

# **Jemena Gas Networks (NSW) Ltd**

## **2015-20 Access Arrangement Information**

Appendix 9.9

Incenta report on independent expert reports

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**Update of evidence on the required return  
on equity from independent expert  
reports**

**May, 2014**

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## 1. Executive Summary

### 1.1 Terms of Reference

TransGrid and Jemena Gas Networks (JGN) engaged Incenta Economic Consulting (Incenta) to update the previous studies that have summarised the estimation methods and outcomes used in independent expert reports, which is a source of evidence that can be drawn upon to assist with the estimation of the cost of capital for regulated energy network firms. Ernst & Young (E&Y) analysed the period from 2008 to 2012,<sup>1</sup> and later SFG Consulting (SFG) extended the analysis to 26 April, 2013.<sup>2</sup> We were tasked by TransGrid and JGN to update the analysis of independent expert reports to April 2014. The Terms of Reference are attached in Appendix C.

### 1.2 Independent expert reports

Independent expert reports are undertaken by experienced corporate advisers and valuers in the course of a market transaction such as an acquisition or merger. Such transactions require that a valuation of a corporate asset or shares be undertaken. When providing an opinion on the valuation of the asset or shares, an independent expert will either:

- calculate the net realisable value of the assets (if it is not a going concern);
- apply a capitalisation multiple to a current or prospective earnings or cash flow value, or
- undertake a discounted cash flow (DCF) valuation.

Approximately 10 to 15 per cent of independent expert reports apply a DCF valuation, which is generally in cases of capital intensive activities, such as mining and infrastructure (including regulated infrastructure). A key question is whether this source of evidence is likely to deliver a reliable estimate of the cost of equity? The following characteristics suggest that an assessment of independent expert reports can provide useful insights for an assessment of the cost of equity for a regulated business:

- *Potential for bias is low* – Independent expert reports are produced for a purpose that is unrelated to regulation (and where the experts have little interests in the regulated utilities), and there is a regulatory regime applying to the production of such reports and potential liability to the expert for negligent advice. We consider that these features indicate that independent expert reports are unlikely to be systematically biased in any direction.
- *Robust and transparent methodology* – Independent expert reports often underpin large transactions, typically include a significant section (or appendix) on the methodology that has been applied, and are fully transparent in revealing all the evidence relied upon and assumptions made.

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<sup>1</sup> Ernst & Young (8 November, 2012), *Market evidence on the cost of equity – Victoria Gas access Arrangement Review 2013-2017*.

<sup>2</sup> SFG Consulting (24 June, 2013), *Evidence on the required return on equity from independent expert reports, Report for the Energy Networks Association*.

- *Reasonable degree of consensus* – Whilst the question of how closely clustered are the opinions of independent expert reports is an empirical question, we note (and this is discussed further below), that there is, for example, evidence of a significant degree of commonality in the response of independent experts to the historically low Government bond yields in recent years.
- *Relevance to regulated businesses* – While there has been a recent independent expert report relating to Envestra, which provides direct evidence on the cost of equity, there are sufficient independent expert reports to permit trends in the cost of equity over time to be gauged, which is useful for making inferences as to how the market average cost of equity (i.e., the required return on the market) has changed, including how costs of equity have changed in recent times with changes to the risk free rate of return.

### **1.3 Previous independent expert evidence on the required return on equity**

There have been two previous studies that have analysed the evidence of independent expert reports, and both of them concluded that independent experts are not constrained by the Sharpe-Lintner CAPM, but rather begin with this model and make adjustments that are informed by alternative market-based information sources, additional analysis and professional judgement.

#### ***Ernst & Young report***

Ernst & Young's (November, 2012) report was undertaken in the context of the AER's review of the Access Arrangements for a number of Victorian gas networks.<sup>3</sup> At the time of the report the risk free rate proxy applied by the AER was the 'spot' 10 year Commonwealth bond rate (10 year CGS), which was at historically low levels. When the AER applied the spot risk free rate together with a long term market risk premium of **6 per cent**, there was a concern that such a 'mechanistic' application of the CAPM would result in an under-estimation of the cost of capital.

E&Y found that, ignoring the impact of imputation credits, in the 17 independent expert reports undertaken during the first six months of 2012, the market cost of equity implied by the independent experts was on average **1.2 percentage points** higher than the AER's implied market cost of equity of 9.5 per cent.

#### ***SFG report***

In updating the E&Y study, SFG considered the 17 reports identified by E&Y, and added 12 reports out of 247 reports issued between 11 October, 2012 and 26 April, 2013 (34 separate assessments of the cost of equity).<sup>4</sup> Net of any value being attributed to imputation credits, SFG found that estimates of the required return on the market presented in these reports were:

- 8.5 per cent applying the mechanistic approach (10 year CGS plus market risk premium of **6 per cent**);
- 10.2 per cent if *none* of any uplift factor is attributed to the required return on the market; and
- 11.6 per cent if all of the uplift factors are applied to the required return on the market.

<sup>3</sup> The businesses were Envestra, Multinet and SP AusNet.

<sup>4</sup> Some reports contained more than one cost of equity estimate, for example when multiple projects needed to be considered separately.

Net of any impact of the assumed value of imputation credits, SFG found that independent experts applied an average uplift of **3.3 per cent** over the return on equity implied by a mechanistic application of the Sharpe-Lintner CAPM (applying a **6 per cent** market risk premium).

#### **1.4 Updated independent expert evidence on the required return on equity**

The CONNECT 4 data base lists 82 independent expert reports for the period that was considered by SFG (from 11 October, 2012 to 26 April, 2013). SFG found 12 independent expert reports in this period had estimated a cost of capital. By searching each of these reports manually for several key words, we found 13 independent expert reports that estimated a cost of equity, which we included in our sample.<sup>5</sup> Applying the same approach, we reviewed the 185 independent expert reports contained in the CONNECT 4 data base over the period from 27 April, 2013 to 20 April 2014. In the latter period we found 19 independent expert reports that estimated a cost of equity (which included 20 individual cost of equity estimates).<sup>6</sup>

##### ***Independent experts almost invariably make upward adjustments to a mechanistic Sharpe-Lintner CAPM***

As noted in the main text, a number of independent expert reports we reviewed expressed caution about mechanistically applying the Sharpe-Lintner CAPM. For example, in its March 2014 independent expert report relating to Envestra, Grant Samuel wrote that:<sup>7</sup>

*In December 2013, the AER released new rate of return guidelines setting out how it will determine the return that regulated energy infrastructure entities can earn on their investments. The new guidelines followed extensive consultation with the market participants and enable greater flexibility in responding to changing market conditions and changes in financing practices in the industry. Grant Samuel has had regard to the AER's analysis and guidelines but in Grant Samuel's view it can give a misleading impression of the precision about what is, in reality, a relatively crude tool of unproven accuracy that gives, at best, a broad approximation of the cost of capital.*

Of the 20 cost of equity estimates made by independent experts over approximately 12 months, 16 (80 per cent) made some adjustment to a mechanistic application of the Sharpe-Lintner CAPM (i.e. they either adjusted the risk free rate above the spot rate, and / or applied a market risk premium above 6 per cent, and / or applied an additional risk factor). Hence, for the vast majority of independent experts the mechanistic Sharpe-Lintner CAPM is only the starting point for the estimation of the cost of equity.

Many independent experts add an additional explicit risk factor to the cost of equity estimate obtained from a mechanistic application of the Sharpe-Lintner CAPM. A number of independent experts added a 'size premium'. For firms with a market capitalisation in the range of \$1 billion to \$4 billion, independent expert Leadenhall indicates that it will increase the cost of equity by 1 per cent over the value obtained from a mechanistic version of the Sharpe-Lintner CAPM. In addition to the size factor, a number of other independent experts referred to other additional risk factors to justify a return on

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<sup>5</sup> We opened up the PDF of each report and searched for the terms 'DCF' 'WACC' and 'beta'. The additional report was for Realm Resources.

<sup>6</sup> This was the Polymetals independent expert report, which contains cost of equity estimates for two projects, Mt Boppy and Marda.

<sup>7</sup> Grant Samuel (3 March, 2014), *Independent Expert's Report on Envestra*, p. 2.



equity uplift (over the mechanistic application of the Sharpe-Lintner CAPM), including stranding risk, legislative / regulatory risk, increased competition, and changing technology.

***Required return on the market and required return on equity***

Our investigation of the 20 cost of capital estimates made by independent experts between 27 April, 2013, and 20 April, 2014 has shown that compared with the contemporaneous application of a mechanistic CAPM proposed to be applied by the AER (i.e. the ‘spot’ risk free rate and a market risk premium of **6.5 per cent**), and ignoring the effects of imputation credits, independent experts’:<sup>8</sup>

- *Return on the market* – increased by **0.20 per cent** for all 20 firms / projects ignoring any additional uplift (‘alpha’),
- *Return on equity* – increased by **1.9 per cent** for all 20 firms / projects (i.e., after including the effect of any additional uplifts),
- *Return on equity for low beta firms* – increased by **2.8 per cent** for 5 low equity beta (averaging 0.77) firms, and
- *Return on equity for Envestra* – increased by approximately **0.8 percentage points** relative to a mechanistic application of the AER’s proposed approach.<sup>9</sup>

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<sup>8</sup> AER (December, 2013), *Explanatory Statement, Rate of Return Guideline*, Better Regulation.

<sup>9</sup> The AER’s proposed approach is to apply a 0.7 beta and 6.5 per cent market risk premium to regulated energy businesses like Envestra. With a risk free rate of 4.2 per cent (as applied by Grant Samuel), the AER’s approach would estimate a cost of equity of 8.75 per cent (i.e.  $4.2 + (0.7 \times 6.5)$ ), while Grant Samuel’s estimated cost of equity was 9.54 per cent (i.e.  $4.2 + (0.65 \times 6) + 1.44$ ), a difference of 0.79 per cent.

## **2. Terms of reference and previous evidence on the cost of equity based on independent expert reports**

### **2.1 Terms of Reference**

TransGrid and JGN engaged Incenta Economic Consulting (Incenta) to update the previous studies that investigated the evidence on the estimation of the cost of capital that can be derived from independent expert reports. A study conducted by Ernst & Young (E&Y) analysed the period from 2008 to 2012, while SFG Consulting (SFG) analysed approximately an additional year (to 26 April, 2013). We were tasked by TransGrid and JGN to update the analysis of independent expert reports to April 2014 (the period we analysed ended with 20 April, 2014). The Terms of Reference are attached in Appendix C.

In the remainder of this chapter we examine the nature of independent expert reports, and their advantages and disadvantages with respect to the provision of information that is indicative of the rate of return on equity that is required in the market. This is to provide background to our review of the analysis of independent expert reports undertaken by E&Y and SFG, which is presented below, and for our own updated analysis, which is presented in Chapter 3.

### **2.2 Independent expert reports**

Independent expert reports are undertaken by experienced corporate advisers and valuers in the course of a market transaction such as an acquisition or merger. Such transactions require that a valuation of a corporate asset or shares be undertaken. When providing an opinion on the valuation of the asset or shares, an independent expert will:

- calculate the net realisable value of the assets (if it is not a going concern);
- apply a capitalisation multiple to a current or prospective earnings or cash flow value, or
- undertake a discounted cash flow (DCF) valuation.

A small minority of independent expert reports apply a DCF valuation. Most commonly, DCF valuations are undertaken for capital intensive activities, such as mining and infrastructure (including regulated infrastructure). When independent experts undertake a DCF valuation, they need to derive an estimate of the weighted average cost of capital (WACC), and therefore, the cost of equity that is appropriate to the risk profile of that asset. Almost exclusively, when estimating the cost of equity for a DCF valuation, independent expert reports begin with an assessment that relies on the Sharpe-Lintner Capital Asset Pricing Model (CAPM), and provide an analysis of each parameter. However, owing to the uncertainty associated with estimation of the cost of equity, independent expert reports generally:

- provide a range of cost of equity estimates rather than a point estimate, and
- cross-check their results to those obtained using other methodologies, such as
  - observed valuation multiples,
  - transaction multiples,

- the dividend growth model (DGM),
- estimates of the cost of equity made by investment analysts, and
- if deemed necessary on the basis of that additional evidence, apply a further uplift to the rate of return on equity implied by a mechanical application of the Sharpe-Lintner CAPM.

### **2.3 The transparency and objectivity of independent expert reports**

Independent expert reports are likely to be objective and well informed assessments of the cost of equity demanded by investors in the current market. They are generally undertaken by specialist expert valuation firms (such as Grant Samuel and Lonergan Edwards & Co.) or corporate value advisers located within divisions of the major and second tier accounting firms. Independent expert reports are made public, and subjected to significant scrutiny, since they are subject to:

- 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);<sup>10</sup>
- competitive pressure from other independent experts; and
- reputational risk to provide fair and unbiased valuations.

ASIC, RG 111 encourages the use of more than one valuation methodology, requires experts to base their assessments on ‘reasonable assumptions’ that are fully disclosed, specific and definite, and encourages the use of a valuation range that is as narrow as possible.<sup>11</sup> Hence, there can be a degree of confidence that observations about the application of the CAPM model drawn from a reasonable sample of independent expert reports will provide an unbiased reflection of market opinion with respect to the estimation of the cost of equity.

Typically, the independent expert reports that apply the DCF methodology provide an appendix setting out the evidence that was relied upon when estimating the WACC, and the expert’s reasons for adopting the values attributed to specific WACC parameters. Each WACC parameter is discussed separately, setting out the evidence and reasoning behind the choice of a value, or a range of values, for that parameter. The extent of this reasoning varies between reports, with reports for larger transactions typically providing more extensive analysis and reasoning than reports for smaller transactions. With the information provided, it is always possible to compare the cost of equity obtained by a mechanistic application of the CAPM, and the cost of equity judged to be appropriate by the independent expert.

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<sup>10</sup> Australian Securities and Investments Commission, Regulatory Guide 111 (RG 111), Contents of Expert’s Reports; and RG 112, Independence of Experts.

<sup>11</sup> Australian Securities and Investments Commission, Regulatory Guide 111 (RG 111), Contents of Expert’s Reports; and RG 112, Independence of Experts.

## **2.4 Impact of the imputation credits assumption**

As reported by E&Y and SFG, independent expert reports universally ignore any impact of imputation credits on valuation, and therefore in effect apply a gamma of zero, while regulators have in the past generally assumed a gamma value of 0.50. In order for the return on equity observed in independent expert reports to be made comparable with the approach taken in regulatory decisions, it is necessary to adjust the latter by excluding the impact of gamma on the assumed taxation of the regulated business. However, the Scope of Work within our Terms of Reference (contained in Appendix C below) instructs us to ignore the impact of imputation credits on the rate of return on equity.

## **2.5 The Ernst & Young report (November, 2012)**

### **2.5.1 Background to the report**

The E&Y report was undertaken in the context of the AER's review of each of Envestra's, Multinet's and SP AusNet's ('the businesses') Access Arrangements for their respective gas networks in Victoria.<sup>12</sup> An important issue at the time of the report (November, 2012), was the historically low level of the risk free rate proxy (the 10 year Commonwealth bond rate, or 10 year CGS). The AER was applying the CAPM in what was being termed a 'mechanistic' manner. That is, the spot risk free rate was being applied together with a long term market risk premium of 6 per cent, with no allowance being made for the fact that the spot risk free rate was at historically low levels.

The businesses were concerned that the AER's mechanistic application of the CAPM would understate the required return on equity and that its approach was at odds with market practice. Hence, E&Y was engaged to undertake a review of market practice, as indicated by the CAPM approach adopted by independent experts.

### **2.5.2 E&Y's methodology**

E&Y reviewed the 889 independent expert reports issued between 1 January 2008 and 10 October, 2012 that were published by the CONNECT 4 Expert Reports data base. Of these 889 reports, 132 (14.8 per cent) qualified for further analysis as they applied DCF analysis. Seventeen of these reports, which were undertaken during 2012, were identified for detailed analysis as they were most recent and coincided with the averaging periods of the businesses.

E&Y's main focus was to determine the average market cost of equity, which it considered could be implied by:

- Adding the risk free rate to the market risk premium as applied in the 17 reports; and
- Where it was identified in any of the reports that the cost of equity or the discount rate applied differs from that calculated by the expert, adding the difference to the sum of the risk free rate and the market risk premium by taking into account the assumed gearing level.<sup>13</sup>

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<sup>12</sup> E&Y (8 November, 2012)

<sup>13</sup> In one case the cost of capital also took account of issues associated with estimating the cost of debt, and was therefore excluded from the sample.

### 2.5.3 E&Y's findings

Comparing the market cost of equity implied by independent experts with that applied by the AER, E&Y found that these were generally in line over the period from 2008 to the middle of 2011, but that in the 2011-12 year there had developed a divergence. During the later period the risk free rate reduced to historical lows, and the AER continued to apply the CAPM mechanistically. As a result, E&Y found that in the 17 independent expert reports undertaken during the first six months of 2012, the market cost of equity implied by the independent experts was on average 1.2 percentage points higher than the AER's implied market cost of equity of 9.5 per cent, and 1.7 percentage points higher than the market cost of equity implied in the AER's Draft Decisions on the businesses. Including the impact of imputation credits, which E&Y assessed at 1 percentage point, it concluded that the full differential was in the order of 2.2 percentage points.<sup>14</sup>

In addition, E&Y quoted a number of specific comments that were made by independent experts as justification for the upward adjustments that they had made to the mechanistic application of the CAPM. For example, Grant Samuel, in adjusting its discount rate upwards relative to a mechanistic application of the CAPM in its report on HDUF, stated that:<sup>15</sup>

*...the market upheaval since 2007 has seen a repricing of risk by investors and global interest rates, including long term bond rates, are at very low levels by comparison with historical norms. The CAPM methodology does not readily allow for these types of events.*

Other experts, such as Deloitte, responded to the circumstances by increasing the market risk premium that was applied:<sup>16</sup>

*In recent years it has been common market practice in Australia in expert's reports and regulatory decisions to adopt an EMRP of 6%.*

*Having considered the various approaches and their limitations, we consider an EMRP of 7% to be appropriate.*

E&Y also noted that by observing trading multiples, Grant Samuel had found little evidence that falls in CGS yields had been incorporated into market valuations, which was further evidence that the required rate of return had not fallen in line with the risk free rate.

## 2.6 The SFG report (June, 2013)

### 2.6.1 Background

SFG's report came a year after the E&Y report, and applied a similar methodology of reliance on independent expert reports since 2008. However, SFG's terms of reference were wider, extending to consideration of, *inter alia*, the term of the risk free rate of interest that is applied by independent experts. In contrast to the E&Y report, SFG's report also investigated the additional uplift that independent experts applied in their reports that was above the mechanistic application of the CAPM.

SFG updated the E&Y study, which covered the period between 1 January, 2008, and 10 October, 2012. SFG considered the 17 independent expert reports identified by E&Y, and added 12 independent expert reports (out of a total of 247 reports) published after 10 October, 2012, up to 26

<sup>14</sup> E&Y (8 November, 2012), p. 16.

<sup>15</sup> Grant Samuel (3 August, 2012), *Independent Expert Report: Pipeline Partner's Offer*, p.2.

<sup>16</sup> Deloitte (26 April, 2012), *Independent Expert Report: Gloucester Coal Ltd*, p. 108.

April, 2013.<sup>17</sup> This gave SFG a total of 29 independent expert reports, which contained a total of 34 separate assessments of WACC.<sup>18</sup>

## 2.6.2 Required return on the market

For the period from 11 October 2012 to 26 April, 2013, net of any value being attributed to imputation credits, SFG found that estimates of the required return on the market were:

- 8.5 per cent applying the mechanistic approach (10 year CGS plus market risk premium **of 6 per cent**);
- 10.2 per cent if *none* of any uplift factor is attributed to the required return on the market; and
- 11.6 per cent if all of the uplift factors are applied to the required return on the market.

## 2.6.3 Required return on equity

SFG compared (net of any assumed value for imputation credits):

- The independent expert's estimate of the required return on equity for each firm; with
- An estimate formed by inserting the following values into the Sharpe-Lintner CAPM:
  - Contemporaneous 10 year CGS yield as the proxy for the risk free rate;
  - 6 per cent for market risk premium; and
  - The equity beta adopted by the independent expert.

The average estimated required rate of return on equity obtained by applying the first approach was found to be 14.4 per cent, while the average return obtained using the latter approach was 11.1 per cent. In other words, net of any impact of the assumed value of imputation credits, independent experts were shown to apply an average uplift of 3.3 per cent over the return that would be implied by a mechanistic application of the Sharpe-Lintner CAPM.

Like E&Y, SFG also provided a number of extracts from expert reports, which illustrated the concerns of these experts about applying the Sharpe-Lintner CAPM in a mechanistic fashion. For example, in its report on Consolidated Media Holdings Ltd, KPMG stated that it considered bond yields to be trading at historical lows, and that there is a 'strongly inversely correlated' relationship with the market risk premium. In these circumstances, KPMG considered it appropriate to either:<sup>19</sup>

- *Adopt a historical MRP as a proxy for the expected MRP and adjust the spot risk-free rate to take into account the relationship highlighted above; or*

<sup>17</sup> We note that only 85 of these reports were independent expert reports.

<sup>18</sup> Some reports contained more than one cost of equity estimate, for example when multiple projects needed to be considered separately.

<sup>19</sup> KPMG (24 September, 2012), *Consolidated Media Holdings Ltd – Independent Expert Report*, pp.91-92.

- *Adopt the spot risk-free rate and adjust the MRP for the perceived additional risks attaching to equity investments implicit from historically low (or high as the case may be) risk-free rates to reflect the current investment environment and the inverse relationship between the two variables.*

Similarly, Lonergan & Edwards stated that:<sup>20</sup>

*Had a higher risk free rate not been adopted [to compensate for the historically low risk free rate], in our view, it would be appropriate to adopt a correspondingly higher market risk premium.*

SFG found that 13 assessments from the total of 34 cost of equity assessments (38 per cent) applied an upward adjustment to the risk-free rate in recognition of the abnormally low level of CGS yields. The average adjustment was 1.24 per cent. However, SFG found that in every case (100 per cent) the figure adopted by the independent expert report was above the mechanistic CAPM estimate of the return on equity, and in almost every one of these cases the differential was more than 1 per cent.<sup>21</sup>

## **2.7 Conclusion**

Our conclusions are as follows:

- Independent expert reports are subject to significant market and institutional scrutiny regarding their independence and technical standard, and are therefore likely to provide an accurate reflection of best market practice relating to the estimation of the cost of equity
- E&Y found that the market cost of equity applied in 17 independent expert reports over the period 1 January, 2012 to 10 October 2012 was 1.2 percentage points higher than the equity return that would be estimated applying a mechanistic version of the Sharpe-Lintner CAPM, and this differential would rise to 2.2 percentage points if the impact of imputation credits were included, and
- SFG found that the market cost of equity applied in 12 independent expert reports over the period 11 October 2012 to 26 April 2013 was 1.7 percentage points higher than the equity return that would be estimated applying a mechanistic version of the Sharpe-Lintner CAPM if none of any additional uplift factor was attributed to the market return, and would be 3.1 percentage points higher if all of any uplift factor was attributed to the market return. These differentials did not include any adjustment for dividend imputation.

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<sup>20</sup> Lonergan & Edwards (25 October, 2012), *Funding Agreement with Greatgroup – Independent Expert Report*, footnote 43.

<sup>21</sup> SFG (24 June, 2013), p. 2.

### **3. Updated analysis of evidence on the required return on equity from independent expert reports**

#### **3.1 Introduction**

In this chapter we extend the work of E&Y and SFG, by examining how independent experts have applied the Sharpe-Lintner CAPM model during the approximately 12 month period from 27 April 2013 to 20 April 2014. We first describe the data base of independent expert reports that we have compiled, then reference some extracts from those reports about the concerns that independent experts have expressed about the shortcomings of a mechanistic application of the Sharpe-Lintner CAPM, and lastly provide an empirical analysis of the implications of the independent expert reports in relation to:

- The required return on the market; and
- The required return on equity.

#### **3.2 Updated data on independent expert reports for 2013-14**

To reiterate, E&Y's period of analysis ranged from 1 January 2008 to 10 October, 2012, and SFG extended the analysis to include the period from 11 October, 2012 to 26 April, 2013. We have extended the analysis for approximately another year, including independent expert reports for the period from 27 April, 2013, to 20 April, 2014.

##### **3.2.1 Search of CONNECT 4 data base**

To find the independent expert reports that have estimated a cost of equity we relied on the CONNECT 4 data base, which is a Thomson Reuters online data service. The Expert Reports Module of this data base is one of 10 modules relating to ASX-listed companies, which cover topics ranging from new issues, mergers and takeovers and prospectuses to company announcements. The Expert Reports Module contains all expert reports that have been issued by ASX-listed companies pursuant to the Corporations Law or ASX Listing rules. A number of statistics are provided for each report, including the issuing company, the names and roles of advisers, the fees paid to advisers and the industry classification.

We searched the CONNECT 4 data base by first selecting the ranges of dates that we required (11 October, 2012 to 26 April, 2013 to match the SFG period, and 27 April, 2013, to 20 April, 2014 to extend this to the present). We arranged the selected reports by type, and selected those classified as 'independent expert reports'.<sup>22</sup> We then manually opened each of these reports (which are provided in PDF format) and undertook searches for the following key words: DCF, WACC and beta. If one of these words was found in the report we examined it in detail. This procedure resulted in the following samples of independent expert reports that estimated a cost of equity:

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<sup>22</sup> Other categories of reports included those undertaken by financial, technical and legal experts.



- For the SFG extension period of 11 October, 2012 to 26 April, 2013, we reviewed 83 independent expert reports and found 13 expert reports that applied the DCF methodology and were included for analysis, which is one more than the sample SFG analysed.<sup>23</sup>
- For the latest extension period, from 27 April, 2013 to 20 April 2014, we reviewed 185 expert reports contained in the CONNECT 4 data base, and using the approach set out above, we found 19 reports that estimated a cost of equity (with 20 individual cost of equity estimates).<sup>24</sup>

For each of the selected independent expert reports we noted the cost of equity estimates provided by the expert, the date of the report, the date used for the estimation of the risk free rate, and the CAPM parameters:

- Risk free rate applied and date of the estimate,<sup>25</sup>
- The size of any adjustment made specifically to the risk free rate,
- The market risk premium, or range of the market risk premium, applied,
- The equity beta, or range of equity betas, and
- The value (or range) of any additional uplift that was provided over the mechanistic CAPM.

As related in the next section, we also noted the reasons that were given by the independent experts when they departed from a mechanistic application of the Sharpe-Lintner CAPM.

### **3.3 Adjustments made by independent experts to the Sharpe-Lintner CAPM**

In this section we review some of the observations that have been made by independent experts about the operation of the Sharpe-Lintner CAPM, and its accuracy in estimating the cost of equity.

#### **3.3.1 Expressions of caution regarding the Sharpe-Lintner CAPM methodology** *Concern about the overall application of the Sharpe-Lintner CAPM*

In the following extract from its independent expert report on Australian Infrastructure Fund (AIF), Grant Samuel expressed reservations about mechanistic application of the Sharpe-Lintner CAPM methodology.<sup>26</sup>

*The selection of a discount rate to apply to the forecast cash flows of any business is fundamentally a matter of judgement. The valuation of an asset or business involves judgements about the discount rates that may be utilised by potential acquirers of that asset. There is a body of theory that can be used to support that judgement. However, a mechanistic*

<sup>23</sup> This expert report was for Realm Resources, which was undertaken by RMS Bird Cameron. The inclusion or exclusion of this report would have made no material difference to SFG's results.

<sup>24</sup> In the case of Polymetals Mining, two projects were valued (Mount Boppy and Marda), and these were treated as separate expert assessments of the cost of equity.

<sup>25</sup> If a specific date was not provided for the risk free rate, for the 'spot' rate we assumed the 20 day average risk free rate leading up to the date of the report.

<sup>26</sup> Grant Samuel (7 December, 2012), *Independent Expert Report on Australian Infrastructure Fund*, Appendix 1, p.1

*application of formulae derived from that theory can obscure the reality that there is no 'correct' discount rate. Despite the growing acceptance and application of various theoretical models, it is Grant Samuel's experience that many companies rely on less sophisticated approaches. Many businesses and investors use relatively arbitrary 'hurdle rates' which do not vary significantly from investment to investment or change significantly over time despite interest rate movements. Valuation is an estimate of what real world buyers and sellers of assets would pay and must therefore reflect criteria that will be applied in practice even if they are not theoretically correct. Grant Samuel considers the rates adopted to be reasonable discount rates that acquirers use irrespective of the outcome of any particular theoretical model...*

*In selecting the discount rate range, we utilised the capital asset pricing model ('CAPM'), as the starting point in our analysis to determine a cost of equity. However, it is easy to credit the output of models with a precision it does not warrant. The reality is that any cost of capital estimate or model output should be treated as a broad guide rather than as an absolute truth. The cost of capital is fundamentally a matter of judgement, not merely of calculation. In this context, regard was also had to other methods such as the implied cost of equity based on the Gordon Growth Model (or perpetuity formula), market evidence that suggests that equity investors have substantially repriced risk since the global financial crisis and the fact that interest rates are at low levels in comparison with historical norms.*

*However, while the theory underlying the CAPM is rigorous the practical application is subject to shortcomings and limitations and the results of applying the CAPM model should only be regarded as providing a general guide. There is a tendency to regard the rates calculated using the CAPM as inviolate. To do so is to misunderstand the limitations of the model.*

More recently, Grant Samuel undertook a valuation analysis of Envestra, which is one of the comparable firms that is used by the AER to estimate other benchmark firm characteristics, such as equity beta and credit rating. In that report Grant Samuel noted that in its opinion, the shortcomings of the Sharpe-Lintner CAPM model had not been fully accepted in the AER's *Rate of Return Guidelines*:<sup>27</sup>

*In December 2013, the AER released new rate of return guidelines setting out how it will determine the return that regulated energy infrastructure entities can earn on their investments. The new guidelines followed extensive consultation with the market participants and enable greater flexibility in responding to changing market conditions and changes in financing practices in the industry. Grant Samuel has had regard to the AER's analysis and guidelines but in Grant Samuel's view it can give a misleading impression of the precision about what is, in reality, a relatively crude tool of unproven accuracy that gives, at best, a broad approximation of the cost of capital.*

For example, Grant Samuel expressed its concern that the Sharpe-Lintner CAPM model is not reliable when there has been a repricing of risk by investors, and global sovereign interest rates are depressed:

*In addition, the market upheaval since 2007 has seen a repricing of risk by investors and global interest rates, including long term bond rates, are at very low levels by comparison*

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<sup>27</sup> Grant Samuel (3 March, 2014), *Independent Expert's Report on Envestra*, p. 2.

*with historical norms. The CAPM methodology does not readily allow for these types of events.”*

Grant Samuel calculated a nominal after-tax WACC range of 5.9 per cent to 6.5 per cent based on a beta range of 0.6 to 0.7, gearing of 0.55 to 0.65, and a cost of debt of 7 per cent.<sup>28</sup> However, it increased this range, noting:

*However, it must be recognised that this is a calculation based on statistics of limited reliability and involving a multitude of assumptions. In this regard, Grant Samuel’s view is that the selected cost of capital should incorporate a margin over the calculated WACC range to reflect:*

- *alternative approaches for estimating the cost of equity such as the Gordon Growth Model suggest higher rates than the 7.8%-8.4% implied by the CAPM. Analysis of the entities most comparable to Envestra (i.e. DUET Group, SP AusNet, APA Group and Spark) using the Gordon Growth Model suggest cost of equity capital in the range of 9.0-11.3% (yields mostly around 6.5-8.3% and dividend growth of 2.5-4.5% with medians of around 6.6% and 3.0% respectively). A cost of equity of 9.0-11.3% would imply a WACC of 6.3-7.8% if all the other parameters are held constant.... However, caution is warranted in considering this analysis because of the difficulties of putting the yields of the energy infrastructure entities on a comparable basis because of differing tax treatments;*
- *anecdotal information suggests that equity investors have repriced risk since the global financial crisis and that acquirers are pricing offers on the basis of hurdle rates above those implied by theoretical models. However, this has yet to be translated into the measures of market risk premium (at least based on longer term historical data). In this regard an increase in the market risk premium of 1% (i.e. from 6% to 7%) would increase the calculated WACC range to 6.1%-6.8%;*
- *global interest rates, including long term bond rates, are at very low levels by comparison with historical norms reflecting very substantial amounts of liquidity being pumped into many advanced economies... Grant Samuel does not believe this position [of low effective real interest rates] is sustainable... 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 advocate that a ‘normalised’ risk free rate should be used.*
- *Analysis of recent research reports on Australian entities involved in the energy infrastructure sector (i.e. APA Group, Envestra, DUET Group, Spark and SP AusNet) indicates that brokers are currently adopting costs of equity capital in the range 8.5-11.2% with a median of 9.6% and WACC in the range of 6.0-8.8%, with a median of 7.5%.*

During the last year, several independent expert reports referred to the need to take account of the cost of equity estimates being made by broker and investment bank analysts. These analysts value the company at regular intervals and interact with one another in forming opinions about the cost of capital. They therefore have more familiarity with the asset than independent experts, who may infrequently assess the cost of equity of firms in a given sector. In its expert’s report on Greencross

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<sup>28</sup> As observed earlier, this cannot be compared directly to the values used by the AER because of the differing treatments of imputation credits.

Limited, Deloitte stated that it would not rely solely on the cost of equity that is implied by a mechanistic application of the Sharpe-Lintner CAPM, but would also take account of the opinions of broker analysts:

*We have selected a nominal after tax discount rate in the range of 10.5% to 11.5% to discount the future cash flows of Greencross to their present value. In selecting this range, we have considered the following:*

- *The Capital Asset Pricing Model (CAPM) having regard to market data observed on comparable companies*
- *The required rate of return of Greencross as estimated by brokers.*

### **Risk free rate**

During the last year many independent experts have continued to express concern about the level of the CGS yield relative to the long term average, and have compensated by increasing the yield applied as the risk free rate above the spot yield value. For example, in its independent expert's report on RHG Limited, Deloitte noted that:<sup>29</sup>

*While the return on Australian Government bonds has declined, we do not consider there is sufficient evidence to suggest that investors have reduced their overall required returns. As such, the specific risk premium has been adjusted upwards to reflect this.*

*We have therefore selected a specific risk premium of 0.5% which relates to short term market risk factors.*

Accounting firm BDO expressed reservations about singular reliance on the spot CGS yield as a proxy for the risk free rate:<sup>30</sup>

*Importantly, the risk free rate has been considered in conjunction with other inputs and the overall discount rate.*

### **3.3.2 Additional risk factors**

Approximately half of the independent expert reports we analysed for the period starting from 11 October 2012 (i.e. the start of SFG's period), and ending on 20 April, 2014 (i.e. the last date that we reviewed in our additional period) applied an additional risk factor, termed alpha, which provided an uplift to the rate of return applied using the Sharpe-Lintner CAPM. This is further evidence that independent experts view the mechanistic Sharpe-Lintner CAPM as a starting position, rather than as a destination. Relative to the Sharpe-Lintner CAPM, independent experts have expressed this as:<sup>31</sup>

$$R_e = R_f + \beta_e \times (R_m - R_f) + R_s$$

<sup>29</sup> Deloitte (5 November, 2013), RHG Limited, Independent expert's report and Financial Services Guide, p.171.

<sup>30</sup> BDO (14 October, 2013), *Independent Expert Report on Australasian Wealth Investments*, p.23.

<sup>31</sup> Ernst & Young (14 January, 2013), *Independent Expert's Report and Financial Services Guide – Macmahon Holdings Limited Sale of the Construction Assets to Leighton Holdings Limited*, p. 55.

Where,

$R_e$	rate of return on equity
$R_f$	risk free rate of return
$\beta_e$	expected equity beta of the investment
$R_m$	expected rate of return on the market portfolio of risky investments
$(R_m - R_f)$	excess return of the market over the risk free rate, or the market risk premium
$R_s$	specific risk premium

### ***Size effect***

Some independent experts have made reference to the size effect as a justification for applying a specific risk premium to the standard Sharpe-Lintner CAPM methodology. A particularly enthusiastic proponent of this approach is Leadenhall, which in its Independent Expert's Report on FRR Corporation applied 'a small size risk premium of 5% to reflect the fact that NewLease would be towards the lower end of the Micro-cap banding based on its size'.<sup>32</sup>

*Leadenhall and others have conducted a number of high level studies which have confirmed the existence of the size effect in the Australian market. However, we are not aware of any Australian studies that have been performed with the same detail and rigour as the US studies, such as the Morningstar data presented above. Based on the evidence from US studies and our knowledge of prices actually paid in Australian transactions, from which a discount rate can be implied, we believe the size premium ranges in the below table are appropriate. This table should have been taken as a guide to the appropriate size premium for a given business and needs to be considered in conjunction with the specific circumstances of a particular business.*

The table used by Leadenhall to adjust for the size effect is reproduced in Table 3.1 below.

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<sup>32</sup> Leadenhall (17 December, 2013), *FRR Corporation Proposed Acquisition of NewLease Pty Ltd*, pp. 63-78.

Table 3.1: Leadenhall size premium bandings

Decile	Market cap. range (AU \$m)			Size premium range		
	Low	to	High	Low	to	High
Largest	4,000	to	Above	-	to	-
Large	1,000	to	4,000	-	to	1.0%
Mid-cap	300	to	1,000	1.0%	to	2.0%
Low-cap	100	to	300	2.0%	to	3.0%
Small-cap	50	to	100	3.0%	to	4.0%
Micro-cap	10	to	50	4.0%	to	5.0%
Medium private	5	to	10	5.0%	to	7.5%
Small private	2	to	5	7.5%	to	9.0%
Smallest		to	2	9.0%	to	15.0%

Source: Leadenhall analysis, in Leadenhall (17 December, 2013), p.64.

BDO is another Australian independent expert that has articulated a position on the size effect. For example, in its independent expert report on the \$27 million market cap Australasian Wealth Investments Limited (AWK), it noted that:<sup>33</sup>

*There are several empirical studies that demonstrate that the investment market does not ignore specific company risks. In particular, studies show that on average, smaller companies have higher rates of return than larger companies (often referred to as the size premium). We note that the management income derived by the Management Contract is significantly less than the comparable transactions in Section 6.1.*

*Based on the above we have selected a specific risk premium of 3.0% to 4.0% for AWK.*

#### **Other additional risk factors**

Other factors have also been found by independent experts to justify an increment to the CAPM cost of equity. Grant Thornton explained the additional risk factors it applied to the Mt Boppy Project (2 per cent) and Marda Project (1 per cent) as requiring ‘a certain level of professional judgement’.<sup>34</sup>

*Specific risk premium represents the additional return an investor expects to receive to compensate for country, size and project related risks not reflected in the beta of the observable comparable companies.*

*In assessing the appropriate specific risk premium to be applied, we have considered the following:*

- *Uncertainty associated with the early stage nature of this asset;*
- *Risk associated with successfully converting mineral resources into ore reserves; and*

<sup>33</sup> BDO (14 October, 2014), *Independent Expert’s Report, Australasian Wealth Investments Limited*, p. 26.

<sup>34</sup> Grant Thornton (31 May, 2013), *Polymetals Mining Limited, Independent Expert’s Report and Financial Services Guide*, p. 101.

- *Economic viability of extending the life of the mine.*

Asset stranding risk and legislative / regulatory risk were among the additional risks identified by Grant Thornton when it was assessing the cost of equity of Australian Power and Gas Limited (APK):

*As detailed in the beta section below we have adopted a beta, which largely reflects the historical risk of the business. In selecting an additional risk premium we have the following specific additional risks*

- *We note that in recent years the average usage per customer has decreased slightly year on year due to higher energy costs and more focus on renewable energy sources...*
- *In FY13 APK experienced a significant increase in provision for bad debts...*
- *There is no certainty that door-to-door selling will continue to be allowed in Australia going forward and this may have a material impact on APK, given it is currently a key marketing channel for the Company.*
- *Political uncertainty relating to the upcoming Australian elections and the impact these elections could have on clean energy legislation including carbon tax reform.*

In addition to the size premium, which independent expert Leadenhall allowed for in its assessment of the cost of equity of Spencer Resources Limited, a number of other risk were allowed for:<sup>35</sup>

*In addition to the size premium selected above, we have selected a company specific risk premium of 2% to 3% for Bulletproof to account for potential negative events that have not been included in the forecast cash flows, in relation to:*

- *A lower rate of adoption of cloud computing than currently predicted;*
- *Significantly higher competition levels in the industry resulting in pricing pressure; and*
- *Potential alternative new technologies.*

### **3.4 Required return on the market**

In Table 3.2 we show how the relative required return on the market that is implicit in a mechanistic application of the CAPM and in independent expert reports have changed in the last two years. While E&Y and SFG examined the difference between the market and equity returns estimated by independent experts and a mechanistic CAPM previously applied by the AER (i.e. employing the ‘spot’ risk free rate and a 6 per cent market risk premium), we have defined the mechanistic CAPM to reflect the recommendation contained in the AER’s (December, 2013) *Rate of Return Guideline*:<sup>36</sup>

- the ‘spot’ risk free rate, and

<sup>35</sup> Leadenhall (13 November, 2013), *Spencer Resources Limited, Proposed Acquisition of Bulletproof Networks Pty Ltd, Independent Expert’s Report and Financial Services Guide*, p. 68.

<sup>36</sup> AER (December, 2013), p.11.

- a **6.5 per cent** market risk premium.

Like SFG, we have not applied an adjustment for the impact of imputation credits on the comparative rate of return estimated by the AER's methodology.

Overall, the mechanistic CAPM market return has continued to be below the market return that has been applied by independent experts, although this differential has narrowed. During the SFG report period extending from 11 October, 2012 to 26 April, 2013, the independent experts estimated a market return of 10.09 per cent compared with a mechanistic estimate of 9.55 per cent (0.53 percentage point differential), whereas in the 27 April 2013 to 20 April, 2014 the respective values were 10.44 per cent and 10.24 per cent (i.e. a differential of 0.20 per cent).

**Table 3.2: Required return on the market ( $R_m = R_f + MRP$ ) – pre-gamma**

Period		Rf	MRP	Market Return (Average)	Uplift	Market Return (plus Uplift)
11/10/2012	Independent Experts (N=13)	3.47%	6.62%	10.09%	3.32%	13.4%
To	Mechanistic CAPM	3.05%	6.50%	9.55%		9.6%
26/04/2013	<b>Difference</b>	<b>0.42%</b>	<b>0.12%</b>	<b>0.53%</b>		<b>3.9%</b>
27/04/2013	Independent Experts (N=20)	4.10%	6.34%	10.44%	1.73%	12.2%
To	Mechanistic CAPM	3.74%	6.50%	10.24%		10.2%
20/4/2014	<b>Difference</b>	<b>0.36%</b>	<b>-0.16%</b>	<b>0.20%</b>		<b>1.9%</b>

Source: *CONNECT 4 and Incenta analysis*

Table 3.2 shows that the 0.53 percentage point higher market return assessed by independent experts in the 11 October, 2012, to 26 April, 2013 period was comprised of an approximately 0.42 percentage point higher risk free rate (i.e. independent experts increased the risk free rate in the CAPM formula above the spot rate), and an average 0.12 percentage point increase in the market risk premium. In the 27 April, 2013, to 20 April, 2014 period the 0.20 percentage point overall differential is shown to be comprised of an approximate 0.36 percentage point uplift in the risk free rate (i.e. almost the same as in the previous year), and a 0.16 percentage point lower market risk premium compared with the 6.5 per cent market risk premium adopted in the AER's *Rate of Return Guideline*.

If the full extent of the additional uplift (i.e. above that specifically attributed to the risk free rate or market risk premium) provided by independent experts were assigned to the return on the market, this value was 13.4 per cent in the 11 October, 2012, to 26 April, 2013 period, and fell to 12.2 per cent in the 27 April, 2013, to 20 April, 2014 period.<sup>37</sup> At the same time the average mechanistic CAPM return on the market rose from 9.6 per cent to 10.2 per cent, and hence the difference between this return and the market return of independent experts (attributing the full extent of the independent experts' uplift to the market return) decreased from 3.9 per cent to 1.9 per cent. Again, we note that these differentials are not directly comparable to the AER's rate of return on equity as they have not been adjusted for dividend imputation.

<sup>37</sup> This was due to a single outlier in the earlier period (the Medivac report by Bird Cameron), where an additional uplift range of 20 per cent to 30 per cent was assessed.



### 3.5 Required return on equity

In Table 3.3 we show the difference between the cost of equity estimated by independent experts, and the cost of equity that would have been estimated following a mechanistic Sharpe-Lintner CAPM approach. We have taken the independent expert cost of equity values as the average of the ‘high’ and ‘low’ cost of equities estimated by reference to:

- the risk free rate applied (including uplift),
- the equity beta times the market risk premium applied, and
- the average specific risk premium applied.

The mechanistic cost of equity is taken as the sum of:

- the spot risk free rate, and
- the average beta employed in the independent expert report times the market risk premium of 6.5 per cent adopted by the AER’s *Rate of Return Guideline*.

We find that in the earlier period the average cost of equity estimated by independent experts was 14.7 per cent compared with 10.8 per cent estimated by a mechanistic approach (median values 12.2 per cent and 10.3 per cent respectively). In the most recent period the average cost of equity estimated by independent experts was again 14.7 per cent, while the mechanistic approach provided an estimate of 12.8 per cent (median values 13.9 per cent and 11.9 per cent). Based on average rates of return the difference has fallen from 3.9 per cent to 1.9 per cent, but the difference in medians has increased from 1.9 percent previously to 2.1 per cent in the most recent, approximately 12 month, period.

Table 3.3: Required return on equity ( $R_e = R_f + (\text{beta} \times \text{MRP}) + \text{specific risk factor}$ ) – pre-gamma

Period	Average		Difference	Median		Difference
	Indep. Experts	Mechanistic		Indep. Experts	Mechanistic	
11 Oct 2012 to 26 April, 2013	14.7%	10.8%	3.9%	12.2%	10.3%	1.9%
27 April 2013 to 20 April, 2014	14.7%	12.8%	1.9%	13.9%	11.9%	2.1%

Source: CONNECT 4 and Incenta analysis

### 3.6 Required return on equity for low beta firms

The average beta assessed by independent experts for the latest period (27 April 2013 to 20 April, 2014) for the full sample of 20 cost of equity estimates is 1.4 (median 1.25), which indicates that these firms/projects had a higher systematic risk than the market in general (beta equal to unity). We assume that the average benchmark regulated firm will have an equity beta that is less than the average of the market, since regulation reduces systematic risk by buffering cash flows, and regulated businesses are generally exposed to less than average market risk.

To investigate how independent experts approach cost of equity estimation for lower than average beta businesses, we selected the 5 lowest beta firms/projects from the sample of 20 that used a 10 year

risk free rate time horizon, which had an average equity beta of 0.77.<sup>38</sup> For this low beta group during the 27 April 2013 to 20 April 2014 period the average cost of equity estimated by independent experts was 11.9 per cent compared with 9.1 per cent estimated by a mechanistic approach (median values 12.2 per cent and 8.8 per cent respectively).<sup>39</sup> These results are also set out in Table 3.4.

Table 3.4 also provides further information about the assumptions adopted in each of these 5 reports for the average or low beta firms. We find that in 4 out of 5 of these average or below average beta firms compared with the proposed AER mechanistic approach, the independent expert provided a specific (average) uplift ranging from 1.3 percentage points to 6.3 percentage points.<sup>40</sup> In the case of RHG, which did not receive a specific risk factor uplift, Deloitte's cost of equity estimate of 10.5 per cent was still materially higher than the mechanical cost of equity estimate of 9.5 per cent owing to a 50 basis point increase in the risk free rate together with the application of a market risk premium of 7 per cent.

Table 3.4: Specific risk factors applied by Independent Experts to low beta firms

Firm	Expert	Average equity beta	Mech. cost of equity	Rf &/or MRP uplift	Additional risk factor	Expert cost of equity	Difference in cost of equity
Australasia Wealth Investments	BDO	0.73	8.8%	0.20%	3.5%	12.7%	3.8%
RHG	Deloitte	0.85	9.5%	1.00%	0.0%	10.5%	0.9%
Greencross Limited	Deloitte	0.95	10.5%	0.50%	1.3%	12.2%	1.7%
CFX Retail Property Trust	Grant Samuel	0.65	8.3%	-0.50%	6.3%	14.3%	6.0%
Envestra	Grant Samuel	0.65	8.4%	-0.50%	1.4%	9.6%	1.1%
<b>Average</b>		<b>0.77</b>	<b>9.1%</b>	<b>0.1%</b>	<b>2.5%</b>	<b>11.8%</b>	<b>2.7%</b>
<b>Median</b>		<b>0.73</b>	<b>8.8%</b>	<b>0.2%</b>	<b>1.4%</b>	<b>12.2%</b>	<b>3.4%</b>

Source: CONNECT 4 and Incenta analysis Note: mechanistic beta uses the beta established by the expert, in conjunction with the spot risk free rate and a market risk premium of 6.5 per cent.

We undertook the same analysis for the five companies that had the highest average beta assessed by independent experts. The average beta of this group was 2.46 and in only one of these 5 independent expert reports did the expert add an additional risk factor. The average risk free rate or market risk premium uplift for this group was zero, and the average cost of equity difference (between the

<sup>38</sup> The two firms that were excluded were Savcor Group Limited and Signature Capital Investments. In the case of Savcor a 3 year risk free rate assumption was applied, but the asset beta was 0.92, and the 'alpha' risk adjustment was between 4.2 per cent and 5.08 per cent. On these grounds we did not consider this to be a relatively low risk asset. In its expert report for Signature capital Investments, BDO explained that it had applied a 5 year risk free rate term for the following reason: 'Having regard to the period of the investment cash flows we have used the current yield to maturity on the 5 year Commonwealth Government Bond, which was 3.25% per annum as at 16 April 2013.' See, BDO (8 May, 2013), Independent Expert's Report, Signature Capital Investments Ltd, p. 31. Hence, this expert report is not comparable to those assessing long term investments, which apply a 10 year risk free rate.

<sup>39</sup> Note that we are not proposing this low beta group is a comparator group for a regulated electricity or gas distribution or transmission business.

<sup>40</sup> In the case of CFX Retail Property Trust Grant Samuel applied a 6 per cent market risk premium, but provided a 6.3 per cent uplift, yielding a net 5.8 per cent uplift relative to the proposed AER mechanistic approach.

mechanistic and independent expert values) was close to zero. In other words, while independent experts increase the cost of equity above the mechanistic Sharpe-Lintner CAPM approach for below average beta companies and projects, they do not appear to do this for the highest beta companies and projects.

We also note that in the very recent expert report on Envestra that was undertaken by Grant Samuel, the additional risk uplift was approximately 1.1 per cent relative to the AER's proposed mechanistic approach (without reference to the different views on beta). If the AER's stated preference for applying a beta of 0.7 and a market risk premium of 6.5 per cent is used, then Grant Samuel's approach provides a net uplift of approximately 0.80 of a percentage point.<sup>41</sup> As noted above, Grant Samuel applied this uplift to take account of the fact that the Dividend Growth Model and the cost of equity estimated by investment analysts exceeded the cost of equity implied by a mechanistic application of the Sharpe-Lintner CAPM. This example is particularly relevant for TransGrid and JGN, as Envestra is also a firm that is in the regulated energy sector.

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<sup>41</sup> The AER's proposed approach would apply a 0.7 beta and 6.5 per cent market risk premium to Envestra. With a risk free rate of 4.2 per cent (as applied by Grant Samuel), the AER's approach would estimate a cost of equity of 8.75 per cent (i.e.  $4.2 + (0.7 \times 6.5)$ ), while Grant Samuel's estimated cost of equity was 9.54 per cent (i.e.  $4.2 + (0.65 \times 6) + 1.44$ ), a difference of 0.79 of a percentage point.

## **A. 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. Copies of the curriculum vitae of each author are attached below.

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 together with the Terms of Reference.

## **B. CVs**

### **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 quantify 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 self-funded 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

## **C. Terms of Reference**



**Expert Terms of Reference**  
**Review independent expert reports**

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

**AA15-570-0059**

**Version B – 21 May 2014**



**Contact Person**

Cameron Herbert

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A	Draft	11/03/14	E Grace-Webb		
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# 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.

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).

Accordingly, the independent opinion of Incenta Economic Consulting, as a suitably qualified independent expert (**Expert**), is sought 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. JGN seeks this opinion on behalf of itself and TransGrid.

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## 2 Scope of Work

The Expert will provide an opinion report that:

1. explain what independent expert reports are, their purpose, and how they are used in practice;
2. analyse whether independent expert reports are relevant for setting a return on equity that is:
  - (a) commensurate with the efficient financing costs and degree of risk of a benchmark efficient entity; and
  - (b) reflective of prevailing conditions in the market for equity funds
3. review previous studies of independent expert reports, including the reports considered and the findings made; and
4. update these studies to include any new independent expert reports and assess what these say about setting a return on equity that is:
  - (a) commensurate with the efficient financing costs and degree of risk of a benchmark efficient entity; and
  - (b) reflective of prevailing conditions in the market for equity funds.

For the purpose of this report, the Expert will ignore the impact of imputation credits on the return on equity.

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### 3 Information Provided by JGN

The Expert is encouraged to draw upon the following information which JGN will make available:

- a report by SFG Consulting titled “Evidence on the required return on equity from independent expert reports, Report for the Energy Networks Association”, dated 24 June 2013; and
- a report by Ernst & Young titled “Market evidence on the cost of equity – Victoria Gas access Arrangement Review 2013-2017”, dated 8 November 2012.

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### 4 Other 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.

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### 5 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<sup>1</sup>;
- 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;

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<sup>1</sup> Available at: <http://www.federalcourt.gov.au/law-and-practice/practice-documents/practice-notes/cm7>.

- 
- 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).

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## 6 Timetable

The Expert will deliver the final report to Jemena Regulation by **22 May 2014**.

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## 7 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<sup>2</sup>, 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<sup>3</sup>

- 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<sup>4</sup>


- 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

<sup>2</sup> 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].

<sup>3</sup> The "*Ikarian Reefer*" (1993) 20 FSR 563 at 565-566.

<sup>4</sup> 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<sup>5</sup>; 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<sup>6</sup>.
- 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<sup>7</sup>.

### 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

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<sup>5</sup> See also *Dasreef Pty Limited v Nawaf Hawchar* [2011] HCA 21.

<sup>6</sup> The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565

<sup>7</sup> The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240