



Western Australia

Economic Regulation Authority

16 May 2005

Dr Brian Fisher
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Dear Dr Fisher

EXPORTS AND INFRASTRUCTURE TASKFORCE

On behalf of the Economic Regulation Authority (**Authority**), I would like to take this opportunity to express my thanks for the opportunity to meet with members of the Infrastructure Taskforce during its recent visit to Perth.

Following on from some of the key discussion topics during the meeting, I undertook to provide the taskforce with further information in support of my views regarding the consistent approach adopted by regulators across Australia in applying the building blocks approach to price cap regulation.

In the limited time available, I have focused on reviewing the decision making approach with respect to calculating cost of capital parameter values. Reviewing the approach taken towards calculating regulated asset values would represent a prohibitively significant task in such a short timeframe. This is particularly so since asset values are influenced by an array of unique circumstance-specific infrastructure issues (not the least of which arises due to the term “normally” in section 8.11 of the Gas Access Code – in reference to the initial capital base not falling outside the range of depreciated actual cost and depreciated optimised replacement cost – which exacerbates the issue).

The attachments to this letter review the estimated values of comparative weighted average cost of capital (**WACC**) parameters (such as gearing levels, risk premiums and beta values) in recent regulatory decisions. The attachments discuss the extent to which consistency in regulatory decision making is apparent, as well as the relevance of any discrepancies in terms of sensitivity of the final WACC estimate to changes in respective parameter values. Where appropriate, the attachments acknowledge any circumstance-specific issues, as well as how the decision making processes may have matured over time as regulatory expertise has improved and/or the impact of review body decisions that have necessitated a shift in the approach to estimating parameters.

The following table summarises the information in the attachments and highlights the conclusions that can be drawn regarding the extent of consistency apparent in regulatory decision making processes

Table 1: Consistency apparent in estimating parameter values for calculating WACC in regulatory decisions (based on Attachments 1-6)

CAPM Parameter	Average	Conclusion regarding consistency in application by regulators
Market risk premium (<i>MRP</i>)	6.0%	86% of regulatory decisions adopt <i>MRP</i> of 6.0, with remaining 14% adopting a range which includes 6.0
Debt to total assets ratio (<i>D/V</i>)	60%	All gas and electricity related regulatory decisions adopt debt-to-equity ratio of 60:40
Debt margin (<i>DM</i>) ¹ <i>Debt premium</i> <i>Debt issuance costs</i>	1.20% 1.00-1.10% 0.125%	87% of regulatory decisions within $\pm 25\%$ of average (i.e. 0.90%-1.50%). Corresponding impact on final WACC of no more than ± 15 bp
Equity beta (β_e) ²	1.0	80% of gas and electricity decisions within $\pm 20\%$ of average (i.e. 0.8-1.2). Corresponding impact on final WACC of no more than ± 30 bp
Franking credit value (γ)	0.50	76% of regulatory decisions adopt γ of 0.50, with a further 13% adopting a range which includes 0.50

1. Debt margin consists of the debt premium and an allowance for debt issuance costs

2. At an assumed gearing of 60%

Source: Published regulatory decisions

The conclusions drawn in the table support the points being made regarding the consistency regulators have demonstrated in applying the respective regulatory regimes.

It would also be pertinent to note the Authority's recent draft decision on the proposed access arrangement for the Dampier to Bunbury Natural Gas Pipeline, in which the Authority has approved the rate of return proposed by the pipeline operator. The parameter estimates within the proposed rate of return are consistent with the previous decisions of the Authority and other State and National regulatory bodies regarding rates of return, which accords with the Authority's previously expressed views regarding current regulatory rates of return being consistent with the legitimate business interests of service providers. This example also demonstrates how an efficient and timely approvals process can be achieved when infrastructure owners have reasonable expectations and submit suitable proposals in the first instance (rather than pursuing ambit claims which have the potential delay the process).

During the Authority's meeting with the taskforce, I also stressed the point regarding the confidence of the finance industry regarding predictability of the regime and the attractiveness of regulated assets at current regulatory values and rates of return. In line with this, I note that in its recent "*Industry Report Card: Asia-Pacific Structured Corporate Debt*" (3 May 2005) Standard & Poor's cited "the benign legal and regulatory framework in Australia" as a key factor supporting the continuing significant growth in the Asia-Pacific structured corporate debt market over the next few years.

Accordingly, I reiterate the comments in the Authority's previous submission to the taskforce that the case for any change to the regulatory regime needs to be strong and substantiated to justify the risk of introducing new regulatory uncertainty. A regime that the infrastructure and finance industries understand and is relatively predictable is far more preferable than a continually changing regime that will generate uncertainty.

Yours sincerely

LYNDON ROWE
CHAIRMAN

WESTERN AUSTRALIAN REGULATORY DECISION

The tables below record decisions made by the Economic Regulation Authority (or its predecessor regulatory bodies) regarding WACC parameter value estimates.

Table 1. Market Risk Premium*Source: Published regulatory decisions*

Year	Decision	Parameter value
2000	OffGAR - AlintaGas Networks access arrangement (final decision)	6.00%
2000	OffGAR - CMS (Parmelia Pipeline) access arrangement (final decision)	6.00%
2001	OffGAR - Goldfields Gas Pipeline access arrangement (draft decision)	6.00%
2001	OffGAR - Tubridgie access arrangement (final decision)	6.00%
2003	Rail Access Regulator - WestNet Rail (final determination)	6.00%
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	6.00%
2003	OffGAR – DBNGP access arrangement (final decision)	6.00%
2004	ERA - Goldfields Gas Pipeline access arrangement (amended draft decision)	6.00%
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	6.00%
2005	ERA - AlintaGas Networks revised access arrangement (draft decision)	6.00%
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	6.00%
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	6.00%
2005	ERA - DBNGP revised access arrangement (draft decision)	5.0-6.0%

Table 2. Debt-to-Equity Ratio

Year	Decision	Parameter value
2000	OffGAR - AlintaGas Networks access arrangement (final decision)	60:40
2000	OffGAR - CMS (Parmelia Pipeline) access arrangement (final decision)	60:40
2001	OffGAR - Goldfields Gas Pipeline access arrangement (draft decision)	60:40
2001	OffGAR - Tubridgie access arrangement (final decision)	60:40
2003	Rail Access Regulator - WestNet Rail (final determination)	55:45
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	55:45
2003	OffGAR – DBNGP access arrangement (final decision)	60:40
2004	ERA - Goldfields Gas Pipeline access arrangement (amended draft decision)	60:40
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	60:40
2005	ERA - AlintaGas Networks revised access arrangement (draft decision)	60:40
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	60:40
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	40:60
2005	ERA - DBNGP revised access arrangement (draft decision)	60:40

Table 3. Debt Margin

Year	Decision	Parameter value
2000	OffGAR - AlintaGas Networks access arrangement (final decision)	1.20%
2000	OffGAR - CMS (Parmelia Pipeline) access arrangement (final decision)	1.20%
2001	OffGAR - Goldfields Gas Pipeline access arrangement (draft decision)	1.20%
2001	OffGAR - Tubridgie access arrangement (final decision)	1.20%
2003	Rail Access Regulator - WestNet Rail (final determination)	1.24%
	<i>debt premium</i>	1.11%
	<i>debt issuance costs</i>	0.125%
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	1.24%
	<i>debt premium</i>	1.11%
	<i>debt issuance costs</i>	0.125%
2003	OffGAR – DBNGP access arrangement (final decision)	1.20%
2004	ERA - Goldfields Gas Pipeline access arrangement (amended draft decision)	1.20%
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	<i>debt issuance costs</i> 0.125%
2005	ERA - AlintaGas Networks revised access arrangement (draft decision)	1.125%
	<i>debt premium</i>	1.00%
	<i>debt issuance costs</i>	0.125%
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	1.125%
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	1.125%
2005	ERA - DBNGP revised access arrangement (draft decision)	0.98-1.225%

Table 4. Equity Beta

Year	Decision	Parameter value
2000	OffGAR - AlintaGas Networks access arrangement (final decision)	1.08
2000	OffGAR - CMS (Parmelia Pipeline) access arrangement (final decision)	1.33
2001	OffGAR - Goldfields Gas Pipeline access arrangement (draft decision)	1.33
2001	OffGAR - Tubridgie access arrangement (final decision)	1.33
2003	Rail Access Regulator - WestNet Rail (final determination)	1.00
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	0.66
2003	OffGAR – DBNGP access arrangement (final decision)	1.20
2004	ERA - Goldfields Gas Pipeline access arrangement (amended draft decision)	1.33
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	1.00
2005	ERA - AlintaGas Networks revised access arrangement (draft decision)	1.00
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	0.78
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	0.52
2005	ERA - DBNGP revised access arrangement (draft decision)	0.80-1.20

Table 5. Franking Credit Value

Year	Decision	Parameter value
2000	OffGAR - AlintaGas Networks access arrangement (final decision)	50%
2000	OffGAR - CMS (Parmelia Pipeline) access arrangement (final decision)	50%
2001	OffGAR - Goldfields Gas Pipeline access arrangement (draft decision)	50%
2001	OffGAR - Tubridgie access arrangement (final decision)	50%
2003	Rail Access Regulator - WestNet Rail (final determination)	50%
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	50%
2003	OffGAR – DBNGP access arrangement (final decision)	50%
2004	ERA - Goldfields Gas Pipeline access arrangement (amended draft decision)	50%
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	50%
2005	ERA - AlintaGas Networks revised access arrangement (draft decision)	50%
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	50%
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	50%
2005	ERA - DBNGP revised access arrangement (draft decision)	30-60%

Conclusions that can be drawn from information above: The information above demonstrates:

- the Economic Regulation Authority (or its predecessor) has adopted a consistent approach in all gas and electricity-related regulatory decisions regarding market risk premium (MRP of 6.00), debt-to-equity ratio (D/V of 60:40) and franking credit value (γ of 0.50);
- the Economic Regulation Authority (or its predecessor) has adopted a consistent approach towards calculating the debt premium (DM). Recent decisions have acknowledged that market data regarding debt premium (e.g. CBA Spectrum data) is exhibiting a declining trend, as Australian companies gain greater access to overseas debt markets at lower interest premiums and the increasing utilisation of ‘credit wrapping’ facilities to improve credit rating and hence reduce premiums; and
- the Economic Regulation Authority (or its predecessor) has adopted a consistent approach towards calculating the equity beta (β_e), whilst acknowledging some pipeline-specific factors (e.g. risk associated with under utilisation and/or greater exposure to risk due to servicing cyclical demand associated with mining/resources activities).

NATIONAL REGULATORY DECISIONS: MARKET RISK PREMIUM

The tables below record decisions made by State and National regulators regarding the market risk premium (MRP) parameter used in estimating WACC.

Table 1. Gas regulatory decisions (Market Risk Premium) *Source: Published regulatory decisions*

Year	Decision	Parameter value
1998	ACCC - Transmission Pipelines Australia (final decision)	6.00%
1998	ORG - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	6.00%
2000	OffGAR - AlintaGas Networks (final decision)	6.00%
2000	IPART - AGL Gas Network (NSW) (final decision)	5.0-6.0%
2000	OffGAR - CMS (Parmelia Pipeline) (final decision)	6.00%
2000	ACCC - Central West Pipeline (Marsden to Dubbo) (final decision)	6.00%
2001	OffGAR - Goldfields Gas Pipeline (draft decision)	6.00%
2001	OffGAR – Tubridgie Pipeline (final decision)	6.00%
2001	QCA - Queensland Gas Distribution Networks (Allgas and Envestra) (final decision)	6.00%
2002	ACCC - Moomba to Adelaide Pipeline System (final decision)	6.00%
2002	ESC - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	6.00%
2002	ACCC - Victorian Gas Transmission System (GasNet) (final decision)	6.00%
2003	ACCC - Amadeus to Darwin Pipeline (NT Gas) (final decision)	6.00%
2003	ACCC - Moomba to Sydney Pipeline (EAPL) (final decision)	6.00%
2003	OffGAR - DBNGP (final decision)	6.00%
2004	ERA - Goldfields Gas Pipeline (amended draft decision)	6.00%
2004	ICRC - ActewAGL Natural Gas System (final decision)	6.00%
2005	ERA - AlintaGas Networks (draft decision)	6.00%
2005	IPART - AGL Gas Network (NSW) (final report)	5.5-6.5%
2005	ERA - DBNGP (draft decision)	5.0-6.0%

Table 2. Electricity regulatory decisions (MRP)

Year	Decision	Parameter value
1999	IPART - NSW Electricity Network Service Providers (final decision)	5.0-6.0%
2000	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	6.00%
2001	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	6.00%
2001	ORG - Victorian Electricity Distribution Networks (AGL, CitiPower, Powercor, TXU, United Energy) (final determination)	6.00%
2001	ACCC - Queensland Transmission Network (Powerlink) (final decision)	6.00%
2002	ACCC - South Australian Transmission Network (ElectraNet SA) (final decision)	6.00%

Table 2 (cont.) Electricity regulatory decisions (MRP)

2002	ACCC - Victorian Transmission Network (SPI PowerNet and VenCorp) (final decision)	6.00%
2003	ACCC - Tasmania Transmission Network (Transend Networks) (final decision)	6.00%
2004	ICRC - ActewAGL Electricity Distribution Network (final decision)	6.00%
2004	IPART - NSW Electricity Network Service Providers (final decision)	5.0-6.0%
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	6.00%
2005	ESCOSA - ETSA Utilities (final determination)	6.00%
2005	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	6.00%
2005	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	6.00%

Table 3. Other (non-gas and non-electricity) regulatory decisions (MRP)

Year	Decision	Parameter value
2000	IPART - Sydney Water Corporation (final decision)	5.0-6.0%
2001	QCA - Queensland Rail (QR) (final decision)	6.00%
2002	ACCC - Australian Rail Track Corporation (ARTC) (final decision)	6.00%
2003	Rail Access Regulator - WestNet Rail (final determination)	6.00%
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	6.00%
2005	ESC - Victorian Metropolitan and Regional Urban Water Businesses (draft decision)	6.00%
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	6.00%
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	6.00%
2005	QCA - Gladstone Area Water Board (final report)	6.00%
2005	QCA - Dalrymple Bay Coal Terminal (final decision)	6.00%

Conclusions that can be drawn from information above: The information above demonstrates that regulators have adopted consistent approaches towards calculating the MRP parameter:

- 86% of regulatory decisions adopt a MRP of 6.0%; and
- the remaining 14% of decisions adopt a range for MRP which includes 6.0%.

Whilst some infrastructure owners have argued for a higher value for MRP (6.5%-7.0%), recent analysis indicates the MRP may in fact be lower than 6.0% (between 5.0-6.0%) (e.g. Essential Services Commission, October 2002, Review of Gas Access Arrangements: Final Decision, pp332-356, citing Jardine Fleming Capital Partners Limited, (September, 2001) *The Equity Risk Premium – An Australian Perspective*, Trinity Best Practice Committee). For information, a ± 100 bp change in MRP can equate to a ± 30 bp change in WACC. For this reason, regulators have generally accepted the industry standard in regulatory decisions.

NATIONAL REGULATORY DECISIONS: DEBT-TO-EQUITY RATIO

The tables below record decisions made by State and National regulators regarding the Debt-to-Equity ratio parameter used in estimating WACC.

Table 1. Gas regulatory decisions (Debt-to-Equity Ratio) *Source: Published regulatory decisions*

Year	Decision	Parameter value
1998	ACCC - Transmission Pipelines Australia (final decision)	60:40
1998	ORG - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	60:40
2000	OffGAR - AlintaGas Networks (final decision)	60:40
2000	IPART - AGL Gas Network (NSW) (final decision)	60:40
2000	OffGAR - CMS (Parmelia Pipeline) (final decision)	60:40
2000	ACCC - Central West Pipeline (Marsden to Dubbo) (final decision)	60:40
2001	OffGAR - Goldfields Gas Pipeline (draft decision)	60:40
2001	OffGAR – Tubridgie Pipeline (final decision)	60:40
2001	ACCC - Queensland Gas Pipeline (Wallumbilla to Gladstone via Rockhampton) (final decision)	60:40
2001	QCA - Queensland Gas Distribution Networks (Allgas and Envestra) (final decision)	60:40
2002	ACCC - South West Queensland Pipeline (Ballera to Wallumbilla) (final decision)	60:40
2002	ACCC - Moomba to Adelaide Pipeline System (final decision)	60:40
2002	ACCC - Roma to Brisbane Pipeline (final decision)	60:40
2002	ACCC - Carpentaria Gas Pipeline (Ballera to Mt Isa) (final decision)	60:40
2002	ESC - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	60:40
2002	ACCC - Victorian Gas Transmission System (GasNet) (final decision)	60:40
2003	ACCC - Amadeus to Darwin Pipeline (NT Gas) (final decision)	60:40
2003	ACCC - Moomba to Sydney Pipeline (EAPL) (final decision)	60:40
2003	OffGAR - DBNGP (final decision)	60:40
2004	ERA - Goldfields Gas Pipeline (amended draft decision)	60:40
2004	ICRC - ActewAGL Natural Gas System (final decision)	60:40
2005	ERA - AlintaGas Networks (draft decision)	60:40
2005	IPART - AGL Gas Network (NSW) (final report)	60:40
2005	ERA - DBNGP (draft decision)	60:40

Table 2. Electricity regulatory decisions (Debt-to-Equity Ratio)

Year	Decision	Parameter value
1999	IPART - NSW Electricity Network Service Providers (final decision)	60:40
2000	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	60:40
2001	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	60:40
2001	ORG - Victorian Electricity Distribution Networks (AGL, CitiPower, Powercor, TXU, United Energy) (final determination)	60:40
2001	ACCC - Queensland Transmission Network (Powerlink) (final decision)	60:40
2002	ACCC - South Australian Transmission Network (ElectraNet SA) (final decision)	60:40

Table 2 (cont.) Electricity regulatory decisions (Debt-to-Equity Ratio)

2002	ACCC - Victorian Transmission Network (SPI PowerNet and VenCorp) (final decision)	60:40
2003	ACCC - Tasmania Transmission Network (Transend Networks) (final decision)	60:40
2004	ICRC - ActewAGL Electricity Distribution Network (final decision)	60:40
2004	IPART - NSW Electricity Network Service Providers (final decision)	60:40
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	60:40
2005	ESCOSA - ETSA Utilities (final determination)	60:40
2005	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	60:40
2005	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	60:40

Table 3. Other (non-gas and non-electricity) regulatory decisions (Debt-to-Equity Ratio)

Year	Decision	Parameter value
2000	IPART - Sydney Water Corporation (final decision)	60:40
2001	QCA - Queensland Rail (QR) (final decision)	55:45
2002	ACCC - Australian Rail Track Corporation (ARTC) (final decision)	60:40
2003	Rail Access Regulator - WestNet Rail (final determination)	55:45
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	55:45
2005	ESC - Victorian Metropolitan and Regional Urban Water Businesses (draft decision)	60:40
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	60:40
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	40:60
2005	QCA - Gladstone Area Water Board (final report)	50:50
2005	QCA - Dalrymple Bay Coal Terminal (final decision)	60:40

Conclusions that can be drawn from information above: The information above demonstrates that regulators have adopted a debt-to-equity ratio of 60:40 for all gas and electricity related regulatory decisions. This is consistent with regulators' views regarding providing infrastructure owners with the incentive to pursue efficient financing structures.

Debt-to-equity ratios lower than the accepted 60:40 industry standard have only been adopted in specific circumstances, for example rail and water scheme related decisions in Queensland and Western Australia (industries with markedly different characteristics to the energy sector).

NATIONAL REGULATORY DECISIONS: DEBT MARGIN

The tables below record decisions made by State and National regulators regarding the debt margin parameter used in estimating WACC.

Table 1. Gas regulatory decisions (Debt Margin) *Source: Published regulatory decisions*

Year	Decision	Parameter value
1998	ACCC - Transmission Pipelines Australia (final decision)	1.20%
1998	ORG - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	1.20%
2000	OffGAR - AlintaGas Networks (final decision)	1.20%
2000	IPART - AGL Gas Network (NSW) (final decision)	0.90-1.10%
2000	OffGAR - CMS (Parmelia Pipeline) (final decision)	1.20%
2000	ACCC - Central West Pipeline (Marsden to Dubbo) (final decision)	1.20%
2001	OffGAR - Goldfields Gas Pipeline (draft decision)	1.20%
2001	OffGAR – Tubridgie Pipeline (final decision)	1.20%
2001	QCA - Queensland Gas Distribution Networks (Allgas and Envestra) (final decision)	1.55%
2002	ACCC - Moomba to Adelaide Pipeline System (final decision)	1.20%
2002	ESC - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision) <i>includes debt issuance costs</i>	1.70% 0.05%
2002	ACCC - Victorian Gas Transmission System (GasNet) (final decision) <i>includes debt issuance costs</i>	1.59% 0.125%
2003	ACCC - Amadeus to Darwin Pipeline (NT Gas) (final decision)	1.54%
2003	Australian Competition Tribunal - Victorian Gas Transmission System (GasNet) (appeal decision) <i>debt issuance costs</i>	0.25%
2003	ACCC - Moomba to Sydney Pipeline (EAPL) (final decision)	0.92%
2003	OffGAR - DBNGP (final decision)	1.20%
2004	ERA - Goldfields Gas Pipeline (amended draft decision)	1.20%
2004	ICRC - ActewAGL Natural Gas System (final decision)	1.245-1.43%
2005	ERA - AlintaGas Networks (draft decision) <i>debt premium</i>	1.125% 1.00%
	<i>debt issuance costs</i>	0.125%
2005	IPART - AGL Gas Network (NSW) (final report)	1.13-1.22%
2005	ERA - DBNGP (draft decision)	0.98-1.225%

Table 2. Electricity regulatory decisions (Debt Margin)

Year	Decision	Parameter value
1999	IPART - NSW Electricity Network Service Providers (final decision)	0.80-1.00%
2000	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	1.00%
2001	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	1.70%
2001	ORG - Victorian Electricity Distribution Networks (AGL, CitiPower, Powercor, TXU, United Energy) (final determination)	1.50%
2001	ACCC - Queensland Transmission Network (Powerlink) (final decision)	1.20%
2002	ACCC - South Australian Transmission Network (ElectraNet SA) (final decision)	1.22%

Table 2 (cont.) Electricity regulatory decisions (Debt Margin)

2002	ACCC - Victorian Transmission Network (SPI PowerNet and VenCorp) (final decision)	1.20%
2003	ACCC - Tasmania Transmission Network (Transend Networks) (final decision)	0.91%
2004	ICRC - ActewAGL Electricity Distribution Network (final decision)	1.245%
	<i>debt premium</i>	<i>1.12%</i>
	<i>debt issuance costs</i>	<i>0.125%</i>
2004	IPART - NSW Electricity Network Service Providers (final decision)	0.90%-1.10%*
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	<i>debt issuance costs</i>
		<i>0.125%</i>
2005	ESCOSA - ETSA Utilities (final determination)	1.64%
	<i>debt premium</i>	<i>1.34%</i>
	<i>debt issuance costs</i>	<i>0.125%</i>
	<i>allowance for hedging costs</i>	<i>0.1825%</i>
2005	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	0.90%
2005	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination) <i>including debt issuance costs</i>	1.22%
		<i>0.125%</i>

* Decision referenced allowance of 12.5bp for debt issuance costs, not included in debt margin

Table 3. Other (non-gas and non-electricity) regulatory decisions (Debt Margin)

Year	Decision	Parameter value
2000	IPART - Sydney Water Corporation (final decision)	0.80-1.00%
2001	QCA - Queensland Rail (QR) (final decision)	1.20%
2002	ACCC - Australian Rail Track Corporation (ARTC) (final decision)	1.20%
2003	Rail Access Regulator - WestNet Rail (final determination)	1.24%
	<i>debt premium</i>	<i>1.11%</i>
	<i>debt issuance costs</i>	<i>0.125%</i>
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	1.24%
	<i>debt premium</i>	<i>1.11%</i>
	<i>debt issuance costs</i>	<i>0.125%</i>
2005	ESC - Victorian Metropolitan and Regional Urban Water Businesses (draft decision)	1.10%
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	1.125%
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	1.125%
2005	QCA - Gladstone Area Water Board (final report)	1.32%
2005	QCA - Dalrymple Bay Coal Terminal (final decision)	1.30%

Conclusions that can be drawn from information above: The information above demonstrates:

- the average value adopted by regulators in decisions is for a debt margin of around 1.20%;
- 87% of regulatory decisions fall within $\pm 25\%$ of the average (i.e. between 0.90% and 1.50%). For information, a $\pm 25\%$ variation in the debt margin parameter has a corresponding impact on the final WACC estimate of no more than ± 15 basis points;

- recent decisions have acknowledged that market data regarding debt premium (e.g. CBA Spectrum data) is exhibiting a declining trend, as Australian companies gain greater access to overseas debt markets at lower interest premiums and availability of 'credit wrapping' facilities to improve credit rating and hence reduce premiums; and
- where explicitly acknowledged, regulators have adopted a relatively consistent approach towards making an allowance for debt issuance costs (usually 12.5 basis points).

NATIONAL REGULATORY DECISIONS: EQUITY BETA

The tables below record decisions made by State and National regulators regarding the equity beta parameter used in estimating WACC.

Table 1. Gas regulatory decisions (Equity Beta)

Source: Published regulatory decisions

Year	Decision	Parameter value
1998	ACCC - Transmission Pipelines Australia (final decision)	1.20
1998	ORG - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	1.20
2000	OffGAR - AlintaGas Networks (final decision)	1.08
2000	IPART - AGL Gas Network (NSW) (final decision)	0.90-1.10
2000	OffGAR - CMS (Parmelia Pipeline) (final decision)	1.33
2000	ACCC - Central West Pipeline (Marsden to Dubbo) (final decision)	1.50
2001	OffGAR - Goldfields Gas Pipeline (draft decision)	1.33
2001	OffGAR – Tubridgie Pipeline (final decision)	1.33
2001	QCA - Queensland Gas Distribution Networks (Allgas and Envestra) (final decision)	0.99
2002	ACCC - Moomba to Adelaide Pipeline System (final decision)	1.16
2002	ESC - Victorian Gas Distribution Networks (Mulitnet, Westar and Stratus) (final decision)	1.00
2002	ACCC - Victorian Gas Transmission System (GasNet) (final decision)	1.00
2003	ACCC - Amadeus to Darwin Pipeline (NT Gas) (final decision)	1.00
2003	ACCC - Moomba to Sydney Pipeline (EAPL) (final decision)	1.00
2003	OffGAR - DBNGP (final decision)	1.20
2004	ERA - Goldfields Gas Pipeline (amended draft decision)	1.33
2004	ICRC - ActewAGL Natural Gas System (final decision)	0.90-1.09
2005	ERA - AlintaGas Networks (draft decision)	1.00
2005	IPART - AGL Gas Network (NSW) (final report)	0.80-1.00
2005	ERA - DBNGP (draft decision)	0.80-1.20

Table 2. Electricity regulatory decisions (Equity Beta)

Year	Decision	Parameter value
1999	IPART - NSW Electricity Network Service Providers (final decision)	0.78-1.14
2000	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	0.78-1.25
2001	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	0.70
2001	ORG - Victorian Electricity Distribution Networks (AGL, CitiPower, Powercor, TXU, United Energy) (final determination)	1.00
2001	ACCC - Queensland Transmission Network (Powerlink) (final decision)	1.00
2002	ACCC - South Australian Transmission Network (ElectraNet SA) (final decision)	1.00

Table 2 (cont.) Electricity regulatory decisions (Equity Beta)

2002	ACCC - Victorian Transmission Network (SPI PowerNet and VenCorp) (final decision)	1.00
2003	ACCC - Tasmania Transmission Network (Transend Networks) (final decision)	1.00
2004	ICRC - ActewAGL Electricity Distribution Network (final decision)	0.90
2004	IPART - NSW Electricity Network Service Providers (final decision)	0.78-1.11
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	1.00
2005	ESCOSA - ETSA Utilities (final determination)	0.80
2005	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	1.00
2005	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	0.90

Table 3. Other (non-gas and non-electricity) regulatory decisions (Equity Beta)

Year	Decision	Parameter value
2000	IPART - Sydney Water Corporation (final decision)	0.65-1.02
2001	QCA - Queensland Rail (QR) (final decision)	0.76
2002	ACCC - Australian Rail Track Corporation (ARTC) (final decision)	1.27
2003	Rail Access Regulator - WestNet Rail (final determination)	1.00
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	0.66
2005	ESC - Victorian Metropolitan and Regional Urban Water Businesses (draft decision)	0.75
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	0.78
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	0.52
2005	QCA - Gladstone Area Water Board (final report)	0.65
2005	QCA - Dalrymple Bay Coal Terminal (final decision)	1.00

Conclusions that can be drawn from information above: The information above demonstrates:

- the average decision adopted by regulators is a equity beta of around 1.00;
- 80% of regulatory decisions fall within $\pm 20\%$ of the average (i.e. between 0.80 and 1.20). The predominant number of the results outside of this range as with respect to water-related decisions (reflecting the lower volatility and risk exposure of water service provision activities). For information, a $\pm 20\%$ variation in the equity beta parameter has a corresponding impact on the final WACC estimate of no more than ± 30 basis points; and
- whilst adopting a consistent approach, regulators have acknowledged some pipeline-specific factors (e.g. risk associated with greenfields infrastructure, under utilisation and/or greater exposure to risk due to cyclical demand associated with servicing mining/resources activities rather than a consistent population base).

NATIONAL REGULATORY DECISIONS: FRANKING CREDIT VALUE

The tables below record decisions made by State and National regulators regarding the franking credit value parameter used in estimating WACC.

Table 1. Gas regulatory decisions (Franking Credit Value) *Source: Published regulatory decisions*

Year	Decision	Parameter value
1998	ACCC - Transmission Pipelines Australia (final decision)	50%
2000	OffGAR - AlintaGas Networks (final decision)	50%
2000	IPART - AGL Gas Network (NSW) (final decision)	30-50%
2000	OffGAR - CMS (Parmelia Pipeline) (final decision)	50%
2000	ACCC - Central West Pipeline (Marsden to Dubbo) (final decision)	50%
2001	OffGAR - Goldfields Gas Pipeline (draft decision)	50%
2001	OffGAR - Tubridgie Pipeline (final decision)	50%
2001	ACCC - Queensland Gas Pipeline (Wallumbilla to Gladstone via Rockhampton) (final decision)	0%
2001	QCA - Queensland Gas Distribution Networks (Allgas and Envestra) (final decision)	50%
2002	ACCC - South West Queensland Pipeline (Ballera to Wallumbilla) (final decision)	0%
2002	ACCC - Moomba to Adelaide Pipeline System (final decision)	50%
2002	ACCC - Roma to Brisbane Pipeline (final decision)	0%
2002	ACCC - Carpentaria Gas Pipeline (Ballera to Mt Isa) (final decision)	0%
2002	ACCC - Victorian Gas Transmission System (GasNet) (final decision)	50%
2003	ACCC - Amadeus to Darwin Pipeline (NT Gas) (final decision)	50%
2003	ACCC - Moomba to Sydney Pipeline (EAPL) (final decision)	50%
2003	OffGAR - DBNGP (final decision)	50%
2004	ERA - Goldfields Gas Pipeline (amended draft decision)	50%
2004	ICRC - ActewAGL Natural Gas System (final decision)	30-50%
2005	ERA - AlintaGas Networks (draft decision)	50%
2005	IPART - AGL Gas Network (NSW) (final report)	30-50%
2005	ERA - DBNGP (draft decision)	30-60%

Table 2. Electricity regulatory decisions (Franking Credit Value)

Year	Decision	Parameter value
1999	IPART - NSW Electricity Network Service Providers (final decision)	30-50%
2000	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	50%
2001	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	50%
2001	ORG - Victorian Electricity Distribution Networks (AGL, CitiPower, Powercor, TXU, United Energy) (final determination)	50%
2001	ACCC - Queensland Transmission Network (Powerlink) (final decision)	50%
2002	ACCC - South Australian Transmission Network (ElectraNet SA) (final decision)	50%

Table 2 (cont.) Electricity regulatory decisions (Franking Credit Value)

2002	ACCC - Victorian Transmission Network (SPI PowerNet and VenCorp) (final decision)	50%
2003	ACCC - Tasmania Transmission Network (Transend Networks) (final decision)	50%
2004	ICRC - ActewAGL Electricity Distribution Network (final decision)	50%
2004	IPART - NSW Electricity Network Service Providers (final decision)	50%
2005	ERA - Western Power Networks (Preferred WACC methodology determination)	50%
2005	ESCOSA - ETSA Utilities (final determination)	50%
2005	ACCC - NSW and ACT Transmission Networks (TransGrid and EnergyAustralia) (final decision)	50%
2005	QCA - Queensland Distribution Networks (Ergon and Energex) (final determination)	50%

Table 3. Other (non-gas and non-electricity) regulatory decisions (Franking Credit Value)

Year	Decision	Parameter value
2000	IPART - Sydney Water Corporation (final decision)	30-50%
2001	QCA - Queensland Rail (QR) (final decision)	50%
2002	ACCC - Australian Rail Track Corporation (ARTC) (final decision)	50%
2003	Rail Access Regulator - WestNet Rail (final determination)	50%
2003	Rail Access Regulator - Western Australian Government Railways Commission (final determination)	50%
2005	ESC - Victorian Metropolitan and Regional Urban Water Businesses (draft decision)	50%
2005	ERA - Water Corporation (Urban Water Inquiry Draft Report)	50%
2005	ERA - AQWEST and Busselton Water (Urban Water Inquiry Draft Report)	50%
2005	QCA - Gladstone Area Water Board (final report)	50%
2005	QCA - Dalrymple Bay Coal Terminal (final decision)	50%

Conclusions that can be drawn from information above: The information above demonstrates that regulators have adopted to date generally adopted a γ value of 0.50 (76% of regulatory decisions adopt an γ of 0.50; and a further 13% of decisions adopt a range for γ which includes 0.50).

The regulatory precedent for regulators' adoption of 0.50 is based on the 1999 study by Hathaway and Officer, which estimates gamma at close to 0.50 (Hathaway, N. and R.R. Officer (1999), *The Value of Imputation Tax Credits*, Unpublished Manuscript, Graduate School of Management, University of Melbourne). It is noted that that the study upon which this regulatory precedent is based has recently been updated by the authors and the estimate of gamma revised to between 0.28 and 0.36 (Hathaway, Neville and Officer, Bob (2004), *The Value of Imputation Tax Credits: Update 2004*, Capital Research Pty Ltd). The appropriate value to be assumed for the value of imputation credits is highly contentious, and in the absence of a definitive resolution, the Economic Regulation Authority has adopted a consistent approach (as have most other regulators). However given the difference between a γ value of 0.50 and 0.30 can equate to a corresponding impact on WACC of up to ± 25 bp, the issue remains under ongoing investigation.