



# *Economic Regulation Authority*

Western Australia

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**Response to Submissions made on:**

*Final Report – Review of Rate of Return  
Methodologies and Practices  
(Institute for Research into International  
Competitiveness - September 2003)*

**Economic Regulation Authority  
Western Australia**

**8 March 2005**

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## 1 INTRODUCTION

In September 2003, the then Office of Gas Access Regulation received a commissioned report from the Institute for Research into International Competitiveness (IRIC) titled, *Final Report – Review of Rate of Return Methodologies and Practices* (hereafter referred to as the “IRIC Report”). The Office of Gas Access Regulation published the IRIC Report on 31 December 2003, and invited public submissions on its contents by 30 January, 2004.

On 1 January 2004, the functions of the Office of Gas Access Regulation and the Independent Gas Pipelines Access Regulator (the “Regulator”) were transferred to the Economic Regulation Authority.

The Authority received seven submissions on the IRIC Report from the following parties (in alphabetical order):

- Alinta Gas Networks Limited (“Alinta”).
- Australian Pipeline Trust (“APT”).
- Chamber of Commerce and Industry WA (“CCIWA”).
- Energy Networks Association (“ENA”).
- Epic Energy (WA) Transmission Pty Ltd (“Epic Energy”).
- Goldfields Gas Transmission Pty Ltd (“GGT”).
- Hawkins Gas Consultants Limited (“Hawkins Gas”).

In this paper the Authority responds to the matters raised in submissions by interested parties. Section 1 of this paper outlines the scope of the IRIC Report. Successive sections outline matters raised in submissions and the Authority’s response to each of the substantive matters.

The Authority will take the IRIC report and submissions received on this report into account (along with other relevant information) in future considerations of Rate of Return matters relevant to its functions.

## 2 SCOPE OF THE IRIC REPORT

As outlined in Chapter 1 of the IRIC Report, the study undertaken by IRIC addressed a number of primary issues as follows.

- Review of the Capital Asset Pricing Model (CAPM) and other relevant approaches to determination of the rate of return.
- Review of the application of the CAPM methodology in Western Australia.
- Review and analysis of the rate of return decisions by the Independent Gas Pipelines Access Regulator in Western Australia (the Regulator).
- Review and analysis of the rate of return decisions by regulators in other jurisdictions including some relevant regulators overseas.

The IRIC Report addresses the following issues.

- Whether the CAPM model is the most appropriate basis for determining the rate of return for regulated gas pipelines in Western Australia, considering regulatory practice in Australia and relevant overseas countries.
- Whether the application of the CAPM model in Western Australia has been consistent with that by other regulators.
- Whether the CAPM parameter values selected by the Regulator are appropriate taking into consideration the specific circumstances of Western Australia.
- The parameter values or ranges of values that would be appropriate for regulated pipelines in Western Australia.
- Whether regulatory rates of return in Australia and Western Australia are sufficient to encourage investment in pipelines, citing relevant evidence where appropriate.

### 3 RECENT DEVELOPMENTS IN REGULATION

#### 3.1 EVOLVING REGULATORY PRACTICE

##### 3.1.1 Matters Addressed in the IRIC Report

Chapter 2 of the IRIC Report considers a number of issues related to evolving regulatory practice. In particular, the IRIC Report reviews the CAPM and several alternative approaches for assessing rates of return expected by investors, as follows.

- The Gordon Growth Model (GGM), which is based on the fundamental proposition that a company's share price is the discounted value of future dividends. The main advantage of the GGM is its simplicity; however it suffers from the fact that a constant growth rate for future dividends must be assumed. It is unlikely that future dividend growth will be constant, and one approach is to assume different stages in which the growth rate may be assumed to be constant.
- The Arbitrage Pricing Theory Model (APT), which is based on the proposition that in competitive markets arbitrage profits will be competed away. The model relates expected return to a number of potential risk factors including unexpected interest rates, unexpected changes in inflation, and unexpected changes in GDP. The main advantage of the APT model is that, unlike the CAPM, it does not require the construction of a theoretical market portfolio. The main disadvantage is that the APT model does not specify the risk factors that are important. This results in lack of uniformity between practitioners and hampers its wider application in practice. The IRIC Report notes that empirical research has not been able to conclude that the forecasting ability of the APT is any better than using the CAPM.
- The Three Factor Model (TFM) attributed to Fama and French, who demonstrate that CAPM is a poor predictor of relative variation in stock returns relative to that of a market portfolio. Fama and French show that a three-factor model including the CAPM beta, and variables representing the difference between returns earned by small and large firms and the Book/Market ratio is more successful in explaining the cross-sectional variability in returns.<sup>1</sup> Unfortunately, the TFM is a purely empirical model, which cannot explain why or how the additional variables influence returns. As the TFM is still being debated in academic circles, and has yet to prove itself through widespread adoption by practitioners, the IRIC Report concludes that its use by regulators would be premature.

The IRIC Report also examines Australian and international regulatory experience (especially the UK) with respect to the calculation of the CAPM parameters. This investigation reveals (p.25) that the “main features of the methodology used by the Western Australian Gas Pipelines Access Regulator are... broadly in line with methodologies used by other regulators both in Australia and overseas.”

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<sup>1</sup> Fama, E.F. and K.R. French (1993), “Common risk factors in returns on stocks and bonds”, *Journal of Financial Economics*, Vol. 33, pp.3-56.

### 3.1.2 Matters raised in Submissions

Two respondents made general comments about the IRIC Report's failure to address evolving "best practice" in regulation. GGT (p.2) submits that although the IRIC Report speaks of the Code's requirement to have regard to regulatory "best practice", it simply justifies existing practice as it ignores the Draft Report of the Productivity Commission's review of the Gas Access Regime ("PC Draft Report"), which was released prior to its release. CCIWA (p.1) comments that the report "does not contain a great deal of quantitative and qualitative analysis" which could improve its "credibility".

### 3.1.3 The Authority's Response

The Authority considers that the assertion that the IRIC Report "does not contain a great deal of quantitative and qualitative analysis" is not, as a general proposition, a reasonable criticism of the IRIC Report. The IRIC Report provides a qualitative analysis of the main alternative methodologies to the CAPM model and also provides a quantitative and qualitative analysis of how closely pipeline access regulation in Western Australia corresponds with best practice in Australia and overseas.

GGT draws attention to the Productivity Commission's review of the Gas Access Regime. Since GGT made its submission, the Productivity Commission has issued its Final Report, in which the Commission gives consideration to use of the CAPM methodology in determination of regulatory rates of return.<sup>2</sup> The Commission indicated "concern" that the CAPM has become a *de facto* requirement under the regime, and recommended that the Code be amended to provide greater scope for service providers to propose different methodologies for determination of rates of return. The Commission did not, however, consider the relative merits of alternative methodologies. Nor did the Commission recognise that in proposed access arrangements for pipelines, service providers under the Code have without exception proposed rates of return determined using the CAPM methodology despite the Code clearly allowing alternative methodologies to be applied.

## 3.2 THE EPIC ENERGY DECISION

### 3.2.1 Matters Addressed in the IRIC Report

In a footnote, IRIC (p. 32) refers briefly to the decision of the Western Australian Supreme Court (the Epic Energy Decision) in respect of the Epic Energy's action in respect of the Regulator's Draft Decision on the Dampier to Bunbury Natural Gas Pipeline (DBNGP). IRIC note that the Epic Energy Decision might require a regulator to consider economic development issues in consideration of the rate of return for a gas pipeline. IRIC indicated a view that this is not an appropriate course of action for a regulator, and should instead be considered as part of industry policy by Government.

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<sup>2</sup> Productivity Commission, 11 June 2004, *Review of the Gas Access Regime*, Productivity Commission Inquiry Report No. 31, pp 296–302.

### 3.2.2 Matters Raised in Submissions

ENA submit that it is not up to IRIC to question Court determinations. Each of Alinta, the ENA and Epic Energy submitted that the IRIC Report skirts over the Epic Energy Decision and its implications in a short footnote.

Both Alinta and the ENA submitted that the Epic Energy Decision found that the concept of competition encapsulated in the Code is “workable competition” rather than “perfect competition”, but the implications of this have not been brought out in the IRIC Report.

Alinta submits that the “Price = Marginal Cost” outcome ascribed to the equilibrium condition under perfect competition cannot be applied to infrastructure industries. It is argued by Alinta that the long run has to be looked at as well as the short run. In the long run a utility with declining average cost will not cover its costs, and investment will not take place unless average costs are covered. Alinta also refers to the following passage from the IRIC Report (p.9):

In essence, the role of the regulator is to ensure that returns made by investors who purchase an asset by virtue of their share ownership in a firm, earn only those returns which a competitive market would provide to the most skilful managers of that particular asset in the face of numerous competitors, and not supernormal profits associated with a lack of competition and ability to abuse a position of market power.

Alinta claims that by constraining the regulated firm’s earnings “to those which a competitive market would provide to the most skilful managers” is not consistent with the Epic Energy Decision, which held that the concept of competition referred to in the Code is “workable competition”. CCIWA also raises the Epic Energy Decision’s reference to “workable competition”, adding that it is a “lesser form” of competition than perfect competition.

### 3.2.3 The Authority’s Response

The Authority concurs with the parties making submissions that the IRIC Report could have included a more thorough analysis of the implications of the Epic Energy Decision for consideration by regulators of proposed rates of return.

The submissions do not expand on what the specific implications of the Court’s determination with respect to “workable competition” are for regulation and determination of regulatory rates of return. The Authority has examined this issue separately from the IRIC study and notes that Dr. Darryl Biggar recently undertook an analysis of the implications of the Court’s decision for regulatory practice.<sup>3</sup> Biggar proposed that the Court’s intention was to make it clear that the regulator’s task under the Code is *not* to mimic the outcomes of a narrow interpretation of competition, such as the text-book definition of “perfect competition”, but that the detailed task of interpretation is up to the regulator:

It is not necessary for the purpose of this decision to attempt to explore fully the implications of this in the full understanding of s 8.1(b). That is primarily the task of the Regulator within the bounds of the intended meaning of the provision.<sup>4</sup>

<sup>3</sup> Biggar, Darryl (26 August, 2003), On “workable competition”, “Replicating the Outcomes of Competitive Markets” and “The Implications of the Epic Decision,”, Attachment 1 of ACCC (2003), *Submission to the Productivity Commission Review of the Gas Access Regime*, 15 September.

<sup>4</sup> Re Dr Ken Michael AM; Ex Parte Epic Energy (WA) Nominees Pty Ltd & Anor [2002] WASCA 231, Para. 128.

The Authority notes that the concept of workable competition dates from J.M. Clarke's 1940 formulation.<sup>5</sup> A major weakness of the concept is the numerous interpretations of what workable competition entails in terms of characteristics or outcomes. The Court indicated that a key property of workable competition is that "no firm has a substantial degree of market power." In network industries such as natural gas distribution and in Australian pipeline markets, the Court's opinion was that firms do have substantial market power and thus the objective of regulation should be mimicking of the outcomes of workable competition. Such outcomes, according to the Court decision in the Epic Energy case, could include the following.

- A workably competitive market may well tolerate a degree of market power, even over a prolonged period.<sup>6</sup>
- In a workably competitive market past investments and risks taken may provide some justification for prices above the efficient level.<sup>7</sup>

The Authority considers that the interpretation of such outcomes may depend on specific circumstances. For example, there may be no need to tolerate a degree of market power, particularly if this implies inordinately high price-cost margins, unless there are potential offsetting benefits in the long-term such as innovation, which ultimately reduces prices and/or increases quality of service for customers, or encourages new entry of service providers to the market that drives competitively efficient outcomes. If such potential benefits are absent, such as in a natural monopoly with little incentive for innovation, it may not be in the interests of long-term efficiency to tolerate the exercise of market power.

At no point does the IRIC Report suggest that regulation should aim to achieve the perfect competition outcome of setting price equal to marginal cost. The discussion in the IRIC Report of greenfield investments indicates that it does not accept that the outcome of price equal to marginal cost will provide an appropriate solution in the case of declining cost infrastructure industries. This indicates that the "competitive market" that IRIC refers to is a market that is characterised by "effective competition", a term that has wider currency in economics and regulation than "workable competition", but is nevertheless consistent with it.

The Authority agrees, however, that the IRIC Report's (p.9) reference to "numerous competitors" could give the impression that it is making a reference to "perfect competition" situations in which there are numerous competitors. A situation of effective or workable competition would not require numerous competitors, but enough competitors to create a situation in which genuine rivalry in price and quality takes place. Gas pipelines, particularly networks, are unlikely to ever exhibit the characteristics associated with "effective" or "workable competition" without regulatory oversight.

CCIWA does not expand on why or how "workable competition" is a "lesser form" of competition, or what the implications are for the regulatory process. Exponents of the concept of "workable competition" emphasise that it is a *process* of competition in which higher than necessary returns may be earned for some period of time, but these returns are justified in view of the long-term gains to society through the pursuit of dynamic efficiency. This view is not unlike the process of incentive regulation described by the IRIC Report, in which regulated companies are given the opportunity to stimulate demand or innovate in ways that yield a superior return to investors. Just

<sup>5</sup> Clark, J.M. (1940), "Towards a concept of workable competition", *American Economic Review*, 30, pp. 241-256.

<sup>6</sup> Re Dr Ken Michael AM; Ex Parte Epic Energy (WA) Nominees Pty Ltd & Anor [2002] WASCA 231, Para. 128.

<sup>7</sup> Re Dr Ken Michael AM; Ex Parte Epic Energy (WA) Nominees Pty Ltd & Anor [2002] WASCA 231, Para. 144.

as in a workably competitive market, an innovative firm can win market share through “dynamic efficiency” and earn superior returns for some time: a utility is provided scope for innovation under incentive regulation by the establishment of CPI-X and WACC parameters for a period of time. There should be a positive correlation between the scope that exists for dynamic behaviour and the length of the regulatory period allowed by a regulator. Hence, in principle, the current regulatory framework already regulates with a view to achieving “effective competition” that is consistent with “workable competition”.

Whilst the regulatory framework outlined in the Code, and described by the IRIC Report, is clearly consistent with the concept of workable competition, there can still be debate as to whether the full potential benefits of the dynamic nature of incentive regulation are being achieved. On the other hand, in Queensland, Energex and Allgas have proposed that “workable competition” is best mimicked by “price service offerings” (“PSOs”) that should be agreed with customers and the regulator, and then merely monitored by the regulator.<sup>8</sup> It can be argued, however, that this is very close to how the current regulatory framework operates: overall revenues are determined taking efficiency, minimum service quality and cost of capital into account, and allowing the company to set or negotiate different price-service combinations with customers.

### 3.3 RECENT DECISIONS OF THE AUSTRALIAN COMPETITION TRIBUNAL

#### 3.3.1 Matters Raised in Submissions

ENA draws attention to two recent cases determined by the Australian Competition Tribunal in relation to GasNet and Epic Energy South Australia<sup>9</sup> that were not considered by the IRIC Report, even though “both [were] released while the IRIC Report was being held by OffGAR”.<sup>10</sup> ENA holds that these decisions have important implications and their scheduled release was known. As a result of these omissions, ENA considers the IRIC Report to be “significantly outdated by key events”.

#### 3.3.2 The Authority’s Response

The IRIC Report is dated September 2003, which is well before the handing down of the Australian Competition Tribunal’s determinations on 10 December (Epic Energy SA) and 23 December (GasNet) 2003. It was clearly not possible for IRIC to have addressed these cases.

Of the two determinations of the Tribunal cited by ENA, only the GasNet determination dealt with matters relating to the rate of return.<sup>11</sup> In this case, the Tribunal determined that:

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<sup>8</sup> Allgas Energy Ltd (29 August, 2003), *Submission to the Productivity Commission: Review of the Gas Access Regime*.

<sup>9</sup> Application by GasNet Australia (Operations) Pty Ltd [2003] AcompT 6; and Application by Epic Energy South Australia Pty Ltd [2003] AcompT 5.

<sup>10</sup> ENA (February 2004) *Submission to the WA Economic Regulation Authority: Review of Rate of Return Methodologies and Practices*, p. 3.

<sup>11</sup> The key matter determined by the Tribunal in the case of Epic Energy South Australia related to asset valuation. The Tribunal rejected the ACCC’s approach in estimating asset replacement costs of adopting the lowest possible estimates of the unit costs of pipelines rather than a median value where a range exists. Whilst this may have important implications for the regulatory process, it is an issue that lies outside of the scope of the IRIC Report, which is titled “Review of Rate of Return Methodologies and Practices” and, as outlined in the introduction (p. 1), deals with CAPM and rate of return issues, and not issues of asset valuation.

- An allowance of 25 basis points per annum for debt raising costs above the debt margin be used in determining Total Revenue, rather than 12.5 basis points allowed by the ACCC; and
- A real risk free rate of 3.33 per cent (based on 10 year Commonwealth Government bonds) be used for determining the Rate of Return.

In respect of the Tribunal's determination on the real risk free rate, the IRIC Report came to the same conclusion as the Tribunal with respect to use of the 10 year Commonwealth Government bond rate as the base for the CAPM, rather than the 5 year rate, as had been proposed in the case of GasNet by the ACCC. IRIC (p. 15) states that "almost all jurisdictions use a government bond that is relevant in the circumstances, generally the ten-year bond." On page 25, the IRIC Report states that the "methodology of the Western Australian Gas Pipelines Access Regulator" is to calculate the risk free rate "according to a 20-day moving average on a ten year Treasury bond." This approach is not questioned by the IRIC Report.

In regard to the Tribunal's determination on an allowance of 25 basis points for debt raising costs, the Tribunal did not provide reasons for this determination. As such, the Authority does not consider that the Tribunal's decision informs an examination of debt issuance costs.

In 2004, the Tribunal made a further determination on an appeal against a regulatory determination under the Code, in this instance an appeal against the ACCC's Final Decision on a proposed Access Arrangement for the Moomba to Sydney Pipeline.<sup>12</sup> In this determination, the Tribunal upheld the application for review of the ACCC's Final Decision in respect of the ACCC's determination of a cost of debt on the basis of an assumed credit rating of BBB+ rather than BBB. The Authority notes, however, that the Tribunal's decision in this instance was made on the basis of the arguments made by the ACCC in its decision and not on the basis of substantive information relevant to making an appropriate assumption as to the credit rating and hence debt margin. As such, the Authority does not consider the Tribunal's decision on this matter to be informative in a rigorous consideration of the debt margin for a regulated business.

### **3.4 PRODUCTIVITY COMMISSION'S REPORT**

#### **3.4.1 Matters raised in submissions**

All Australian-based parties that made submissions refer to the fact that the IRIC Report did not consider the findings of the Productivity Commission's Draft Report on review of the Gas Code ("PC Draft Report").

#### **3.4.2 The Authority's Response**

While the IRIC Report was released some two weeks after the release of the PC Draft Report in December 2003, it was completed in September 2003 (i.e. prior to the PC Draft Report). Therefore, the IRIC Report could not have addressed the PC Draft Report, and a discussion of the PC Draft Report was clearly outside of the IRIC Report's terms of reference.

Since the receipt of submissions, the Productivity Commission has issued its Final Report. In addition to indicating concern as to sole use of the CAPM by regulators in making determinations

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<sup>12</sup> Application by East Australian Pipeline Limited [2004] AcompT 8.

on rates of return (as addressed above at section 3.1.3), the Commission made conclusions and recommendations on a number of other matters relating to determination of the rate of return, including that:

- a regulator should be obliged to accept assumptions made by a service provider as to parameter values for the CAPM if the values used by the service provider “lie within the range of plausible estimates”;<sup>13</sup>
- that there is disagreement amongst technical experts about how regulatory rates of return compare to those in other countries;<sup>14</sup> and
- that a study should be undertaken by a group of recognised experts in the field of financial economics that considers whether a robust method can be developed for setting businesses’ expected rate of return on capital under incentive regulation.<sup>15</sup>

In regard to the first of these conclusions, the Authority does not accept that a requirement for a regulator to accept any assumptions made by a service provider that lie within a “plausible range” is either currently required by the Code, or is consistent with ensuring that regulatory rates of return are commensurate with the cost of capital to service providers. To the contrary, the Authority considers that such a requirement on a regulator would create an incentive for service providers to systematically make assumptions that are the most favourable to their own interests, creating a bias in the determination of regulatory rates of returns that would cause determinations to be inconsistent with the objectives of section 8.1 of the Code.

### **3.5 PRICE MONITORING AS AN ALTERNATIVE REGULATORY APPROACH**

#### **3.5.1 Matters raised in submissions**

Both CCIWA and the ENA argue that the IRIC Report limits its consideration of alternatives to the CAPM as a regulatory approach. The ENA submits that the IRIC Report considers only a narrow range of alternatives to the CAPM. Both CCIWA and the ENA submit that price monitoring should have been considered by IRIC.

#### **3.5.2 The Authority’s Response**

It was outside of IRIC’s scope to have considered price monitoring as an alternative to the CAPM. A major issue addressed by the IRIC Report (p. 1) was to “review the Capital Asset Pricing Model (CAPM) and give consideration to other relevant approaches.” The “other relevant approaches” must be interpreted within the framework of cost-based price or revenue regulation. The IRIC Report does review some alternative approaches to the CAPM, such as the Gordon Growth Model (“GGM”), the Arbitrage Pricing Model (“APT”) and the Fama-French Three Factor Model (FFM). It also considers a number of shortcomings of the CAPM approach. IRIC was not engaged to undertake a review of alternative regulatory frameworks, such as the price monitoring approach, relative to the current framework of cost-based price regulation.

<sup>13</sup> Productivity Commission, 11 June 2004, *Review of the Gas Access Regime*, Productivity Commission Inquiry Report No. 31, p 300.

<sup>14</sup> *Ibid.*, p 302.

<sup>15</sup> *Ibid.*, p 302.

## 4 THE COST OF REGULATION

### 4.1 COSTS OF THE CURRENT REGULATORY APPROACH

#### 4.1.1 Matters raised in submissions

ENA refers to an indication in the PC Draft Report that there is a “high cost” associated with the current regulatory approach. Alinta highlights the need to focus on practical outcomes rather than theory.

#### 4.1.2 The Authority’s Response

The scope of the IRIC Report did not allow for a consideration of the cost of regulation under the existing framework.

However, the Authority notes that the cost of regulation was not actually estimated by the Productivity Commission for the purposes of its Draft Report or subsequent Final Report. In its Final Report, the Commission deliberately refrained from undertaking a quantitative assessment of costs and benefits, instead taking the approach to “identify the various costs and benefits, then illustrate them with qualitative and anecdotal evidence from inquiry participants”.<sup>16</sup> The Commission concluded that there are both benefits and costs to the current regime and made a number of recommendations as to changes that could be made to the regime to reduce costs.<sup>17</sup>

The Authority has noted the Commission’s findings and recommendations on the costs and benefits of the current regime, but does not propose to discuss, in this document, their relevance to the determination of rates of return under the regime.

### 4.2 ASYMMETRIC REGULATORY COSTS

#### 4.2.1 Matters Addressed in the IRIC Report

Whilst recognising that poor regulatory practice has the potential to claw-back returns (pp.53-55), the IRIC Report (p.30) makes the following points about the nature of regulatory risk:

As experience with the regulatory regime increases, the level of uncertainty and regulatory risk declines. Regulatory risk is clearly diversifiable as investors can hold stocks in both regulated and unregulated industries.

#### 4.2.2 Matters Raised in Submissions

Each of Alinta, CCIWA, ENA and GGT made submissions on the issue of asymmetric regulatory costs and “regulatory truncation”. CCIWA argues that asymmetric returns result from the fact that the achievement of high profits by a utility will result in claw-back by the regulator. Alinta submits that a higher regulatory return is required to compensate for “regulatory truncation”.

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<sup>16</sup> Ibid., p 85.

<sup>17</sup> Ibid., pp 83 to 160.

Alinta, CCIWA and the ENA submit that the costs of under-compensating owners of infrastructure, and therefore finding investment curtailed, are greater than the costs of over-compensating owners of infrastructure assets, but this has not been recognised by the IRIC Report.

Alinta submits that regulatory risk should be treated as being within a third category of business risks – those that are neither non-systematic nor non-diversifiable – that are not currently recognised in the application of the CAPM.

#### **4.2.3 The Authority’s response**

The IRIC Report does address the issue of “regulatory truncation” even though it uses different terminology. In its discussion of greenfields investment, the IRIC Report makes the point that truncation of returns is not a significant issue in forward-looking, incentive-based regulation. A similar point was made in the ACCC’s submission to the Productivity Commission’s review of the Gas Code:

Regulatory truncation requires an expectation that there will be ex post truncation of high return outcomes. However, regulatory practice to date has been to apply an incentive based framework in which the time path of regulatory tariffs are determined in advance so that the service provider has the ex ante expectation of achieving the benchmark CAPM rate of return.... The service provider may increase its rate of return by pursuing cost reductions and by stimulating market demand for its services.<sup>18</sup>

GGT’s claim that it doesn’t hold other assets and therefore cannot diversify regulatory asymmetric risks is not relevant. Under generally accepted finance theory and commercial practice, non-systematic risks are not relevant to determination of a rate of return because it is assumed that they are diversifiable in a portfolio of investments. In this, it is not the diversification opportunities of the utility that are relevant, but those of investors. That is, since investors who could purchase the assets of the utility are capable of diversifying investment portfolios, the returns that these investors require and therefore the amount they are willing to pay for the regulated asset will depend only on the non-diversifiable risk of the asset. For the same reason, Alinta’s submission that regulatory risks are “non-systematic and non-diversifiable” is also not sustainable.

### **4.3 REGULATORY ERROR**

#### **4.3.1 Matters Addressed in the IRIC Report**

The IRIC Report implicitly recognises that there is scope for regulatory error, since there is uncertainty inherent in the use of the CAPM framework. The imperfect nature of the CAPM framework is acknowledged by the IRIC Report, but it is concluded that there are no clearly superior methodologies available.

#### **4.3.2 Matters Raised in Submissions**

ENA (p.7) also points to the scope for “regulatory error” in relation to cost of capital determinations, which it says has been a key issue in price reviews in recent years, but was ignored in the IRIC Report. ENA notes finding 7.5 of the PC Draft Report, which states that there “is a high potential for regulatory error when approving reference tariffs”.

<sup>18</sup> ACCC (17 March, 2004), *Submission to the Productivity Commission Draft Report: Review of the Gas Access Regime*, p. 22.

### 4.3.3 The Authority's Response

The Authority acknowledges that scope for regulatory error exists, just as scope for business error exists. It is also noted that the finding of the Productivity Commission cited by ENA in relation to regulatory error was maintained by the Commission in its Final Report.<sup>19</sup>

Regulators can reduce the scope for regulatory error by adopting a relatively conservative stance on key CAPM parameters and operational forecasts. By taking a relatively conservative stance on CAPM parameters and efficiency/volume targets, regulators will trade-off some of those benefits to reduce the risk that regulatory rates of return underestimate the true cost of capital. Whilst the IRIC Report does not explicitly point to this aspect of regulatory behaviour, it does (p. 56) note the "importance of the Regulator coming to sound decisions that ensure that firms will earn appropriate rates of return". The Authority acknowledges that the IRIC Report could have made this point more clearly and could have pointed to instances where a conservative approach in favour of the regulated companies has been adopted in spite of objective evidence that would have indicated otherwise.<sup>20</sup>

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<sup>19</sup> Productivity Commission, 11 June 2004, *Review of the Gas Access Regime*, Productivity Commission Inquiry Report No. 31, Finding 7.9.

<sup>20</sup> For example, see Essential Services Commission (October 2002) *Review of Gas Access Arrangements: Final Decision*, p. 342, where little weight was accorded to UK and US proxy beta data suggesting a lower beta than the one determined.

## 5 THE CAPITAL ASSET PRICING MODEL

### 5.1 USE OF THE CAPM BY REGULATORS

#### 5.1.1 Matters Addressed in the IRIC Report

The IRIC Report sets out the main problem faced by regulators (and regulated companies), being to estimate the cost of capital required by investors and recognises that under conditions of uncertainty, a degree of discretion must be exercised by regulators in order to estimate an appropriate rate of return that reflects current, forward looking rates of return required by investors.

#### 5.1.2 Matters Raised in Submissions

ENA submits that the CAPM is an imprecise measure and that regulatory discretion is high and quotes the PC Draft Report (Draft finding 7.6) that “while some refinements to the existing regulatory approach are needed, there is a sound basis for an alternative less costly approach.” Contrasting this opinion of the PC, ENA states that IRIC takes the view that the CAPM remains appropriate because it holds (p.14) that:

...despite its shortcomings, it has the least onerous information requirements and is, of the methods available, the least subject to judgement.

#### 5.1.3 The Authority’s Response

The Authority notes that ENA’s citing of finding 7.6 in the PC Draft Report is out of context, and that this finding was made in relation to the regulatory regime *in toto* and not in relation to use of the CAPM for determination of regulatory rates of return. This finding was maintained by the Commission in its Final Report.<sup>21</sup> The “alternative less costly” approach that is addressed by the Commission in both its Draft and Final Reports is the possibility of price monitoring, which is an alternative approach to regulation, not an alternative method of estimating rates of return.

As already noted above, the consideration of alternative regulatory approaches was not within the scope of the study undertaken by IRIC. However, the Authority notes that if alternative regulatory approaches had been considered, the discretion associated with the use of the CAPM by Australian regulators might have appeared somewhat lower than that employed in some other regulatory jurisdictions. An example is provided by the “Risk Premium” approach applied to Canadian pipelines by the Canadian National Energy Board. Under this approach allowed equity returns are determined by a fixed margin, which is applied to the risk free bond rate. Adjustments are made to the margin for divergent risk profiles. An overview of the Canadian National Energy Board approach is contained in the submission of Hawkins Gas.

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<sup>21</sup> Productivity Commission, 11 June 2004, *Review of the Gas Access Regime*, Productivity Commission Inquiry Report No. 31, Finding 7.10.

## 5.2 THE EFFICIENT MARKETS HYPOTHESIS

### 5.2.1 Matters Addressed in the IRIC Report

The IRIC Report raises the efficient markets hypothesis on page 10:

However, under the efficient markets hypothesis, expectations of individual investors should (on average) be correct, and hence historical price data will accurately reflect expectations. The degree to which the efficient markets hypothesis is correct is a matter of some conjecture in the literature (see section 2.2.3.4) particularly when markets experience shocks not anticipated by investors, but the use of historical information in appropriate modelling scenarios remains the best approach generally available.

### 5.2.2 Matters Raised in Submissions

Alinta challenges the validity of the IRIC Report's statement that "under the efficient markets hypothesis expectations of individual investors should (on average) be correct, and hence historical price data will accurately reflect expectations." Alinta (p.3) argues:

This is a misunderstanding of the hypothesis, which is not that investors are always right in hindsight but rather that all available information is incorporated into the market price. It is however, perfectly possible for these expectations to be proven wrong.

### 5.2.3 The Authority's Response

There does not appear to be a contradiction in the statements by IRIC and Alinta. Under the "weak form" of the efficient markets hypothesis, all information in historical price data is incorporated into share prices. Under the "semi-strong" form of the efficient markets hypothesis all publicly available data are incorporated into share price, so that no arbitrage opportunities are possible without insider information. Furthermore, the IRIC Report (p.10) qualifies its statement and allows for future information that will prove expectations wrong ex post, as stated by Alinta.

## 5.3 CONSISTENCY WITH OTHER REGULATORS

### 5.3.1 Matters Addressed in the IRIC Report

The IRIC Report reviews assumptions adopted by other regulators in respect of parameters of the CAPM with conclusions as follows.

- *Risk-free rate* – evidence is cited that Australian regulators used 10-year treasury bonds in 16 out of 18 recent decisions.
- *Market Risk Premium* – "most regulators utilise a figure of six percent."
- *Equity beta* – "Later Australian regulatory decisions have often based decisions on beta on the perceived riskiness of the particular pipeline being regulated compared to those for which betas have been determined in the past in Australia."
- *Capital Structure* – "The gearing level of 60% used by Australian regulators in gas regulatory decisions appears to be consistent with actual levels of a majority of listed gas utilities."

- *Inflation* – “Inflation is generally inferred from the difference between real and nominal rates (from the relevant bonds) via the Fischer Transformation method. All Australian gas access regulators now use this approach.”
- *Gamma* – “The value chosen for gamma is generally 0.5.”
- *Statutory or effective tax rate* – Virtually all Australian gas access regulators that use this approach use the statutory taxation rate.
- *Pre-tax real or post-tax nominal WACC* – Most regulators in Australia, apply the pre-tax real WACC approach.

In respect of all CAPM parameters, IRIC found that assumptions made by the Western Australian regulator were consistent with assumptions made by other regulators throughout Australia.

### 5.3.2 Matters Raised in Submissions

ENA questions the IRIC Report’s (p.50) conclusion that,

The Regulator is applying the CAPM framework and calculates the various parameters within this framework in an appropriate manner, consistent with its application in other Australian jurisdictions.

The ENA cites differences between Australian regulators with respect to such key issues as:

- the use of statutory or effective tax rates in cost of capital;
- the use of 5-10 year bond rates in estimating the risk free rate;
- value of imputation credits of between 0.3-0.5;
- provision for a return on working capital; and
- compensation for various classes of asymmetric risk.

### 5.3.3 The Authority’s Response

The Authority takes the view that ENA’s arguments are not valid with respect to tax rates, bond rates and imputation credits, where the IRIC Report has shown that regulatory practice in Western Australia has been in line with general Australian regulatory practice, despite some variation.

The Authority also notes that where variation between regulators is apparent, that such variation should be considered in the context of the totality of assumptions made in applying the CAPM, as there are offsetting CAPM parameters and the main issue is whether the overall cost of capital applied is sufficient to attract investment capital.

## 5.4 THE APPROACH USED BY INVESTORS

### 5.4.1 Matters Addressed in the IRIC Report

The IRIC Report (p.9) claims that the CAPM “is the asset pricing model most widely used by practitioners in the finance industry”, and cites evidence (p.14) confirming that this is the case.

#### 5.4.2 Matters Raised in Submissions

CCIWA submits that under section 8.30 of the Code the regulatory rate of return should be consistent with market conditions and the level of risk, and questions whether the IRIC Report's approach to examining required rates of return on investment is consistent with industry practice.

#### 5.4.3 The Authority's Response

In its submission, CCIWA does not itself propose what the industry practice is with respect to infrastructure investments.

With respect to the valuation of existing energy infrastructure assets, the May 2003 expert report on United Energy by Deloitte Touche Tohmatsu provides an insight into the approach taken by private enterprise.<sup>22</sup> The CAPM approach is a prominent part of the analysis, although the exact methodology differs in some ways from that employed by Australian regulators.

### 5.5 VALIDITY OF THE CAPM APPROACH

#### 5.5.1 Matters Addressed in the IRIC Report

The IRIC Report concludes (p.50) that, "although some problems exist, the CAPM remains the most common and, from data availability and implementability (*sic*) perspective, most appropriate mechanism, for use in the regulatory framework in WA." IRIC also indicates that this view is held by the majority of academics as well as the majority of finance practitioners.

#### 5.5.2 Matters Raised in Submissions

Alinta indicates (p.3) agreement with the IRIC Report that despite its shortcomings, the CAPM is the best available model. ENA (p.14), however, criticises the IRIC Report for lacking rigorous analysis of the limitations of the CAPM approach and the recommendation for its continued adoption despite itself noting a lack of compelling evidence that this model is superior to a range of theoretical alternatives.

#### 5.5.3 The Authority's Response

The IRIC Report does discuss the positive and negative attributes of alternative approaches for determination of rates of return such as the Fama-French 'three factor' model, the Gordon Growth Model and Arbitrage Pricing Theory Model. This discussion provides a rationale for why the CAPM model is used most widely in finance. As mentioned earlier, the risk premium approach and comparable companies approaches that are sometimes practiced in North America could have been examined.

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<sup>22</sup> Deloitte Touché Tohmatsu (May 2003), *United Energy Limited – Independent Expert's Report in Relation to Proposed Scheme of Arrangement*.

## 5.6 THE MARKET RISK PREMIUM

### 5.6.1 Matters Addressed in the IRIC Report

The IRIC Report notes that theoretically, expected returns on all assets in the economy should be included in estimating the Market Risk Premium (MRP), however, in practice expected returns in the stock market are focussed on. Whilst the MRP is a forward-looking concept, generally the MRP is estimated on the basis of historical trends, although surveys of the returns expected by market participants could be used. As an example, the UK Office of Gas and Electric Markets (OFGEM) reviews market and institutional investor estimates of expected returns.

IRIC notes that in Australia, Professor Kevin Davis has used a forward-looking methodology, and suggested a downward trend in the MRP over time, and whilst most Australian regulators apply an MRP of 6 percent, the ACCC appears to have foreshadowed future reductions in the MRP.

### 5.6.2 Matters Raised in Submissions

Both Alinta and CCIWA comment that the study by Professor Kevin Davis in 1998,<sup>23</sup> which had reported a declining MRP, is now outdated given that it is 6 years old and the risk associated with the events of 11 September 2001 has raised required returns in the market.

### 5.6.3 The Authority's Response

The Authority is of the view that the observations of Professor Kevin Davis about a historical downward trend in the MRP have not necessarily been outdated by the last 6 years of experience, including the events of 11 September 2001. The events of 11 September 2001 do not appear to have had any discernible impact on the long-term trend in market volatility, although insurance premiums have been affected and various regulators are giving greater weight to pass-through cost items associated with insurance and terrorism events. Moreover, two studies recently commissioned by the ACCC have reaffirmed the reasonableness of current Australian practice in applying a regulatory MRP of around 6%.<sup>24</sup>

## 5.7 VALUATION OF FRANKING CREDITS

### 5.7.1 Matters Addressed in the IRIC Report

The IRIC Report (pp.23-25) notes that Australian regulators give consideration to the dividend imputation system and the valuation of franking credits. IRIC indicates that in 1999 the ACCC had set down a non-discriminatory policy for the treatment of dividend imputation depending on country of ownership and that the inability of foreigners to benefit from imputation credits may be offset by other CAPM parameters.

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<sup>23</sup> Davis, Kevin (18 March 1998), *The Weighted Average Cost of Capital for the Gas Industry*, report prepared for: Australian Competition and Consumer Commission and Office of Regulator General.

<sup>24</sup> See The Allen Consulting Group, (March 2004), *Review of Studies Comparing International Regulatory Determinations*, Report to the Australian Competition and Consumer Commission; and Lally, Martin, (June 2002), *The Cost of Capital Under Dividend Imputation*, Prepared for the Australian Competition and Consumer Commission.

IRIC indicates that Australian regulators have generally assumed a value of franking credits of 50 percent of face value (a gamma value of 0.50).

### 5.7.2 Matters Raised in Submissions

Both the Alinta (pp.4-5) and CCIWA submissions raise the issue of gamma. Alinta notes that the ACCC has been discussing the possibility of applying a gamma of 1, rather than the gamma of 0.50 that currently applies. Alinta notes that foreign investors cannot utilise imputation credits, and a recent study by Cannavan, Finn and Gray has shown that credits “for the average company are valued at around 33 cents in the dollar by the representative investor.”<sup>25</sup> On this basis, Alinta argues that gamma “should be no more than 50% and there is a case to be made for less”. CCIWA (p. 2) goes further, arguing that, “given the inability of foreigners to take advantage of imputation credits... a gamma value closer to zero may be more appropriate.”

### 5.7.3 The Authority’s Response

The Authority notes that the IRIC Report does not challenge Australian regulatory practice with respect to the value of franking credits (assuming a gamma value of 0.50) based on the findings of Hathaway and Officer.<sup>26</sup> It is also noted that IRIC did not address the latest research on this issue. In particular, the recent work by Associate Professor Martin Lally argues that there needs to be a consistent and articulated approach. If the Officer model is applied in determination of the WACC, which assumes the Australian capital market is segmented rather than integrated with world capital markets, then consistency requires an assumption that virtually all imputation credits are utilised, so that gamma should be set equal to unity.

The Authority considers that it should also be recognised that the corollary of arguing for integrated world capital markets and a gamma of zero, is that consistency would require the adoption of a world MRP, which would be less than 6 percent<sup>27</sup> and measurement of beta risk against a world market index. The Alinta submission appears to foreshadow these interactions between risk, gamma and a regulatory paradigm that assumes international capital market integration and Alinta implicitly suggests that Australian regulators should assume a domestic or segmented-market approach. CCIWA does not give recognition to the question of consistency in respect of the gamma value relative to other CAPM parameters and estimates of the WACC.

## 5.8 POST-TAX NOMINAL WACC VS. PRE-TAX REAL WACC

### 5.8.1 Matters Addressed in the IRIC Report

The IRIC Report (p.22) argues that, “neither the pre-tax real nor the post-tax nominal approaches have been clearly shown to be superior” in specification of a rate of return, although IRIC recognises that the two different approaches may differ in effects on a regulated business. In particular, the IRIC Report recognises that if the statutory tax rate is used by a regulator in determination of a pre-tax real WACC from a post-tax WACC, asset owners are favoured due to

<sup>25</sup> Cannavan, D. F. Finn and S. Gray (2002), *The value of imputation tax credits*, working paper, University of Queensland and Duke University.

<sup>26</sup> Hathaway N. and R. Officer, (1995), *The Value of Imputation Tax Credits*, Finance Research Group, Melbourne Business School.

<sup>27</sup> See Dimson, Elroy, Paul Marsh and Mike Staunton (2002), *Triumph of the Optimists: 101 Years of Global Investment Returns*, Princeton University Press, Princeton, New Jersey and Oxford. They argue for a world risk premium of around 4%.

accelerated depreciation and other tax concessions provided by the government that cause the effective rate of tax to be less than the statutory rate. IRIC (p. 23) concludes that:

The issue for Government therefore is whether regulators should seek to ensure that tax concessions provided to natural monopolies are passed on to consumers in the interests of stimulating increased demand, investment and economic development.

### **5.8.2 Matters Raised in Submissions**

Both Alinta and CCIWA criticise the IRIC Report for not including mention that the major advantage of the pre-tax real WACC approach is that it is less intrusive than the post-tax nominal WACC approach.

Alinta (p.4) submits that the IRIC conclusion “would be more balanced were it to refer to the trade-off between maintenance of a tax benefit provided to stimulate investment and lower prices to consumers.” Alinta’s view is that tax benefits inherent in the pre-tax approach have historically been there to “encourage investment in long life assets” and on this basis such benefits should be retained.

### **5.8.3 The Authority’s Response**

The Alinta/CCIWA argument that a post-tax nominal WACC approach is more intrusive than a pre-tax approach is presumably based on a requirement under a post-tax approach for more company-specific information to be obtained by the regulator.

IRIC did not examine whether the post-tax approach necessitates a regulator imposing onerous information requirements on a service provider, or whether the greater information requirements would or would not be justified by a better regulatory outcome under a post-tax approach.

The Authority has in the past used pre-tax rates of return in accordance with regulatory practice of Australian regulators other than the ACCC. The issue is a matter of on-going consideration by the Authority.

## 6 ADEQUACY OF REGULATORY RATES OF RETURN

### 6.1 INTERNATIONAL COMPARISONS

#### 6.1.1 Matters Addressed in the IRIC Report

The IRIC Report makes a comparison of recent average real post-tax rates of return across jurisdictions in North America, the United Kingdom, and Australia, based on a study by NERA.<sup>28</sup> NERA concluded that the Australian returns were comparable with the US and significantly higher than in the UK.

The IRIC Report also examines real pre-tax WACCs allowed by Australian regulators in the gas transmission and distribution industry between 1998 and 2003. It is concluded (p. 40) that:

... decisions by the Western Australian Regulator on rates of return have been towards the upper end as compared with decisions by other regulators around Australia.

The IRIC Report also undertakes a review of the share price performance of four listed Australian energy stocks and concludes that, “all outperformed the All Ordinaries Index in the six months from October 2002 to April 2003.” On this evidence IRIC indicated that it would be “difficult to conclude that gas pipeline regulation in Australia is impeding the ability of firms to attract investors.”

The IRIC Report includes a comparison of rates of return in different Australian industries based on Australian Bureau of Statistics data for 1995/6 to 1999/00. It is concluded that, “the Regulator has calculated access reference tariffs based on a WACC of almost twice the average actual rate of return on assets made in the market over the five year period.”<sup>29</sup>

Finally, the IRIC Report compares returns on common equity earned by US and Canadian gas pipeline companies, concluding that:

“The WA Regulator is thus allowing returns on equity which are approximately double (on average) of those actually achieved by gas pipeline firms in the US”, and

“returns on equity offered by the Regulator in WA are roughly comparable to, and in fact may be better than, those offered by Canadian regulators.”

#### 6.1.2 Matters raised in submissions

Alinta indicates agreement with what it terms the “key conclusion” of the IRIC Report’s (p.40) section on rates of return in Australian regulated industries that:

Simplistic comparisons of rates of return allowed in regulated industries in different national jurisdictions does not add substantially to the rigorous assessment of the reasonableness of rates of return offered in a particular jurisdiction.

<sup>28</sup> NERA (March 2001), *International Comparison of Utilities’ Regulated Post Tax Rates of Return in: North America, the UK and Australia*, Report to the Australian Competition and Consumer Commission.

<sup>29</sup> IRIC Report, P44.

Alinta (p.6) also agrees with the IRIC Report that “there is no basis for seeing Australian decisions as necessarily more generous than those allowed elsewhere simply because they appear higher.”

The ENA submission (p.10) criticises the IRIC Report’s comparison of international rates of return as it:

relies narrowly on two pieces of data which are of limited general application, in particular:

- historic rates of return from the mature gas transmission sector in the United States; and
- historic rates of return for 12 gas distribution businesses operating in Canada

ENA (p. 11) comments that the ABS data quoted by the IRIC Report show that “the regulated energy and water sector has one of the lowest measured returns on assets of any sector in the Australian economy”. ENA provides its own table drawn from ABS data showing that for the period 1995-96 to 1999-2000, for four industry sectors with an average gearing of around 60 percent, the average nominal pre-tax return on net worth was 19 percent compared with an estimated 17.1 percent for Australian regulatory decisions.

ENA (pp.11-13) devotes a considerable part of its submission to a summary of the results of a study by Network Economic Consultants (NECG), that it terms “the most comprehensive comparison and analysis of Australian and international cost of capital decisions made to date”. The ENA notes that according to the NECG study, “regulatory outcomes have been comparable to United Kingdom decisions, but significantly lower than cost of capital decisions made in the United States.”

The submission from Hawkins Gas criticises the reliance of the IRIC Report on rate of return on equity data for US pipelines. Hawkins Gas submits that reliance on data for mature US pipelines is inappropriate because these are well-established businesses, and what is most relevant to the Australian case is the provision of regulatory returns sufficient to attract new investment. Therefore, only the returns on new US pipelines should be looked at as being comparable.

Hawkins Gas reports that a return on equity of 9.56 percent (relative to a forecast Canada bond yield of 5.15 percent) is being applied currently by the National Energy Board, the major gas transmission pipeline regulator in Canada. However, Hawkins Gas (p.3) also submits that it is more appropriate to make comparisons with the rate of return allowed for new pipelines in Canada.

### **6.1.3 The Authority’s Response**

The claim by Alinta that the qualifier in the IRIC Report can be summarised as “no basis for seeing Australian decisions as necessarily more generous” appears to overstate the conclusions drawn by IRIC (p.50), which can be seen from the following:

Whilst comparisons of regulated rates of return in jurisdictions in Australia and overseas are fraught with difficulties, and much more complex than the relatively simple analysis of this report, on the basis of available evidence, it is difficult to conclude that the rates of return being utilised by the WA Regulator are below the opportunity cost of capital for the gas pipeline industry.

Section 4 of the IRIC Report incorporates disclaimers about its “very rough ‘ballpark’ estimate of ranges” and warnings about its “very superficial comparison[s]”.

There is some justification in ENA’s criticism of the IRIC rate of return data, since much of the data relate to an earlier period, and relate to actual returns rather than returns allowed by the Regulator.

Moreover, it is not clear whether the FERC data cited by IRIC are real or nominal. The IRIC Report (p.47) also effectively negates the Australia versus US comparison in its Figure 1 by its qualification that “in order to establish the appropriateness of the rates of return offered by the regulator with sufficient rigour, one would need to conduct a detailed review of the risk (or beta) of all of the pipelines in the FERC sample and those of WA”.

The IRIC Report relies on its table 4 (drawn from a study by The Allen Consulting Group<sup>30</sup>) to conclude that “Australian energy companies are roughly twice as risky as their American counterparts”. This would appear to provide some justification for higher returns being provided by Australian regulators, but this theme is only hinted at. However, the IRIC Report does not consider the full implications of the report by The Allen Consulting Group, which remains cautious about the recent observation of exceptionally low utility betas in North America due to the disruption caused to the S&P 500 stock market index by the “IT bubble”.

ENA’s observation that “the regulated energy and water sector has one of the lowest measured returns on assets of any sector” deserves some comment. First, the regulated utility sector can be expected, due to its stability of market and regulated cash flows, to be relatively low risk. Hence, other things (including gearing) being equal, a lower actual rate of return may be expected in this sector compared with the market as a whole. Secondly, the inclusion of water companies can be particularly misleading given their relatively high asset base, public ownership and their often significant cross-subsidy element.

The comparisons of allowed returns of regulated companies and realised returns in ENA’s Table 1 are not valid. Whilst the average gearing level of the four sectors might be around 60%, this does not reflect the level of non-diversifiable business risk encapsulated in beta coefficients. The Australian Graduate School of Management’s (“AGSM”) *Risk Measurement Service* indicates that the average observed betas for the four sectors included by ENA (mining, manufacturing, communication services and finance and insurance) are significantly higher than for the utilities sector,<sup>31</sup> and thus higher rates of return for these sectors are not surprising.

The NECG report referred to by ENA has been reviewed in detail in a recent report by The Allen Consulting Group.<sup>32</sup> In this report, The Allen Consulting Group concludes that:

The NECG Report does not demonstrate that Australian regulators have provided “less generous” rates of return to infrastructure investors relative to other jurisdictions or alternative Australian investments of similar risk.

The report by The Allen Consulting Group finds that the NECG Report’s claims are undermined by a number of methodological flaws and some potentially biased data. For example, the NECG report’s conclusion that in electricity distribution the UK’s OFGEM “provided a higher asset beta than all the Australian decisions, and also results in a higher adjusted vanilla WACC margin than all the Australian decisions” is highly misleading. This is because the NECG report added 2.5% to the UK regulator’s 3.5% market risk premium (to make it comparable with the Australian regulators’ 6%) but failed to adjust the higher UK asset beta downwards to account for the fact that the UK utility would have a lower beta measured against an ostensibly higher-risk Australian market.

<sup>30</sup> ACG (July 2002), *Empirical Evidence on Proxy Beta Values for Regulated Gas Transmission Activities*, Report to the Australian Competition and Consumer Commission.

<sup>31</sup> For example, see AGSM (December 2002), *Risk Measurement Service*.

<sup>32</sup> ACG (March, 2004), *Review of Studies Comparing International Regulatory Determinations*, a report to the Australian Competition and Consumer Commission.

The Hawkins Gas submission is useful in providing an insight into the discretion exercised by the National Energy Board in Canada. According to Hawkins Gas (p.2):

In recent years, the NEB has issued one page letters outlining the appropriate rate of return for common equity. Since 1995, the approved rate of return on common equity generally reflects a premium over the forecast bond yield for a [sic] 10-year Government of Canada bonds. For 2004 the NEB approved a 9.56% rate of return on common equity.

However, it is not clear from the Hawkins Gas submission why new US and Canadian pipelines should be regarded as appropriate comparators for existing Australian pipelines. If there are greater investment risks associated with new pipelines, the principles of risk-reward outlined in the IRIC Report (especially with respect to greenfields proposals) would justify a higher regulated return. The Hawkins Gas warning that the “rate of return data for the overall US gas pipeline industry should be treated with caution” is a sentiment that is shared by the IRIC Report. Given these concerns and the comment that has been generated, the Authority considers that this comparison by IRIC inadequately addresses differences between Australian and US/Canadian pipelines that may give rise to differences in rates of return.

## **6.2 GREENFIELDS INVESTMENT**

### **6.2.1 Matters Addressed in the IRIC Report**

The IRIC Report devotes two and a half pages (57-59) of discussion to the issue of “greenfields developments and risk”. For example, the IRIC Report (p.57) challenges the notion of returns truncation by noting that regulation in Australia is “incentive based, not rate of return regulation”: if actual demand exceeds forecast demand higher returns will be earned. The IRIC Report also proposes that the regulatory approach “removes downside risks associated with pipeline construction” since if demand turns out to be lower than expected, “the pipeline owner retains the right to renegotiate the access arrangement.”

The Central West pipeline decision by the ACCC is held up by the IRIC Report as an example of regulatory flexibility in which depreciation methodology, tariff re-determinations in the event of less-than-anticipated demand, and longer access arrangement periods are provided as additional incentives in situations involving higher than normal risk. The IRIC Report indicates that such arrangements allow for the achievement of higher than expected returns and are fully compatible with the basic building block methodology.

### **6.2.2 Matters Raised in Submissions**

ENA questions the IRIC Report’s failure to consider the views of business in its analysis of the efficacy of the ACCC’s *Draft Greenfields Guideline for Natural Gas Transmission Pipelines*, which had been issued in June 2002. The ENA notes that the PC Draft Report’s Draft Finding 9.1 states:

The Australian Competition and Consumer Commission’s draft greenfields guideline does not substantially alter the potential for the Gas Access regime to discourage investment. This is because the published guideline:

- is only a draft (and has been so for at least 18 months)
- maintains the wide discretion that the Gas Code gives to regulators to set key regulatory parameters.

ENA submits that the debate on greenfields developments has advanced beyond the IRIC Report's analysis, with the PC's recommendation of binding rulings of non-coverage and the potential for premiums to be included in the return requirement to recognise asymmetric risk and truncated returns.

### **6.2.3 The Authority's Response**

Again, it should be noted that IRIC's report was completed before the PC Draft Report was released. None of the issues raised by the IRIC Report are debated by the ENA submission which relies only on the draft finding of the Productivity Commission, which was maintained in the Commission's Final Report (as Finding 9.1).

The views of industry on the ACCC's Draft Guideline could have been addressed more explicitly in the IRIC Report, but these views are considered nevertheless. The IRIC Report recognises and accepts that "greenfield pipeline developments may face a higher level of demand uncertainty with the possibility of asset stranding if design capacity exceeds requirements." However, the discussion presented in the IRIC Report questions the proposition that "incentive based regulation or reference tariffs result in limits to upside returns".