# Attachment 10.11

Further Update on the Required Return on Equity from Independent Expert Reports

A report by Incenta Economic Consulting

**2016/17 to 2020/21 Access Arrangement Information**

Australian Gas Networks

# Further update on the required return on equity from Independent expert reports

**Jemena Gas Networks, Jemena Electricity Networks, ActewAGL, Ausgrid, AusNet Services, Australian Gas Networks, CitiPower, Endeavour Energy, Energex, Ergon, Essential Energy, Powercor, SA PowerNetworks, and United Energy**

**February, 2015**

INCENTA
ECONOMIC CONSULTING

# Table of Contents

# 1. Executive Summary

## 1.1 Summary of findings

Our terms of reference required us to respond to the Australian Energy Regulator's (AER's) comments in relation to independent expert reports that was included in its recent draft decision on Jemena Gas Networks (JGN), and to update our previous analysis of independent expert reports. Our key findings are as follows:

- The AER concluded that the only independent expert reports that are relevant are those relating to regulated infrastructure. Whilst we agree that these reports provide a particular insight into the practices of independent experts in relation to regulated infrastructure specifically, in our view an examination of the broader spectrum of expert reports provides insights into how independent experts adapt to changing market conditions, in particular, how they assess the required market rate of return, which is important for assessing the cost of equity for a particular asset. We note in particular that there are very few reports in relation to regulated infrastructure in the period since the global financial crisis when government bond rates have been at historically very low levels.

- The AER has compared the risk premium over the "spot" risk free rate that independent experts have applied to the risk premium over the spot risk free rate that it applies, and so implicitly assumed the risk premium that experts apply has remained (and will remain) constant in the face of large changes in the risk free rate. However, this masks the actual behaviour of independent experts, with almost 90 per cent having adjusted the risk free rate and / or the market risk premium in response to changes in the risk free rate.

  – Our examination of 53 independent expert reports shows that independent experts on average have assumed a required market-wide return of approximately 10.52 per cent between August 2012 and November, 2014, which was a period of historically low interest rates. This was 46 basis points higher than the average over the period that is implied by the AER's current methodology (the 'spot' risk free rate plus a 6.5 per cent market risk premium) before accounting for dividend imputation (meaning the true difference is larger). During this period – which also experienced material fluctuations in the risk free rate – the difference was larger than the average during the times when the risk free rate was lower than the average.

- We find that the AER has misunderstood Grant Samuel's report on Envestra. Far from supporting the AER's assumption that the range of premium for equity risk implicit in Grant Samuel's report encapsulates the 4.55 per cent that the AER is currently providing (with a 0.7 beta and 6.5 per cent market risk premium), a correct interpretation of Grant Samuel's report shows an implied premium for equity risk range of 5.27 per cent to 5.37 per cent. With the AER's gross up factor for imputation applied, we find that the AER's current premium for equity risk would fall short of Grant Samuel's assessment by 138 basis points if the risk free rate were at 4.2 per cent. With the 'spot' risk free rate currently at 2.5 per cent, this shortfall against Grant Samuel's assessment could be expected now to be well over 200 basis points.

- Taken together, our findings indicate strongly that were the AER to continue to apply the same mechanistic SL-CAPM approach that was applied in its draft decision, with JGN's current averaging period risk free rate at 2.64 per cent, the resulting estimated rate of return on equity will fall materially short of the required rate of return in the market that is implied by a consideration

of independent expert reports, and not be commensurate with the efficient financing costs a benchmark entity will face over the access arrangement period.

## 1.2 Terms of Reference

Jemena Gas Networks (JGN) has engaged Incenta Economic Consulting (Incenta) on behalf of itself and Jemena Electricity Networks, ActewAGL, Ausgrid, AusNet Services, Australian Gas Networks, CitiPower, Endeavour Energy, Energex, Ergon, Essential Energy, Powercor, SA PowerNetworks, and United Energy (the network firms) to provide a further update of our previous report titled 'Update of evidence on the required return on equity from independent expert reports'.[1] Our previous report has been considered by the Australian Energy Regulator (AER) in the context of its draft decision for *Jemena Gas Networks (NSW) Ltd – Access arrangement 2015-20*. More specifically, the AER's draft decision included an attachment dealing with the rate of return, and in that attachment it provided an analysis of independent expert reports.[2] JGN, on behalf of the network firms, has requested that we update the evidence on independent expert reports to the present time, review, and, where appropriate, respond to the AER's analysis.

In Chapter 2 we provide the terms of reference, a statement of authorship and an outline of the report. The remainder of the report is in two parts. Chapter 3 sets out and responds to the AER's position on independent expert reports, as set out in its draft decision with respect to JGN. Chapter 4 then provides the results of an empirical analysis of 53 independent expert reports spanning the period from August 2012 to November, 2014, which includes the 36 independent expert reports reviewed in our previous reports, and 17 additional firm / project cost of equity assessments that have been published since the end of the period covered by our previous reports.

## 1.3 Reply to the AER on the information to be drawn from independent expert reports

In our view, there were three principal shortcomings in the AER's consideration and conclusions in relation to how the analysis set out in independent expert reports can and should be used in estimating a return on equity that contributes to the allowed rate of return objective.

First, the AER has concluded that the only reports of relevance are those that related to regulated infrastructure businesses.[3] In our view, a consideration of all reports that undertake a discounted cash flow valuation analysis (and so require an estimate of the WACC) provide a source of evidence as to whether the required returns (and the cost of equity in particular) moves mechanistically with the 'spot' risk free rate of return as the AER's standard approach assumes, which is one of the key issues of difference between the AER and the proposals put forward by the regulated businesses.

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1 Incenta (May, 2014), Update of evidence on the required return on equity from independent expert reports, Report to TransGrid and Jemena Gas Networks. See also Incenta (20 August, 2014), Addendum to report titled, Update of evidence on the required return on equity from independent expert reports.

2 AER (November, 2014), *Draft decision: Jemena Gas Networks (NSW) Ltd – Access arrangement 2015-20, Attachment 3: Rate of return*, pp. 3-89 to 3-93.

3 AER (November, 2014), p.3-89.

Secondly, for the smaller sample that the AER has considered, the AER considers that independent experts derive a cost of equity by adding a risk premium to the 'spot' risk free rate.[4] This mischaracterises the practice of independent experts and, most relevantly, means that the AER fails to detect the strong negative relationship between the risk premium and the risk free rate that is implied by the independent experts cost of capital estimates in the period following the global financial crisis.[5] This is important to note at the current time because of the prevailing very low level of the 'spot' risk free rate. As a subset of this point, we also consider that it is inappropriate to focus as the AER does on the 'total' risk premium (that is, the WACC less the risk free rate). The total risk premium conflates issues with the estimation of both the cost of debt and cost of equity. In our view, more information is gained from expert reports by focussing on their practice with respect to the wider universe of reports,[6] and focussing particularly on periods when the risk free rate falls below the range that is considered 'normal' (i.e. 5 per cent to 6 per cent).[7]

Thirdly, the AER has misinterpreted Grant Samuel's independent expert reports, in particular the Envestra report – the reports that the AER considers to be very relevant to regulated infrastructure – and consequently has understated the risk premium that was applied by the relevant independent expert.

These issues are elaborated upon in turn.

### *Class of independent expert reports that are relevant*

The AER has said that it has focussed on those reports that include a return on equity for companies that provide the closest comparison to the AER's benchmark efficient entity. It appears that the only reports the AER considers relevant out of the 36 reports reviewed in our previous report are those relating to regulated infrastructure businesses, as only these reports are included in Table 3-20, labelled 'Relevant independent valuation (expert) reports'.

We disagree with this view.

In Incenta's view, two of the most critical current issues in relation to the estimation of the cost of equity for regulated energy networks are:

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4 The AER made this claim in footnote 342 of the Draft decision. While many independent experts do not adjust the risk free rate that is applied, only 7 out of the 53 expert reports covered in this report did not adjust the risk free rate and / or the market risk premium.

5 The majority of the expert reports dealing with the regulated businesses that the AER considered relevant related to periods prior to the global financial crisis when interest rates were at 'normal' levels (5 per cent to 6 per cent). These reports do not shed any light on how independent experts have estimated costs of capital in the context of the current unusually low government bond rates.

6 While over the period during and immediately after the global financial crisis there was a large gap between the AER and the regulated businesses with respect to the interest rate that would be payable for a particular type of corporate debt at any point in time, the differences between the regulated businesses and the AER on this matter are not material at the current time. Rather, the differences between the AER and the regulated businesses relate to how a 'trailing average' approach to the cost of debt should be implemented. Independent expert reports cannot offer any insight into this issue.

7 Among the expert reports dealing with regulated businesses, the only ones including an uplift factor are the most recent reports undertaken by Grant Samuel, which has made it very clear that none of its uplift relates to the cost of debt (see below).

- Whether the Sharpe-Lintner CAPM (SL CAPM) fully captures the systematic risk of regulated energy networks (an issue that has come into sharper focus as the regulatory equity beta determined by the AER has been reduced over time). This issue is obviously relevant only to estimating the cost of equity for regulated energy networks or other relatively low beta businesses (i.e. businesses whose beta is materially less than unity),[8] and

- Whether the "risk premium" class of financial models in general (i.e., including the SL CAPM, Black CAPM and Fama-French model) will provide the best forecast or estimate of the cost of equity if the model is applied with a relatively inflexible or fixed market risk premium in the context where the risk free rate is at unusually low levels. This issue is relevant to estimating the cost of equity for any firm in the economy.

Clearly, the expert reports relating to regulated businesses provide important insights in relation to both of the above issues. However, the valuation reports of independent expert pertaining to businesses generally are equally relevant in relation to the second of these issues. By expanding the set of independent expert reports to include non-infrastructure firms the sample of reports – and the frequency of observations – is expanded considerably, which provides greater confidence as to the conclusions that can be drawn about whether the 'risk premium' class of financial models in general will provide the best forecast or estimate of the cost of equity if the model is applied with a relatively inflexible or fixed market risk premium where the risk-free rate is at unusually low levels.

### *Relationship between the risk premium and the risk free rate*

As noted above, the AER has stated that it considers it appropriate to benchmark the 'total risk premium' (i.e. WACC less the risk free rate)[9] that is observed in independent expert reports against the risk premium that it applies in its decisions. In our view, this is inappropriate for two reasons.

First and foremost, it contains an assumption on the part of the AER that the independent experts in question would keep their total risk premium constant in the face of material changes in the risk free rate. We consider that the assumption that the risk premium is held constant is inconsistent with the observed practice of the independent experts.

Secondly, by focussing on the total risk premium, the level of insight that can be gained into the most pressing WACC issues – namely, whether the SL-CAPM as the AER applies it provides an accurate estimate of the cost of equity – is diluted. In our view, more information can be gained from independent expert reports by restricting attention to how they estimate the cost of equity.

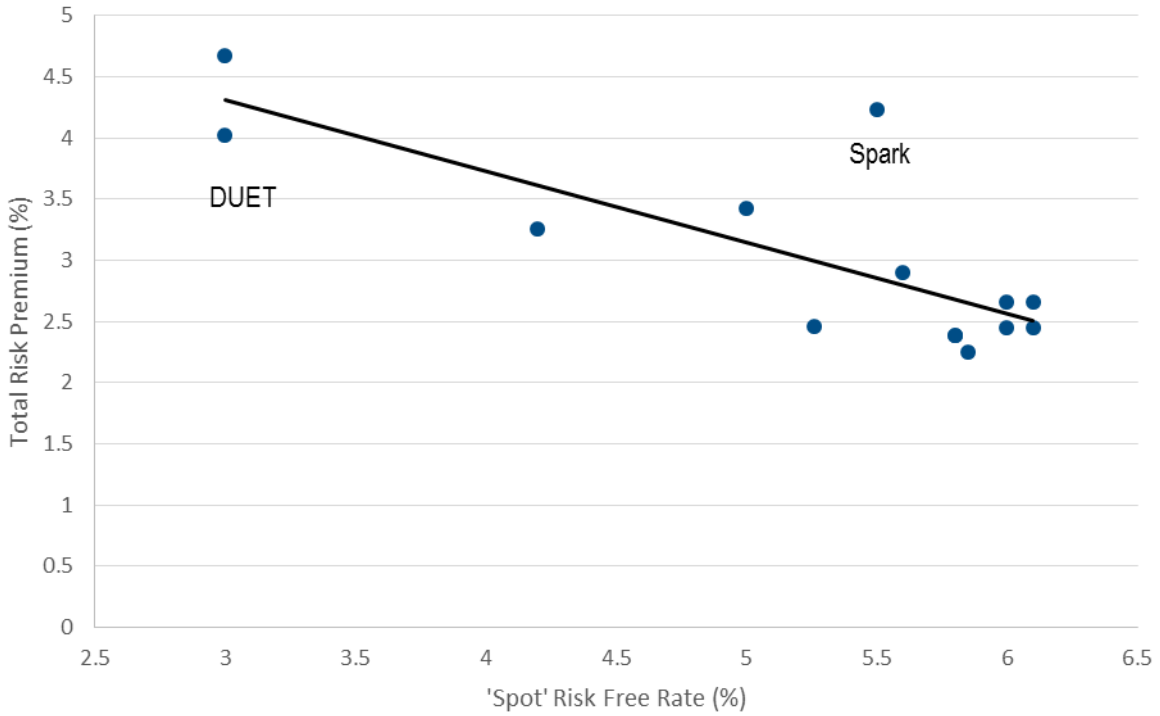
Turning first to the question of whether it is appropriate to assume the total risk premium is constant over time, the AER's draft decision for JGN included a chart (at 3-90) showing that the total risk premium observed for approximately a dozen businesses whose WACC was estimated by independent experts. The total risk premium was relatively low prior to the global financial crisis, rose after the crisis (there were no transactions during), but appears to be reducing in recent times. However, we observe that the AER's findings were affected by what we consider to be an incorrect

8 In the body of the report we discuss the equity beta of 0.65 attributed to Envestra and CFS Retail Property Trust, which we consider to be materially lower than unity.

9 In this report, we use the term 'total risk premium' to refer to the premium applied to the difference between the WACC and the risk free rate, and the term "risk premium to equity" to refer to the difference between the cost of equity and the risk free rate.

interpretation of Grant Samuel's uplift factor, which we discuss directly below.[10] In Figure ES.1 we have taken the AER's estimates of the total risk premium and adjusted them for this factor and related the total risk premiums to the 'spot' risk free rate that prevailed at the time of each independent expert report. This chart shows that it would be incorrect to assume that the total risk premium is independent of the risk free rate. Rather, the experience after the global financial crisis (and particularly after the risk free rate fell below the 'normal' range of 5 per cent to 6 per cent) is that a clear inverse relationship between the total risk premium and the risk free rate can be observed.

**Figure ES.1: Independent expert reports (regulated infrastructure) – Total risk premium vs risk free rate**




*Source: AER (November, 2014), p.3-90 to p.3-92, Grant Samuel, Incenta analysis*

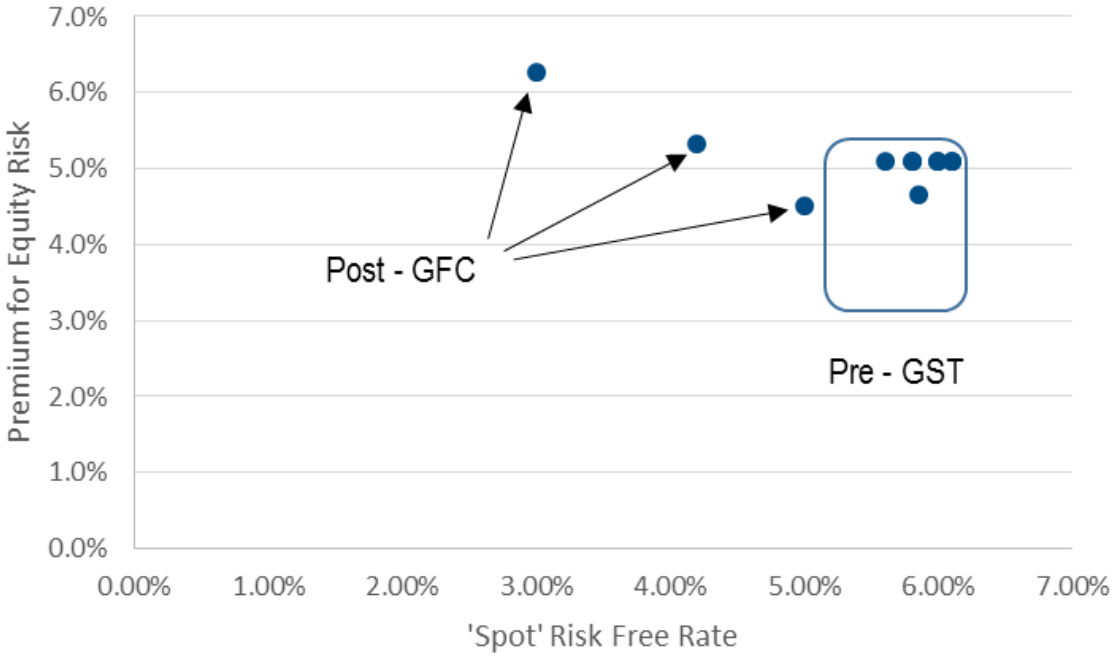
Secondly, as we discussed earlier, in our view, more insight is gained by focussing on how independent experts estimate the cost of equity and the risk premium adopted as part of this estimate. For greater comparability we have removed two of the expert reports relied on by the AER, as these do not conform to the characteristics of regulated infrastructure.[11] This evidence points to a clear

[10] We also have concerns that two of the independent expert reports in this group (Spark Infrastructure and DUET Group) actually related to the valuation of management rights rather than a regulated infrastructure business per se, and so we have excluded these observations in the results we report.

[11] The excluded reports were for Spark Infrastructure Group (13 April, 2011) and DUET Group (3 October, 2012). Neither of the transactions related to the purchase or sale of a business receiving regulated cash flows – rather, both of the transactions related to bringing in-house a portion of overheads that were previously contracted out. While both valuations referred to regulated utilities in the context of deriving the WACC, both adopted a very different gearing level to what independent experts typically adopt for regulated utilities. Accordingly, even if the observations were retained, the cost of equity adopted by the expert would need to be adjusted to be consistent with a 60 per cent gearing level.

negative relationship between the risk premium for equity applied for regulated energy networks and the risk free rate, which is set out in Figure ES.2.[12]

**Figure ES.2: Independent expert reports (regulated infrastructure) – Risk premium for equity vs risk free rate**




*Source: AER (November, 2014), p.3-90 to p.3-92, Grant Samuel, Incenta analysis*

### *Errors in interpreting Grant Samuel report's on Envestra*

The AER's draft decision for JGN made a number of assumptions about the way that Grant Samuel had estimated the rate of return (WACC) requirement in its independent expert's report on Envestra in March, 2014. The consequence of these assumptions were that the AER revised down the risk premium from the level assumed by Grant Samuel. Specifically, the AER assumed that Grant Samuel had applied a mechanistic SL-CAPM to obtain a cost of equity estimate of 8.1 per cent, and had applied a further uplift factor for non-systematic risk factors. Grant Samuel recently provided an explanatory letter that has clarified the AER's interpretation of the methodology used by Grant Samuel, including responding to:[13]

[12] From observation, there is an almost one-for-one relationship between the risk premium and risk free rate for the three post global financial crisis observation (with the cost of equity ranging only between 9.3 per cent and 9.5 per cent, notwithstanding a variation in the risk free rate of more than 2 percentage points. While we do not advocate fitting a regression line to three data points, we observe that were this to be done then the equation that is derived is Premium for Equity Risk = 9% - 0.895 × Risk Free Rate, which is consistent with an almost one-for-one relationship.

[13] Grant Samuel (12 January, 2015), Australian Energy Regulator – Draft Decision.

- The AER's position that it has a 'differing objective' from Grant Samuel, i.e. the estimation of systematic risk rather than 'specific risk' uplifts was not accepted by Grant Samuel, which has confirmed that none of its uplift related to 'specific risk.' [14]

- The AER's position that the 'spot' risk free rate should be applied because it is concerned with the 5 years in the regulatory period whilst Grant Samuel and other independent experts are valuing a 'perpetuity' was also not accepted by Grant Samuel, which explained that the terminal value at the conclusion of the 5 year regulatory period was subject to the same systematic risk as the intervening cash flows and was, therefore, also a perpetuity value.[15]

- The AER's suggestion that Grant Samuel applied some of its uplift to the cost of debt was not accepted by Grant Samuel, which said that none of the uplift related to the cost of debt (and hence could only be allocated to adjust the return on equity).[16]

- The AER's position that Grant Samuel was unclear about whether it had included the impact of dividend imputation in its return estimates was also not accepted by Grant Samuel, which has always categorically stated that it does not attribute any value to imputation credits.[17]

A proper consideration of the Envestra report reveals that Grant Samuel had increased its estimate of Envestra's cost of equity (at the midpoint of its range) from the mechanistic SL-CAPM determined level of 8.1 per cent by 1.42 percentage points to 9.5 per cent (excluding the impact of imputation credits), and that this was all due to systematic risk factors. The range for the cost of equity implied by Grant Samuel's report after including the uplift factor was from 9.47 per cent to 9.57 per cent, with a range for the premium for equity risk of 5.27 per cent to 5.37 per cent. These Grant Samuel ranges compare with the AER's cost of equity of 8.75 per cent and premium for equity risk of 4.55 per cent if the AER applies a 6.5 per cent market risk premium and an equity beta of 0.7. However, the Grant Samuel ranges cited above have not been grossed up for the impact of imputation credits, which would increase the differential with the AER's estimates of the cost of equity and premium for equity risk.

## 1.4 Updated empirical evidence on equity and market required rate of return estimates of independent expert reports

### 1.4.1 Implications from independent expert reports for the cost of equity for infrastructure assets

We have extended the AER's analysis of the risk premium to equity by:

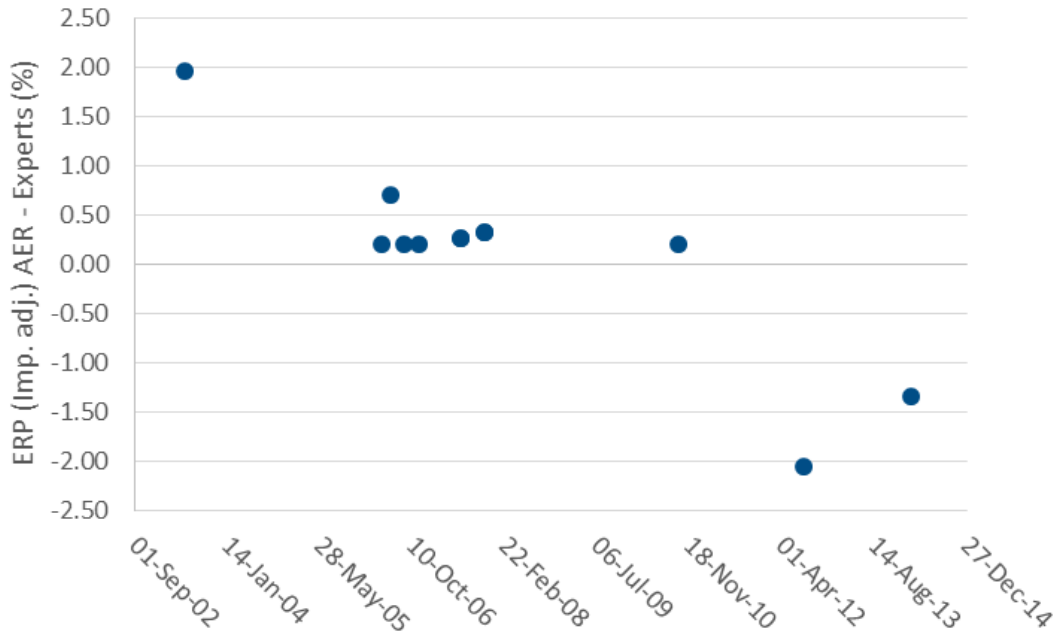
- Excluding the two expert reports relating to management contracts because we do not consider that they reflect the characteristics of a regulated business (as discussed above);

[14] Grant Samuel (12 January, 2015), Australian Energy Regulator – Draft Decision, p 5.
[15] Grant Samuel (12 January, 2015), *Australian Energy Regulator – Draft Decision*, p 5.
[16] Grant Samuel (12 January, 2015), p 8.
[17] Grant Samuel (12 January, 2015), p 5.

- Re-estimating the cost of equity for all of Grant Samuel's independent expert reports to include the uplift factors as part of the cost of equity as explained in the relevant reports);[18]
- Estimating imputation adjusted returns using the AER's implied imputation adjustment;[19] and
- Focusing on the *differential* between the cost of equity provided by the AER's methodology (which applies the 'spot' risk free rate a risk premium for equity that is the product of the equity beta and the market risk premium adopted by the AER), and the estimate produced by the independent expert in each case.

The results are displayed in Figure ES.3 below.

**Figure ES.3: Regulated infrastructure: Difference in the estimated cost of equity (imputation adjusted) – AER compared to Independent Experts**




*Source: AER (November, 2014), p.3-91 and p.3-92, and Incenta analysis. Note: imputation adjusted premiums for equity risk as calculated from AER (November, 2014) data contained in Table 3-20*

[18] Specifically, we attributed all of Grant Samuel's uplift to the cost of equity, consistent with the position set out in: Grant Samuel (12 January, 2015), p 8; and, Grant Samuel (3 August, 2012), *Hastings Diversified Utilities Fund – Independent Expert's Report in Relation to the Takeover Offer by Pipeline Partners Australia Pty Ltd*, Appendix 2, Selection of Discount Rate. We have read the reports and are satisfied that the uplift Grant Samuel provided was for systematic risk factors.

[19] We have adjusted for imputation using the same proportional increase in the return on equity that was implied by the AER's calculations (in its Table 3-20). The average adjustment for these businesses was 0.60 percentage points. We applied the implied gross up for imputation to the uplifted equity returns implied by Grant Samuel's uplift factors for Hastings Diversified Utilities Fund and Envestra. The average gross up for imputation was 0.60 percentage points. We are not aware of the assumptions that the AER applied in deriving its imputation adjustments, and hence do not make any comment regarding their appropriateness. We have simply adopted the AER's implied adjustments for expediency.

*relative to the 'spot' risk free rate, except for Hastings Diversified Utilities Fund, and Envestra (where the Grant Samuel uplifts have been included).*

What this analysis suggests is that since the global financial crisis, and more specifically the recent period during which the 'spot' risk free rate has fallen below the previous 'normal' level of between 5 per cent and 6 per cent) the AER has provided a lower equivalently calculated (i.e. adjusted for imputation) risk premium to equity for regulated infrastructure businesses than independent experts. More specifically:

- Prior to 2008, when the AER applied a market risk premium of 6 per cent and an equity beta of 1 and the spot risk free rate typically ranged between 5.5 per cent and 6 per cent, the estimates of the cost of equity produced by the AER's standard method were higher than those of independent experts; however we note that the differential for the first observation (United Energy, 2003) is over-estimated since the expert in that case applied a gearing structure that was significantly lower than the 60 per cent that is assumed by the AER, and in the majority of cases (7 from 9) this was in the order of 25 basis points;

- During 2010-11, when the 'spot' risk free rate was in the range of 5-5.5 per cent and the AER applied a 6.5 per cent market risk premium and an equity beta of 0.8, the estimate of the cost of equity produced by the AER's standard method was approximately 20 basis points above that estimated by independent experts;

- During 2012 (at the time of the HDUF report), when the risk free rate was approximately 3 per cent and the AER applied a market risk premium of 6 per cent and an equity beta of 0.8, the estimate of the cost of equity produced by the AER's standard method was approximately 200 basis points below that estimated by independent experts; and

- In the most recent case examined (Envestra), when the risk free was 4.2 per cent and the AER was applying a 6.5 per cent market risk premium and an equity beta of 0.70, the estimate of the cost of equity produced by the AER's standard method was 138 basis points below that estimated by the independent expert.

One qualifier to these results is that the gearing levels assumed by the independent expert in most cases (not in the case of Envestra) was either higher (often 65 per cent) or lower (in the region of 45 per cent) than the standard 60 per cent gearing assumption applied by the AER. In the main body of this report we adjust the independent experts' cost of equity numbers for this factor, and show the impact on the earlier differentials shown in Figure ES.3.[20]

We observe that the spot value for the risk free rate is currently lower than at any point during this period (approximately 2.5 per cent).

[20] The picture that emerges is similar to that shown in Figure ES.3. However, prior to the global financial crisis the AER's methodology is shown to have provided between 20-87 basis points more return to equity than the independent experts (inclusive of imputation credits), while the most recent two independent expert reports show a 138 basis points (Envestra) to 410 basis points (HDUF) deficit through applying the AER's methodology.

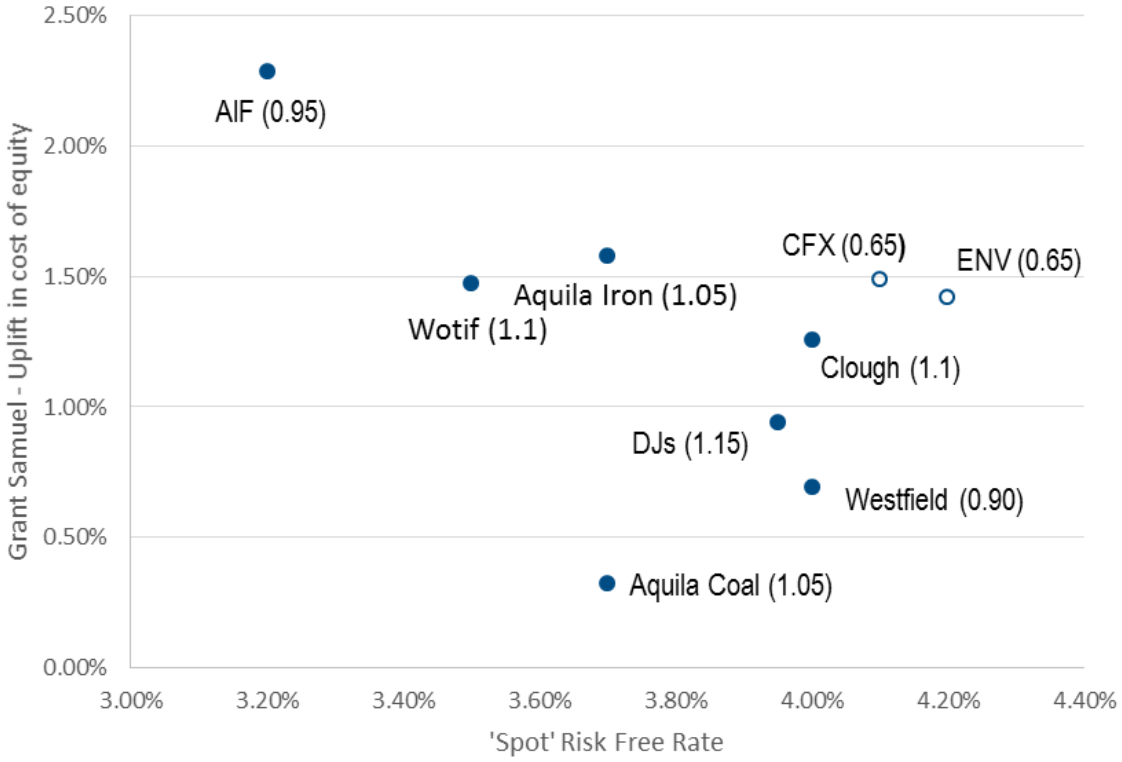
### 1.4.2 Insight from Grant Samuel reports for the cost of equity of low beta stocks

The method by which Grant Samuel estimates the cost of equity involves:

- Estimating the mechanistic SL-CAPM cost of equity using a spot risk free rate and a relatively constant market risk premium, and
- Then adding an uplift if necessary after considering other evidence, principally the results of the dividend growth model, but also the estimates adopted by equity analysts.[21]

The transparent nature of this method allowed us to inquire into whether the level of uplift that is applied to low beta stocks (with the uplift assessed by Grant Samuel being 1.49 per cent for CFS Property Trust and 1.42 per cent for Envestra) differs to the adjustment that is applied to stocks with an average level of risk. The results of this analysis are set out in Figure ES.4.

**Figure ES.4: Grant Samuel independent expert reports – Cost of equity uplift vs risk free rate**




*Source: Grant Samuel and Incenta analysis. Note: Two hollow data points are low beta stocks.*

The data points that are hollow (CFS Retail Property Trust and Envestra) were assessed by Grant Samuel to have equity betas materially below 1.0 (i.e. 0.65), while the average beta of the remaining 5

[21] Grant Samuel refers to the cost of capital estimates of equity analysts in relation to both regulated and unregulated businesses. See respectively: Grant Samuel (22 May, 2014), *Independent Expert's Report in relation to the Offer by Woolworths Holdings Limited*, p.52; and, Grant Samuel (3 March, 2014), *Independent Expert's Report to the Independent Board Sub-committee in relation to the Proposal by APA Group*, p.9.

businesses was close to the market average of unity (ranging from 0.90 to 1.15). Grant Samuel adjusted upwards the cost of equity of the two relatively low beta stocks by materially more than might have been expected (1.49 per cent and 1.42 per cent respectively) for these firms given the prevailing risk free rate at the time (i.e. 4.1 per cent and 4.2 per cent respectively). Our observation from the pattern across the uplifts that Grant Samuel applied in the different cases is that the level of uplift appeared to have comprised:

- An adjustment to reflect the extent to which the risk free rate was less than approximately 4.5 to 5 per cent, and
- An additional uplift for the low beta stocks in the order of approximately 1 percentage point.

We note that Grant Samuel has not stated in its reports that it has a specific concern about the ability of the SL-CAPM to explain the returns on low beta stocks, but rather that the larger uplift for these stocks was a function of the other market sources reviewed by Grant Samuel.[22] Nevertheless, in our view, the outcome we summarise above provides some evidence that the CAPM has a particular weakness in predicting the required returns for low beta stocks.

### 1.4.3 Insight from independent expert reports for the 'return on the market'

Based on our analysis and empirical findings, we are concerned that in its draft decision for JGN the AER does not give a meaningful role to the information contained in the independent expert reports that are the basis of significant market transactions and which are a deep and relevant source of information. It is our view that the estimates of the market rate of return applied by independent experts should be used as guidance by the AER when it comes to estimate the rate of return on equity for regulated energy businesses.[23] Our conclusions, based on a review of 53 independent expert reports are as follows:

- Over a period when the 'spot' risk free rate was 3.56 per cent, the average return on the market observed in these independent expert reports (excluding the uplift for dividend imputation required for comparability with the AER) was 10.52 per cent,[24] although there is some dispersion around this figure. We observe from the figure that the market rate of return estimated by independent experts has remained relatively constant over the period notwithstanding the movements in the 'spot' risk free rate.

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22 In the following section that summarises the 'return on the market' that is assumed by the various independent experts, we have assumed that 1 percentage point of the uplift that Grant Samuel has assumed for these two low beta stocks was related to those stocks in question and that the remainder comprised an adjustment to the market return above what was implied by the mechanistic CAPM. This is based on our observation (from the data points shown in Figure ES.4) that Grant Samuel appears to provide a higher uplift for these lower beta stocks relative to higher beta stocks for the same risk free rate.

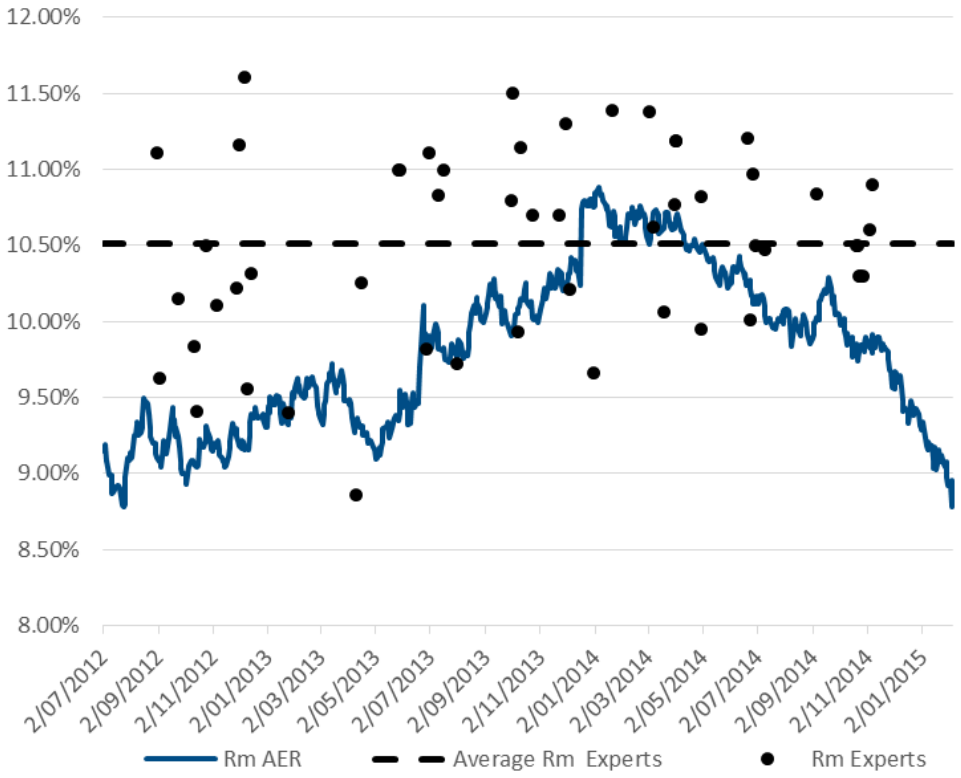
23 In this discussion, placing weight on the estimates of the cost of equity made by independent experts is important to restrict attention to firms which are substantially similar to regulated businesses.

24 As discussed above, for the Grant Samuel reports (9) we have classified the additional uplifts as adjustments to the return on the market, except for the first 1 percentage point of the uplift for 2 low beta stocks (which we have classified as particular to low beta stocks). The average risk free rate of 3.56 per cent is the average of the 'spot' risk free rates prevailing at the date of each of the independent expert reports.

- The return on the market implied by the AER's standard method (which applies the 'spot' risk free rate and a risk premium for equity that is the product of the equity beta and the market risk premium adopted by the AER) has been lower than the value assumed in the majority of the independent expert reports since August 2012 (43 out of 53). On average, the market return implied by the AER's standard method over this period (if it had maintained a 6.5 per cent market risk premium throughout) has been 46 basis points lower than the value disclosed in the independent expert reports, before any adjustment is made for dividend imputation (which would have the effect of increasing this gap). In addition, a visual inspection of the figure suggests that the gap between the return on the market assumed by independent experts and the value produced by the AER's standard method gets larger as the 'spot' risk free rate reduces.

- A number of independent expert reports that were issued since April 2014 have been completed in the context of a declining 'spot' risk free rate, but have maintained an expected market rate of return that has not declined with the reduction in the 'spot' risk free rate. In fact, the expected market rate of return implicit in the most recent 15 independent expert reports averaged at 10.54 per cent over a period when the average 'spot' risk free rate was 3.58 per cent. Currently, the 10 year risk free rate is approximately 2.5 per cent, which is lower than at any time during the study period. The findings above suggest that the gap between the value that an independent expert would use and the value produced by the AER's standard approach therefore may currently be higher than at any time during the study period.

**Figure ES.55: Required rate of return on the market (pre-gamma) – Independent expert reports vs the AER**




*Source: CONNECT 4, Bloomberg and Incenta analysis. Note: AER return on market applies a 6 per cent market risk premium up to 17 December, 2013, and 6.5 per cent beyond that date.*

# 2. Terms of reference, statement of authorship and outline of report

## 2.1 Terms of reference

JGN has engaged Incenta Economic Consulting (Incenta) on behalf of itself and Jemena Electricity Networks, ActewAGL, Ausgrid, AusNet Services, Australian Gas Networks, CitiPower, Endeavour Energy, Energex, Ergon, Essential Energy, Powercor, SA PowerNetworks, and United Energy to provide a further update of our previous report titled 'Update of evidence on the required return on equity from independent expert reports'.[25] Our previous report has been considered by the AER in the context of its draft decision for *Jemena Gas Networks (NSW) Ltd – Access arrangement 2015-20*. More specifically, the AER's draft decision included an attachment dealing with the Rate of return, and in that attachment it provided an analysis of independent expert reports.[26] JGN, on behalf of the network firms, has requested that we update the evidence on independent expert reports to the present time, review, and, where appropriate, respond to the AER's analysis. The full terms of reference are contained in Appendix A.1.3 below.

## 2.2 Statement of authorship

This report has been prepared by Mr. Jeff Balchin and Dr Michael Lawriwsky. We have made all the enquiries that we believe are desirable and appropriate, and no matters of significance that we regard as relevant have, to our knowledge, been withheld. Both Mr. Balchin and Dr Lawriwsky have extensive experience in regulatory economics in relating to regulated energy network and other regulated businesses. Copies of the curriculum vitae of each author are attached in Appendix A.1.1.

Mr. Balchin and Dr Lawriwsky have been provided with a copy of the Federal Court of Australia's 'Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia'. This report has been prepared in accordance with those Guidelines, which are attached below in Appendix A.1.2.

## 2.3 Outline of the report

The remainder of this report is structured in two parts:

- In Chapter 3 we outline the reasons given by the AER, in the context of its draft decision for JGN, to reject the proposition that the rates of return observed in published independent expert reports should be used to inform the setting of regulatory rates of return for regulated infrastructure.

- In Chapter 4 we report on the findings of our empirical analysis of the required rates of return on equity, and by implication rates of return on the market, that independent experts have assessed in the course of market transactions between August 2012 and the end of 2014. We then compare the required rate of return on the market implied in independent expert reports against the AER's application of a mechanistic SL-CAPM approach.

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25 Incenta (May, 2014), *Update of evidence on the required return on equity from independent expert reports, Report to TransGrid and Jemena Gas Networks*. See also Incenta (20 August, 2014), *Addendum to report titled, Update of evidence on the required return on equity from independent expert reports.*

26 AER (November, 2014), *Draft decision: Jemena Gas Networks (NSW) Ltd – Access arrangement 2015-20, Attachment 3: Rate of return*, pp. 3-89 to 3-93.

# 3. AER vs independent experts' concerns with the SL-CAPM

## 3.1 Introduction

In its draft report for JGN, the AER provided a reply to JGN's (and TransGrid's) submissions relating to the use of independent expert reports to provide assistance to the AER in its own analysis of the required rate of return on equity. Having considered JGN's submissions, the AER has given independent expert reports a very limited role, since they were not used as direct evidence of either the prevailing market return, the market risk premium that should be applied, or the cost of equity. In this chapter we first report the essence of the AER's reply to JGN, and then provide our own response to the points the AER made, and the evidence it brought to bear.

## 3.2 The AER's reply

In its JGN draft decision, the AER considered whether the rates of return on equity contained in independent expert reports could be used to inform its overall rate of return estimate. The AER did not consider all independent expert reports and the insight that they might provide on the market's required rate of return on the market in general. Instead, the AER concentrated its attention on only those expert reports that it considered to be substantially comparable to the benchmark entity, i.e. regulated energy transmission and distribution businesses. It found 12 independent expert reports dealing with 14 regulated entities during the period from May 2003 (United Energy) to March, 2014 (Envestra).

### 3.2.1 Breadth of independent expert reports considered

The AER noted that our initial report on independent expert reports pointed to the fact that independent experts often include an uplift to the return on equity above the initial CAPM estimate, and that these uplifts are on average higher for businesses with betas that are assessed as being materially less than unity (i.e. 'low beta' businesses). We had examined low beta businesses to see whether there was a link to more problems with the standard CAPM for these businesses. However, the AER preferred to examine only those independent expert reports that involved a regulated business as there is 'greater benefit in observing comparable businesses than all businesses with low betas.'[27] In addition, the AER expressed a view that the availability of only 12 independent expert reports dealing with 14 regulated businesses for which rate of return estimates were derived is too small to draw directional conclusions from in relation to the rate of return on equity. Furthermore, the AER was concerned that 9 out of the 12 reports were undertaken by Grant Samuel & Associates.

### 3.2.2 AER's assessment of the risk premium to equity

The AER also expressed a preference to restrict its consideration to a focus on:[28]

> *…the equity risk premium, rather than the overall return on equity to isolate the business-specific risk premium from movements in the risk free rate.*

[27] AER (November, 2014), p. 3-93.
[28] AER (November, 2014), p. 3-89.

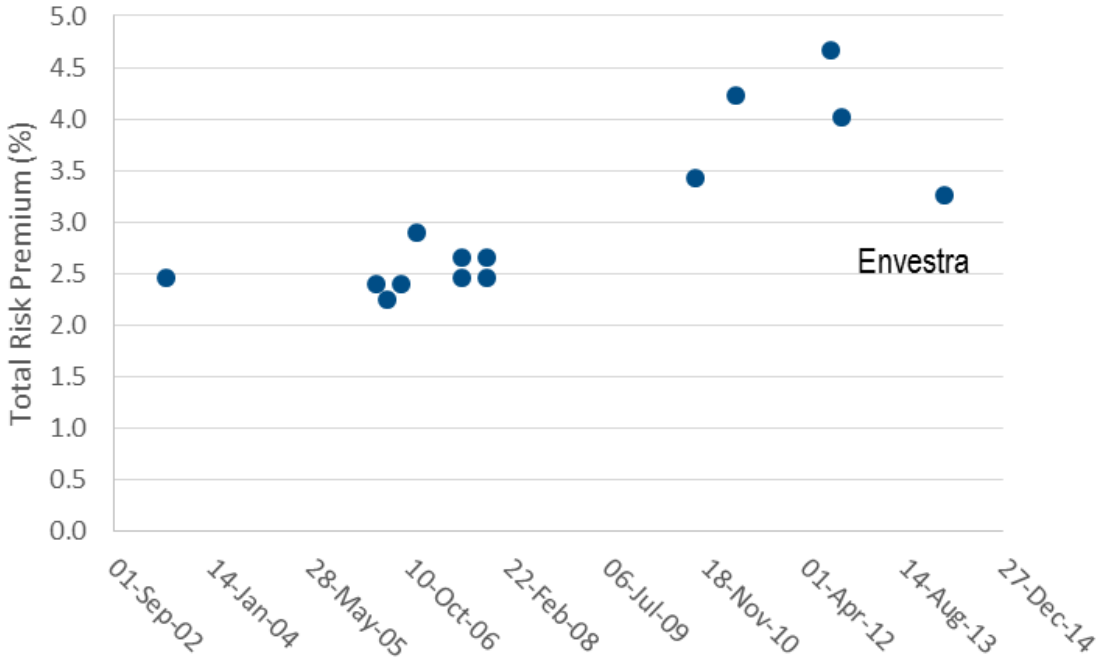
The AER summarised the directional evidence it gleaned from these reports as follows:[29]

- For the range of ranges they obtained, independent experts were found to apply a risk premium to equity range of:
  - 3.3 per cent to 5.4 per cent with no adjustment for dividend imputation
  - 3.7 per cent to 6.2 per cent with adjustment for dividend imputation
- For the range of midpoints they obtained, independent experts were found to apply a risk premium to equity range of:
  - 3.6 per cent to 5.1 per cent with no adjustment for dividend imputation
  - 4.0 per cent to 5.8 per cent with adjustment for dividend imputation
- The AER's foundation model risk premium to equity of 4.55 per cent (which includes the effect of dividend imputation) is within the range of estimates from independent expert reports prior to making adjustment to those latter figures for dividend imputation (i.e. 3.6 per cent to 5.1 per cent).
- While the foundation risk premium to equity of 4.55 per cent sits lower in the range of estimates from independent expert reports (i.e. 3.7 per cent to 6.2 per cent the AER expressed concerns that the adjustment for dividend imputation may not be appropriate due to a lack of transparency of independent expert reports about how they have or have not treated dividend imputation.[30]
- The mid-point total risk premiums for the WACC above the risk free rate that was provided by independent experts ranges from 2.39 per cent to 4.67 per cent as shown in Figure 3.1 below, and the 'total risk premium' provided by [the AER's] rate of return estimate of 6.80 per cent for JGN is approximately 3.3 per cent'.[31]
- It considered that the total risk premium implied by independent experts appears to have increased following the global financial crisis, but 'appears to be recently declining towards a level more in line with the total risk premium from [the JGN] draft decision.'[32]

As explained in detail below, the AER interpreted the independent expert reports differently to us, and decided that the information to be drawn from those reports was not inconsistent with its WACC decision for JGN.

29 AER (November, 2014), p. 3-89.
30 AER (November, 2014), p. 3-89.
31 AER (November, 2014), p. 3-90.
32 AER (November, 2014), p. 3-89.

**Figure 3.1: Total risk premium from relevant expert reports over time**




*Source: AER (November, 2014), p. 3-90.*

### 3.2.3 AER's interpretation of the Envestra case study

The AER, in the JGN draft decision referred to the Envestra expert's report, and considered TransGrid's submission proposed placing weight on the independent expert report for Envestra (undertaken by Grant Samuel) when estimating TransGrid's cost of equity. The AER in turn considered that the Grant Samuel report supported its own foundation model estimate of the cost of equity using the following arguments and findings:

- Grant Samuel's initial SL-CAPM range for the risk premium to equity of 4.1 to 4.8 per cent (imputation adjusted) was consistent with the AER's 4.55 per cent risk premium to equity.
- The risk premium to equity range in three out of the four Grant Samuel uplift scenarios is consistent with the AER's risk premium to equity of 4.55 per cent.
- After including of the additional uplifts, including a downside scenario where all of the Grant Samuel uplift is allocated to increasing the debt risk premium, Grant Samuel's final estimate of Envestra's risk premium to equity ranges from 4.3 per cent to 6.2 per cent, which it considered to be consistent with the AER's risk premium to equity of 4.55 per cent.[33]

[33] AER (November, 2014), p. 3-89. 'Where the lower bound does not include any adjustment for dividend imputation and maximises the allocation of uplift to return on debt, while the upper bound does include an adjustment for dividend imputation and allocates the entire uplift to the return on equity.'

- The AER considered that it was not clear from Grant Samuel's report whether it had allowed for dividend imputation in its cost of equity estimate.[34]

## 3.3 Response to the AER's reply

The AER has said that it has focussed on those reports that include a return on equity for companies that provide the closest comparison to the AER's benchmark efficient entity. It appears that the only reports the AER considers relevant out of the 36 reports reviewed in our previous report are those relating to regulated infrastructure businesses, as only these reports are included in Table 3-20, labelled 'Relevant independent valuation (expert) reports'.

We disagree with the AER's view that the only reports undertaken in relation to regulated infrastructure businesses are worthy of consideration. In Incenta's view, two of the most critical issues in relation to the estimation of the regulatory WACC for regulated energy networks are:

- Whether the Sharpe-Lintner CAPM (SL CAPM) fully captures the systematic risk of regulated energy networks (an issue that has come into sharper focus as the regulatory equity beta determined by the AER has been reduced over time). This issue is obviously relevant only to estimating the cost of equity for regulated energy networks or other relatively low beta businesses (i.e. businesses whose beta is materially less than unity), and

- Whether the "risk premium" class of financial models in general (i.e., including the SL CAPM, Black CAPM and Fama-French model) will provide the best forecast or estimate of the cost of equity if the model is applied with a relatively inflexible or fixed market risk premium in the context where the risk free rate is at unusually low levels. This issue is relevant to estimating the cost of equity for any firm in the economy.

The reports undertaken by independent expert reports in relating to regulated businesses provide important insights in relation to both of these issues. However, independent expert reports for general businesses are equally relevant in relation to the second issue. By expanding the set of independent expert reports to include non-infrastructure firms the sample of reports – and the frequency of observations – is expanded considerably, which provides greater confidence as to the conclusions that can be drawn about whether the 'risk premium' class of financial models in general will provide the best forecast or estimate of the cost of equity if the model is applied with a relatively inflexible or fixed market risk premium where the risk-free rate is at unusually low levels.

In addition, even with respect to the regulated infrastructure firms, the AER is concerned that a small sample size is a problem where the factor being assessed is subject to a potentially large degree of estimation error. This is the case when estimating beta, and it might legitimately be asked whether reliance on 4 observations of Australian listed stocks is sufficient for that task. In this case the observations of market behaviour are taken from independent expert reports that are subject to considerable market scrutiny from the two sides of market transactions. Furthermore, with respect to the expected return on the market, which is addressed in the following chapter, there is a reasonable degree of unanimity between these reports and those of other market participants.

[34] AER (November, 2014), Return on Equity Appendix, Section E-2, p. 3-89.

The AER has also omitted to discuss in detail the many concerns that independent experts have raised about the shortcomings of the SL-CAPM model, which can also be informed by considering independent expert reports for a broader sample of firms. Grant Samuel continues to make this clear, as it did in its recent expert report on David Jones:[35]

> *Strict application of the CAPM at the present time gives results that are arguably unrealistically low (primarily because of very low government bond rates) and are often inconsistent with other measures… In Grant Samuel's opinion, these [mechanistic SL-CAPM] calculations are likely to understate the true cost of capital.*

Furthermore, the AER's concern about Grant Samuel authoring the majority of independent expert reports on regulated infrastructure is misplaced. In revenue terms, and in terms of the most valuable and highest profile transactions, Grant Samuel is considered to be the "go to" independent expert report market. The fact that Grant Samuel has such a strong reputation and significant experience in conducting valuations of regulated infrastructure should in fact increase the confidence that may be had in their valuation reports, as opposed to creating some concern as to whether the reports should be relied on. There are very few independent experts in the market with as much experience regarding the market's required returns.[36]

### 3.3.1 Relationship between the risk premium and the risk free rate

The AER has stated that it considers it appropriate to benchmark the 'total risk premium' that is observed in independent expert reports against the risk premium that it applies in its decisions. In our view, this is inappropriate for two reasons.

- The AER's implicit assumption is that independent experts would keep their total risk premium constant in the face of material changes in the risk free rate. We consider that this assumption is inconsistent with the observed practice of the independent experts. As noted by Grant Samuel, 'the CAPM at the present time gives results that are arguably unrealistically low (primarily because of very low government bond rates)'.

- By focussing on the total risk premium, the level of insight that can be gained into the most pressing WACC issues – namely, whether the SL-CAPM as the AER applies it provides an accurate estimate of the cost of equity – is diluted. In our view, more insight of market behaviour can be obtained from independent expert reports by restricting attention to the question of how they estimate the cost of equity.

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35 Grant Samuel (22 May, 2014), *David Jones – Independent Expert's Report in relation to the Offer by Woolworths Holdings Limited*, pp. 49-50.

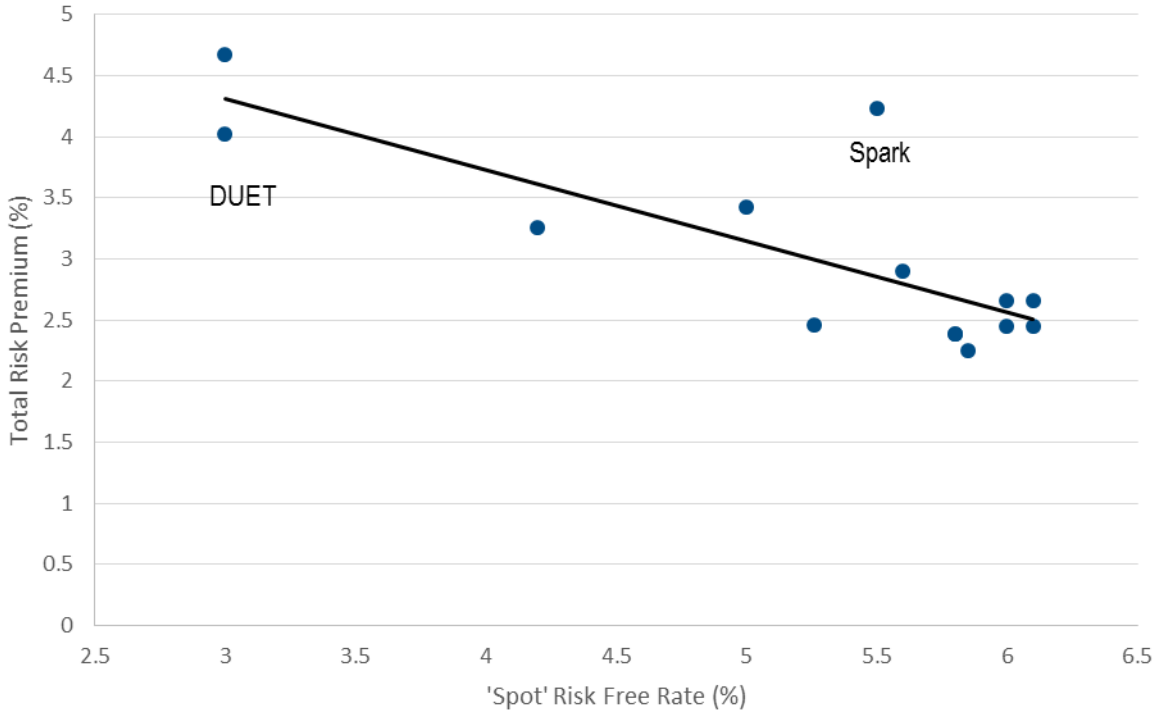
36 Grant Samuel's website includes the following claims: 'Our valuation arm, Grant Samuel & Associates, is the recognised market leader in the preparation of business valuations, independent expert's reports and fairness opinions. Grant Samuel & Associates has completed reports on some of the largest and most complex corporate transactions in Australian and New Zealand. Our reports are widely acknowledged for their quality of analysis, thoroughness and ease of understanding.' See: http://www.grantsamuel.com.au/corporate-advisory/valuations-fairness-opinions. Grant Samuel's recent letter (Grant Samuel (12 January, 2015)) notes (at p.10) that since its establishment in 1988 it has undertaken more than 500 independent expert and appraisal reports, and that it 'has prepared an independent expert report for every one of the 10 largest corporate acquisition transactions in Australia since 2007.'

Addressing the first issue of whether it is appropriate to assume the total risk premium is constant over time, the AER's draft decision for JGN included a chart showing the total risk premium observed for approximately a dozen businesses whose WACC was estimated by independent experts. This chart (reproduced as Figure 3.1 above) showed that the total risk premium was relatively low prior to the global financial crisis, rose after the crisis, as there were no transactions during it, but appears to be reducing in recent times. However, we observe that the 'reduction' in the 'total risk premium' that the AER highlighted was in fact due to the AER's incorrect interpretation of Grant Samuel's uplift factor, which we discuss below.[37] In Figure 3.2 we have used the AER's risk premium to equity data displayed in its Table 3-20, adjusted it for the AER's misinterpretation of the uplifts to the cost of equity implied in the Grant Samuel reports (as discussed further below) and related it to the 'spot' risk free rate that prevailed at the time of each independent expert report.

Figure 3.2 shows that it would be incorrect to assume that the total risk premium is independent of the risk free rate, but rather that there is a clear inverse relationship after the global financial crisis, when the risk free fell below the 'normal' range of 5 per cent to 6 per cent. The observation furthest from the trend line is Spark Infrastructure, which we consider to be not representative of a regulated infrastructure business, as this transaction related to a management contract rather than to a regulated business per se (in our view, this observation should be excluded from consideration when the AER's estimate of the cost of equity is compared to the estimates of independent experts).

[37] We also have concerns that two of the independent expert reports in this group that have been included in the AER's sample (Spark Infrastructure and DUET Group) actually related to the valuation of management rights rather than a regulated infrastructure business per se.

**Figure 3.2: Independent expert reports (regulated infrastructure) – Total risk premium (WACC – $R_f$) vs risk free rate**




*Source: AER (November, 2014), p.3-90 to p.3-92, Grant Samuel, Incenta analysis. Note: We do not consider the two highlighted expert reports (DUET Group and Spark infrastructure) represent regulated infrastructure. They are included here because they were in the AER's sample.*

In addition, we consider that more insight is gained by focussing on how independent experts estimate the cost of equity and the risk premium applied to estimate the cost of equity. This evidence shows that when the risk free rate falls below the levels considered to be 'normal', there has been a very strong negative relationship between the risk premium applied to regulated energy networks and the risk free rate, which is set out in Figure 3.3 below.[38]

The AER has stated that it wishes to concentrate its attention on the risk premium to equity and the total risk premium rather than the overall return on equity in order to 'isolate the business-specific risk premium from movements in the risk free rate'. By doing so there are two fundamental points that the AER's approach misses:

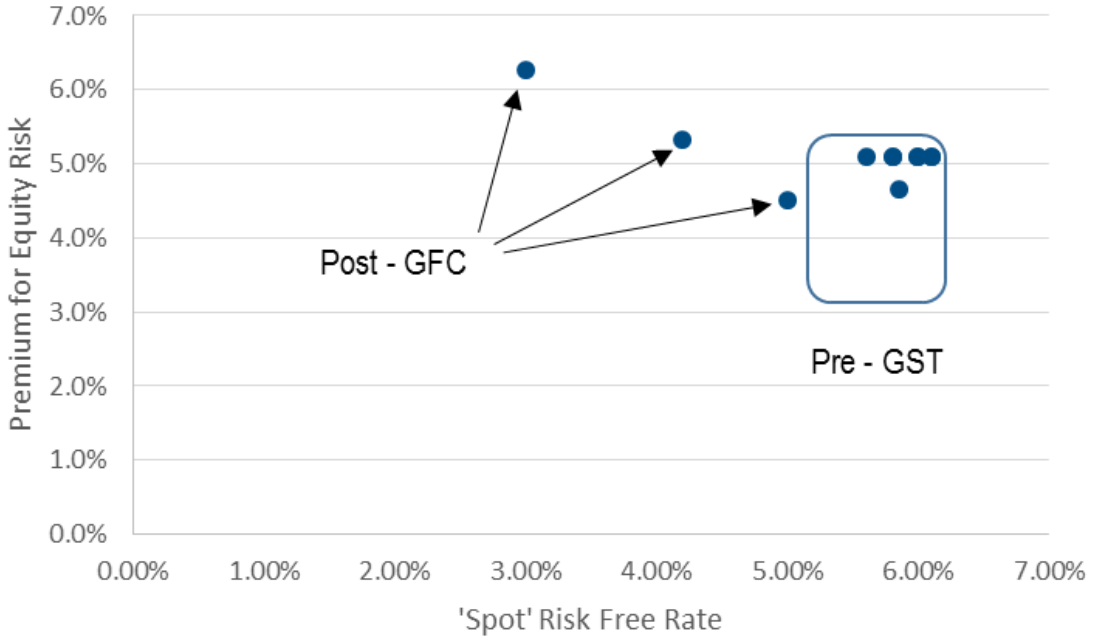
- Investors are not interested in just the risk premium to equity or total risk premium, but in total returns; and

[38] From observation, there is an almost one-for-one relationship between the risk premium and risk free rate for the three post global financial crisis observation (with the cost of equity ranging only between 9.3 per cent and 9.5 per cent, notwithstanding a variation in the risk free rate of more than 2 percentage points. While we do not advocate fitting a regression line to three data points, we observe that were this to be done then the equation that is derived is Premium for Equity Risk = 9% - 0.895 × Risk Free Rate, which is consistent with an almost one-for-one relationship.

- The central point of the concern expressed by many independent experts about the results delivered by a mechanistic application of the SL-CAPM in the context of an abnormally low risk free rate.

As discussed further in Chapter 4 below, we consider that the AER's application of a 4.55 per cent risk premium for equity to JGN in the current market circumstances is not commensurate with the efficient financing costs a benchmark entity will face over the access arrangement period.

**Figure 3.3: Independent expert reports (regulated infrastructure) – Risk premium for equity vs risk free rate**




*Source: AER (November, 2014), p.3-90 to p.3-92, Grant Samuel, Incenta analysis*

### 3.3.2 Errors in interpreting Grant Samuel reports

#### The AER's 'differing objective'

In its Table 3-20, which addresses what the AER considers to be the relevant (i.e. regulated infrastructure) independent expert reports, the AER has set out the returns on equity assumed, and also the imputation adjusted returns on equity. However, for the four most recent reports, all conducted by Grant Samuel, Note D to Table 3-20 states that 'These values exclude the uplifts explained in note C, for the reasons set out in step two.' Looking at 'step two' we found that the explanation was related to the AER's 'differing objective'. This was explained as follows:[39]

> *For valuations of regulated businesses, prevailing market expectations may be for the business to achieve cash flows worth well in excess of regulatory allowances. For cash flows from regulated activities, this may be done by outperforming regulatory allowances. The assumption of outperformance in future cash flows may be coupled*

[39] AER (November, 2014), p.3-277.

> *with the use of a matching discount rate that is not entirely reflective of the true cost of capital… Such expectations are reflected in a valuation greater than 1 times the RAB… To the extent that return on equity estimates from broker and valuation reports reflect expectations of regulated cash flows in excess of regulatory allowances, placing significant reliance on these estimates may not provide a return on equity that best achieves the rate of return objective.*

This statement by the AER is incorrect in a number of respects. If the expert did adopt a forecast of higher cash flows than implied by regulatory allowances and the expert also used a correspondingly higher WACC to offset this (as the AER appears to hypothesise), then a valuation of greater than the RAB would not be obtained in any event. Moreover, it is not clear why the expert would want to adopt a higher WACC to match it with higher cash flows in any event. The purpose of an independent expert report is to produce as accurate estimate of the value of an asset as possible, which is obtained by applying an estimate of the WACC that is as accurate as possible with a forecast of cash flows that too are as accurate as possible. If the forecast of cash flows are higher than assumed by the AER then this will translate into a higher value for the asset, without the need to (or any reason to) alter the estimate of the WACC.

Grant Samuel, in a recent letter to the AER in the context of its draft decision on TransGrid, also clarified a number of points for the AER, including that it considers its objective does not differ from that of the AER:[40]

> *Section E (pages 3-274 to 3-281) [of the AER's draft decision on TransGrid] sets out some explanation of the AER's rationale. In the sub-section 'Differing objective' it refers to reports by Grant Thornton and Deloitte which indicate that their uplifts took into account specific risk. While those parties have done so, it is very clear in our reports that our uplift has nothing to do with specific risk.*

In its original Envestra report Grant Samuel stated its view that specific risks should be dealt with in the cash flows rather than the discount rate. Its reasons for the uplift it applied in the case of Envestra were:[41]

- *Alternative approaches such as the Gordon Growth Model* – Grant Samuel considered the Gordon Growth Model is a 'particularly useful approach when valuing assets which generate long term stable cash flow growth.' Applying this model to similar entities (DUET Group, SP AusNet, APA Group and Spark), with yields of 6.5 per cent to 8.3 per cent, and dividend growth of 2.5-4.5 per cent, Grant Samuel found a higher indicated cost of equity range for Envestra of 9 per cent to 11.3 per cent (unadjusted for dividend imputation).

- *Investor repricing of risk since the global financial crisis* – Grant Samuel pointed to anecdotal information that 'equity investors have repriced risk since the global financial crisis', and that acquirers of businesses are now 'pricing offers on the basis of hurdle rates above those implied by theoretical models'. It was noted that this development had not yet been priced into estimates of the market risk premium.

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40 Grant Samuel (12 January, 2015), *Australian Energy Regulator – Draft Decision*, p.5. We note that Grant Samuel's 'clarification' is exactly as we had interpreted Grant Samuel's expert's reports based on the explanations contained therein.

41 Grant Samuel (3 March, 2014), pp.8-9.

Grant Samuel suggested that the repricing of risk could be reflected in a 1 per cent increase of the market risk premium (to 7 per cent).

- *Low interest rates compared with historical norms* – Grant Samuel noted that 'substantial amounts of liquidity [are] being pumped into many advanced economies (particularly Western Europe and the United States) to stimulate economic activity,' which is depressing effective real interest rates.

> *Some academics/valuation practitioners consider it to be inappropriate to add a 'normal' market risk premium (e.g. 6%) to a temporarily depressed bond yield and therefore a 'normalised' risk free rate should be used. On this basis, an increase in the risk free rate to (say) 5% would increase the calculated WACC range to 6.6%-7.2%.'*

- *Returns applied in broker research reports* – Grant Samuel reviewed the research reports of broker analysts specialising in the energy infrastructure sector, and concluded that 'brokers are currently adopting costs of equity capital in the range 8.5%-11.2%, with a median of 9.6%.'

While it is not relevant to the matters addressed in this report, Grant Samuel also questioned whether the AER's assumption that Envestra's EV/RAB value was substantially above 1 is valid, as follows:[42]

> *As explained in the Envestra Report, Envestra Limited was in the middle of a substantial mains replacement program which would result in a significant increase in the RAB over the short to medium term. Accordingly, the true RAB multiple is materially less than the AER's calculated 1.4-1.6 times.*

### Regulatory period vs valuation of a 'perpetuity'

The AER also considers that the purpose for which independent experts estimate a cost of equity is different from the one that it pursues. That is, independent experts are concerned with estimating the value of a business into perpetuity, while the AER is only concerned with the current regulatory period. Therefore, a long term cost of equity is appropriate for independent experts, while a cost of equity reflecting current market data (including the observed risk free rate) is appropriate for the AER's task.

We disagree with the AER on this point. An independent expert that forecasts cash flows explicitly for 5 years and then applies a terminal value that reflects the value of the business at that terminal value date into perpetuity, is conducting fundamentally the same exercise as the AER. The only difference is that the AER takes as its terminal value (the value of the RAB) at the end of the regulatory period. The value of the RAB at the end of the regulatory period is taken as a single value, but the risk associated with that value must be the long term risk attaching to the asset, which is in effect the risk to perpetuity. Hence, the only legitimate discount rate that should be applied to the regulatory task is the long term rate. This was also remarked upon by Grant Samuel in its recent letter:[43]

[42] Grant Samuel (12 January, 2015), p.6.
[43] Grant Samuel (12 January, 2015), p.5.

> *In any event, it is our view that the relevant period is always a perpetuity, even in the context of a five year regulatory period. The rate of return over the five year period can only be realised if the capital value is sustained at the end of the period. The sustainability of the capital value at the end of year five is in turn dependent on cash flows beyond year five (i.e. cash flows in perpetuity).*

This is why a 10 year risk free rate is applied, and why the appropriate estimate of the 10 year risk free rate is the long term value.[44] It is the approach that has been applied by regulators such as IPART in Australia and Ogem/Ofwat in the UK.

### Attributing a portion of the uplift to the cost of debt

As noted above, the AER calculated a scenario in which all of Grant Samuel's uplift was attributed to the cost of debt, and as a result, asserted that its 4.55 per cent premium for equity risk was found to be within the range of values that was consistent with the Grant Samuel report. However, not one of the reasons given by Grant Samuel related to the cost of debt, and was then never discussed again in its expert opinion. Grant Samuel simply noted that:[45]

> *A cost of debt of 7.0% has been adopted based on a margin of 2.8% over the risk free rate. This figure represents the cost of borrowings with a ten year tenor.*

Yet the AER's analysis (without any evidence) surmised that some part of the uplift must have been attributed to the cost of debt component of the WACC. Grant Samuel's recent letter also clarified this point:[46]

> *…we reject the argument that any meaningful portion of the uplift should be attributed to debt.*

### Gross-up of the return on equity for dividend imputation

As shown above, the AER also presented a range of values for the premium for equity risk estimated by Grant Samuel that excluded the value of imputation credits on grounds that the latter had not been clear on whether dividend imputation effects were incorporated into its cost of equity estimate. It is noteworthy that Grant Samuel's recent letter clarified that it does not include the impact of dividend imputation in the rates of return it estimates:[47]

> *We have always made it clear in our reports that we do not believe that day to day market prices of Australian equities incorporate any particular value for franking credits attached to any future income stream and we have never made any adjustment*

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44 As part of an earlier report we interviewed a dozen equity market analysts specialising in regulated energy assets, and two of the most highly regarded independent experts with experience in regulated energy infrastructure, who all confirmed that a 10 year time horizon is appropriate for valuing all firms, including those regulated on a 5 year cycle. See Incenta (May, 2013), *Term of the risk free rate for the cost of equity*, Report for the Energy Networks Association.

45 Grant Samuel (3 March, 2014), Envestra – Independent Expert's Report to the Independent Board Sub-committee in relation to the Proposal by APA Group, p. 7.

46 Grant Samuel (12 January, 2015), p.8.

47 Grant Samuel (12 January, 2015), p. 5.

> *for dividend imputation (in either the cash flows or the discount rate) in any of our 500 plus public valuation reports.*

### Implications of a correct interpretation of Grant Samuel's Envestra report

A proper consideration of Grant Samuel's Envestra report is as follows. Grant Samuel stated that the WACC for regulated energy assets could lie in the range of 6.5 per cent to 8 per cent, but Grant Samuel conservatively settled on a range of 6.5 per cent to 7.0 per cent. Grant Samuel's (Classical After Tax) WACC calculation assumed a cost of debt of 7 per cent, gearing at an average of 60 per cent, and a market risk premium of 6 per cent.

At the mid-point of its range Grant Samuel was recommending a 1.42% increase in the cost of equity (given that Grant Samuel has confirmed that no part of the uplift was ascribed to debt[48]). Hence, the mid-point cost of equity was increased from 8.1 per cent assuming a mechanistic application of the SL-CAPM, to 9.52 per cent, which would translate to an imputation adjusted return on equity of approximately 10.1 per cent based on the adjustments the AER has made. This in turn implies that Grant Samuel estimated a 5.9 per cent premium for equity risk (with imputation effects included and relative to the observed risk free rate of 4.2 per cent), which compares with the AER's 4.55 per cent (i.e. 1.33 per cent less) premium for equity risk.

The range for the cost of equity implied by Grant Samuel's uplift factor was from 9.47 per cent to 9.57 per cent, with a respective premium for equity risk range of 5.27 per cent to 5.37 per cent. These Grant Samuel ranges compare with the AER's cost of equity of 8.75 per cent and premium for equity risk of 4.55 per cent if the AER applies a 6.5 per cent market risk premium and an equity beta of 0.7. However, the Grant Samuel ranges cited above have not been grossed up for the impact of imputation credits, which would increase the differential with the AER's cost of equity and premium for equity risk estimates.

[48] Grant Samuel (12 January, 2015), Australian Energy Regulator – Draft Decision, p 8.

# 4. Further updated empirical evidence on equity and market required rate of return estimates of independent expert reports

## 4.1 Introduction

### 4.1.1 Types of information to be drawn from independent expert reports

In this chapter we provide a further update on the information contained in independent expert reports, which could be used to inform the AER's assessment of the rate of return on equity for JGN. We agree with the AER that the analysis of regulated infrastructure businesses by independent experts is especially relevant as it will allow a test of any issues with estimating required rates of return that are common across all firms, as well as a test of issues that are particular to regulated infrastructure businesses. Our analysis of the information that we consider can be gained from these reports is contained in section 4.2.1. However, in our view, important information can be gained by examining wider samples of independent expert reports as this permits insight into whether the opinions of independent experts is consistent with:

- An approach that implies that the SL-CAPM has shortcomings in relation to low-beta stocks in general (this matter is addressed in section 4.2.2), and
- a view that the SL-CAPM if applied mechanistically (i.e. applies a 'spot' risk free rate with a fixed market risk premium irrespective of market conditions) has shortcomings at the present time, being a period of continued historically-abnormal interest rates (this matter is addressed in section 4.2.3).

### 4.1.2 Characteristics of independent expert reports

We observe that the discount rate that is estimated and applied by independent experts is a simple and transparent number (relative to cash flow forecasts). Moreover, it is also an input that we would expect to have been the product of extensive consideration. The discount rate in discounted cash flow valuations almost universally has a substantial impact on the estimated value of the firm or project. Given the importance of this number in contested market transactions, if the rate of return proposed by independent experts were to diverge from the level that is seen to be acceptable in the market, it would be challenged and the reputation of the independent expert would come under scrutiny. Independent experts can therefore be expected to carefully consider the return on the market and the required premium for equity risk that they propose. In the first of our previous reports we noted that independent expert reports are subject to significant institutional and market scrutiny:[49]

- *potential litigation from the parties involved in the business transaction that is the subject of the independent expert report;*
- *a regulatory regime administered by the Australian Securities and Investment Commission (ASIC);*[50]

[49] Incenta (May, 2014), p. 6.

[50] Australian Securities and Investments Commission, Regulatory Guide 111 (RG 111), Contents of Expert's Reports; and RG 1112, Independence of Experts.

- *competitive pressure from other independent experts; and*
- *reputational risk to provide fair and unbiased valuations.*

In the remainder of this chapter we:

- Describe the sample of independent expert reports;
- Consider the implications from independent expert reports for the cost of equity for infrastructure assets;
- Further investigate Grant Samuel's independent expert reports to assess the sources of its premium for equity risk;
- Assess the estimates of the required return on equity for the market undertaken by independent experts; and
- Then compare the implied expected rates of return on the market relative to those of the AER.

### 4.1.3 The sample of independent expert reports

We have assembled a sample of 53 WACC assessments (projects / firms) contained in 47 independent expert reports spanning the period from 10 October, 2012 to 31 January, 2015, as follows:

- 13 projects/reports from the period of SFG's report: 10 October, 2012 to 26 April, 2013;
- 23 firms/projects from 22 reports from the period of our previous reports: 27 April, 2013 to 20 April, 2014; and
- 17 firms/projects from 12 reports for the period: 21 April, 2014 to 31 January, 2015.

In the last period the last independent expert report that contained an assessment of the cost of equity applying the CAPM model was Otis Energy (assessed by RSM Bird Cameron), which was for 6 November, 2014. While a small number of independent expert reports were made public between 6 November 2014 and 31 January, 2015, none of these applied the CAPM to derive a cost of equity or applied a discount rate to the cash flows for valuation purposes.[51]

[51] These reports generally used earnings and/or cash flow multiples for valuation purposes, after having considered a DCF approach inappropriate for the circumstances of the firm in question. One expert's report (KPMG (14 November, 2014) *Boart Longyer Limited*, p. 72) applied a 'high level DCF cross check' with a WACC range of 18.1 per cent to 19.2 per cent, but provided no further details about the assumptions used in the derivation of this range.

## 4.2 Results of our analysis of independent expert reports

### 4.2.1 Implications from independent expert reports for the cost of equity for infrastructure assets

As discussed in the previous chapter, we consider that the AER's emphasis on the total risk premium (as described in its Figure 3-8, reproduced as Figure 3.1 above) is misplaced, and that the emphasis should be placed on the premium for equity risk. To illustrate the impact of the AER's WACC policy changes over the past decade, we have adjusted the data contained in the AER's Table 3-20 in the following ways:

- Excluding the two expert reports relating to management contracts because we do not consider that they reflect the characteristics of a regulated business (as discussed above);
- Re-estimating the cost of equity for all of Grant Samuel's independent expert reports based on the clarifications that Grant Samuel provided in relation to Envestra (as outlined above);[52]
- Estimating imputation adjusted returns using the AER's implied imputation adjustment;[53] and
- Focusing on the *differential* between the cost of equity provided by the AER's methodology (which applies the 'spot' risk free rate a risk premium for equity that is the product of the equity beta and the market risk premium adopted by the AER) , and the estimate produced by the independent expert in each case.

In addition, we observe that as the figures being compared are costs of equity, and care is required to ensure that the levels of gearing assumed are consistent with the regulatory benchmark of 60 per cent debt-to-assets. In the sample of regulated firms that we have analysed (i.e., after removing the observations discussed above), the midpoint level of gearing assumed by the relevant independent expert is very close to 60 per cent in all except two cases, where a materially lower level of gearing was applied. We discuss the implications of this below.

Figure 4.1 below, displays the fall in the differential between the premiums for equity risk (adjusted for dividend imputation by the AER) that have been applied since 2003, compared with those applied by independent experts. The different phases, which can be related to market conditions and the AER's WACC policies are as follows:

- Phase 1: Prior to 2008, beta 1.0, MRP 6 per cent – During this period the AER applied a regulatory beta of 1.0 and a market risk premium of 6 per cent, but the risk free rate was in the region of 5.5 per cent to 6 per cent. In these circumstances the AER provided an imputation

[52] Specifically, we attributed all of Grant Samuel's uplift to the cost of equity, consistent with the position set out in: Grant Samuel (12 January, 2015), p 8.

[53] We have adjusted for imputation using the same proportional increase in the return on equity that was implied by the AER's calculations (in its Table 3-20). The average adjustment for these businesses was 0.60 percentage points. We applied the implied gross up for imputation to the uplifted equity returns implied by Grant Samuel's uplift factors for Hastings Diversified Utilities Fund and Envestra. The average gross up for imputation was 0.60 percentage points. We are not aware of the assumptions that the AER applied in deriving its imputation adjustments, and hence do not make any comment regarding their appropriateness. We have simply adopted the AER's implied adjustments for expediency.

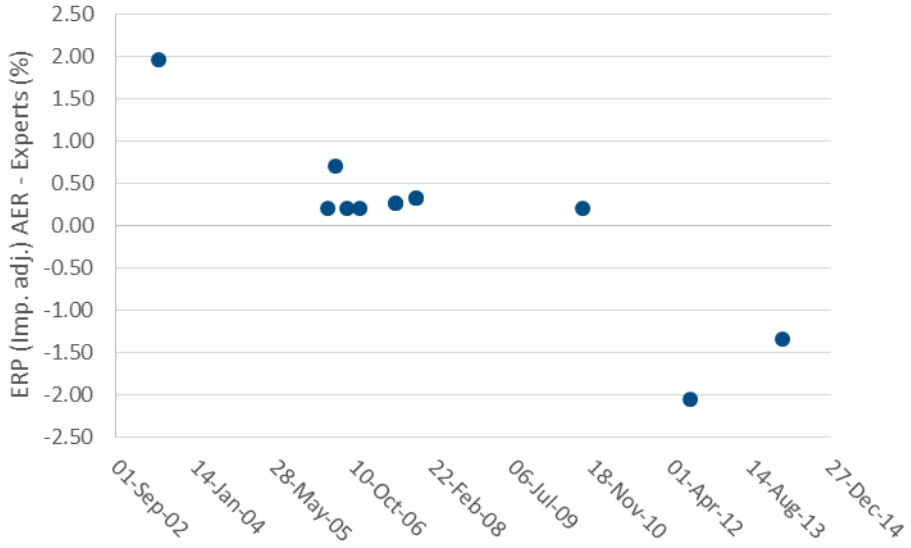
adjusted premium for equity risk approximately 25 basis points higher than the independent experts. However, the left-most figure one of the observations where the independent expert adopted a materially lower level of gearing than the regulatory benchmark, which means that the independent expert's estimate would need to be adjusted upwards to make it consistent with the regulatory benchmark gearing. The consequence of this is that the extent of overstatement under the AER's standard approach is itself overstated.

- Phase 2: Post global financial crisis, beta 0.80, MRP 6.5 per cent - The AER increased the market risk premium to 6.5 per cent for a time (2009-11), but reduced the regulatory beta to 0.80 and continued to apply a mechanistic SL-CAPM approach. The AER's risk premium to equity was 20 basis points above the independent expert, at a time when the risk free rate was still at levels of 5 per cent to 5.5 per cent.

- Phase 3: Post global financial crisis, beta 0.80, MRP 6 per cent - When the risk free rate dropped to 3 per cent (at the time of the HDUF and DUET Group reports), the AER's risk premium for equity fell to 206 basis points below that being provided by Grant Samuel.

- Phase 4: Post global financial crisis, beta 0.70, MRP 6.5 per cent – In December 2013 the AER reduced the regulatory equity beta from 0.80 to 0.70 and raised the market risk premium from 6 per cent to 6.5 per cent. At the time of the Envestra report (March, 2014), the risk free rate recovered to 4.2 per cent, and the shortfall of the AER's risk premium for equity relative to independent experts reduced to approximately 138 basis points.

**Figure 4.1: Regulated infrastructure: Difference in risk premium for equity (imputation adjusted) – AER less Independent Experts**



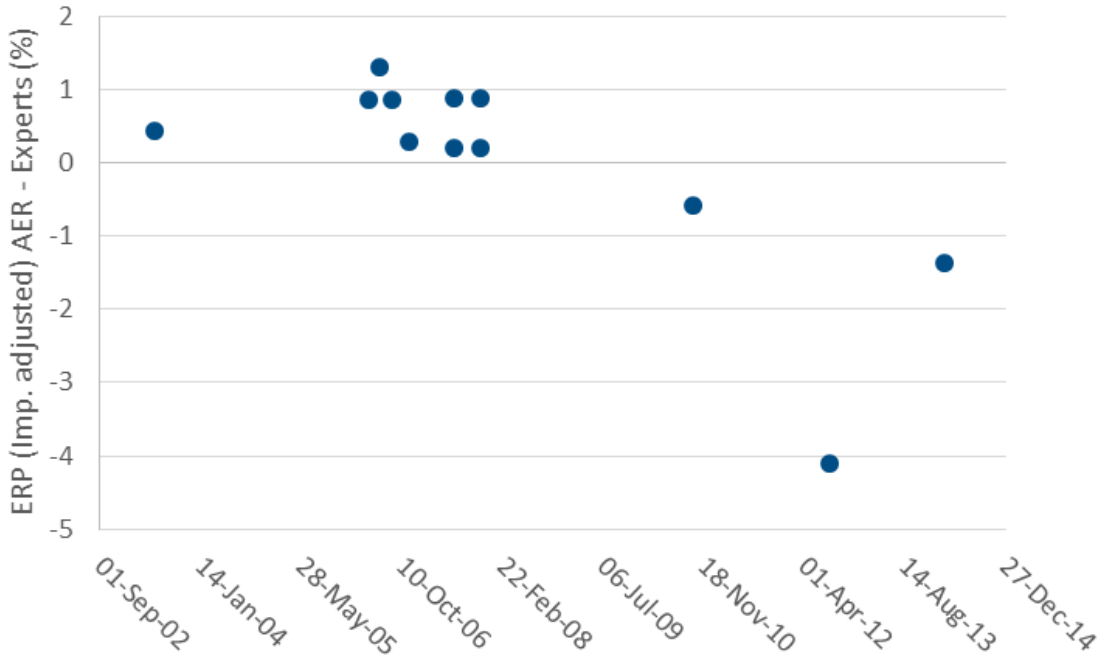

*Source: AER (November, 2014), p.3-91 and p.3-92, and Incenta analysis. Note: imputation adjusted equity risk premiums as calculated from AER (November, 2014) data contained in Table 3-20 relative to the observed risk free rate, except for HDUF and Envestra.*

As the risk free rate at the time of the AER's JGN draft report was 3.35 per cent, based on its previous reports we would expect that Grant Samuel would have estimated a premium for equity risk between

150 and 200 basis points higher than the AER if both continued to apply their methodologies. The AER's shortfall relative to Grant Samuel can now be expected to be well in excess of 200 basis points based on the 'spot' Commonwealth bond yield of 2.64 per cent that applies to JGN's revised averaging period (covering the 20 business days to 30 January, 2015).

As noted above, the gearing levels applied by the independent experts in most of the independent expert's reports shown in Figure 4.1 were either above or below the 60 per cent level assumed by the AER. To put these returns on a like-for-like basis with the AER's returns we adjusted the cost of equity up or down to reflect the cost of equity that would have applied with 60 per cent gearing. The results are displayed in Figure 4.2 below.

**Figure 4.2: Regulated infrastructure: Difference in risk premium for equity (imputation adjusted) assuming 60% gearing – AER less Independent Experts**




*Source: AER (November, 2014), p.3-91 and p.3-92, and Incenta analysis.*

Figure 4.2 shows that while the values have changed, in some cases significantly, the overall picture has stayed roughly the same as in Figure 4.1. That is, prior to the global financial crisis, relative to the restated independent expert cost of equity estimates, the AER provided a 20 basis points to 87 basis points higher cost of equity (adjusted for dividend imputation). However, since the end of the global financial crisis this has changed. For HDUF the cost of equity shortfall implicit in the AER's methodology was 410 basis points, while for Envestra the AER's 138 basis point deficit stayed the same (since Grant Samuel applied an average gearing of 60 per cent in this case).

### 4.2.2 Insight from Grant Samuel reports for the cost of equity of low beta stocks

Grant Samuel's methodology estimates the (high and low) cost of capital (WACC) by:

- First estimating the WACC using a mechanistic SL-CAPM cost of equity that applies the spot risk free rate and a relatively constant market risk premium, and

- Then adding an uplift if necessary after considering other evidence, principally the results of the dividend growth model, but also the estimates adopted by equity analysts (as discussed in Section 3.3.2 above).

Grant Samuel then applies judgement based on these relevant market sources to identify a new (high and low) WACC range that incorporates the implications of the alternative data sources. Since the gearing level is given and the cost of debt component is held constant (i.e. not varied from the mechanistic WACC), it is possible to infer the range of cost of equity estimates that Grant Samuel has applied. It is not possible definitively to apportion the increase in the estimated cost of equity among the:

- Risk free rate;

- Market risk premium; and

- Systematic risk applying to the characteristics of the asset that differs from that estimated using the mechanistic SL-CAPM (i.e. applying the equity beta and a market risk premium)

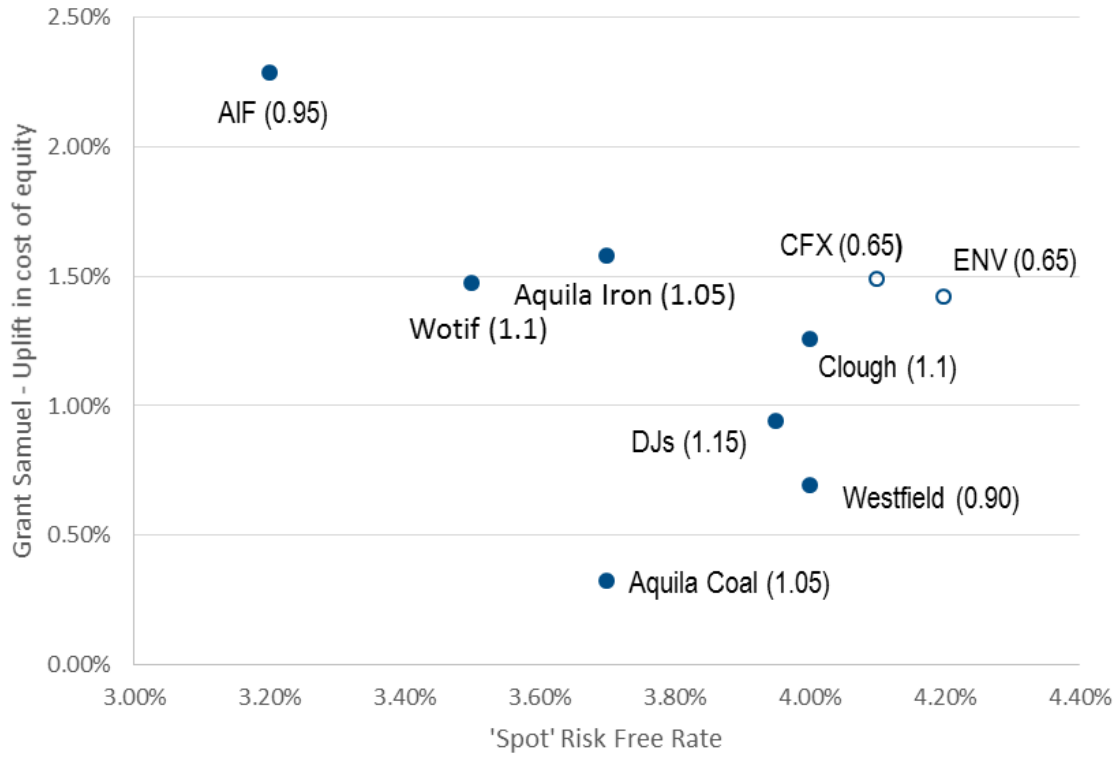
The transparent nature of Grant Samuel's methodology allowed us to inquire into whether the level of uplift that is applied to low beta stocks differs to the adjustment that is applied to stocks with an average level of risk. The results of this analysis, based on 9 Grant Samuel independent expert reports, are set out in Figure 4.2 below.

We note that the data points that are hollow represent CFS Retail Property Trust (CFX) and Envestra, which had relatively low betas. On the other hand, the average beta of the remaining 5 businesses was close to unity (ranging from 0.90 to 1.15). Grant Samuel adjusted upwards the cost of equity of the two relatively low beta stocks by materially more than might have been expected (1.49 per cent and 1.42 per cent respectively) given that the risk free rate had not fallen as far below the 'normal' level of 5 per cent to 6 per cent (i.e. 4.1 per cent and 4.2 per cent respectively). Our observation from the independent expert behaviour revealed in this figure is that the level of uplift that is applied by Grant Samuel for these assets would appear to have comprised:

- An adjustment to reflect the extent to which the risk free rate was less than approximately 4.5 to 5 per cent, and

- An additional uplift for the low beta stocks in the order of approximately 1 percentage point.

**Figure 4.2: Grant Samuel independent expert reports – Cost of equity uplift vs risk free rate**




*Source: Grant Samuel and Incenta analysis. Note 1): Two hollow data points are low beta stocks. Note 2): Mid-point equity beta assessed by the independent expert is shown in brackets.*

Whilst Grant Samuel has expressed concern about the efficacy of the SL-CAPM model, it has not stated that it has a general concern about the ability of the SL-CAPM to explain the returns on low beta stocks. Rather, the larger uplift for these low beta stocks (given the relatively higher 'spot' risk free rate at the time they were assessed) was a function of the other market sources reviewed by Grant Samuel, such as application of the Dividend Growth Model and the rates of return on equity assessed by broker analysts.[54] Nevertheless, in our view, the outcome that is observed in Figure 4.2 above provides some evidence that the CAPM is deficient in predicting the required returns for low beta stocks. That is, the uplift in the relatively low beta property trust and regulated energy transmission/distribution business is larger than would appear justified given the relatively high 'spot' risk free rate applying at the time. We also note that with respect to property trusts Grant Samuel states that in this sector the discount rate is assessed not by reference to the SL-CAPM, but by observing the stock's yield and growth prospects (which is equivalent to applying the Dividend Growth Model).[55]

[54] In the following section that summarises the 'return on the market' that is assumed by the various independent experts, we have assumed that 1 percentage point of the uplift that Grant Samuel has assumed for these two low beta stocks was related to those stocks in question and that the remainder comprised an adjustment to the market return above what was implied by the mechanistic CAPM.

[55] Grant Samuel (12 January, 2015), p.3.

### 4.2.3 Insight from independent experts for the Independent experts' assumptions about the return on the market

***Independent experts' assumptions about the return on the market***

In Table 4.1 below, we show the overall results for the independent expert reports in the sample, arranged by independent expert and in declining order of the independent expert's estimate of average equity beta for the 53 firms / projects. The overall average return on equity, excluding the effect of gamma but including the uplift factor, U, was 14.33 per cent (compared with the range of 14.2 to 14.7 per cent reported in our previous report). For the recent 'low beta' Grant Samuel reports (CFX and Envestra) we have subtracted 1 per cent from the uplift from the cost of equity and attributed the remainder to the return on the market. As there were only two Grant Samuel cost of equity assessments (out of 9) that were likely to have such an uplift component, this would not have a material impact on the overall market rate of return estimate.

On average, the risk free rate adopted by the independent experts was 3.98 per cent relative to an average 'spot' risk free rate of 3.56 per cent.[56] The policies of different independent experts has varied:[57]

- Some, like Grant Thornton and Crow Horwath, adjust the risk free rate upwards more than others, while holding the market risk premium at 6 per cent, and

- Others, like RSM Bird Cameron and BDO, have left the risk free rate largely or wholly unadjusted, but increased the market risk premium above 6 per cent.

However, the feature common to the behaviour of independent experts between 2012 and 2014 is the estimation of a return on the market that is significantly higher than what would have been estimated on the basis of a mechanistic application of the SL-CAPM. The average return on the market implied in these reports was 10.52 per cent, in a range of 10.1 per cent to 11.3 per cent depending on the independent expert. With an average 'spot' risk free rate of 3.56 per cent during the period, the independent experts' average assumed 10.52 per cent market rate of return could be interpreted as implying that on average a market risk premium of close to 7 per cent (not including dividend imputation) over the whole period had been applied, with this adjusted market risk premium increasing as the 'spot' risk free rate fell, and vice-versa.

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56 We applied the independent expert's stated risk free rate and the respective spot risk free rate that was mentioned by the expert. However, if the prevailing spot rate was not mentioned, we applied the 'spot' risk fee rate on the day that the adopted risk free rate was 'as at', but if no date was given, we applied the 'spot' risk free rate on the day that the report was published.

57 It should also be noted that the policies of different independent experts displayed in Table 4.1 are not strictly comparable, since the prevailing 'spot' risk free rate was different in each case.

**Table 4.1: Independent experts – Required return on equity, and required return on the market (pre-gamma), 31 August 2012 to 6 November 2014**

| Adviser | No. of reports | Rf | Adopted Rf | Adopted MRP | Expert's beta | Expert's Uplift | Expert's Re | Expert's Rm |
|---|---|---|---|---|---|---|---|---|
| RSM Bird Cameron | 3 | 3.06% | 3.60% | 6.50% | 1.63 | 8.33% | 12.97% | 10.10% |
| BDO | 13 | 3.29% | 3.36% | 6.69% | 1.51 | 0.27% | 13.61% | 10.05% |
| Grant Thornton | 5 | 3.69% | 4.88% | 6.00% | 1.39 | 1.40% | 14.63% | 10.88% |
| Lonergan Edwards | 4 | 3.63% | 4.50% | 6.00% | 1.41 | 0.50% | 13.48% | 10.50% |
| Ernst & Young | 3 | 3.22% | 4.56% | 6.00% | 1.29 | 2.47% | 14.75% | 10.56% |
| Leadenhall | 3 | 3.82% | 3.82% | 6.33% | 1.16 | 7.33% | 18.47% | 10.15% |
| Deloitte | 4 | 4.11% | 4.30% | 7.00% | 1.09 | 0.94% | 12.85% | 11.30% |
| Others | 6 | 3.62% | 4.06% | 6.38% | 1.06 | 3.90% | 14.79% | 10.44% |
| Crowe Horwath | 3 | 3.35% | 4.30% | 6.00% | 0.93 | 7.00% | 16.90% | 10.30% |
| Grant Samuel | 9 | 3.82% | n.a. | n.a. | 0.96 | 1.27% | 12.10% | 11.02% |
| Total (excl. GS for Rf and MRP) | 53 | 3.56% | 3.98% | 6.54% | 1.26 | 2.39% | 14.33% | 10.52% |

*Source: CONNECT 4, Bloomberg and Incenta analysis. Note 1: n.a. for Grant Samuel as the 'uplift' is clearly a premium for equity risk but not allocated. Note 2: The 'Expert's Rm column does not include 'Expert's Uplift' as part of the required return on the market, and therefore is an under-estimate to the extent that this is the case. Note 3: 'Others' category includes DMR Corporate, KPMG, PKF, Titan Partners, Value Adviser and William Buck.*

On average, a 2.39 per cent average uplift factor was applied by independent experts over the whole period (which compares with a range of 1.55 per cent to 3.35 per cent identified in our previous report). However, the application of an uplift factor varied between independent investors. We consider it likely that in some cases the application of an uplift may compensate for not adjusting the risk free rate or the market risk premium at a time of a reduced 'spot' risk free rate. Leadenhall's reports are a case in point. Here the 'spot' risk free rate has been applied, but the market risk premium was raised from 6 per cent to 7 per cent in one report (during 2012) out of three, and in addition an average uplift of approximately 7 per cent has been provided. Leadenhall applies uplifts of up to 15 per cent to compensate for the 'size effect', which is a component of systematic risk that is not explained by the SL-CAPM.[58] It is therefore likely that part of what independent experts have termed an 'uplift' also includes some adjustment for systematic risk.

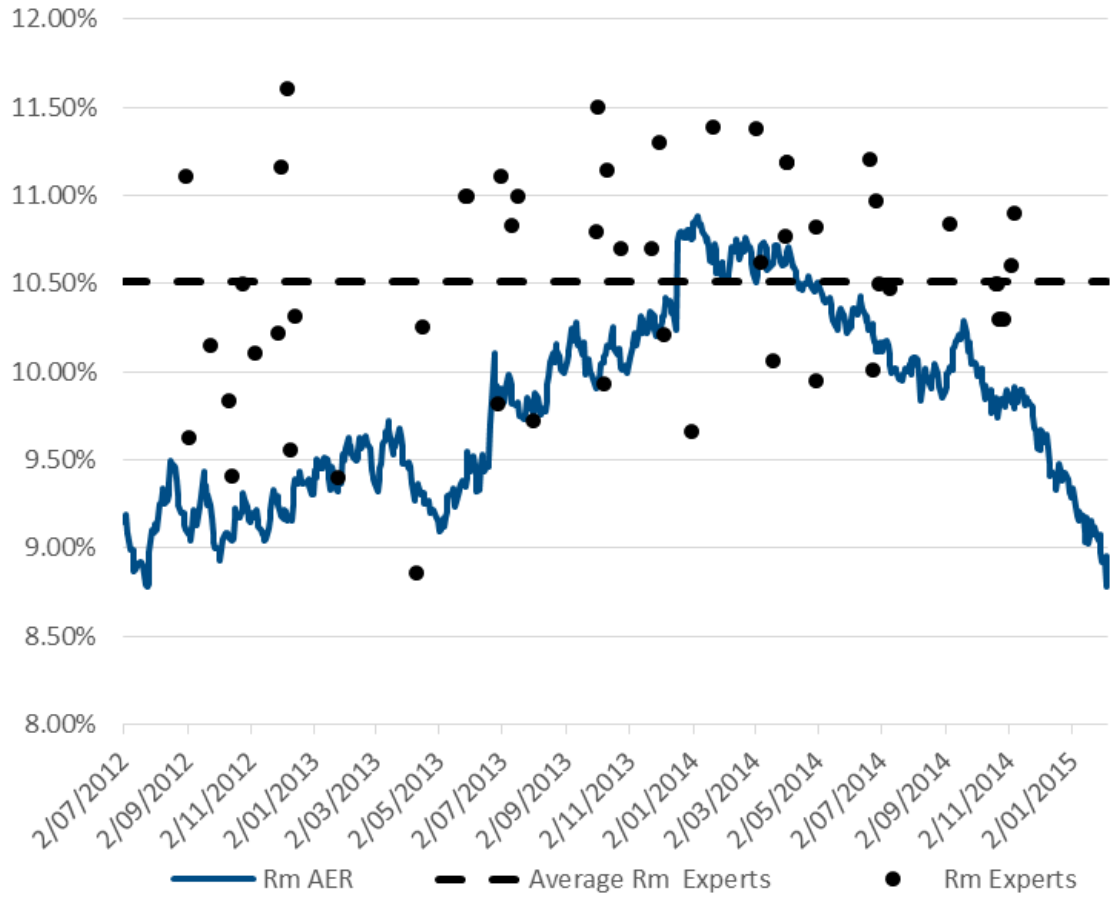
### *Return on the market: Independent experts vs the AER*

#### Comparison of market rates of return estimates

In this section we consider the relationship between the required return on the market estimates of independent experts relative to the mechanistic SL-CAPM approach applied by the AER. Each dot in Figure 4.4 below shows the relative expected return on the market (pre-gamma) implied by the independent expert reports, and for each day, the mechanistic SL-CAPM return on the market has been calculated using a 6 per cent market risk premium up to 17 December, 2013, and 6.5 per cent beyond that date. The dotted line is the independent experts' average expected return on the market over the whole period.

58 Leadenhall (17 December, 2013), FRR Corporation Proposed Acquisition of NewLease Pty Ltd, p.64.

**Figure 4.4: Required rate of return on the market (pre-gamma) – Independent expert reports vs the AER**




*Source: CONNECT 4, Bloomberg and Incenta analysis. Note: AER return on market applies a 6 per cent market risk premium up to 17 December, 2013, and 6.5 per cent beyond that date.*

The two most striking features relating to this figure are:

- The way that independent experts have maintained an essentially constant expected market return throughout 2012 to 2014; and

- The fact that the vast majority (43 out of 53) of independent expert reports have an expected return on the market above what is assumed in the AER's application of the SL CAPM, even before an increment is added to the independent expert values to allow for the value the AER ascribes to imputation credits.

The return on the market implied by the AER's mechanistic application of the SL-CAPM was materially below the expectations of independent experts late 2012 and early 2013 (when the 'spot' risk free rate was a relatively low 3 per cent to 3.5 per cent), and more recently in late 2014 (when the 'spot' risk free rate again declined to approximately 3.5 percent). The only time that the market return expected by the AER was approximately equal to that of the independent experts was in the few

months after the AER raised its market risk premium estimate from 6 per cent to 6.5 per cent. However, even this adjustment to the market risk premium was not sufficient to achieve actual parity between the AER's estimate of the market's expected return and those of the independent experts, since the values reported in Figure 4.4 do not make adjustments for imputation credits (either the AER's value needs to be adjusted downwards or the experts' values upwards to achieve consistency). In recent months the gap between the independent experts' market return expectation and that of the AER has increased again as the 'spot' risk free rate has fallen to approximately 2.5 per cent.

### Comparison of estimated market rates of return based to the AER's 6.5 per cent market risk premium

In Table 4.2 we have assumed that the AER applied a market risk premium of 6.5 per cent throughout the whole period of the study (i.e. not just since 17 December, 2013). Three periods have been identified, in order to isolate the period with a relatively high 'spot' risk free rate, which was between 8 October, 2013 and 31 March, 2014. The 'spot' risk free rate was approximately 4 per cent during this period, which coincided with the AER raising its estimate of the market risk premium to 6.5 per cent, and was the only period that the AER's estimate of the market rate of return came close to that embodied in independent expert reports. We find that the 'spot' risk free rate was lowest in the earlier period (3.29 per cent), and next lowest in the third period (3.58 per cent). Not surprisingly, the difference between the market rate of return estimated by independent experts and the AER was greatest during the first period (0.56 per cent), and lowest during the second period (0.26 per cent), as the adjustments made by independent experts has mitigated the effect of a fluctuating 'spot' risk free rate. We note that these market (i.e. independent expert) estimates of the market return on equity may be considered conservative, as they are exclusive of additional uplifts for risk attributed by independent experts, and are not strictly comparable to the value assumed by the AER (as the independent expert values do not include an assumed value of dividend imputation credits).

**Table 4.2: Required rate of return on the market (pre-gamma) – Independent expert reports vs the AER (assuming 6.5% market risk premium)**

| Date range | 31 Aug 12 to 31 July 13 | 8 Oct 13 to 31 Mar 14 | 19 Mar 14 to 6 Nov 14 | 31 Aug 12 to 6 Nov 14 |
|---|---|---|---|---|
| Number of reports | 25 | 13 | 15 | 53 |
| Risk free rate | 3.29% | 4.04% | 3.58% | 3.56% |
| Rm - Independent experts | 10.35% | 10.79% | 10.54% | 10.52% |
| Rm - AER (6.5% MRP) | 9.79% | 10.54% | 10.08% | 10.06% |
| **Difference ($R_m$)** | **0.56%** | **0.26%** | **0.46%** | **0.46%** |
| Uplift (not incl. GS) | 2.47% | 1.90% | 2.67% | 2.67% |

*Source: CONNECT 4, Bloomberg and Incenta analysis. Note: AER return on market applies a 6.5 per cent throughout.*

### A.1.1 Appendix: CVs of authors

# Jeff Balchin

**Managing Director**

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Jeff is the Managing Director of Incenta Economic Consulting. Jeff has 20 years of experience in relation to economic regulation issues across the electricity, gas, ports, airports and water sectors in Australia and New Zealand. He has advised governments, regulators and major corporations on issues including the development of regulatory frameworks, regulatory price reviews and issues around the introduction and measurement of competition (including franchise bidding). Jeff has undertaken a number of expert witness assignments. In addition, Jeff has led a number of analytical assignments for firms to understand the responsiveness of consumers to changes to prices and related factors (like promotional activities) and to use this information to inform pricing strategy, and has assisted with the application of economic principles in transfer pricing matters. His particular specialities have been on the application of finance principles to economic regulation, the design of incentive compatible regulation and efficient tariff structures, the drafting and economic interpretation of regulatory instruments and the application of economic principles to pricing in unregulated markets.

### *Past positions*

Jeff previously was a Principal at PwC in its economics and policy team for almost 4 years, prior to that a director and partner at the Allen Consulting Group for over 13 years, and prior that he held a number of policy positions in the Commonwealth Government. In this latter role, he was on the secretariat of the Gas Reform Task Force (1995-1996), where he played a lead role in the development of the National Gas Code.

### *Relevant experience*

#### A. Economic regulation of network / monopoly activities

- Assistance to parties during price reviews/negotiations
- Design of incentives for operating expenditure efficiency (Client: ElectraNet, 2012-13) – provided expert advice on the detailed application of the incentive arrangements for operating expenditure, including the link between the incentive scheme and the forecasting method.
- Regulatory depreciation (Client: APA, 2012-13) – provided expert reports on the economic principles relevant to the depreciation method that is applied to set gas transmission charges.
- Regulatory cost of debt (Clients: Powerlink, ElectraNet and Victorian gas distributors 2011-2012) – provided a series of reports addressing how the benchmark cost of debt should be established pursuant to the National Electricity Rules and on the appropriate benchmark allowance for debt and equity raising costs.
- Strategic advice, Victorian electricity distribution review and NSW gas distribution review (Client: Jemena Electricity Networks, 2009-2011) – retained as strategic adviser during the review and also provided advice on a range of technical regulatory economic issues, including on regulatory finance matters, service incentives, party contracts, allocation of costs between regulated and unregulated activities and forecasting of expenditure.
- Regulatory cost of debt (Client: Powercor Australia Limited, 2009-2010) – provided a series of reports addressing how the benchmark cost of debt should be established pursuant to the National Electricity Rules.

- Service incentive scheme (Client: Powercor Australia Limited, 2010) – assisted Powercor to quantify the financial effect that would have flowed if the former service performance incentive scheme had continued. Also prepared an expert report pointing to a material inconsistency in how the AER intended to close out the old scheme and the parameters for the new service performance incentive scheme, which was accepted by the AER.
- Input methodologies for NZ regulated businesses (Clients: Powerco NZ and Christchurch International Airport, 2009-2012) – advised in relation to the Commerce Commission's development of input methodologies, focussing asset valuation, the regulatory cost of capital, the use of productivity trends in regulation and the design of incentive-compatible regulation. Also assisted in briefing counsel in subsequent reviews.
- Equity Betas for Regulated Electricity Transmission Activities (Client: Grid Australia, APIA, ENA, 2008) – Prepared a report presenting empirical evidence on the equity betas for regulated Australian electricity transmission and distribution businesses for the AER's five yearly review of WACC parameters for these industries. The report demonstrated the implications of a number of different estimation techniques and the reliability of the resulting estimates. Also prepared a joint paper with the law firm, Gilbert+Tobin, providing an economic and legal interpretation of the relevant (unique) statutory guidance for the review.
- Economic Principles for the Setting of Airside Charges (Client: Christchurch International Airport Limited, 2008-2013) – Provided advice on a range of economic issues relating to its resetting of charges for airside services, including the valuation of assets and treatment of revaluations, certain inputs to the cost of capital (beta and the debt margin) and the efficiency of prices over time and the implications for the depreciation of assets and measured accounting profit.
- Treatment of Inflation and Depreciation when Setting Landing Charges (Client: Virgin Blue, 2007 2008) – Provided advice on Adelaide Airport's proposed approach for setting landing charges for Adelaide Airport, where a key issue was how it proposed to deal with inflation and the implications for the path of prices over time. The advice also addressed the different formulae that are available for deriving an annual revenue requirement and the requirements for the different formulae to be applied consistently.
- Application of the Grid Investment Test to the Auckland 400kV Upgrade (Client: Electricity Commission of New Zealand, 2006) - As part of a team, undertook a review of the Commission's process for reviewing Transpower's proposed Auckland 400kV upgrade project and undertook a peer review of the Commission's application of the Grid Investment Test.
- Appropriate Treatment of Taxation when Measuring Regulatory Profit (Client: Powerco New Zealand, 2005 2006) - Prepared a series of statements on how taxation should be treated when measuring realised and projected regulatory profit.
- Application of Directlink for Regulated Status (Client: Directlink, 2003-2004) – Prepared advice on the economic efficiency of the conversion of an unregulated (entrepreneurial) interconnector to a regulated interconnector and how the asset should be valued for pricing purposes.
- Principles for the 'Stranding' of Assets by Regulators (Client: the Independent Pricing and Regulatory Tribunal, NSW, 2005) - Prepared a report discussing the relevant economic principles for a regulator in deciding whether to 'strand' assets for regulatory purposes (that is, to deny any further return on assets that are partially or unutilised).
- Principles for Determining Regulatory Depreciation Allowances (Client: the Independent Pricing and Regulatory Tribunal, NSW, 2003) - Prepared a report discussing the relevant economic and other principles for determining depreciation for the purpose of price regulation, and its application

to electricity distribution. An important issue addressed was the distinction between accounting and regulatory (economic) objectives for depreciation.

- Methodology for Updating the Regulatory Value of Electricity Transmission Assets (Client: the Australian Competition and Consumer Commission, 2003) - Prepared a report assessing the relative merits of two options for updating the regulatory value of electricity transmission assets at a price review - which are to reset the value at the estimated 'depreciated optimised replacement cost' value, or to take the previous regulatory value and deduct depreciation and add the capital expenditure undertaken during the intervening period (the 'rolling-forward' method). This paper was commissioned as part of the ACCC's review of its Draft Statement of Regulatory Principles for electricity transmission regulation.
- Application of Murraylink for Regulated Status (Client: Murraylink Transmission Company, 2003) - Prepared advice on the economic efficiency of the conversion of an unregulated (entrepreneurial) interconnector to a regulated interconnector and how the asset should be valued for pricing purposes.
- Proxy Beta for Regulated Gas Transmission Activities (Client: the Australian Competition and Consumer Commission, 2002) - Prepared a report presenting the available empirical evidence on the 'beta' (which is a measure of risk) of regulated gas transmission activities. This evidence included beta estimates for listed firms in Australia, as well as those from the United States, Canada and the United Kingdom. The report also included a discussion of empirical issues associated with estimating betas, and issues to be considered when using such estimates as an input into setting regulated charges.
- Treatment of Working Capital when setting Regulated Charges (Client: the Australian Competition and Consumer Commission, 2002) - Prepared a report assessing whether it would be appropriate to include an explicit (additional) allowance in the benchmark revenue requirement in respect of working capital when setting regulated charges.
- Pricing Principles for the South West Pipeline (Client: Esso Australia, 2001) - As part of a team, prepared a report describing the pricing principles that should apply to the South West Pipeline (this gas transmission pipeline was a new asset, linking the existing system to a new storage facility and additional gas producers).
- Likely Regulatory Outcome for the Price for Using a Port (Client: MIM, 2000) - Provided advice on the outcome that could be expected were the dispute over the price for the use of a major port to be resolved by an economic regulator. The main issue of contention was the valuation of the port assets (for regulatory purposes) given that the installed infrastructure was excess to requirements, and the mine had a short remaining life.
- Relevance of 'Asymmetric Events' in the Setting of Regulated Charges (Client: TransGrid, 1999) - In conjunction with William M Mercer, prepared a report (which was submitted to the Australian Competition and Consumer Commission) discussing the relevance of downside (asymmetric) events when setting regulated charges, and quantifying the expected cost of those events.

### Major roles for regulators

- Victorian Gas Distribution Price Review (Client: the Essential Services Commission, Vic, 2006 2008) - Provided advice to the Essential Service Commission in relation to its review of gas distribution access arrangements on the treatment of outsourcing arrangements, finance issues, incentive design and other economic issues.
- Envestra Gas Distribution Price Review (Client: the Essential Services Commission, SA, 2006) - Provided advice on several finance related issues (including 'return on assets' issues and the financial effect of Envestra's invoicing policy), and the treatment of major outsourcing contracts when setting regulated charges.
- DBCT price review (Client: QCA, Qld, 2004-2006) – advice on a number of finance related issues, including the calculation of IDC for a DORC valuation, cost of debt and equity beta.
- Victorian Electricity Distribution Price Review (Client: the Essential Services Commission, Vic, 2003 2005) - Provided advice to the Essential Service Commission on a range is economic issues related to current review of electricity distribution charges, including issues related to finance, forecasting of expenditure and the design of incentive arrangements for productive efficiency and service delivery. Was a member of the Steering Committee advising on strategic regulatory issues.
- Victorian Water Price Review (Client: the Essential Services Commission, Vic, 2003 2005) - Provided advice to the Essential Services Commission on the issues associated with extending economic regulation to the various elements of the Victorian water sector. Was a member of the Steering Committee advising on strategic regulatory issues, and also provided advice on specific issues, most notably the determination of the initial regulatory values for the water businesses and the role of developer charges.
- ETSA Electricity Distribution Price Review (Client: the Essential Services Commission, SA, 2002 2005) - Provided advice on the 'return on assets' issues associated with the review of ETSA's regulated distribution charges, including the preparation of consultation papers. The issues covered include the valuation of assets for regulatory purposes and cost of capital issues. Also engaged as a quality assurance adviser on other consultation papers produced as part of the price review.
- Victorian Gas Distribution Price Review (Client: the Essential Services Commission, Vic, 2001 2002) - Economic adviser to the Essential Services Commission during its assessment of the price caps and other terms and conditions of access for the three Victorian gas distributors. Was responsible for all issues associated with capital financing (including analysis of the cost of capital and assessment of risk generally, and asset valuation), and supervised the financial modelling and derivation of regulated charges. Also advised on a number of other issues, including the design of incentive arrangements, the form of regulation for extensions to unreticulated townships, and the principles for determining charges for new customers connecting to the system.
- ETSA Electricity Distribution Price Review (Client: the South Australian Independent Industry Regulator, 2000 2001) - As part of a team, prepared a series of reports proposing a framework for the review. The particular focus was on the design of incentives to encourage cost reduction and service improvement, and how such incentives can assist the regulator to meet its statutory obligations. Currently retained to provide commentary on the consultation papers being produced by the regulator, including strategic or detailed advice as appropriate.
- Dampier to Bunbury Natural Gas Pipeline Access Arrangement Review (Client: the Independent Gas Pipelines Access Regulator, WA, 2000 2002) - Provided economic advice to the Office of the Independent Regulator during its continuing assessment of the regulated charges and other terms and conditions of access for the gas pipeline, including a review of all parts of the draft decision, with particular focus on the sections addressing the cost of capital (and assessment of risk

generally), asset valuation and financial modelling. Represented the Office on these matters at a public forum, and provided strategic advice to the Independent Regulator on the draft decision.

- Goldfield Gas Pipeline Access Arrangement Review (Client: the Independent Gas Pipelines Access Regulator, WA, 2000 2004) - Provided economic advice to the Office of the Independent Regulator during its continuing assessment of the regulated charges and other terms and conditions of access for the gas pipeline, including a review of all parts of the draft decision, with particular focus on the sections addressing the cost of capital (and assessment of risk generally), asset valuation and financial modelling. Represented the Office on these matters at a public forum, and provided strategic advice to the Independent Regulator on the draft decision.
- Victorian Electricity Distribution Price Review (Client: the Office of the Regulator General, Vic, 1999 2000) - Economic adviser to the Office of the Regulator General during its review of the price caps for the five Victorian electricity distributors. Had responsibility for all issues associated with capital financing, including analysis of the cost of capital (and assessment of risk generally) and asset valuation, and supervised the financial modelling and derivation of regulated charges. Also advised on a range of other issues, including the design of incentive regulation for cost reduction and service improvement, and the principles for determining charges for new customers connecting to the system.
- Victorian Ports Corporation and Channels Authority Price Review (Client: the Office of the Regulator General, Vic, 2000) - Advised on the finance related issues (cost of capital and the assessment of risk generally, and asset valuation), financial modelling (and the derivation of regulated charges), and on the form of control set over prices. Principal author of the sections of the draft and final decision documents addressing the finance related and price control issues.
- AlintaGas Gas Distribution Access Arrangement Review (Client: the Independent Gas Pipelines Access Regulator, WA, 1999 2000) - Provided economic advice to the Office of the Independent Regulator during its assessment of the regulated charges and other terms and conditions of access for the gas pipeline. This advice included providing a report assessing the cost of capital associated with the regulated activities, overall review of all parts of the draft and final decisions, with particular focus on the sections addressing the cost of capital (and assessment of risk generally), asset valuation and financial modelling. Also provided strategic advice to the Independent Regulator on the draft and final decisions.
- Parmelia Gas Pipeline Access Arrangement Review (Client: the Independent Gas Pipelines Access Regulator, WA, 1999 2000) - Provided economic advice to the Office of the Independent Regulator during its assessment of the regulated charges and other terms and conditions of access for the gas pipeline, including a review of all parts of the draft and final decisions, with particular focus on the sections addressing the cost of capital (and assessment of risk generally), asset valuation and financial modelling. Also provided strategic advice to the Independent Regulator on the draft and final decisions.
- Victorian Gas Distribution Price Review (Client: the Office of the Regulator General, Vic, 1998) - Economic adviser to the Office of the Regulator General during its assessment of the price caps and other terms and conditions of access for the three Victorian gas distributors. Major issues addressed included the valuation of assets for regulatory purposes, cost of capital financing and financial modelling. Principal author of the draft and final decision documents.

### Development/Review of Regulatory Frameworks

- Review of the Australian energy economic regulation (Client: Energy Networks Association, 2010-2012) – assisting the owners of energy infrastructure to engage in the current wide-ranging review of the regime for economic regulation of energy infrastructure. Advice has focussed in particular on the setting of the regulatory WACC and on the regime of financial incentives for

capital expenditure efficiency, and included strategic and analytical advice, preparation of expert reports and assistance with ENA submissions.

- Review of the Australian electricity transmission framework (Client: Grid Australia, 2010-2013) – assisting the owners of electricity transmission assets to participate in the wide-ranging review of the framework for electricity transmission in the national electricity market, covering such matters as planning arrangements, the form of regulation for non-core services and generator capacity rights and charging. Has included analytical advice on policy choices, facilitation of industry positions and articulation of positions in submissions.
- Implications of greenhouse policy for the electricity and gas regulatory frameworks (Client: the Australian Energy Market Commission, 2008-2009) – Provided advice to the AEMC in its review of whether changes to the electricity and gas regulatory frameworks is warranted in light of the proposed introduction of a carbon permit trading scheme and an expanded renewables obligation. Issues addressed include the framework for electricity connections, the efficiency of the management of congestion and locational signals (including transmission pricing) for generators and the appropriate specification of a cost benefit test for transmission upgrades in light of the two policy initiatives.
- Economic incentives under the energy network regulatory regimes for demand side participation (Client: Australian Energy market Commission, 2006) – Provided advice to the AEMC on the incentives provided by the network regulatory regime for demand side participation, including the effect of the form of price control (price cap vs. revenue cap), the cost-efficiency arrangements, the treatment of losses and the regime for setting reliability standards.
- Implications of greenhouse policy for the electricity and gas regulatory frameworks (Client: the Australian Energy Market Commission, 2008 ongoing) - Providing ongoing advice to the AEMC in its review of whether changes to the electricity and gas regulatory frameworks is warranted in light of the proposed introduction of a carbon permit trading scheme and an expanded renewables obligation. Issues addressed include the framework for electricity connections, the efficiency of the management of congestion and locational signals for generators and the appropriate specification of a cost benefit test for transmission upgrades in light of the two policy initiatives.
- Application of a 'total factor productivity' form of regulation (Client: the Victorian Department of Primary Industries, 2008) - Assisted the Department to develop a proposed amendment to the regulatory regime for electricity regulation to permit (but not mandate) a total factor productivity approach to setting price caps – that is, to reset prices to cost at the start of the new regulatory period and to use total factor productivity as an input to set the rate of change in prices over the period.
- Expert Panel on Energy Access Pricing (Client: Ministerial Council on Energy, 2005 2006) - Assisted the Expert Panel in its review of the appropriate scope for commonality of access pricing regulation across the electricity and gas, transmission and distribution sectors. The report recommended best practice approaches to the appropriate forms of regulation, the principles to guide the development of detailed regulatory rules and regulatory assessments, the procedures for the conduct of regulatory reviews and information gathering powers.
- Productivity Commission Review of Airport Pricing (Client: Virgin Blue, 2006) - Prepared two reports for Virgin Blue for submission to the Commission's review, addressing the economic interpretation of the review principles, asset valuation, required rates of return for airports and the efficiency effects of airport charges and presented the findings to a public forum.
- AEMC Review of the Rules for Setting Transmission Prices (Client: Transmission Network Owners, 2005 2006) - Advised a coalition comprising all of the major electricity transmission

network owners during the new Australian Energy Market Commission's review of the rules under which transmission prices are determined. Prepared advice on a number of issues and assisted the owners to draft their submissions to the AEMC's various papers.

- Advice on Energy Policy Reform Issues (Client: Victorian Department of Infrastructure/Primary Industries, 2003 ongoing) - advice to the Department regarding on issues relating to the transition to national energy market arrangements, cross ownership rules for the energy sector, the reform of the cost benefit test for electricity transmission investments and the scope for lighted handed regulation in gas transmission.
- Productivity Commission Review of the National Gas Code (Client: BHPBilliton, 2003 2004) - Produced two submissions to the review, with the important issues including the appropriate form of regulation for the monopoly gas transmission assets (including the role of incentive regulation), the requirement for ring fencing arrangements, and the presentation of evidence on the impact of regulation on the industry since the introduction of the Code.
- Development of the National Third Party Access Code for Natural Gas Pipeline Systems Code (Client: commenced while a Commonwealth Public Servant, after 1996 the Commonwealth Government, 1994-1997) - Was involved in the development of the new legal framework for the economic regulation of gas transmission and distribution systems, with advice spanning the overall form of regulation to apply to the infrastructure and the appropriate pricing principles (including the valuation of assets for regulatory purposes and the use of incentive regulation), ring fencing arrangements between monopoly and potentially contestable activities, and whether upstream infrastructure should be included within the regime.

### Licencing / Franchise Bidding

- Competitive Tender for Gas Distribution and Retail in Tasmania (Client: the Office of the Tasmanian Energy Regulator, 2001 2002) - Economic adviser to the Office during its oversight of the use of a competitive tender process to select a gas distributor/retailer for Tasmania, and simultaneously to set the regulated charges for an initial period.
- Issuing of a Licence for Powercor Australia to Distribute Electricity in the Docklands (Client: the Office of the Regulator General, Vic, 1999) - Economic adviser to the Office during its assessment of whether a second distribution licence should be awarded for electricity distribution in the Docklands area (a distribution licence for the area was already held by CitiPower, and at that time, no area in the state had multiple licensees). The main issue concerned the scope for using 'competition for the market' to discipline the price and service offerings for an activity that would be a monopoly once the assets were installed.

### Assessments of the need for regulation

- South East network (Client: Kimberley Clarke, 2011) – advised whether the gas pipeline from which it is supplied would pass the threshold for regulation.
- Need for regulation of gas transmission pipelines (Client: SA Government) – advised as to whether the Moomba to Adelaide pipeline was likely to pass the threshold required for regulation.

## *B. Pricing in non-infrastructure markets*

### Assessment of competition in energy retail markets

- Assessment of retail competition in Victoria and South Australia (Client: Australian Energy Market Commission) – assisted the Commission to quantity and interpret information on margins for retailers and draw inferences for the level of competition. Also reviewed the Commission's assessment of the other indicators of the level of competition.

### Default/transitional regulated prices for retail functions

- ACT transitional tariff review (Client: ICRC, ACT, 2010) – advised the regulator on an appropriate method to derive a benchmark wholesale electricity purchase cost for an electricity retailer, including the relationship between the wholesale cost and hedging strategy.
- South Australian default gas retail price review (Client: the Essential Services Commission, SA, (2007-2008) - derived estimates of the benchmark operating costs for a gas retailer and the margin that should be allowed. This latter exercise included a bottom-up estimate of the financing costs incurred by a gas retail business.
- South Australian default electricity retail price review (Client: the Essential Services Commission, SA, 2007) - estimated the wholesale electricity purchase cost for the default electricity retail supplier in South Australia. The project involved the development of a model for deriving an optimal portfolio of hedging contracts for a prudent and efficient retailer, and the estimate of the expected cost incurred with that portfolio.
- South Australian default gas retail price review (Client: the Essential Services Commission, SA, 2005) - As part of a team, advised the regulator on the cost of purchasing gas transmission services for a prudent and efficient SA gas retailer, where the transmission options included the use of the Moomba Adelaide Pipeline and SEAGas Pipeline, connecting a number of gas production sources.

### Market Design

- Options for the Development of the Australian Gas Wholesale Market (Client: the Ministerial Committee on Energy, 2005) - As part of a team, assessed the relative merits of various options for enhancing the operation of the Australian gas wholesale markets, including by further dissemination of information (through the creation of bulletin boards) and the management of retailer imbalances and creation of price transparency (by creating short term trading markets for gas).
- Review of the Victorian Gas Market (Client: the Australian Gas Users Group, 2000 2001) - As part of a team, reviewed the merits (or otherwise) of the Victorian gas market. The main issues of contention included the costs associated with operating a centralised market compared to the potential benefits, and the potential long term cost associated with having a non-commercial system operator.
- Development of the Market and System Operation Rules for the Victorian Gas Market (Client: Gas and Fuel Corporation, 1960) - Assisted with the design of the 'market rules' for the Victorian gas market. The objective of the market rules was to create a spot market for trading in gas during a particular day, and to use that market to facilitate the efficient operation of the system.

### Transfer pricing

- Application of a netback calculation for infrastructure under the Minerals Resource Rent Tax (Client: BHPB, 2011-13) – advised on how the arms-length price for the use of downstream infrastructure should be determined, including the valuation of assets, weighted average cost of capital and on the implications for the price of incentive compatible contracts.

### Pricing strategy

- Pricing for telephone directory services (Sensis, 2012) – as part of a team, advised on how margins could be maximised for the telephone directory business in the context of falling print advertising and a very competitive digital market, informed by the application of econometric techniques.
- Effectiveness of promotional strategies (Target, 2011-12) – as part of a team, applied econometric techniques to assess the effectiveness of Target's promotional strategies, with tools developed for management to improve profitability.
- Optimal pricing (Client: Coles, 2011-12) – applied econometric techniques to assist Coles to set relativities of prices within "like" products and developed a method to test the effectiveness of promotional strategies.

### C. Regulatory due diligence and other finance work

- Sale of the Sydney Desalination Plant (Client: a consortium of investors, 2011-12) – Prepared a regulatory due diligence report for potential acquirer of the asset, including a review of the financial modelling of future pricing decisions.
- Sale of the Abbot Point Coal Terminal port (Client: a consortium of investors / debt providers, 2010-11) – Prepared a regulatory due diligence report for potential acquirer of the asset, including a review of the financial modelling of future pricing decisions.
- Private Port Development (Client: Major Australian Bank, 2008) - Prepared a report on the relative merits of different governance and financing arrangements for a proposed major port development that would serve multiple port users.
- Sale of Allgas gas distribution network (Client: confidential, 2006) – Prepared a regulatory due diligence report for potential acquirer of the asset.
- Review of Capital Structure (Client: major Victorian water entity, 2003) - Prepared a report (for the Board) advising on the optimal capital structure for a particular Victorian water entity, taking account of the likely impact of cost based regulation.

### D. Expert Witness Roles

- Abbot Point Coal Terminal Pricing Arbitration (Client: Adani, 2013) – Prepared a number of expert reports for the arbitration on economic issues arising from the application of the cost-based formula in the pricing agreement, including the economic meaning of key terms, the valuation of assets (and specifically the role and calculation of interest during construction), the quantification of transaction costs of raising finance and the calculation of the required rate of return (most notably, the benchmark cost of debt finance).
- New Zealand Input Methodologies (Clients: Powerco and Christchurch International Airport Limited, 2009-2012) – Prepared expert report for both clients on a range of economic issues, including the valuation of assets, weighted average cost of capital, cost allocation, the regulatory treatment of taxation and interpretation of the new purpose statement in the Commerce Act. Appeared as an expert before the Commerce Commission in the key conferences held during the review. Also assisted the clients in their subsequent merit reviews of the Commission's decision.
- Victorian gas market dispute resolution panel (Client: VENCorp, 2008) – Prepared a report and was cross examined in relation to the operation of the Victorian gas market in the presence of supply outages.
- Consultation on Major Airport Capital Expenditure Judicial Review (Client: Christchurch International Airport, 2008) - Prepared an affidavit for a judicial review on whether the airport consulted appropriately on its proposed terminal development. Addressed the rationale, from the

point of view of economics, of separating the decision of 'what to build' from the question of 'how to price' in relation to new infrastructure.

- New Zealand Commerce Commission Draft Decision on Gas Distribution Charges (Client: Powerco, 2007 08) - Prepared an expert statement about the valuation of assets for regulatory purposes, with a focus on the treatment of revaluation gains, and a memorandum about the treatment of taxation for regulatory purposes and appeared before the Commerce Commission.
- Sydney Airport Domestic Landing Change Arbitration (Client: Virgin Blue, 2007) - Prepared two expert reports on the economic issues associated with the structure of landing charges (note: the evidence was filed, but the parties reached agreement before the case was heard).
- New Zealand Commerce Commission Gas Price Control Decision – Judicial Review to the High Court (Client: Powerco, 2006) - Provided four affidavits on the regulatory economic issues associated with the calculation of the allowance for taxation for a regulatory purpose, addressing in particular the need for consistency in assumptions across different regulatory calculations.
- Victorian Electricity Distribution Price Review – Appeal to the ESC Appeal Panel: Service Incentive Risk (Client: the Essential Services Commission, Vic, 2005 2006) - Prepared expert evidence on the workings of the ESC's service incentive scheme and the question of whether the scheme was likely to deliver a windfall gain or loss to the distributors (note: the evidence was filed, but the appellant withdrew this ground of appeal prior to the case being heard).
- Victorian Electricity Distribution Price Review – Appeal to the ESC Appeal Panel: Price Rebalancing (Client: the Essential Services Commission, Vic, 2005 2006) - Prepared expert evidence on the workings of the ESC's tariff basket form of price control, with a particular focus on the ability of the electricity distributors to rebalance prices and the financial effect of the introduction of 'time of use' prices in this context (note: the evidence was filed, but the appellant withdrew this ground of appeal prior to the case being heard).
- New Zealand Commerce Commission Review of Information Provision and Asset Valuation (Client: Powerco New Zealand, 2005) - Appeared before the Commerce Commission for Powerco New Zealand on several matters related to the appropriate measurement of profit for regulatory purposes related to its electricity distribution business, most notably the treatment of taxation in the context of an incentive regulation regime.
- Duke Gas Pipeline (Qld) Access Arrangement Review – Appeal to the Australian Competition Tribunal (Client: the Australia Competition and Consumer Commission, 2002) - Prepared expert evidence on the question of whether concerns of economic efficiency are relevant to the non price terms and conditions of access (note: the evidence was not filed as the appellant withdrew its evidence prior to the case being heard).
- Victorian Electricity Distribution Price Review – Appeal to the ORG Appeal Panel: Rural Risk (Client: the Office of the Regulator General, Vic, 2000) - Provided expert evidence (written and oral) to the ORG Appeal Panel on the question of whether the distribution of electricity in the predominantly rural areas carried greater risk than the distribution of electricity in the predominantly urban areas.
- Victorian Electricity Distribution Price Review – Appeal to the ORG Appeal Panel: Inflation Risk (Client: the Office of the Regulator General, Vic, 2000) - Provided expert evidence (written and oral) to the ORG Appeal Panel on the implications of inflation risk for the cost of capital associated with the distribution activities.

***Qualifications and memberships***

- Bachelor Economics (First Class Honours) University of Adelaide
- CEDA National Prize for Economic Development

## Dr Michael Lawriwsky

**Executive Director**

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Michael is an Executive Director at Incenta. Previously he was a director at PricewaterhouseCoopers (Australia), a director and partner in the Allen Consulting Group, and a director – corporate finance in ANZ Investment Bank. He has had a career spanning academia, investment banking and economic policy advice. He has had involvement in regulation and market reform in wide a range of businesses spanning energy, transport, water, gaming and wagering. He has advised on over $15 billion of bids in the Australian energy and transport sectors.

***Regulatory and Policy roles:***

- International Air Services Commission - Between 1997 and 2007 Michael was a part-time Commissioner of the International Air Services Commission. The IASC was established in 1992 as an independent body regulating new entrant airlines and allocating capacity to Australian international airlines with an objective of strengthening competition.
- Review of Business Programs (Mortimer Report) - In November 1996 Dr. Lawriwsky was appointed to the Review of Business Programs under the leadership of Mr. David Mortimer (Mortimer Report). This was a major review of Government support programs for business with a 15 person secretarial staff. The process included public forums, stakeholder interviews with key government and business groups, and analysis of numerous submissions. The report led to the formation of Invest Australia.

***Relevant experience by sector***

Regulated gas networks:

- Energy Networks Association – assessment of the appropriate term for the risk free rate when estimating the cost of equity.
- Jemena Gas Networks – advice on the appropriate methodology to estimate the cost of debt in relation for gas transmission assets. This is part of the WACC proposal for a gas network revenue determination.
- Essential Services Commission (Victoria) – adviser to the ESC on cost of capital issues associated with the 2007-2008 Gas Price Review.
- QCA – adviser on cost of capital issues (including beta) in relation to Queensland gas distribution assets.
- QCA – adviser on the prepayment of network charges by Envestra.
- Allgas – Adviser on regulatory modelling and regulatory outlook for ANZ Infrastructure Services in its bid for Allgas.
- Envestra – adviser to ESCOSA and Queensland Competition Authority on cost of capital and working capital (prepayment) issues relating to Envestra's 2006 access arrangements in SouthAustralia and Queensland respectively.
- ACCC – advised the ACCC on differentials between BBB and BBB+ for a gas utility in connection with an appeal lodged by the East Australia Pipeline Limited. ACCC – prepared a report on review of studies comparing international regulatory determinations, which was included

as Appendix G of ACCC's submission to Productivity Commission Review of the National Gas Code.

- BHP Billiton – advised BHP Billiton on its submission in response to the Draft Report of the Productivity Commission Review of the National Gas Code.
- Gas and Fuel (Gascor) – adviser to the company in relation to the potential purchase of the Wagga Wagga Gas Company from the City of Wagga Wagga.
- Gas and Fuel (Gascor) – mandated to critique Gascor's weighted average cost of capital calculation used in regulatory tariff setting.
- The USA Gas Utility market – authored this ANZ Securities monograph examining the regulatory structure and market reforms introduced into the US gas industry and implications for Australia.
- Gas and Fuel Corporation – co-authored this ANZ Securities monograph

### Regulated electricity networks:

- Energy Networks Association – assessment of the appropriate benchmark term of debt.
- Energy Networks Association – debt financing costs.
- Powerlink – adviser to Powerlink on regulatory cost of capital including beta, debt risk premium and on equity and debt raising transaction costs.
- Aurora Energy – advice to Aurora Energy by writing their debt risk premium submission to the Australian Energy Regulator
- CitiPower and Powercor - advice on the appropriate methodology to estimate the cost of debt in relation for electricity distribution assets, as part of the WACC proposal for an electricity network revenue determination.
- Independent Market Operator WA – advised the Western Australia's wholesale electricity market operator, the Independent Market operator, by advising on the methodology to be used to calculate to estimate Allowance For Funds Used During Construction, and the WACC to be applied in the determination of the maximum reserve price for generation capacity.
- Energy Networks Association, APIA and Grid Australia – adviser on the AER review of WACC parameters for electricity transmission and distribution network service providers.
- Retail credit support arrangements – advised the Essential Services Commission of Victoria on new arrangements for credit support by electricity retailers.
- ETSA Utilities – adviser to the Essential services Commission of South Australia on cost of capital issues.
- Energex and Energon – advised the Queensland Competition Authority on cost of capital issues relating to the 2005 access arrangements of these companies.
- Electricity Commission of Papua New Guinea (PNG Power) – lead financial/strategic adviser to the PNG Government on the corporatisation/privatisation of PNG Power, managing a team of investment bankers, lawyers, accountants and regulatory consultants.
- Electricity Trust of South Australia (ETSA) – lead financial adviser to Edison Mission Energy in their bid for this $3.5 billion electricity distribution and retailing company, particularly in relation to regulation, valuation, financial modelling and capital structure.

- Pacific Gas and Electric Company – lead financial adviser in bids for four electricity distribution/retailing companies totalling $5.5 billion (United Energy, Powercor, Citipower, Eastern Energy).

  Electro Power Limited (NZ) – adviser to the company's board in its merger negotiations with the contiguous Central Power Limited, including valuation and capital structure issues.

Energy:

- Snowy Hydro – Michael led a team undertaking a comprehensive valuation analysis of Snowy Hydro, including a cost of capital update.
- Snowy Hydro – Adviser to the Snowy Hydro on cost of capital (on-going annual review).
  Southern Electric International (US) – advised on cost of capital with respect to Australian electricity generation assets.
- Energy Developments Limited – float valuation and pricing for this independent power project underwritten by ANZ Securities.
- Loy Yang A – coordinated a sell-down of $30 million of equity in Horizon Energy Investments to institutional investors.
- Southern Hydro Limited – established a consortium of bidders for this privatisation (Pacific Hydro, Hyder Investments and Hastings Funds Management) and directed financial due diligence/valuation. Including capital structure determination.
- Electro Power Limited (NZ) – analysis of the rate of return on investment which would be required by investors in the Gateway Electronic Monitoring System ("GEMS") – a "smart meter" technology.

Road and Rail:

- QCA – Adviser on equity beta and cost of debt for the Aurizon Network price review.
- Federal Government Department – Strategic and governance review of Australian Railtrack Corporation (ARTC).
- QCA – Adviser on the cost of capital issues relating to the Northern Missing Link railway.
- QCA – Adviser on cost of capital issues in relation to the Queensland Rail below rail network – coal price review.
- Victorian Department of Transport – adviser on new techniques for attracting private sector capital to the roads sector
- Victorian Auditor General's Office – Adviser analysing the terms of the cost of capital for the financing of the Tulla-Calder freeway extension.
- Stagecoach plc – adviser to Stagecoach on cost of capital issues relating to bidding for rail infrastructure assets in Victoria.
- Adelaide-Darwin railway – adviser on regulatory issues to the ANZ Investment Bank project finance team in relation to this financing.

Ports:

- Infrastructure investor – advice on cost of capital issues in the course of an arbitration involving a significant unregulated transport infrastructure asset.
- Abbot Point Coal Terminal – regulatory adviser to the consortium comprising CKI and Deutsche Bank (RREEF), which bid for this asset (lead adviser, Macquarie Bank).
- Port of Brisbane – regulatory adviser to the Q Ports Holdings consortium partners, Industry Funds Management, Global Infrastructure Partners, QIC Global Infrastructure and Tawreed Investments, which won this bid and was awarded 'Best Privatisation Deal' and 'Asian Infrastructure of the Year' awards (lead advisor, Macquarie Bank). PwC received an award from Infrastructure Partnerships Australia for the role it played in this transaction.
- BHP Billiton – advise on Pilbara ports from a real options perspective
- Port of Melbourne Corporation – review of regulatory cost of capital for price monitoring by the Essential Services Commission.
- Wiggins Island Coal Terminal - adviser to the ANZ Bank and the User Group proposing a selffunded expansion of coal loading capacity at the Port of Gladstone.
- Port of Waratah – adviser to Newcastle Coal Infrastructure Group (NCIG) in relation to the Prime Minister's Taskforce on Infrastructure.
- Dalrymple Bay Coal Terminal – Adviser to the Queensland Competition Authority on the WACC parameters (including beta) for DBCT.
- Port of Brisbane Corporation – strategic adviser to the port, including a review of strategic options and a valuation of the port's operations.
- Ports of Portland and Geelong – advice on cost of capital to the ANZ Investment Bank team bidding for the assets on behalf of the Strang/Hastings consortium.
- Port of Napier (NZ) – reviewer of the valuation of the port by the ANZ Investment Bank Auckland office.

Aviation and tourism:

- Tourism Victoria – Adviser on commercial issues surrounding the proposed Werribee Theme Park.
- Travel Compensation Fund – Michael led a team which reviewed the TCF's revenue model and proposed a new risk-based revenue model.
- Department of Transport and Regional Services – adviser to DoTRS in connection with financial issues associated with the proposed Air New Zealand/Ansett takeover in connection with the FIRB review.
- Qantas Airlines – float valuation and pricing when ANZ Securities was a joint Lead Manager of the initial float process.
- Australian Airlines – prepared a valuation and analysis for the purchase of the airline for a private consortium prior to the merger with Qantas.
- Indian Airlines – on an advisory panel of an ANZ team (based in London and Mumbai) mandated to sell a 26% stake in the Indian Government-owned domestic/international airline.  Compass Airlines – advised on the preparation of an Information Memorandum for an initial private equity raising to fund Compass Airlines (prior to the float by JB Were).

### Airports:

- New Zealand Airports Association – analysis of airport betas for negotiations with airlines and the Commerce Commission.
- Virgin airlines – advice on cost of capital issues for negotiations with airports on landing charges.
- Federal Airports Corporation – directed a seven-month regulatory modelling, valuation and capital structure analysis of all 22 airports as part of the Capital Structure Review commissioned by the Department of Transport/Department of Treasury.
- Brisbane International Airport – lead financial adviser to the Port of Brisbane Corporation in the course of the successful Schiphol/CBA/POBC bid in 1997.
- Christchurch International Airport – adviser to the airport with respect to its negotiations with the NZ Commerce Commission on the cost of capital and implications for landing charges.

### Water:

- Gladstone Area Water Board – adviser to the Queensland Competition Authority on the assessment of costs of capital parameters for the 2005 GAWB price review.
- Melbourne Water – adviser to Melbourne Water on its financial strategy, including capital structure, dividend policy and financial benchmarks.
- SA Water – adviser on its capital structure review and review of dividend policy.
- SA Water – adviser on commercialisation, and dividend policy in negotiations with the SA Treasury.
- Auckland City Council (NZ) – advice on the corporatisation of water and waste water assets.
- Gippsland Water – adviser on pricing policy with respect to future capital funding requirements.  South Gippsland Water – prepared a benchmarking analysis of corporate performance relative to peers.
- United Water – advised the company on the potential for listing on the stock exchange pursuant to requirements under the United Water Management Contract.

### General regulatory assignments:

- QCA – Advice on a cost of debt estimation methodology for businesses regulated by the Queensland Competition Authority.
- QCA – adviser on the level of regulated WACCs.
- Debt and equity transaction costs – Advised the ACCC on debt and equity transaction costs that could be applied in regulatory determinations.
- International evidence on regulatory rates of return – Adviser to the ACCC on rates of return provided internationally by regulators.
- Exceptional circumstances – advised the Queensland Competition Authority on appropriate regulatory responses to exceptional circumstances.
- Monte Carlo analysis – adviser to a regulatory agency assessing the efficacy of Monte Carlo analysis as a methodology to be employed in cost of capital studies for regulatory purposes.

### Construction and industrial:

- Adroyal – prepared a takeover analysis of a potential target.

- Astec – prepared an independent valuation of the asphalt and quarrying operations to identify a carrying value in the books of the Standard Rods Group.
- GWA International – preparations for the refloating of 60% of the Anderson family's interest.
- Expert's Report on Futuris Corporation – prepared an Expert's Report to the stakeholders of Air International Group Limited, an automotive air conditioner manufacturer, on the takeover offer by Keratin Holdings Pty Ltd (a wholly owned subsidiary of Futuris Corporation).
- Australian Tax Office – valuation of executive options over a listed company's shares.

Media and Telecommunications:

- Telstra – analysis of the risk impacts of the NBN-Telstra deal, and its implications for the regulatory cost of capital for the fixed copper loop network.
- John Fairfax Group - undertook a valuation of the company that was used by the Banking Syndicate in its decision to take control under debt covenants.
- Austereo – reviewer of valuations of the Austereo radio licences for the Board of Directors.
- Australian Tax Office – valuation of shares in a UK media company for the ATO.

Resources:

- Review of hostile takeover – acted as adviser and expert witness to a party potentially seeking damages in a large hostile takeover bid of a major resources company, involving analysis of bid documents and valuation/modelling analysis.
- Ashton Mining – adviser to Ashton Mining Limited on the implementation of its 1999-2000 5% share buy-back and prepared a report on capital management options for the Board of Directors.  MIM Holdings – participated in a comprehensive strategy report recommending divestment of non-core assets, debt reduction and restructure of shareholdings.
- Comindico – advised AGL with respect to the acquisition of a $40 million equity interest in Comindico, overview of financial modelling and coordination of production of due diligence report.

Health:

- Victorian Auditor General's Office – Performance audit of the $1 billion Royal Melbourne Children's Hospital.
- Department of Health (Victoria) – Analysis of the proposed user cost of capital approach to funding hospitals

Other:

- Infrastructure Partnerships Australia - Public Private Partnerships – Michael led a team that produced a report assessing the relative timing and construction cost efficiency of PPPs vs traditional procurement methods.
- Property Council of Australia – assessment of the scope and capacity of the Victorian Government to fund public infrastructure through increase public debt.
- Financial software developer – advised a financial software developer on merger and IPO options.
- Queensland Cane Growers' Association – advised the Association on the formula for the division of revenues between growers and millers and developed a new formula for negotiations with the millers.

- Godfrey Pembroke Financial Services – valuation of Godfrey Pembroke Financial Services Pty Ltd for FAI insurances Limited.
- Venture Stores – advised the ANZ Bank on a capital restructure including valuation, and the establishment of equity swaps in connection with negotiations between creditors and debt holders.
- Colonial Mutual Property Trust – advice on the fair terms for a merger of three listed and two unlisted property trusts.

***Expert Opinions:***

- Ferrier Hodgson – Expert opinion on the conduct of an investment bank advising on a multi-billion dollar merger transaction, which destroyed substantial shareholder value and resulted in a default of banking covenants.
- Essential Services Commission of Victoria – Relative bias in the yields of indexed Commonwealth Government Securities when used as a proxy for the CAPM risk free rate.
- Australian Taxation Office, Commerciality of AAPT's financial arrangements
- Australian Taxation Office, Statement on the financial arrangements of Futuris Corporation Limited

***Qualifications and memberships***

- Ph.D. B.Ec. (Hons) (University of Adelaide)
- Trustee and Chair of the Finance Committee, Shrine of Remembrance

## A.1.2 Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia

**FEDERAL COURT OF AUSTRALIA**

*Practice Note CM 7*

**EXPERT WITNESSES IN PROCEEDINGS IN THE**

**FEDERAL COURT OF AUSTRALIA**

**Commencement**

1. This Practice Note commences on 4 June 2013.

**Introduction**

2. Rule 23.12 of the Federal Court Rules 2011 requires a party to give a copy of the following guidelines to any witness they propose to retain for the purpose of preparing a report or giving evidence in a proceeding as to an opinion held by the witness that is wholly or substantially based on the specialised knowledge of the witness (see **Part 3.3 - Opinion** of the *Evidence Act 1995* (Cth)).

3. The guidelines are not intended to address all aspects of an expert witness's duties, but are intended to facilitate the admission of opinion evidence[59], and to assist experts to understand in general terms what the Court expects of them. Additionally, it is hoped that the guidelines will assist individual expert witnesses to avoid the criticism that is sometimes made (whether rightly or wrongly) that expert witnesses lack objectivity, or have coloured their evidence in favour of the party calling them.

**Guidelines**

**1. General Duty to the Court**[60]

1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.

[59] As to the distinction between expert opinion evidence and expert assistance see *Evans Deakin Pty Ltd v Sebel Furniture Ltd* [2003] FCA 171 per Allsop J at [676].

[60] The "*Ikarian Reefer*" (1993) 20 FSR 563 at 565-566.

1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.

1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

**2. The Form of the Expert's Report[61]**

2.1 An expert's written report must comply with Rule 23.13 and therefore must

(a) be signed by the expert who prepared the report; and

(b) contain an acknowledgement at the beginning of the report that the expert has read, understood and complied with the Practice Note; and

(c) contain particulars of the training, study or experience by which the expert has acquired specialised knowledge; and

(d) identify the questions that the expert was asked to address; and

(e) set out separately each of the factual findings or assumptions on which the expert's opinion is based; and

(f) set out separately from the factual findings or assumptions each of the expert's opinions; and

(g) set out the reasons for each of the expert's opinions; and

(ga) contain an acknowledgment that the expert's opinions are based wholly or substantially on the specialised knowledge mentioned in paragraph (c) above[62]; and

(h) comply with the Practice Note.

2.2 At the end of the report the expert should declare that "[the expert] has *made all the inquiries that* [the expert] *believes are desirable and appropriate and that no matters of significance that* [the expert] *regards as relevant have, to* [the expert's] *knowledge, been withheld from the Court*."

2.3 There should be included in or attached to the report the documents and other materials that the expert has been instructed to consider.

2.4 If, after exchange of reports or at any other stage, an expert witness changes the expert's opinion, having read another expert's report or for any other reason, the change should be communicated as soon as practicable (through the party's lawyers) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court[63].

2.5 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.

[61] Rule 23.13.
[62] See also *Dasreef Pty Limited v Nawaf Hawchar* [2011] HCA 21.
[63] The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565

2.6 The expert should make it clear if a particular question or issue falls outside the relevant field of expertise.

2.7 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports[64].

## 3. Experts' Conference

3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

J L B ALLSOP

Chief Justice

4 June 2013

[64] The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240

### A.1.3 Terms of Reference

# Expert Terms of Reference

# Review independent expert reports, update

## Jemena Gas Networks
## 2015-20 Access Arrangement Review

## AA15-570-0067

## Version C – 13 February 2015

**Contact Person**

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| Version | Status | Date | Prepared | Checked | Authorised |
|---|---|---|---|---|---|
| A | Draft | 19/12/14 | E Grace-Webb | | |
| B | Draft | 24/12/24 | E Grace-Webb | G+T | |
| C | Final | 13/02/15 | E Grace-Webb | | E Grace-Webb |
| | | | | | |
| | | | | | |

# Contents

# 1 Background

Jemena Gas Networks (**JGN**) is the major gas distribution service provider in New South Wales (**NSW**). JGN owns more than 25,000 kilometres of natural gas distribution system, delivering approximately 100 petajoules of natural gas to over one million homes, businesses and large industrial consumers across NSW.

JGN is currently preparing its revised Access Arrangement proposal (**Project**) with supporting information for consideration by the Australian Energy Regulator (**AER**). The revised access arrangement will cover the period 1 July 2015 to 30 June 2020 (July to June financial years).

As with all of its economic regulatory functions and powers, when assessing JGN's revised access arrangement (**AA**) under the National Gas Rules and the National Gas Law, the AER must do so in a manner that will or is likely to contribute to meeting the National Gas Objective, which is:

> "to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."

For electricity networks, the AER must assess regulatory proposals under the National Electricity Rules and the National Electricity Law in a manner that will or is likely to achieve the National Electricity Objective, as stated in section 7 of the National Electricity Law.

Where there are two or more possible decisions in relation to JGN's revised Access Arrangement that will or are likely to contribute to the achievement of the National Gas Objective, the AER is required to make the decision that the AER is satisfied will or is likely to contribute to the achievement of the National Gas Objective to the greatest degree.

The AER must also take into account the revenue and pricing principles in section 24 of the National Gas Law and section 7A of the National Electricity Law, when exercising a discretion related to reference tariffs. The revenue and pricing principles include the following:

> "(2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—
>
> a) providing reference services; and
>
> b) complying with a regulatory obligation or requirement or making a regulatory payment.
>
> (3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—
>
> (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services…
>
> […]

(5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.

(6) Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services."

Some of the key rules that are relevant to an access arrangement and its assessment are set out below.

Rule 74 of the National Gas Rules, relating generally to forecasts and estimates, states:

(1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.

(2) A forecast or estimate:

(a) must be arrived at on a reasonable basis; and

(b) must represent the best forecast or estimate possible in the circumstances.

Rule 87 of the National Gas Rules, relating to the allowed rate of return, states:

(1) Subject to rule 82(3), the return on the projected capital base for each regulatory year of the access arrangement period is to be calculated by applying a rate of return that is determined in accordance with this rule 87 (the allowed rate of return).

(2) The allowed rate of return is to be determined such that it achieves the allowed rate of return objective.

(3) The allowed rate of return objective is that the rate of return for a service provider is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services (the allowed rate of return objective).

(4) Subject to subrule (2), the allowed rate of return for a regulatory year is to be:

(a) a weighted average of the return on equity for the access arrangement period in which that regulatory year occurs (as estimated under subrule (6)) and the return on debt for that regulatory year (as estimated under subrule (8)); and

(b) determined on a nominal vanilla basis that is consistent with the estimate of the value of imputation credits referred to in rule 87A.

(5) In determining the allowed rate of return, regard must be had to:

(a) relevant estimation methods, financial models, market data and other evidence;

(b) the desirability of using an approach that leads to the consistent application of any estimates of financial parameters that are relevant to the estimates of, and that are common to, the return on equity and the return on debt; and

(c) any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.

*Return on equity*

(6) The return on equity for an access arrangement period is to be estimated such that it contributes to the achievement of the allowed rate of return objective.

(7) In estimating the return on equity under subrule (6), regard must be had to the prevailing conditions in the market for equity funds.

[Subrules (8)–(19) omitted].

The equivalent National Electricity Rules are in clauses 6A.6.2 (for electricity transmission) and 6.5.2 (for electricity distribution).

In its proposal, JGN submitted the expert report of Incenta Economic Consulting (the **Earlier Report**), as a suitable qualified independent expert (**Expert**), on the role of independent expert reports when estimating a return on equity that complies with the requirements of the National Gas Law and Rules and National Electricity Law and Rules, including as highlighted above.[1] The AER draft decision considered this expert report.

In this context, JGN seeks a further report from Incenta that reviews and responds to matters raised in the draft decision on the role of independent expert reports when estimating the return on equity. JGN seeks this report on behalf of itself, Jemena Electricity Networks, ActewAGL, Ausgrid, AusNet Services, Australian Gas Networks, CitiPower, Endeavour Energy, Energex, Ergon, Essential Energy, Powercor, SA PowerNetworks, and United Energy.

# 2 Scope of Work

The Expert will provide an opinion report that:

1. Reviews and, where appropriate responds to matters raised in the draft decision on the use of independent expert reports to estimate the return on equity, including (but not limited to):

   (a) any limitations of using independent expert reports as evidence of the required return on equity;

   (b) changes in the size of the total risk premium over time in independent expert reports;

[1] *Incenta*, May 2014, *Update of evidence on the required return on equity from independent expert reports*; as updated by *Incenta*, *20 August 2014*, *Addendum to report title, 'Update of evidence on the required return on equity form independent expert reports*'.

(c) whether there is a relationship between the equity risk premium and the risk-free rate estimates in the independent expert reports; and

(d) any adjustments or uplifts made to WACC or return on equity estimates produced using the Sharpe-Lintner CAPM in independent expert reports, and the reasons for these adjustments or uplifts.

2. Insofar as practical, updates the evidence on the return on equity in independent expert reports from the Earlier Report for:

(a) new data available since the Earlier Report;

(b) matters raised in the draft decision; and

(c) any other matters considered relevant in light of the draft decision that were not considered in preparing the Earlier Report.

For the purpose of this report, the Expert will make no adjustment for the value of imputation credits in reporting estimates of the return on equity from independent expert reports.

# 3 Information to be Considered

The Expert is also expected to consider the following additional information:

- such information that, in Expert's opinion, should be taken into account to address the questions outlined above;
- relevant literature on the rate of return;
- the AER's rate of return guideline, including explanatory statements and supporting expert material;
- material submitted to the AER as part of its consultation on the rate of return guideline; and
- previous decisions of the AER, other relevant regulators and the Australian Competition Tribunal on the rate of return and any supporting expert material.

# 4 Deliverables

At the completion of its review the Expert will provide an independent expert report which:

- is of a professional standard capable of being submitted to the AER;
- is prepared in accordance with the Federal Court Practice Note on Expert Witnesses in Proceedings in the Federal Court of Australia (CM 7) set out in Attachment 1, and includes an acknowledgement that the Expert has read the guidelines [2];

[2] Available at: http://www.federalcourt.gov.au/law-and-practice/practice-documents/practice-notes/cm7.

- contains a section summarising the Expert's experience and qualifications, and attaches the Expert's curriculum vitae (preferably in a schedule or annexure);
- identifies any person and their qualifications, who assists the Expert in preparing the report or in carrying out any research or test for the purposes of the report;
- summarises JGN's instructions and attaches these term of reference;
- includes an executive summary which highlights key aspects of the Expert's work and conclusions; and
- (without limiting the points above) carefully sets out the facts that the Expert has assumed in putting together his or her report, as well as identifying any other assumptions made, and the basis for those assumptions.

The Expert's report will include the findings for each of the five parts defined in the scope of works (Section 2).

# 5 Timetable

The Expert will deliver the final report to Jemena Regulation by **13 February 2015**.

# 6 Terms of Engagement

The terms on which the Expert will be engaged to provide the requested advice shall be:

- as provided in accordance with the Jemena Regulatory Consultancy Services Panel arrangements applicable to the Expert.

# ATTACHMENT 1: FEDERAL COURT PRACTICE NOTE

## Practice Note CM 7

**EXPERT WITNESSES IN PROCEEDINGS IN THE FEDERAL COURT OF AUSTRALIA**

### Commencement

1. This Practice Note commences on 4 June 2013.

### Introduction

2. Rule 23.12 of the Federal Court Rules 2011 requires a party to give a copy of the following guidelines to any witness they propose to retain for the purpose of preparing a report or giving evidence in a proceeding as to an opinion held by the witness that is wholly or substantially based on the specialised knowledge of the witness (see **Part 3.3 - Opinion** of the *Evidence Act 1995* (Cth)).

3. The guidelines are not intended to address all aspects of an expert witness's duties, but are intended to facilitate the admission of opinion evidence[3], and to assist experts to understand in general terms what the Court expects of them. Additionally, it is hoped that the guidelines will assist individual expert witnesses to avoid the criticism that is sometimes made (whether rightly or wrongly) that expert witnesses lack objectivity, or have coloured their evidence in favour of the party calling them.

### Guidelines

#### 1. General Duty to the Court[4]

1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.

1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.

1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

#### 2. The Form of the Expert's Report[5]

2.1 An expert's written report must comply with Rule 23.13 and therefore must

(a) be signed by the expert who prepared the report; and

(b) contain an acknowledgement at the beginning of the report that the expert has read, understood and complied with the Practice Note; and

(c) contain particulars of the training, study or experience by which the expert has acquired specialised knowledge; and

(d) identify the questions that the expert was asked to address; and

(e) set out separately each of the factual findings or assumptions on which the expert's opinion is based; and

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[3] As to the distinction between expert opinion evidence and expert assistance see *Evans Deakin Pty Ltd v Sebel Furniture Ltd* [2003] FCA 171 per Allsop J at [676].

[4] The "*Ikarian Reefer*" (1993) 20 FSR 563 at 565-566.

[5] Rule 23.13.

(f) set out separately from the factual findings or assumptions each of the expert's opinions; and

(g) set out the reasons for each of the expert's opinions; and

(ga) contain an acknowledgment that the expert's opinions are based wholly or substantially on the specialised knowledge mentioned in paragraph (c) above[6]; and

(h) comply with the Practice Note.

2.2 At the end of the report the expert should declare that "[the expert] has *made all the inquiries that* [the expert] *believes are desirable and appropriate and that no matters of significance that* [the expert] *regards as relevant have, to* [the expert's] *knowledge, been withheld from the Court*."

2.3 There should be included in or attached to the report the documents and other materials that the expert has been instructed to consider.

2.4 If, after exchange of reports or at any other stage, an expert witness changes the expert's opinion, having read another expert's report or for any other reason, the change should be communicated as soon as practicable (through the party's lawyers) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court[7].

2.5 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.

2.6 The expert should make it clear if a particular question or issue falls outside the relevant field of expertise.

2.7 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports[8].

**3. Experts' Conference**

3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

J L B ALLSOP
Chief Justice
4 June 2013

[6] See also *Dasreef Pty Limited v Nawaf Hawchar* [2011] HCA 21.

[7] The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565

[8] The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240