reduction will depend on the complexity of the new gas balancing procedures to be proposed by ActewAGL
- developing load profiling / reconciliation systems for tariff customers which take into account the development of these systems in NSW.

17.1.3 Responses to the draft decision

ActewAGL's response

ActewAGL has responded to the draft decision in its submission dated 18 April 2000. It agrees to redraft the provisions in regard to aggregation of sites and separation of allocation and reconciliation processes. ActewAGL has provided detailed comment on the requirement to meet criteria set by the Commission, and has distinguished between operational and participant balancing.

AGLGN in NSW presented a new model for gas balancing during IPART's review of its proposed Access Arrangement. ActewAGL proposes that this model be adapted to apply to the particular circumstances in the ACT.

Operational balancing

At present the Moomba-Canberra pipeline (MCP) pressure controls deliveries to the network. Deliveries from the EGP will be flow controlled into the network to deliver the requirements nominated by users of that receipt point. If the users of either the EGP or MCP take a greater quantity of gas than their nomination, the gas will be delivered by the MCP.

ActewAGL proposes that where the MCP delivers more than its users have nominated on a day, ActewAGL will purchase gas by competitive tender from the MCP to supply those users who have taken a quantity greater than their nomination, and sell that gas at a 25 per cent premium to those users. The revenue derived from the premium will be distributed to all users.

The operational balancing scheme will operate unless there is an operational balancing agreement (OBA) between the MCP, the EGP and the network. The OBA will determine the balancing arrangements and provisions will be included in the Access Arrangement to facilitate the operation of that agreement.

Participant balancing

The Ministry for Energy and Utilities in NSW through its Retail Steering Committee process, has proposed a participant balancing mechanism which would be established and provided by a 'market entity' managed by market participants. ActewAGL anticipates that this mechanism will also be adopted in the ACT. The proposed gas balancing arrangements will set out an interim participant balancing mechanism to apply until an industry accepted scheme is adopted in the ACT.

Transitional approach

ActewAGL does not agree with the Commission's amendment that a transitional period apply for the first 12 months of the Access Arrangement period during which time reduced gas balancing incentive charges are to be adopted. ActewAGL acknowledges that a 'learning curve' will apply as balancing arrangements are introduced, but states it would be undesirable if insufficient incentives damaged the gas market.

Additional submission from ActewAGL

Following its original response to the draft decision, ActewAGL made an additional submission to the Commission on gas balancing.[110] This submission reflects significant developments in the NSW Gas Retail Project run by the NSW Ministry of Energy and Utilities, and IPART's final decision on AGLGN's Access Arrangement. The 25 per cent premium sought for the purchase of balancing gas in ActewAGL's response to the draft decision was omitted from its October submission.

ActewAGL proposes that similar arrangements adopted for gas balancing in the AGLGN Access Arrangement in NSW be adopted in the ACT. Following discussions between ActewAGL and the Commission on the proposed arrangements, ActewAGL made some amendments to its proposal. Attachment 6 sets out ActewAGL's (amended) proposal for its network in the ACT, Queanbeyan and Yarrowlumla.

Public submissions

AGL Energy Sales and Marketing and AGL Retail (together AGL ES&M) agree with the objectives behind the Commission's draft decision. However, as the incumbent retailer on the ActewAGL network, it is concerned to ensure that any balancing system does not result in AGL ES&M bearing a disproportionate share of risk from network imbalances.[111] AGL ES&M states:

> The Gas Industry in NSW, through the Ministry of Energy and Utilities' Gas Retail Project, has been working towards alternative gas balancing arrangements. This will be in the form of an Operational Balancing Agreement (OBA) between the two pipelines (the Eastern Gas Pipeline and the Moomba Sydney Pipeline) and ActewAGL. This agreement once finalised has the potential to address gas balancing issues for all participants in the NSW market. ES&M fully supports the development and implementation of an OBA.
>
> In addition AGL Gas Networks Limited in response to the Draft Decision on the NSW Access Arrangement has submitted alternative 'default' balancing arrangements. This is the only alternative currently available and would apply only if the OBA was not implemented…
>
> ES&M is of a strong view that effective gas balancing arrangements are a prerequisite for efficient operation of a competitive market.

ExxonMobil Gas Marketing also comments on gas balancing arrangements, stating:[112]

> ExxonMobil Gas Marketing support in principle the criteria for gas balancing procedures proposed by the Commission in its Draft Decision.

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110 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 20 October 2000.

111 AGL Energy Sales and Marketing and AGL Retail, *Submission to ActewAGL Access Arrangement Review*, 18 May 2000, pp 3-4.

112 ExxonMobil Gas Marketing, *Submission to ActewAGL Access Arrangement Review*, 14 April 2000, p 1.

> However, we do not agree with the need to distinguish between operational and participant balancing. With a system wide balancing arrangement with appropriate incentives, the need for this artificial distinction should disappear.

17.1.4 Commission's assessment

Operators of the Moomba-Sydney Pipeline and EGP, and ActewAGL are developing an OBA. This agreement between pipeline/network owners pledges cooperation in managing the pipeline/network interfaces. The OBA is structured to minimise the impact of local physical variations on pipeline and network transportation arrangements. It ensures matching between deliveries from pipelines and receipts into the network. This type of balancing arrangement is commonly used in overseas markets.[113]

An OBA would largely remove the need for operational balancing requirements in the Access Arrangement. There would be a need for a default operational balancing arrangement only in the event that the OBA failed to eventuate or ceased to operate in the future.

In NSW, AGLGN was requested by IPART to re-examine its gas balancing arrangements in light of the development of the OBA and the work being undertaken by the Gas Retail Project. AGLGN submitted a new gas balancing proposal to IPART on 3 May 2000. This was subsequently further revised by AGLGN following consultation with MoEU's Gas Balancing Working Group and discussions with IPART.

Obviously, there are very close links between the work of IPART and AGLGN in NSW, and that of the Commission and ActewAGL. Where relevant, the Commission has considered the outcomes in NSW in making its final decision.

Operational balancing arrangement

ActewAGL has proposed purchasing swing gas sourced from the MCP through competitive tender. AGL ES&M is in a dominant position as a user on the MCP to supply the ActewAGL network. It may therefore be in a position to exercise substantial market power in the tendering process for any swing gas.

To address this issue of perceived market power it may be necessary to fundamentally redesign the operational balancing arrangement to deal with swing gas on a longer term 'park & lend' basis that would enable EGP users to compensate for nomination shortfalls at a later date. However, to develop a new operational balancing arrangement of this type is complex and would take time.

The Commission is conscious that ActewAGL's proposed operational balancing is a default arrangement that will be used only as a fall back position in the absence of an OBA. For this and timing reasons, the Commission does not require a fundamental change to the proposed default arrangement.

Another concern is ActewAGL's proposal to include a 25 per cent premium on gas it purchases for operational balancing. In reviewing the proposal in NSW, users questioned the need for a premium and its associated redistribution mechanism. Users believe AGL's incumbent retailers may be the major beneficiaries of any redistribution since the

113 Especially in North America and the UK.

mechanism appears to favour the larger incumbent retailers by allocating them the majority of any premiums collected.

Following discussions with IPART and the Balancing Working Group of MoEU's Retail Gas Project, AGLGN decided to remove the provisions dealing with the 25 per cent premium.

The Commission will require a similar approach to be adopted in the ACT.

Notwithstanding the above, the Commission will accept ActewAGL's proposal as a default arrangement. The provision of default operational balancing services will be examined at the next review with the benefit of further experience in a competitive market.

Proposed participant balancing arrangement

The Commission notes that:

- a daily participant balancing arrangement is considered a prerequisite to the OBA
- the participant balancing arrangement originally proposed by AGL in NSW is considered by many stakeholders to be unsatisfactory (these users believe it favours the incumbent AGL retailer at the expense of new entrants)
- the Gas Retail Project is now developing a participant balancing arrangement as a component of the retail market service, but, a preferred arrangement will not be available before the final decision is issued
- once an Access Arrangement has been approved, it is difficult to make revisions until the next review.

ActewAGL will need to have an interim participant balancing arrangement in place until this is included in the Gas Retail Market Code as a retail market service. The question is whether the interim arrangement should be part of the Access Arrangement or some other document?

Given the concerns expressed regarding the proposed participant balancing arrangement and the difficulty in changing an Access Arrangement once it has been approved, the inclusion of the balancing arrangement in the Access Arrangement, even as an interim measure, may be undesirable. A far better option may be for ActewAGL's Network Code[114] to be used initially for this purpose. Procedures in ActewAGL's Network Code can be changed more readily than provisions in an Access Arrangement. This would enable a preferred participant balancing arrangement to be adopted quickly as soon as it is developed by the Gas Retail Project. In its final decision on AGLGN's proposed Access Arrangement, IPART stated that it understood that participant balancing will initially be included in AGLGN's Network Code, as part of the retail competition reforms now being developed by the Gas Retail Project.

The Commission is informed that the ACT has already adopted an early version of the NSW AGL Network Code. The ACT Department of Urban Affairs will recommend to the ACT Government that it follow the NSW lead with the implementation of an updated Network Code and a Gas Retail Market Code once these documents have been finalised.

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114 The Network Code of a service provider documents important elements of the relationship between the service provider and retailers. AGLGN in NSW has developed such a network code. Similarly, ActewAGL will be required to develop a network code.

The Commission supports this approach for the ACT. The Commission acknowledges the similar issues impacting on AGL's NSW and ACT networks in this regard. Under these circumstances, similar gas balancing arrangements are to be expected, and supported. The Commission has therefore decided to remove participant balancing from the Access Arrangement. ActewAGL supports this approach as indicated in Attachment 6.

17.1.5 Final decision

Amendment 27 – Gas balancing

ActewAGL must amend the gas balancing provisions in its Access Arrangement to accurately reflect Attachment 6 of this final decision.

17.2 Metering services

17.2.1 ActewAGL's proposal

In its proposed revisions ActewAGL indicates that where it is technically and commercially feasible, the network will provide a daily metering system for all reference services to the contract market (see Schedule 2A, clause 11 of the Access Arrangement).

ActewAGL states that it will own and maintain the measuring equipment at each tariff service delivery point. Unless otherwise agreed, it will install all measuring equipment (see clause 10, Schedule 2C of the Access Arrangement).

In the metering section, ActewAGL states that where daily metering is installed, it will provide telemetered information to the user and any other person nominated by the user.

In respect of tariff service meter reading, ActewAGL has indicated that industrial and commercial customers have a monthly billing cycle while residential customers' meters are read only quarterly. ActewAGL will nominate the cycles in which meters are read and consult with users regarding any changes to these cycles. A user may request ActewAGL to vary a reading cycle for any delivery point and ActewAGL will advise whether it agrees to such a request and at what cost (see Schedule 2C, clauses 5-9).

17.2.2 Draft decision

In its draft decision, the Commission required the following amendment:[115]

> ActewAGL is required to amend metering services by:
>
> - making the provision of metering services transparent by separating the costs of metering services (both capital and operating) from services forming components of the reference services
> - amending Schedule 2A, Terms and conditions applying to all reference services, clause 10, "Metering", to communicate in more general terms that the release of end use customer usage information is subject to relevant Code provisions, and by providing details of the format in which information will be released to users.

115 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 223.

17.2.3 Responses to the draft decision

ActewAGL's response

In its responding submission dated 18 April 2000, ActewAGL states it will incorporate the amendment into its response Access Arrangement. In relation to release of information to users, ActewAGL states it will provide information for each delivery point for each user, and it will provide such information in accordance with the Code and any amendment to the Code.

Public submissions

No public submissions have been received on the Commission's metering services amendment.

17.2.4 Commission's assessment

Under ActewAGL's original proposal, meter reading charges for contract customers were to be based on the number of metering devices and recovered operating costs only. Capital related costs were to be recovered through local network charges. There was no metering charge for tariff customers.

The draft decision required ActewAGL to separate the costs of metering services (both capital and operating). Metering services were to form a component of reference services.

In NSW, AGLGN proposed two charges to apply to both contract and tariff market customers:

- meter set charge
- meter reading charge.

The Commission understands that a similar approach is proposed by ActewAGL. These charges are intended to recover both capital and operating costs associated with meter assets. The tariff meter reading charge is to be set out separately for customers who have their meter read quarterly and monthly.

The Commission has considered the following issues in relation to metering services:

- the likelihood of contestability
- cost / revenue allocation.

Contestability

Since the draft decision, MoEU's Gas Retail Project has recommended that some components of metering services become contestable. Under the proposed statement of intent[116], meter reading and onsite data logging and daily communication facilities would become contestable.

Network operators would continue to provide basic metering facilities (ie facilities other than the on site data and communication equipment) at each site.

116 This document will form the basis of a new Gas Retail Market Code setting out the business rules and procedures for full retail contestability in the NSW gas market. These rules and procedures will also apply in the ACT.

The Commission notes that:

- contract customers have already installed onsite data and communication facilities provided by the network
- in the short to medium term, network operators (or their agents) are likely to continue to provide these services to a substantial part of the market
- some larger tariff customers may have data loggers and communication facilities installed in the future
- when metering services become contestable, reference tariffs may provide a benchmark for the provision of these services by others.

As stated in the draft decision, the Commission considers metering services should become contestable as the gas market is opened to competition. To encourage competition, the Commission considers metering cost components should be separated in to costs relating to:

- meter sets
- data loggers and communication facilities
- meter reading.

The Commission considers that when aspects of metering services become contestable, they should not be covered by the Access Arrangement.

Cost/revenue allocation to metering services

Metering costs and charges will be based on the allocation of operating and capital costs to metering services. Under the final decision, the ICB of metering assets will be $7.0m. This will affect the calculation of capital charges. In the final decision, ActewAGL is required to recalculate metering charges to recover costs consistent with the Commission's final decision on the ICB allocation.

17.2.5 Conclusion and final decision

The Commission concludes that further separation of metering charges in the Access Arrangement is necessary to promote competition and improve transparency of charges. It should be noted that as they are reference tariffs, metering charges are included in the revenue paths and allocations as per amendment 14.

Amendment 28 – Metering charges

ActewAGL must amend its Access Arrangement as follows:

(a) set metering charges based on a Capital Base of $7.0m at 1 July 1999

(b) allocate Non-Capital Costs to metering services applying a well recognised fully distributed cost methodology reconciled using ActewAGL's activity based costing information.

(c) establish a Reference Tariff for each of the following Services:

 (i) the provision of meter reading;

 (ii) the provision of basic metering equipment; and

 (iii) the provision of on-site data and communication equipment

(d) State in its Access Arrangement that the Reference Tariffs applying to each Service in paragraph (c)(i) and (c)(iii) will cease on the enactment of any law, or any code or any instrument that permits the Service to be provided by a person other than ActewAGL

(e) amend Schedule 2C of its Access Arrangement to include a statement in reasonable detail that some aspects of metering will become contestable, that is, will be permitted to be provided by persons other than ActewAGL.

17.3 Gas specifications

17.3.1 ActewAGL's proposal

Essentially, ActewAGL proposes to maintain the current specifications, as stipulated in the AGL contract with the Cooper Basin producers.

17.3.2 Draft decision

In its draft decision, the Commission required the following amendment:[117]

> ActewAGL is required to amend Schedule 3, 'Gas Quality Specifications' by:
>
> adding a statement at the beginning of the schedule to the effect that gas delivered to a receipt point by a user must comply with the specifications prescribed by law that extends to that gas. If there are no such laws, the gas must comply with specifications determined by ActewAGL from time to time. Failing such a determination, the table set out in Schedule 3 (the 'default specification') will apply.

17.3.3 Responses to the draft decision

ActewAGL's response

ActewAGL stated in its response submission dated 18 April 2000 that it would incorporate the proposed amendment in its response Access Arrangement.

[117] IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 225.

Public submissions

ExxonMobil Gas Marketing agrees with the Commission's assessment in the draft decision, but believes the required amendments need to be changed for the following reasons:[118]

- the amendment requires that if no specifications prescribed by any law extend to the relevant gas, 'the gas must comply with specifications determined by ActewAGL from time to time'. In such circumstances, ActewAGL has the independent right to set any gas specification
- the required amendments must expressly recognise AGL's agreement with the industry developed 'Proposed Gas Quality Specification Safe Operational Limits for Victoria and NSW'.

AGL ES&M has stated that any process to introduce a new specification must have regard to pre existing obligations and the needs of customers.[119]

17.3.4 Commission's assessment

The Commission notes that AGA's Gas Quality Working Group[120] has now recommended a uniform gas specification for South Eastern Australia. The specification was accepted after its successful testing by AGL for 'fitness of purpose' and safety.

Generally, industry supports the uniform gas specification set for South Eastern Australia. The Commission has therefore decided to maintain the general intent of its draft decision.

17.3.5 Final decision

Amendment 29 – Gas specifications

In its Access Arrangement, ActewAGL must amend Schedule 3, Gas Quality Specifications by adding a statement at the beginning of the Schedule to the effect that:

"Gas delivered to a Receipt Point by a User must comply with the specifications prescribed by any ACT or NSW law that extends to that gas. Such a law may include, without limitation, any regulation made under the *Gas Supply Act 1998* or a new Utilities Act. For any period during this Access Arrangement in which there in no such law, the gas must comply with:

- specifications determined by ActewAGL from time to time
- failing such a determination, the table set out in Schedule 3 described as the *default specification*."

118 ExxonMobil Gas Marketing, *Submission to ActewAGL Access Arrangement Review*, 14 April 2000, p 2.

119 AGL Energy Sales and Marketing and AGL Retail, *Submission to ActewAGL Access Arrangement Review*, 18 May 2000, p 4.

120 AGLGN is represented in this group.

17.4 Unaccounted for gas

17.4.1 ActewAGL's proposal

Unaccounted for gas (UAG) is treated as part of the network's operating costs. In 1998 the cost of UAG was $300,000. In the proposed Access Arrangement, ActewAGL is seeking between $600,000 and $700,000 for UAG. ActewAGL has assumed a UAG level of 2.5 per cent. This is the same level of UAG used by AGLGN in developing its proposed Access Arrangement for NSW.

17.4.2 Draft decision

In its draft decision, the Commission required the following amendment:[121]

> ActewAGL is required to reduce the UAG figure from 2.5 per cent to 0.7 per cent fro the period of the Access Arrangement.

17.4.3 Responses to the draft decision

ActewAGL's response

ActewAGL has agreed to incorporate the amendment into its revised Access Arrangement.

Public submissions

No public submissions have commented on this issue.

17.4.4 Commission's assessment

No new information has been submitted in response to the Commission's draft decision on the UAG issue. The Commission sees no reason to change its draft decision on UAG.

17.4.5 Final decision

Amendment 30 – Unaccounted for gas (UAG)

ActewAGL must amend its Access Arrangement to provide that the UAG level will be set at 0.7 per cent for the Access Arrangement Period.

17.5 Trading policy

17.5.1 ActewAGL's proposal

ActewAGL's trading policy is outlined in Section 5 of its proposed Access Arrangement. Users are allowed to undertake bare transfers after providing notification to ActewAGL. A bare transfer is when the user's obligations to the service provider remain in full force and the terms of the contract with the service provider are not altered in any way.

121 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 226.

All other transfers require the consent of ActewAGL. ActewAGL may withhold its consent on reasonable commercial or technical grounds only, and may make its consent subject to reasonable conditions.

ActewAGL's trading policy is expressed in similar terms to the requirements in section 3.10 of the Code.

17.5.2 Draft decision

In its draft decision, the Commission required the following amendment:[122]

> ActewAGL is required to amend its trading policy to include response times for granting / refusing trading requests which are not bare transfers.

17.5.3 Responses to the draft decision

ActewAGL's response

ActewAGL has agreed to incorporate the amendment into its revised Access Arrangement.

Public submissions

No public submissions commented on this issue.

17.5.4 Commission's assessment

The Commission acknowledges that the development of secondary markets is an important feature of a more mature market. For this reason, the Commission has focused on ActewAGL's services policy to ensure greater flexibility and to remove barriers that might hinder competition, including the development of secondary markets.[123]

In respect of trading policy, the Code acknowledges that there need to be some limitations on the trading of capacity where the terms of the contract with the service provider are altered (a non bare transfer). Non bare transfers can occur only with the consent of the service provider, and then only when technically and commercially reasonable. This is particularly relevant for distribution systems where spare capacity on one part of the network does not necessarily translate to this capacity being available elsewhere on the network.

Following the draft decision, the Commission has considered the issue of response times in ActewAGL's trading policy. In this regard the Commission notes the outcome of the IPART review of AGLGN's Access Arrangement in NSW. From IPART's final decision, the Commission notes:[124]

- AGLGN will respond to any request for consent to a transfer other than a bare transfer, or for a change of receipt point or delivery point, within a maximum of 14 business days from the date on which a request providing sufficient information to enable AGLGN to respond is received by AGLGN

122 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 227.

123 See chapter 16, final decision.

124 IPART, *Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW*, Final Decision, July 2000, p 239.

- should the user establish to AGLGN that circumstances of hardship apply to the request requiring an urgent response, AGLGN will use reasonable endeavours to respond to the request within two business days.

The Commission considers that the above is also appropriate for ActewAGL, and should be incorporated in its trading policy. The Commission will further examine this policy at the next review in light of market developments resulting from increased upstream competition.

17.5.5 Final decision

Amendment 31 – Trading policy

ActewAGL must amend the Trading Policy in its Access Arrangement by including the following statement:

"ActewAGL will reply to any request from a User for ActewAGL's consent to a transfer (other than a Bare Transfer), or for a change of Receipt Point or Delivery Point, within 14 business days of receiving the request accompanied by information which is reasonably necessary to enable ActewAGL to consider the request.

If at the time the request is made, the User informs ActewAGL that due to hardship the User requires an urgent reply to its request, ActewAGL will use reasonable endeavours to respond to the request within two business days of receiving the request."

17.6 Interconnections

This issue is discussed under Services policy in chapter 16.

17.7 Other issues

17.7.1 Capacity management policy

ActewAGL's proposal

ActewAGL has indicated that the network is a contract carriage pipeline.[125]

Commission's assessment

The Commission notes that ActewAGL's capacity management policy accords with the Code.

17.7.2 Queuing policy

ActewAGL's proposal

ActewAGL's queuing policy is outlined in clause 6 of the proposed revisions. Where there is insufficient capacity to satisfy a request for service, a queue will be formed. When capacity becomes available to meet the needs of any prospective user on a queue, capacity will be offered progressively to each prospective user in order of priority. Priority to requests for reference services is given over requests for negotiated services. Within these categories a first come, first served basis is observed.

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125 See clause 9 of the proposed Access Arrangement.

Commission's assessment

The Commission notes that the queuing policy accords with the Code.

17.7.3 Extension/expansion policy

ActewAGL's proposal

ActewAGL has proposed an extension/expansions policy for inclusion in the Access Arrangement.[126] The policy states:

- any extension or expansion carried out in ACT or in a distribution system in the Queanbeyan or Yarrowlumla Local Government Areas by ActewAGL will be part of the network
- no extension or expansion will affect reference tariffs
- surcharges may apply, pursuant to the Code.

Draft decision

An Access Arrangement must include a policy setting out a method for determining whether an extension or expansion to the covered pipeline is or is not to be treated as part of the covered pipeline for the purposes of the Code.[127] The Commission considers ActewAGL's proposed extensions/expansions policy to be acceptable and in accordance with the Code.

Response to the draft decision

No specific comments have been received from ActewAGL or other stakeholders.

Commission's assessment

Although there has been no public comment on ActewAGL's extension/expansion policy following the draft decision, the Commission has reconsidered the issue in making its final decision. The Commission notes IPART's final decision on AGLGN's Access Arrangement.[128]

The Code is designed largely on the assumption that pipelines are natural monopolies. Consequently, the Code does not readily contemplate competition between pipelines/networks.

The granting of authorisation to build a distribution network in NSW is not exclusive. Several authorisations can and have been issued to various operators for the same region. Recently there has either been some duplication or threatened duplication of distribution pipes in new growth areas where natural gas is being introduced.

In the ACT, it is Government policy to issue multiple authorisations within particular areas. To date, duplication of pipelines has not occurred.

126 See clause 7 of the proposed Access Arrangement.

127 See section 3.16 of the Code.

128 IPART, *Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW*, Final Decision, July 2000, pp 246-248.

There is an issue of whether capex on the duplication of pipelines is prudent. This issue is being considered by the Natural Gas Pipelines Advisory Committee (NGPAC). The Commission notes that:

- it is not possible to 'forecast' such an occurrence
- the rationale for duplication is uncertain. There may be difficulty in deciding whether the duplication is a result of a commercial decision or a strategic decision by the incumbent service provider in an attempt to reduce competition
- it may be difficult to assess who duplicated the asset
- duplication of pipeline in new areas is generally perceived as neither economic nor desirable
- for significant extensions eg in new development areas, competitive tendering may be appropriate to avoid duplication of pipelines.

Options for dealing with the duplication of pipelines are:

(a) to treat 'duplicate pipeline' like all other new facilities investment by applying the prudent investment test under section 8.16 of the Code

(b) to amend ActewAGL's extensions/expansions policy so 'duplicate pipelines may not be automatically rolled in as part of the covered pipelines.

In considering this issue, the Commission has considered:

- the requirements of the Code, including sections 2.24, 3.16 and 8.16.
- if 'duplicate pipelines' are completely excluded from coverage, reference tariffs will no longer apply to users served from such pipelines. Reference tariffs may be determined if the 'duplicate pipelines' are to be covered separately under the provisions of the Code
- the potential for stranded asset risk associated with 'duplicate pipeline'. This may occur if the service provider is not able to connect sufficient numbers of new customers, leaving part of the new pipelines unused or redundant
- the ability to roll in the assets between new and existing operators
- regulatory issues including the need to quarantine costs and revenues attributable to the duplicated pipelines.

The Commission concludes that expansions and extensions should normally be covered automatically and regulated under a single Access Arrangement. However, a 'duplicate pipeline' should not be included as part of the existing covered pipeline unless ActewAGL reasonably regards the duplicated pipeline as having system benefits, and provides the Commission with written notice of the reasons for its view. If a duplicated pipeline is included as part of the covered pipeline, the capital base will not be increased by that capital expenditure unless ActewAGL can demonstrate that the new facility investment satisfies the tests set out under section 8.16 of the Code.

Final decision

The Commission has decided the following amendment is required:

Amendment 32 – Extensions/expansions policy

ActewAGL must include the following statement in its extensions/expansions policy in Section 7 of its Access Arrangement:

"All expansions and extensions will normally 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. A '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."

17.7.4 Reference tariffs after 30 June 2004

ActewAGL's proposal

ActewAGL has proposed that where the revision commencement date is later than 30 June 2004, the reference tariff for the transportation service for the period between 30 June 2004 and the revisions commencement date will be charges applicable on 30 June 2004 plus CPI adjustment.[129]

Draft decision

In its draft decision, the Commission required the following amendment:[130]

> ActewAGL is required to amend the clause on reference tariff after 30 June 2004 which appears on pages 32 and 33 of the proposed Access Arrangement by:
>
> - relating the clause to all terms and conditions of reference services, not just prices
> - deleting the proposed CPI adjustment to the 2004 reference tariffs.

Responses to the draft decision

ActewAGL's response

ActewAGL has agreed to incorporate the amendment into its response Access Arrangement.

Public submissions

No public submissions have commented on this issue.

Commission's assessment

Based on the Commission's assessment in the draft decision and comments following this decision, the Commission has decided to maintain its required amendment. An error in page referencing in the draft decision amendment has been rectified.

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129 See Section 3, pp 24-25 of the proposed Access Arrangement.

130 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 230.

Final decision

Amendment 33 – Reference tariffs after 30 June 2004

The clause on reference tariffs after 30 June 2004 on pages 24 and 25 of the Access Arrangement must be amended as follows:

- the clause should relate to all terms and conditions of reference services, not just prices; and
- the proposed CPI adjustment to the 2004 reference tariffs must be deleted.

17.7.5 Commencement and review of Access Arrangement

ActewAGL's proposal

ActewAGL is seeking a five year Access Arrangement period with the next revisions commencement date to be 1 July 2004. ActewAGL has proposed a revisions submission date of 10 December 2003.

Draft decision

In its draft decision, the Commission required the following amendment:[131]

> ActewAGL is required to set the revisions submission date at or before 30 June 2003. The revisions commencement date will be 1 July 2004 or two weeks after final approval of ActewAGL's revised Access Arrangement, whichever is the latter.

Responses to the draft decision

ActewAGL's response

ActewAGL does not agree with the proposed amendment. It has stated that the requirement to lodge proposed revisions to the Access Arrangement 12 months before the commencement date is unduly early:[132]

- the Code assumes a review process should take approximately six months
- effectively, the Access Arrangement would be for only three and a half years. It is generally accepted that an incentive structure requires a period of four to five years to be effective
- work on the new Access Arrangement would need to start late in 2002.

ActewAGL states that the proper date for submission of the revisions is 10 December 2003.

Public submissions

BHPP has commented that the Access Arrangement should run until 30 June 2002, two years shorter than proposed by the Commission. BHPP contends that the regulation of access prices for monopoly infrastructure is relatively new in Australia, and it is inappropriate for poor decisions to be locked in for a long period of time.[133]

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131 IPARC, *Access Arrangement for AGL Gas Company (ACT) Limited and AGL Gas Networks Limited Natural Gas System in ACT, Queanbeyan and Yarrowlumla*, Draft Decision, March 2000, p 231.

132 ActewAGL, *Submission to ActewAGL Access Arrangement Review*, 18 April 2000, pp 69-70.

133 BHPP, *Submission to ActewAGL Access Arrangement Review*, 17 April 2000, p 10.

Commission's assessment

The Commission acknowledges that at the next review there will be no need to establish the ICB. However, the task of establishing the ICB is not the only reason for the length of the present access review. Delays in the provision of information and the process of assessing ActewAGL's proposals has required additional time for this review.

The Commission expects that that the market will have changed significantly in the next three-four years with the introduction of new entrants brought about by increased competition. This may require significant changes to the Access Arrangement. In these circumstances, the Commission considers that it would be prudent to allow 12 months for the next review.

If the next review is completed in a shorter time frame, this does not necessarily mean that the term of the Access Arrangement period will be reduced. It could simply mean that the market will have the benefit of several months' notice of the approved revisions to the Access Arrangement before they take effect. This is likely to be beneficial since transport contracts are sometimes aligned with the Access Arrangement period.

Concluding the Access Arrangement period in 2002 is not considered desirable. The resulting Access Arrangement period would then operate for less than two years. This is considered too short a period for any incentive regulation to become effective and regulatory costs would be high.

17.7.6 Final decision

The Commission has decided to retain the current amendment.

Amendment 34 – Commencement and review of Access Arrangement

ActewAGL is required to set the revisions submission date at or before 30 June 2003. The revisions commencement date will be 1 July 2004 or the date specified in the final approval of ActewAGL's revised Access Arrangement, whichever is the later.

GLOSSARY AND ABBREVIATIONS

ACCC	Australian Competition and Consumer Commission
Access Arrangement	An arrangement for access to a Covered Pipeline that has been approved by the Relevant Regulation in accordance with the *Gas Pipelines Access (Australian Capital Territory) Act 1998 and the Gas Pipelines Access Law*
AAI	Access Arrangement Information
ACQ	Average contract quantity
AGC	Albury Gas Company
AGLGC	AGL Gas Company, the gas distributor in NSW prior to the company restructure in August 1997
ActewAGL	The entity formed through the joint venture between Actew Distribution and AGL Gas Company (ACT) Limited, and the owner and operator of the ACT, Queanbeyan and Yarrowlumla gas distribution network
AGLGN	AGL Gas Networks Limited
Bare transfer	A transfer or assignment of any interest in any person's right to obtain a service in which the contract between the service provider and the transferor or assignor remains in effect
BHPP	BHP Petroleum Pty Ltd
Bypass	To construct a pipeline which avoids a distribution system or part thereof
CAPM	Capital asset pricing model, a financial model that relates the required return of an asset, to the risks associated with that asset
CCA	Current cost accounting
City Gate	Transition point from high pressure transmission pipelines to a distribution network
CoAG	Council of Australian Governments
CPA	Competition Principles Agreement
CPI	Consumer Price Index
Code	The National Third Party Access Code for Natural Gas Pipeline Systems

Contract customers	End use gas customer consuming more than 10 TJ per annum
DAC	Depreciated actual cost
DIHC	Depreciated indexed historical cost
Distribution	Transportation of gas over a combination of high pressure and low pressure pipelines from a city gate to various customers' usage points. Also known as reticulation
DORC	Depreciated optimised replacement cost, an asset valuation approach that reflects both the age of the assets and the required size of the assets. Sometimes referred to as ODRC, optimised depreciated replacement cost
EAPL	East Australian Pipelines Limited
EBIT	Earnings before interest and tax
EBITD	Earnings before interest, tax and depreciation
EP	Ewbank Preece
EPD	Energy Projects Division, the Victorian Treasury
FDC	Fully distributed costs
FE	Funds employed
FFO	Funds from operation
GHD	Gutteridge, Haskins and Davey Limited
GJ	Gigajoule, a measure of the heat content of gas (an average residential customer in NSW consumes approximately 20 GJ of gas per year)
GSN	Great Southern Energy Gas Networks Pty Limited
GTE	Government trading enterprise
ICB	Initial capital base
IPARC	Independent Pricing and Regulatory Commission of ACT, otherwise referred to as "the Commission"
IPART	Independent Pricing and Regulatory Tribunal of NSW
Load factor	A measure of the degree to which a customer's load can cause peak demands on the system, measured as the relationship between the customer's average daily demand and its peak day demand
LPG	Liquefied petroleum gas

MDQ	Maximum daily quantity
MHQ	Maximum hourly quantity
MoEU	Ministry of Energy and Utilities (NSW)
NPV	Net present value
NRV	Net realisable value
ODV	Optimised deprival value
OFFER	Office of Electricity Regulation – the former UK electricity industry regulator
OFGAS	Office of Gas Supply - the former UK gas industry regulator
OFGEM	Office of Gas and Electricity Market – the new UK energy industry regulator
OFWAT	Office of Water Services - the UK water industry regulator
ORG	Office of Regulator General, Victoria
PJ	Petajoule, equal to 1,000,000 GJ
Prospective user	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
PRS	Primary reduction station
RAAI	Revised Access Arrangement Information submitted by ActewAGL
Retail	Sale of gas as a commodity, independent of a transportation service
Reticulation	See distribution
Ring fence	To clearly separate subsidiaries or divisions of a company that may be viewed as having competitive advantages in their dealings with each other
SAC	Stand alone cost allocation
SAAI	Supplementary Access Arrangement Information submitted by ActewAGL
Service provider	As defined in the Gas Pipeline Access Law: the person who is, or is to be, the owner or operator of the whole or any part of the pipeline or proposed pipeline

SIB	Stay in business
Substituted transfer	A transfer or assignment of any interest in any person's right to obtain a service in which the contract between the service provider and the transferor or assignor either does not remain in effect or remains in effect with changed terms
Tariff reference price	Transportation charges to be paid by a user who is supplying tariff gas users
Tariff users	An end use gas customer consuming less than 10 TJ per annum
TJ	Terajoule, equal to 1,000 GJ
Transmission	Long haul transportation of gas via high pressure pipelines
TRS	Trunk receiving station
Trunk mains	High pressure pipelines within the distribution network used to transport large quantities of gas to sections of the network downstream from the city gate
User	A person who has a current contract for a service or an entitlement to a service as a result of an arbitration
WACC	Weighted average cost of capital
WDV	Written down value

ATTACHMENT 1 PUBLIC HEARINGS AND CONSULTATION

Presenters at public hearing, Tuesday 11 May 1999

Organisation	Represented by
ActewAGL	Mr Bruce Connery, General Manager Regulatory Affairs Mr Chris Harvey, Manager Regulatory Affairs Gas Networks
Esso	Mr Stuart Price, Gippsland Gas Marketing Group Mr Allan Dixon
ACTOSS	Mr Peter Sutherland, Executive Member Mr Adam Stankevicius, Policy Officer
BHPP	Mr Colin Martin, Marketing Manager Mr Bill Henson, Manager BHPP NSW and ACT
ACTEW	Mr Alan Morrison, General Manager ACTEW Retail Mr David Graham, Manager Regulatory Affairs
ActewAGL	Mr Bruce Connery, General Manager Regulatory Affairs Mr Chris Harvey, Manager Regulatory Affairs Gas Networks

Presenters at the pricing forum, Wednesday 22 September 1999

Organisation	Represented by
AGL Gas Networks	Ms Linda Gyzen, Manager Sales and Marketing
Great Southern Energy	Mr Peter Hoogland, Manager Retail Pricing and Strategy
Australian Institute of Sport	Mr Alan McGraph, Chief Engineer
BHP Petroleum	Mr Colin Martin, Marketing Manager

ATTACHMENT 2 LIST OF SUBMISSIONS

ActewAGL's proposed Access Arrangement and non confidential submissions

Date	Submission	Purpose/key points
5/1/99	Access Arrangement and AAI	Proposal submitted under the Code.
15/2/99	Revised AAI	Update of the January AAI incorporating forecasting information and in response to IPARC's s2.9 of the Code notice.
22/4/99	Supplementary AAI	Amended in response to further IPARC notice under s2.9.
18/6/99	Response to matters raised by Commission and by interested parties	ActewAGL's response to matters raised at the public hearing, including issues of ICB, past capital contributions, stand alone allocation, operating costs and pricing.
9/8/99	Further submission	Response to issues of marketing costs, past under recoveries and gas specification raised by the Commission.
6/9/99	Further revisions and a report prepared by Arthur Andersen entitled 'Review of financial and valuation models prepared by AGL Gas Company (ACT) Limited'	Revision to capital expenditure forecast and submissions of financial analyses.
16/9/99	Further submission	Deals with matters of windfall gains, role of DORC in the National Access Code and report from Minter Ellison to AGLGN.
20/12/99	Further submission	Proposed new capital expenditure to build a connection to the Eastern Gas Pipeline.
Post draft decision		
18/4/00	Submission responding to draft decision	ActewAGL's response to the draft decision amendments and requirements.
19/5/00	Further submission	Deals with requirements from the draft decision. Some parts of the information were submitted as confidential and commercially sensitive.
17/8/00	Further submission	Impact of proposed Utilities Bill in the ACT on Access Arrangement.
21/8/00	Further submission	Paper titled 'The construction of DORC from ORC'.
23/8/00	Further submission	Revised cost estimate to connect to the Eastern Gas Pipeline.
	Further submission	Submission in response to BHPP's DORC study/submission.
18/10/00	Further submission	Costs associated with heating value measurement.
20/10/00	Further submission	Balancing arrangements for the network.

Public submissions received prior to the draft decision

Organisation	Contact name	Date
ACTEW	J.A. Mackay	26 March 1999
Australian Institute of Sport	A.L McGrath	22 October 1999
BHP Petroleum	B. Henson	29 January 1999
BHP Petroleum	B. Henson	9 March 1999
BHP Petroleum	B. Henson	1 April 1999
BHP Petroleum	B. Henson	25 October 1999
Esso Australia Ltd	S.R. Price	26 March 1999
National Gallery of Australia	A. Froud	26 March 1999
National Library of Australia	T. Pidd	11 March 1999

Public submissions received post draft decision

Organisation	Contact name	Date
AGL Energy Sales and Marketing, and AGL Retail Energy	M. Fraser	18 May 2000
Australian National University	W. Williams	7 April 2000
BHP Petroleum	B. Henson	17 April 2000
BHP Petroleum	C. Martin	2 June 2000
BHP Petroleum	C. Martin	27 October 2000
ExxonMobil Gas Marketing	N. Terjesen	14 April 2000
University of Canberra	C. Spence	6 April 2000

ATTACHMENT 3 RATE OF RETURN – WACC RANGES

ActewAGL WACC calculations

		Low	Medium	High
Risk free rate	Rf	6.16%	6.16%	6.16%
CPI		2.77%	2.77%	2.77%
Real risk free rate		3.30%	3.30%	3.30%
Market risk premium	Rm	5.0%	5.5%	6.0%
Debt margin		0.90%	1.0%	1.10%
Debt funding	D	60%	60%	60%
Equity funding	E	40%	40%	40%
Total funding (debt+equity)	V	100%	100%	100%
Gamma	γ	0.50	0.40	0.30
Asset beta	βa	0.40	0.45	0.50
Debt beta		0.06	0.06	0.06
Effective tax rate for CAPM		30%	30%	30%
Equity beta (calculated)	βe	0.900	1.023	1.147
Cost of equity (nominal post tax)	**Re**	**10.66%**	**11.79%**	**13.04%**
Cost of equity (real post tax)		7.68%	8.78%	9.99%
Cost of debt (nominal pre tax)	**Rd**	**7.06%**	**7.16%**	**7.26%**
Cost of debt (nominal post tax)		4.94%	5.01%	5.08%
Cost of debt (real post tax)		2.11%	2.18%	2.25%
WACC (nominal post tax)		6.48%	7.03%	7.67%
Effective tax rate of grossing up		30%	30%	30%
Rate of return (real, pre tax)			**5.2% - 8.0%**	

Conversion 1: nominal post tax => real post tax => gross up to real pre tax

	Low	Medium	High
WACC (real post tax)	3.61%	4.15%	4.77%
WACC (real pre tax)	**5.15%**	**5.93%**	**6.81%**

Conversion 2: nominal post tax => real post tax => real pre tax

	Low	Medium	High
WACC (pretax real)	**5.18%**	**5.95%**	**6.84%**

Conversion 3 (Market Practice): nominal post tax=>nominal pre tax=>real pre tax

	Low	Medium	High
WACC (pre tax nominal)	9.25%	10.05%	10.96%
WACC (pre tax real)	**6.31%**	**7.08%**	**7.97%**

ATTACHMENT 4 FINANCIAL INDICATORS

Funds Flow Adequacy – Ability to generate finds to cover primary cash requirements.

$$\frac{\text{Net profit after tax + depreciation \& amortisation + increases in long term provisions}}{\text{Dividends + capex}}$$

Funds Flow Interest cover – How many times funds flow covers interest payments (controlled for depreciation).

$$\frac{\text{Net profit after tax + depreciation \& amortisation + increases in long term provisions + net interest + tax}}{\text{Net Interest}}$$

Internal financing ratio – Funds retained as a proportion of capital expenditure.

$$\frac{\text{Net profit after tax + depreciation \& amortisation + increases in long term provisions - Dividends}}{\text{Net Capex}}$$

Total debt / total capital – Gearing ratio

$$\frac{\text{Total debt}}{\text{Total debt + shareholder's funds}}$$

Funds from operation / total debt – Proportion of funds from operations to cover total debt.

$$\frac{\text{Net profit after tax + depreciation \& amortisation + increases in long term provisions}}{\text{Net debt}}$$

ATTACHMENT 5 ECONOMIC ASSET LIVES AND REMAINING ASSET LIVES BY ASSET CLASS

Asset class	Economic asset Life (years)	% DORC/ORC - 1999	Remaining asset lives at 1 July 1996 (years)
Trunk Main	80	-	-
Primary Main	80	96.00	76.80
Secondary Network	80	79.25	63.40
Medium Pressure Network	50	76.95	38.48
Secondary Services	50	86.85	43.42
MP/LP Services	50	82.99	41.49
ALB Valves	50	-	-
TRS/POTS	50	62.00	31.00
PRS	50	-	-
Primary Valves	50	-	-
SRS	50	74.67	37.33
Contract Meters	15	68.90	10.33
Lump Meters - I&C Tariff	15	59.20	8.88
GASS Meters - Domestic	15	49.26	7.39

ATTACHMENT 6 GAS BALANCING ARRANGEMENT

Background

During the Access Arrangement Period, it is expected that the Eastern Gas Pipeline ("EGP") will establish a Receipt Point into the ActewAGL distribution network (the Network).

In New South Wales, AGLGN has entered into an Operational Balancing Agreement (OBA) with Duke Australia Operations as operator of the EGP and EAPL as operator of the Moomba-Sydney Pipeline. An OBA is an agreement between pipeline/network owners to cooperate in the management of the pipeline/network interfaces and is structured to minimise the impact of local physical variations on pipeline and network transportation arrangements. If an OBA is negotiated in relation to the ActewAGL Network, it will also be necessary to establish a nominations incentive scheme that provides sufficient incentive for Users to nominate as accurately as is possible.

This Access Arrangement provides a balancing mechanism for the two possible scenarios during the Access Arrangement Period:

1. Balancing where there is no OBA (including where there is only one Receipt Point on the Network): Section A
2. Balancing with an OBA: Section B.

Only one balancing mechanism will operate at any time as appropriate.

SECTION A: Gas Balancing with no Operational Balancing Agreement

This Section A will apply where there is no Operational Balancing Agreement in effect including where there is only one Receipt Point on the Network.

A. General Qualifications

Whenever there is no Operational Balancing Agreement in effect, the following provisions will apply. These are structured on the understanding that:

a) there will be only one Receipt Point from the Moomba-Sydney Pipeline and either none or one Receipt Point from the EGP[1];

b) input from the EGP pipeline will be under flow control at the Receipt Point. The operator of that pipeline will aim to input a quantity of Gas each Day at the Receipt Point equal to the Confirmed Nominations of Users served by it through that Receipt Point;

c) input at Dalton from the Moomba-Sydney Pipeline will be pressure controlled;

d) there is no Delivery Point at which an automatic feedback flow control system is used to establish a direct relationship between input at the EGP Receipt Point and the quantity actually withdrawn at the Delivery Point and

e) UAG is supplied by ActewAGL.

1 Reference to EGP Receipt Points apply only where an EGP Receipt Point exists.

If any of these circumstances change then the method for determining Input Quantities and the arrangements for Gas Balancing will be reviewed and varied to the extent necessary to take account of the changed circumstances, subject to the approval of the Commission.

B. Daily Forecasts and Nominations

1. Each Day, and for each Receipt Point, the User will provide ActewAGL with its forecast of withdrawals from the Network for each of the next three Days.
2. Each Day, and for each Receipt Point at which the User receives gas, the User will inform ActewAGL of its gas requirements (Forecast Requirement) for the next Day (Nomination Day). The Forecast Requirement for a Receipt Point is to include the following components:
   (a) gas nomination in total for that Receipt Point;
   (b) forecast non-daily metered Tariff Requirements (which will not include any Reconciliation Amount);
   (c) Reconciliation Amount nominated by the User, determined in accordance with the Network Code or the Gas Retail Market Code (whichever is applicable) if they exist or otherwise as nominated by the User, provided that ActewAGL is not required to accept the Reconciliation Amount as part of the Forecast Requirement unless the total of all Reconciliation Amounts for all Users on a Day equals zero;
   (d) Participant Balancing Amount nominated by the User, determined in accordance with the Network Code or the Gas Retail Market Code (whichever is applicable) if they exist or otherwise as nominated by the User, provided that ActewAGL is not required to accept the Participant Balancing Amount as part of the Forecast Requirement unless the total of all Participant Balancing Amounts for all Users on a Day equals zero; and
   (e) when required in advance by ActewAGL, the forecast withdrawal at designated Delivery Points, and at times agreed between the User and ActewAGL.
3. Nominations of the components of Forecast Requirements will be made in good faith so that the total quantity nominated under 2(a) for all Receipt Points is the aggregate amount which the User intends to withdraw from the Network on the Nomination Day under all transportation agreements.
4. ActewAGL will advise the User of the Quantity of Gas which the User should plan to deliver or have delivered into the Network at each Receipt Point on the Nomination Day in order to enable ActewAGL to satisfy the User's request.
5. The User will advise ActewAGL of the Quantity of Gas which the User intends to deliver or have delivered into the Network at each Receipt Point on the Nomination Day (the User's Confirmed Nomination for that Receipt Point for the Nomination Day).
6. Should the User fail to provide ActewAGL with a valid Confirmed Nomination, ActewAGL shall determine the User's Confirmed Nomination as the quantity which was the User's Confirmed Nomination (adjusted for any Reconciliation Amount and/or any Participant Imbalance Amount) for the same day in the prior week (or where such day is a public holiday, based on the same day in the week two weeks prior).

7. Each of the obligations set out in sections 1 to 6 must be completed in accordance with a timetable
   - determined through consultation between ActewAGL and any gas industry governance body which may be established, and
   - published from time to time in the Gas Retail Market Code (or prior to the adoption of such Code, in the Network Code or by ActewAGL).

C. Input and Withdrawal Quantities

Definitions

Input Quantities

The User's Input will be one of the following amounts:

a) Where there is only one User on the Network, the User's Input will be the metered Quantity at all Receipt Points net of UAG purchased by ActewAGL.

b) Where there are two or more Users on the Network:

   (i) for a User or Users who receive gas at the EGP Receipt Point, the metered Quantity at the Receipt Point net of UAG purchased by ActewAGL will be allocated to that User, or where there is more than one User, the Users in proportion to their Confirmed Nominations for the Day.

   (ii) for a User or Users who receive gas at the Dalton Receipt Point:

      (1) where the quantity metered at the Dalton Receipt Point on a Day net of UAG purchased by ActewAGL exceeds or is equal to the aggregate of Confirmed Nominations for Users of that Receipt Point for the Day, then each such User will be deemed to have received its Confirmed Nomination for the Day.

      (2) where the quantity metered at the Dalton Receipt Point on a Day net of UAG purchased by ActewAGL, is less than the aggregate of Confirmed Nominations for Users of that Receipt Point for the Day, then the total quantity metered at that Receipt Point on the Day net of UAG purchased by ActewAGL will be allocated among those Users in proportion to their Confirmed Nominations for the Day.

Withdrawal Quantities means the total of:

a) ***Non-Tariff Withdrawals,*** being the total quantity of gas withdrawn by the User on the Day at all non-Tariff Delivery Points, as determined by measurement or as otherwise agreed under the Service Agreement; and

b) ***Tariff Withdrawals,*** being :

   (i) the quantity of gas withdrawn at non daily metered Tariff Delivery Points,

      (1) calculated, and allocated to the User, in accordance with the Network Code or the Gas Retail Market Code (whichever is applicable), provided the applicable Code allocates the total quantity of gas withdrawn by all users at non daily metered Tariff Delivery Points on the Day, and where it does not do so, or where no such Codes are applicable,

(2) calculated and allocated by ActewAGL in proportion to quantities nominated by all Users under clause B 2(b) of this Section A; plus

(ii) the total quantity of gas withdrawn on the Day at all of the User's daily metered Tariff Delivery Points.

D. Gas Balancing

1. The User is required to act in good faith to ensure that the quantity of gas delivered to the Network for or on behalf of the User on each Day is equal to the quantity withdrawn from the Network by the User on the Day, subject to any amounts which the User may input under the participant balancing arrangements referred to in section E other than for the purpose of delivery to the Delivery Point on that Day. If a User has more than one Service for a Receipt Point, gas balancing arrangements will apply to the aggregates of quantities input at the Receipt Point and withdrawn under those agreements.
2. Where clause (b)(ii)(1) under Input Quantities applies in relation to a Day for the Dalton Receipt Point, ActewAGL will purchase[2] a quantity of operational balancing gas equal to the difference between the total quantity metered at the Dalton Receipt Point on the Day net of UAG purchased by ActewAGL and the aggregate of Confirmed Nominations for Users of that Receipt Point for the Day. The unit cost of purchasing the operational balancing gas is the Operational Balancing Cost.
3. The quantity of gas purchased by ActewAGL will be sold by it to those Users whose withdrawals on the Day exceed their Inputs adjusted for any Participant Balance Amount for the Day, in proportion to the amounts of those differences, at the Operational Balancing Cost. Such Users are obliged to purchase the quantities so nominated by ActewAGL.

E. Participant Balancing

1. In relation to participant balancing, ActewAGL and the User will comply with any of the following provision which may be applicable:
   (a) the provisions of the ActewAGL Network Code, or
   (b) where they replace the relevant provisions in the ActewAGL Network Code, the provisions contained in Gas Retail Market Code.

Section B: Gas Balancing with Operational Balancing Agreement

In this Section B:

Withdrawal Quantities means the total of:

a) ***Non-Tariff Withdrawals,*** being the total quantity of gas withdrawn by the User on the Day at all non-Tariff Delivery Points, as determined by measurement or as otherwise agreed under the Service Agreement; and

b) ***Tariff Withdrawals,*** determined as the Total Tariff Withdrawals for the User, allocated between the Receipt Points used by the User in supplying Tariff Delivery Points in proportion to the User's forecast requirement for non-daily metered Tariff Customers under clause A 1(b) for each Receipt Point, where ***Total Tariff Withdrawals*** are :

   (i) the quantity of gas withdrawn at non daily metered Tariff Delivery Points,

      (1) calculated, and allocated to the User, in accordance with the Network Code or the Gas Retail Market Code (whichever is applicable), provided

[2] ActewAGL will seek tenders for the supply of operational balancing gas on an annual or bi-annual basis.

the applicable Code allocates the total quantity of gas withdrawn by all users at non daily metered Tariff Delivery Points on the Day, and where it does not do so, or where no such Codes are applicable,

(2) calculated and allocated by ActewAGL in proportion to quantities nominated by all Users under clause A 1(b) of this Section B; plus

(ii) the total quantity of gas withdrawn on the Day at all of the User's daily metered Tariff Delivery Points.

A. Daily Forecasts and Nominations

1. Each Day, and for each Receipt Point at which the User receives gas, the User will inform ActewAGL of its gas requirements (Forecast Requirement) for the next Day (Nomination Day). The Forecast Requirement for a Receipt Point is to include the following components:

   (a) gas nomination in total and for each Shipper at that Receipt Point;

   (b) forecast requirement for non-daily metered Tariff Customers (which will not include any Reconciliation Amount);

   (c) Reconciliation Amount nominated by the User, determined in accordance with the Network Code or the Gas Retail Market Code (whichever is applicable) if they exist or otherwise as nominated by the User, provided that ActewAGL is not required to accept the Reconciliation Amount as part of the Forecast Requirement unless the total of all Reconciliation Amounts for all Users on a Day equals zero; and

   (d) when required in advance by ActewAGL, the forecast withdrawal at designated Delivery Points, and at times agreed between the User and ActewAGL.

2. Nominations of the components of Forecast Requirements will be made in good faith so that the total quantity nominated under 1(a) for all Receipt Points is the aggregate amount which the User intends to withdraw from the Network on the Nomination Day under all transportation agreements, and the total and Shipper quantities nominated under 1(a) are consistent with the quantities of gas which the User is entitled to have delivered to the Receipt Point.

3. ActewAGL will advise the User of the quantity of gas (User's Adjusted Requirement) which the User should deliver to each Receipt Point on the Nomination Day in order to enable ActewAGL to:

   (a) satisfy the User's Forecast Requirement;

   (b) reduce the User's Prior Imbalance Account to zero; and

   (c) satisfy any other aggregate needs for the Network (including adjustment for the User's change in share of linepack) to ensure safe and reliable supply.

4. Where the User has more than one Shipper at the Receipt Point, the User will apportion the User's Adjusted Requirement between its Shippers (User's Confirmed Nomination) and advise ActewAGL.

5. Where the User has only a single Shipper at the Receipt Point, the User's Adjusted Requirement is the User's Confirmed Nomination.

6. ActewAGL will advise each relevant Shipper of the User's Confirmed Nomination and each relevant Shipper and Pipeline operator of the aggregate nomination for the Shipper and Pipeline operator for that Receipt Point.

7. Should the User fail to provide ActewAGL with a valid Forecast Requirement or User's Confirmed Nomination, ActewAGL shall determine the User's Confirmed Nomination based on the User's Forecast Requirement (adjusted for any Reconciliation Amount) for the same day in the prior week (or where such day is a public holiday, based on the same day in the week two weeks prior).

8. Each of the obligations set out in sections 1 to 7 must be completed in accordance with a timetable:
   - determined through consultation between ActewAGL, the operators of the Moomba-Sydney Pipeline and the EGP and any gas industry governance body which may be established, and
   - published from time to time in the Gas Retail Market Code (or prior to the adoption of such Code, in the Network Code or by ActewAGL).

B. Prior Imbalance Account

1. ActewAGL shall determine the User's Prior Imbalance Account for each Receipt Point.

2. Each User shall provide ActewAGL with a User's Fiduciary Guarantee to an amount reasonably determined by ActewAGL, having regard to the maximum amount which the User's Prior Imbalance Account may reach.

3. ActewAGL may require settlement by the User of the User's Prior Imbalance Account in part or whole, when:

   (a) the Operational Balancing Agreement requires settlement or is terminated; or

   (b) a Transportation Agreement between the User and ActewAGL is terminated.

4. ActewAGL will issue a notice requiring payment of the Settlement Amount specified in the notice within 7 days of the date of the notice. Should the User fail to comply with the notice within that time, ActewAGL may use the User's Fiduciary Guarantee to pay the Settlement Amount under that notice.

C. Incentive Mechanism

1. In relation to the incentive mechanism which will be adopted in conjunction with the OBA, ActewAGL and the User will comply with:

   (a) the provisions of the ActewAGL Network Code, or

   (b) where they replace the relevant provisions in the ActewAGL Network Code, the provisions contained in Gas Retail Market Code; or

   (c) where the incentive mechanism is contained in some other document agreed between ActewAGL and the all Users, that document; or

   (d) where there is no agreement referred to in sub-clause (c), an incentive mechanism determined by ActewAGL and endorsed by the Commission.

D. Cessation of the Operational Balancing Agreement

1. The Operational Balancing Agreement and the opportunities it provides for the market rely on ActewAGL and infrastructure owners directly upstream remaining parties to the Agreement.
2. In the circumstances where the Operational Balancing Agreement ceases to be effective in the opinion of ActewAGL, the following will occur as transitional arrangements:
   (a) ActewAGL will issue notices to all Users requiring payment of Settlement Amounts for all outstanding User Imbalance Accounts;
   (b) The provisions in Section A "Gas Balancing with no Operational Balancing Agreement" will apply.

Definitions

In this Schedule:

Gas Retail Market Code means any Code or document which is either approved by the retail market through any ACT retail market governance body which deals with data estimation, participant balancing and / or incentive mechanisms, or which is otherwise binding on Users under licence conditions in the ACT or under any other ACT regulatory instrument.

Network Code means any Code or document adopted by ActewAGL whether pursuant to Authorisation or Licence Conditions or otherwise dealing with data estimation, participant balancing and / or incentive mechanisms.

Operational Balancing Agreement is an agreement between pipeline / network owners to cooperate in the management of the pipeline / network interfaces. The OBA is structured to minimise the impact of local physical variations on pipeline and network transportation arrangements.

Participant Balancing Amount means the quantity of gas which the User nominates to rectify part of all of the participant imbalance for the Network caused by the differences between the total of Inputs and any quantity purchased from AGLGN under clause D(3) of Section A, and Withdrawals on any Day.

Prior Imbalance Account means the cumulative difference between the total of the User's Confirmed Nominations for a Receipt Point and the Withdrawal Quantity for the User for the Receipt Point for all Days prior to the Nomination Day for which metering information is available from daily metered Delivery Points, minus the User's share of line pack for that Receipt Point.

Reconciliation Amount means the quantity of gas which the User nominates to rectify part of all of the imbalance caused by the reconciliation of withdrawals between the quantity determined by data estimation and the quantity withdrawn as measured by meter on any Day.

Settlement Amount is the amount incurred by ActewAGL in purchasing by tender a quantity of gas from a Shipper for the purpose of clearing, in whole or in part, that User's Prior Imbalance Account. Where settlement is required under clause B.3(a) of Section B, the quantity of gas required to effect such settlement will be allocated between all relevant Users with a negative Prior Imbalance Account on a pro rata basis.

Shipper means a person contracted to supply gas to the Receipt Point on behalf of the User or on behalf of the person from which the User purchases gas at that Receipt Point.

User's Fiduciary Guarantee means a Bank Guarantee or other appropriate instrument such as a parent company guarantee (as agreed with ActewAGL) as a financial warranty for the underwriting of Settlement Amounts.