Grant Thornton

Energy Networks Australia

RAB Multiple Project

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Energy Networks Australia – RAB Multiple Engagement

Introduction

In December 2022 the Australian Energy Regulator ("AER") and WA Economic Regulation Authority ("WERA") will make binding decisions on Rate of Return Instruments, which will be used to establish the rate of return estimates used in all network revenue decisions over the period 2023 – 2026. These will determine pricing for the use of major Australian energy network infrastructure until 2031[1].

A number of current and proposed transactions of regulated utilities have led to regulatory discussions on the significance and implications of the use of Regulated Asset Base ("RAB") multiples implied by these recent transactions. In particular, these transactions include:

- A consortium comprising KKR & Co, Inc, Ontario Teachers' Pension Plan and Public Sector Pension Investment Boards, completed the acquisition of the issued capital of Spark Infrastructure Limited ("Spark") in December 2021. The RCAB[2] multiple implied by this transaction was 1.47x;
- Brookfield's[3] proposed acquisition of the issued capital of AusNet Services Limited ("AusNet"), pursuant to a Scheme Implementation Deed signed 1 November 2021. The RAB multiple implied by this transaction is 1.58x-1.64x; and
- AustralianSuper's divestment of 16.8% interest in Ausgrid[4] in December 2021 to APG Asset Management for an undisclosed amount.

[1] Price determinations are typically for a 5-year period.
[2] Regulated and Contracted Asset Base, combining regulated assets and assets whose revenues are principally recoverable through long-term contracts with customers.
[3] A consortium comprising Sunsuper Superannuation Fund, Alberta Investment Management Corporation, Investment Management Corporation of Ontario and Healthcare of Ontario Pension Plan.
[4] As transaction information is not disclosed, we will not focus on this transaction as part of our discussions.

Whilst the AER's formal position is to not rely on RAB multiples as a reference point in setting the rate of return estimates due to inherent limitations, the AER has on multiple occasions[5] publicly highlighted the above transactions as market evidence that current regulatory returns are at least sufficient to provide adequate network investment and financing, on the basis that the implied RAB multiples are greater than 1.0 times.

Independent Expert Reports ("IERs") supporting the above transactions prepared by KPMG (Spark) and Grant Samuel (AusNet) have identified that the cost of capital for a market participant investing in regulated utilities is higher than the current regulatory returns, implying that returns have instead been insufficient on a stand-alone basis to promote investment.

Purpose of report

Grant Thornton Australia Limited ("Grant Thornton" or "GT") has been engaged by Energy Networks Australia ("ENA") to consider the following:

- The comparability of tasks between the role of an independent expert preparing an independent expert report ("Expert") and the AER in determining a weighted average cost of capital ("WACC");
- The analytical framework used by investors and Experts in determining the WACC and how that compares to the framework adopted by the AER; and
- The extent to which RAB multiples can be used in assessing the adequacy of allowed regulatory returns, considering all factors in addition to the discount rate which may impact the overall multiple.

Key Findings

Experts are engaged to prepare IERs which are required to provide an unbiased view on value, which in many cases requires an opinion as to a market participant's cost of capital, reflecting the required rate of return investors would be willing to accept to invest in an asset relative to its risk profile. Similarly, the AER sets a regulatory WACC using an "*objective and transparent assessment framework to estimate a rate of return that will promote efficient investment in, and efficient operation and use of, energy network services*"[6]. In both cases, the parties are in effect attempting to calculate an unbiased view of the return an investor would require for investing in that asset.

The approach taken by both Experts and the AER in selecting an appropriate cost of capital and regulatory rate of return respectively, is consistent in terms of using the capital asset pricing model ("CAPM")[7] to determine the appropriate rates. Whilst the approach is broadly consistent, we have observed key differences in the selection of assumptions which include, but are not limited to:

- Risk-free rate – Investors apply a discount rate into perpetuity and hence make adjustments when selecting the risk-free rate to remove the impact of short-term trends. This has been highlighted in recent IERs where experts have adjusted the observed 10-year Australian Government bond rate as the current environment is not reflective of returns into perpetuity. In contrast, the AER follow their current prescribed approach to the risk-free averaging period in the 2018 instrument[8] , and hence have applied a materially lower rate than Experts and investors.
- Market risk premium – Investors and Experts in selecting the market risk premium consider the inverse relationship between the market risk premium and the risk-free rate, and the overall equity market returns over an extended period. The AER in contrast considers these inputs in isolation which can result in the assumed cost of equity deviating materially from the expected long-term equity returns observed in IERs.

[5] See for example AER Electricity Networks Performance Report 2021, September 2021, p.29
[6] Rate of Return Final Working Paper, AER, 2021
[7] The inputs to the CAPM are discussed in section 2.1
[8] Rate of return instrument, AER, 2018

- Cost of debt – Investors select the cost of debt based on observed trends in margins over long-term Australian Government bonds, whereas the AER use a 10-year trailing average approach to replicate the staggered maturity method used to fund regulated utilities. The AER's assumption is intended to replicate the cost of debt for a benchmark entity with an established funding structure, whereas the Expert's assumption reflects the hypothetical cost of funding the business with new debt at the time of the valuation. The resulting difference is that in the current environment, the AER's cost of debt is higher. However, going forward, as observed interest rates increase, this is likely to reverse and result in a lower cost of debt lower than those adopted by investors and Experts.

Based on recent IERs, the above items have caused the cost of capital calculated by Experts to materially deviate from that set by the AER. This has been presented below for AusNet and the regulated entities owned by Spark Infrastructure.

Regulated utility provider	2021-22 Regulatory Cost of Equity	Expert post-tax nominal cost of equity
AusNet	5.12%	5.70%
SA Power Networks	4.56%	7.10%
Citipower	5.04%	7.10%
Powercor	5.04%	7.10%
Transgrid[1]	7.40%	6.45%

Source: AER, Grant Samuel, and KPMG

Notes: 1) Transgrid price determination was set based on the 2013 Rate of Return Instrument and does not reflect the short term risk-free rate movement as it was set in 2018.

The differences between the AER's allowance and Expert estimates of the market cost of equity is even more stark than the above table suggests. This is because the AER's figures reflect higher gearing (i.e., higher equity risk) than the Expert figures.

Despite this persistent shortfall, the AER has stated that RAB multiples indicate that its current returns are at least sufficient. However, the observed RAB multiples inferred by the transactions, as well as those determined by the Experts, do not provide an adequate benchmark in considering the adequacy of the regulatory rate of return based on, but not limited to, the following:

- Future positive NPV projects, which can involve both regulated and unregulated activities;
- Assumed regulatory returns over the life of the asset as opposed to a 5-year time horizon and terminal value assumptions;
- Differing required rates of return from those underpinning the regulatory pricing;
- Variations in cash flows from regulatory returns from those underpinning pricing determinations, including incentive payments; and
- Other investor specific assumptions.

The combination of the above factors, and possibly others, has led to observed RAB multiples in excess of 1.0x. As such, the use of RAB multiples as a measure by which to determine the adequacy of regulated returns can be misleading and may result in returns on the standalone regulated assets being insufficient to attract investment and financing over the longer term.

Whilst we have attempted to isolate and quantify the impact of the above factors on recent RAB multiples paid by investors and implied by Experts, there is insufficient publicly available information to do so with any degree of accuracy. Consequently we do not see how RAB multiples can be used to assess the adequacy of the allowed regulatory return.

Yours faithfully
GRANT THORNTON AUSTRALIA LIMITED

JANNAYA JAMES
Partner

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1 Role of Independent Experts

The purpose of this report is to consider the analytical framework investors in regulated utilities adopt when making investment decisions, relative to the approach and assumptions of the AER and WERA when making regulatory pricing determinations. The AER has stated that broker reports and independent valuation reports have a different objective to the objective the AER has in setting a rate of return for regulatory pricing purposes[9].

Before considering the analytical framework used by investors and independent experts, the role of the independent expert should be considered, from both a process and governance perspective.

Independent Expert Reports are commissioned by entities for various reasons, but generally to ensure that shareholders receive an independent analysis of a proposed transaction to assist them in their decision making in relation to that transaction.

Independent Experts must determine whether, in the Expert's opinion, a transaction is fair and reasonable, or in the best interests of shareholders[10]. Assessing the fairness of a potential transaction involves a comparison between the Expert's opinion of the market value of the shares and the proposed offer price, whereas the reasonableness is a qualitative assessment of the merits of the transaction[11].

The commissioning and subsequent governance of IERs is regulated and scrutinised predominately by the Australian Securities and Investments Commission ("ASIC"). ASIC publishes regulatory guidance pertaining to the independence of Experts[12] and the content that should (or should not) be included in an IER[13], including the analysis required, the different valuation methodologies that can be used, and the general requirements of all IERs. We have summarised key paragraphs from relevant regulatory guides in Appendix A.

In addition to issuing regulatory guides, ASIC have the opportunity to review an IER prior to it being released to the market, and may ask the Expert any questions they feel are necessary to establish independence and reasonable basis of opinion. If after their review ASIC have found material issues with the content of the report or have concerns regarding independence, they will consider regulatory action. Potential actions may include[14]:

- Opposing the transaction through either a declaration of unacceptable circumstances (takeover bid) or at a court hearing (scheme of arrangement).
- Seeking legal repercussions for misleading or deceptive conduct.
- Seeking to revoke, suspend, or add a condition to the expert's license.
- Seeking to cease or suspend the expert from preparing reports in compulsory acquisitions.

Previous action taken by ASIC against Experts includes:

- In January 2018, ASIC altered HLB Mann Judd Corporate Finance's Australian Financial Services ("AFS") licence to exclude the firm from providing independent expert reports. ASIC were not

[9] Jemena Gas Networks Draft Decision, AER, 2014
[10] A "bests interests" conclusions is required for a scheme of arrangements, however for an opinion to be in the best interests of shareholders it must be either fair and reasonable or not fair but reasonable.
[11] It is noted that if an offer is deemed "fair" then it must also be reasonable. If an offer is deemed "not fair" then it may be "not fair but reasonable" or "not fair and not reasonable"
[12] Regulatory guide (RG) 112 *Independence of Experts*
[13] RG 111 Content of expert reports
[14] RG111.147

satisfied that the firm had met its obligations as an AFS licensee, and had not complied with either RG 111 or RG 112[15].

- In June 2019, a director from Stantons International Securities was banned from providing any financial services for 3 years following a review of his independent expert reports. ASIC identified issues relating to independence, an inability to critically review and identify errors in source material, and misrepresentations in certain IERs[16].

In addition to regulatory action, an incomplete or biased report is likely to have a negative impact on the reputation of the expert.

Without a detailed understanding of the operational framework and requirements for IERs, a possible query might be whether Experts face any material incentives that might bias or otherwise impact the relevance of their findings for the AER's regulatory task. However, with their core task being to provide an objective and unbiased view on value, and based on the stringent oversight and governance, there is little to suggest that Experts are not acting independently in their task.

The Expert determines its objective view on value through a variety of approaches, and critical to their assessment is a consideration of the returns required by market participant investors from the underlying asset or business. This is achieved through the determination of a cost of capital reflecting a market participant's required return on capital relative to the risks of the underlying asset or business, having regard to long-term views on macroeconomic conditions.

This is not dissimilar to the role of the AER, which involves using an "*objective and transparent assessment framework to estimate a rate of return that will promote efficient investment in, and efficient operation and use of, energy network services*"[17]. This rate of return determined by the AER should be sufficient to supply the business funds to service debt while also providing an adequate return to shareholders. This is assessed on a 'benchmark efficient entity' basis, i.e. it is an assessment of the required return sufficient to bring forward new investment from a hypothetical firm, not the actual firm being regulated.

In both circumstances the Expert and the AER are effectively and equivalently forming a view as to the rate of return *required by a hypothetical prudent purchaser*"[18]. Whilst we acknowledge the regulatory weighted average cost of capital and Expert's discount rate are applied for different purposes, both parties are in effect attempting to calculate the minimum rate of return required to compensate for the risk involved in investing in a company. That is, both are seeking to estimate the market cost of capital.

In various instances[19], the AER has disagreed with this opinion, suggesting that an Expert's task of determining a hypothetical investor's required rate of return (or cost of capital) is not comparable to that of the AER's in setting the regulatory WACC. Specifically, the AER has cited the different time horizon as a key reason why the tasks are not comparable[20]. In citing this reason, the AER noted that their task is to set the regulatory WACC for 5-years without regard to future periods, where Experts and investors determine the costs of capital on a perpetual basis. Despite this perceived difference by the AER, we consider the tasks to be comparable due to the following:

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[15] ASIC accepts voluntary licence variation from HLB Mann Judd Corporate Finance Pty Ltd to cease providing 'independent expert' advice, ASIC, 2018
[16] 19-332MR ASIC bans John Van Dieren from providing financial services for three years, ASIC, 2019
[17] Rate of Return Final Working Paper, AER, 2021
[18] Spark Infrastructure Independent Expert Report, KPMG, 2021
[19] One such example was in Transgrid's Draft Decision, 2015, another being in the AER's Draft Rate of Return Guideline, 2013.
[20] Grant Samuel's response to Draft Decision of Transgrid, 2015

- In calculating the regulatory WACC, the AER takes a long-term approach to various assumptions including the market risk premium and cost of debt, consistent with Experts estimating a long-term cost of capital. By using a long-term approach to key assumptions, the AER is in effect calculating the cost of capital for a period longer than the 5-year period for which it is applied.
- In assessing the adequacy of returns to enable investment, the AER has indicated that trends in Regulated Asset Base multiples (discussed in section 3) can be used. However, given that RAB multiples reflect a perpetual valuation conducted by investors and Experts, by considering these, the AER is, in effect, acknowledging that any return set, must be sufficient in the long term to enable investment.
- Investors in regulated utilities are typically seeking long term returns and typically hold their investments for periods beyond the 5-year time horizon utilised by the AER. Even when shorter term investments are considered, an investor would seek to maximise their return through the exit of their investment at a future point in time.

In summary, an estimate of the minimum expected return that investors would require to invest capital in a regulated network business is relevant to the task of both the AER and Experts.

We discuss in the following sections the approach taken by investors and Experts in considering the rates of return investors require and how that compares to the AER approach.

2 Rate of return determination

As discussed in the previous section, the AER has ascertained that the role of the regulator in setting the regulatory return is to *promote efficient investment in, and efficient operation and use of, energy network services*[21], a key component of which is to determine a weighted average cost of capital commensurate with the returns required by investors of regulated assets. Whilst the regulatory price setting process is aimed at ensuring that investors in regulated assets receive a normal return on their investment, recent evidence as observed in transactions involving regulated assets and the associated IERs, suggest that the current regulatory WACC is lower than that required by investors. We consider below the analytical framework utilised by investors and Experts in determining the required returns relative to the risk profile of the assets, in comparison to the framework used by the AER in setting the regulatory WACC. Whilst we comment on certain differences in the cost of debt and tax shield assumptions, the focus of this report is on the analytical framework used by Experts and investors in determining the cost of equity. This is consistent with the focus of investors being on the returns on their equity invested, as well as the approach adopted by KPMG in the IER for Spark Infrastructure.

2.1 Analytical framework used by Investors

Investors and Experts typically value and price regulated utilities utilising the discounted cash flow method. This involves discounting forecast future cash flows of the regulated utility and an assumed terminal value to the present value as at the date of valuation utilising a discount rate reflective of the investors cost of capital. The cost of capital is the required return of the investor relative to the risks of the underlying asset and may be reflective of a WACC or a cost of equity.

2.1.1 Cash flow forecasts

The forecast period used by an Expert in valuing long lived regulated infrastructure investments is typically long enough to capture the expected earnings of the asset once established. For regulated utilities, which benefit from predictable and stable cash flows into the future, the forecast period utilised by investors and Experts is rarely less than 10 years[22], with recent valuations using projections up to 47 years past the valuation date[23]. The longer period adopted enables investors and Experts to account for future asset replacement programmes and any long-term growth in the underlying asset base.

The longer cash flow forecast period is reflective of investors holding period, which typically extends beyond 5-years. This is characteristic of financial buyers, such as superannuation funds and pension funds, who seek investments in regulated assets as a means by which to balance their portfolio of assets from a risk-return perspective, as well as strategic buyers looking to secure significant footprints in the energy market in Australia (coupled with the portfolio balance). Even where an investor is considering a shorter investment horizon, investors typically still assume an exit value, which is representative of the remaining value of the asset beyond their investment timeframe.

This perspective is in contrast to the AER which considers a return on the asset over a limited time frame of 5 years, well short of the timeframe underpinning the analytical framework of investors. Whilst the AER has noted that they do not consider the later periods, the extended timeframe is, in fact, relevant to the extent that an investor would not accept a return in a low interest environment as we are currently experiencing over the short term unless they had an expectation of being compensated in the

[21] Rate of Return Final Working Paper, AER, 2021
[22] DUET Company Limited Independent Expert's Report, KPMG, 2017
[23] Spark Infrastructure Independent Expert Report, KPMG, 2021

longer term. It is not reasonable for an investor to consider a return over a 5-year period in isolation of the long-term perspective.

This has been demonstrated in the Grant Samuel IER in relation to AusNet report whereby the cash flow forecasts adopted assume that regulatory returns revert to levels of c. 6% (from the current level of c. 4%) over the explicit forecast period, thus compensating investors for the lower returns received in the short term[24]. KPMG in the Spark Infrastructure IER have not explicitly stated the longer-term assumptions regarding regulatory WACCs, however note that they have included scenarios of higher and lower regulatory WACCs in future periods.

2.1.2 Terminal value

Following the explicit forecast period, investors include in their assessment of value a terminal value. This reflects the value of the asset into perpetuity that investors would expect to receive, either by the on-going returns, or the exit value at a future point in time.

In calculating the terminal value, Experts typically adopt either a Gordon Growth model ("GGM")[25] , or a RAB exit multiple. The primarily approach in determining a terminal value used by investors and Experts is the GGM, which assumes that cash flows will continue to grow at a consistent rate (normally at an inflationary rate) into perpetuity. This is adopted on the basis that these assets are ordinarily held for an extended period of time, and will retain significant value beyond the period explicitly forecast. This perpetual perspective of regulatory utilities is a fundamental basis for all transactions of such assets.

Often the terminal value is a means by which to capture the value of returns generated by unregulated activities, which are an alternative way that investors in regulatory assets may seek to achieve returns that meet their cost of capital in an environment where regulated returns may be insufficient to compensate the investors for the lower regulatory returns available in the short to medium term. Alternatively, where a pure play regulated asset is concerned, the terminal value is typically based on an assumed level of regulatory returns which is reflective of the investor's view of the long-term pricing available, commensurate with their required rate of return.

Both KPMG and Grant Samuel used the GGM to calculate the terminal value of regulated assets in recent IERs, assuming a long-term growth rate of 2.5%[26], consistent with the Reserve Bank of Australia's ("RBA") inflationary target of 2% to 3%[27].

2.1.3 Weighted average cost of capital

To derive the present value, the DCF method requires the valuer to determine a cost of capital that is used to discount future cash flows. This rate should be reflective of both the time value of money and the risks associated with the future financial performance of the asset and underlying business. To do this, an Expert may adopt a single WACC for all operations, or a specific WACC for each segment of the business to reflect the underlying risks of each segment. Whilst the standard rate of return is a weighted average cost of capital, it should be noted that many investors consider their investment based on equity returns (i.e. returns available after debt and taking into account tax structuring and franking credits). In this case the return required by investors is representative of a cost of equity, which forms a key element of the weighted average cost of capital.

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[24] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021

[25] *TV= 〖CF〗_n/(r-g);* where CFn = cash flow in final year of forecast period, r = discount rate and g = growth rate

[26] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021 and Spark Infrastructure Independent Expert Report, KPMG, 2021

[27] Inflation Target, RBA, 2022

The WACC is calculated in accordance with the following formula:

$$WACC = \left(R_e \times {}^{E}/_{V}\right) + \left(R_d \times (1 - t) \times {}^{D}/_{V}\right)$$

Where:

$R_e = Cost\ of\ equity$
${}^{E}/_{V} = Equity\ to\ Value\ ratio$
$R_d = Cost\ of\ debt$
$t = Corporate\ tax\ rate$
${}^{D}/_{V} = Debt\ to\ Value\ ratio$

Cost of equity

The cost of equity represents the rate of return required by providers of equity capital to compensate for the time value of money and the perceived risk or uncertainty of the cash flows.

The Capital Asset Pricing Model is commonly used by practitioners to calculate the required return on equity capital. Whilst we note that the selection of an appropriate rate is ultimately a professional judgment, we detail below the approaches typically taken by investors and Experts in determining their required return. We have provided a detailed explanation of the derivation of CAPM, in **Appendix B**.

We note, the CAPM formula adopted by the AER is consistent with that used by Experts, however, relies on a different basis for assumptions, which have been detailed in **Appendix C**.

The CAPM assumes that the return required by an investor in respect of an investment will be a combination of the risk-free rate of return and a premium for systematic risk, which is measured by multiplying the beta of the investment by the return earned on the market portfolio in excess of the risk-free rate. Whilst the selection of inputs may involve some judgement, we detail below certain highlights with respect to the CAPM which creates divergence between the analytical framework observed by investors and independent experts to that of the AER.

Under the CAPM, the required nominal rate of return on equity (Re) is estimated as follows:

$$Re = R_f + \beta(R_m - R_f)$$

Where:

$R_f = Risk\ free\ rate$
$\beta = Expected\ equity\ beta\ of\ the\ investment$
$\left(R_m - R_f\right) = \text{Market risk premium}$

Risk-free rate

In the absence of an official risk-free rate, the yield on the Government bonds (in an appropriate jurisdiction) is commonly used as a proxy. The following table sets out the average yield on 10-year Australian Government Bond over the last 10 years.

Australia Government Debt - 10 Year as at 31 December 2021	Range			Daily average Nominal
Previous 5 trading days	1.54%	-	1.66%	1.61%
Previous 10 trading days	1.54%	-	1.66%	1.60%
Previous 20 trading days	1.54%	-	1.69%	1.60%
Previous 30 trading days	1.54%	-	1.88%	1.66%
Previous 60 trading days	1.54%	-	2.10%	1.73%
Previous 1 year trading	0.95%	-	2.10%	1.49%
Previous 2 years trading	0.60%	-	2.10%	1.20%
Previous 3 years trading	0.60%	-	2.34%	1.30%
Previous 5 years trading	0.60%	-	2.99%	1.85%
Previous 10 years trading	0.60%	-	4.44%	2.51%

Source: Capital IQ, GT analysis

In light of the COVID-19 pandemic and the resulting disruption to the global economy, the RBA, like other central banks around the world, reduced the cash rate to a historic low of 0.1% in November 2020. While recent economic data has been better than initially expected, output in most countries remains well below pre-pandemic levels and further virus outbreaks pose a risk to the macroeconomic outlook. In Australia, the higher unemployment and excess capacity in the economy resulted in lower-than-expected inflation in the short-term, and in turn continued monetary and fiscal support. We note, this is reflected in the short-term daily average (less the previous 3 years trading) being significantly lower than longer term averages. However, in light of recent inflation data, there are expectations of increases to cash rates as fiscal policy begins to unwind and the RBA considers when to increase cash rate until actual inflation is sustained within the 2-3% target range.

Having regard to the volatility in 10-year government bond rates over a sustained period of time, a mechanical application of the CAPM could result in a cost of capital which is not acceptable to investors, particularly given the current volatile climate as a result of the COVID-19 pandemic. The short-term anomalies, which a mechanical application can create, is a key point of difference between the approach of Experts and the AER.

As noted in section 1, the AER sets the regulatory WACC for a single regulatory period, while the discount rate adopted by an Expert or investor is used into perpetuity. Hence, when determining the underlying inputs, the AER only needs to consider the prevailing market conditions at that time, whereas Experts need to consider the expected market conditions into perpetuity. As a result, Experts necessarily must apply professional judgement in selecting underlying inputs and the overall discount rate applied, whereas the AER relies strictly on their prescribed formula.

This difference has been particularly apparent in the current low risk-free rate environment. In the recent IERs of AusNet and Spark, both Experts considered the abnormally low risk-free rate environment to be temporary, and not reasonable to assume into perpetuity. As a result, KPMG and Grant Samuel took separate approaches to remove the short-term market conditions from the selected discount rate[28]. KPMG blended the current yield on 10-year government bonds with the longer term expected yield to normalise the risk-free rate for the Spark discount rate, resulting in a figure of 2.8%[29]. Grant Samuel did not explicitly take a long-term view on risk free rate but rather considered factors such as the 30-year

[28] This has been discussed further in section 2.3.
[29] Spark Infrastructure Independent Expert Report, KPMG, 2021

Australian Government bonds (trading 60 basis points higher than 10-year) and implied broker discount rates (between 4.2% and 5.4%) when determining the discount rate for AusNet Services[30].

In contrast, the AER when setting recent regulatory returns did not adjust these factors, under the apparent assumption future changes could be reflected at that point in time (i.e. in future determinations). As such, despite reasonably comparable market conditions, the risk-free rate adopted by the AER and Experts was materially different, as set out in the table below.

Valuer	Risk Free Rate
Australian Energy Regulator	1.46%
Grant Samuel - Selected	1.80%
Grant Samuel - Frontier Economics Adjusted[1]	3.10%
KPMG	2.80%

Source: AER, KPMG, Grant Samuel and Frontier Economics

Note: 1) Frontier has assumed that uplift to the overall discount rate is solely relating to a normalisation of the risk-free rate.

Having regard to average annual inflation over the last 3 years, it is noted that the AER selected risk-free rate of 1.46% suggests a real rate of return of between -1.1% (Dec 21) to 0.3% as illustrated below:

Date	Annual Inflation	AER Implied Real Rate of Return
December 2021	2.60%	-1.11%
June 2021	1.60%	-0.14%
December 2020	1.20%	0.26%
June 2020	1.30%	0.16%
December 2019	1.50%	-0.04%
June 2019	1.60%	-0.14%
December 2018	1.80%	-0.33%
June 2018	1.60%	-0.14%
RBA Target	**2.50%**	**-1.01%**

Source: Australian Bureau of statistics, Annual inflation is trimmed mean.

Market risk premium

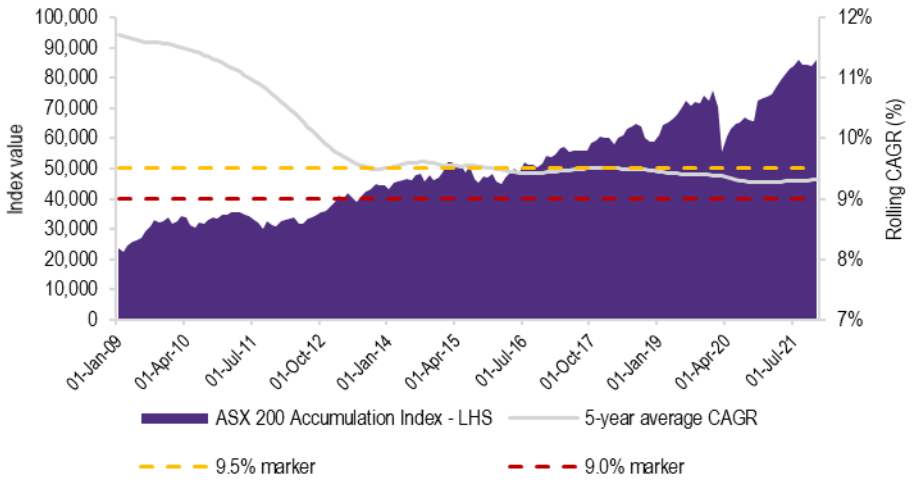
A market risk premium ("MRP") is determined to compensate for additional risk associated with investing in equities as opposed to assets on which a risk-free rate of return is earned. It is widely accepted by Experts and market practitioners that the MRP has an inverse relationship with the risk-free rate, which results in a reasonably stable long-term equity return. It is important that the market risk premium is considered in conjunction with the risk-free rate and the time horizon over which an investor and Expert considers its value.

Empirical studies of the historical risk premium in Australia over periods of up to 100 years suggest the long-run average premium is between 6% and 8%. This is broadly consistent with the observed rolling

[30] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021

5-year average CAGR post global financial crisis (“GFC”), which suggests that total market returns are between 9% and 9.5%, as displayed below.

S&P ASX 200 Total Return Index since 2009



Source: Capital IQ and GT analysis

Below, we have presented the real market returns over periods from 1995 to 2020.

Real total market return % unless stated otherwise	Period	Real Return
All-time median	April 95 - Nov 20	7.63%
All-time average	April 95 - Nov 20	7.93%
20-year average	Dec 00 - Nov 20	7.66%
15-year average	Dec 05 - Nov 20	7.69%
10-year average	Dec 10 - Nov 20	7.39%
5-year average	Dec 15 - Nov 20	7.69%
LTM average	Dec 19 - Nov 20	8.13%
Observed Real Return		**7.5% - 8.0%**

Source: Capital IQ and GT analysis

Assuming a short to medium term inflation of 1% to 1.5%, the nominal market return using this method ranges between 9% and 9.5%. Taking into account longer term inflation expectations (not inconsistent with the trimmed average for calendar year 2021) of 2.5%, this suggests a nominal market return of between 10% and 11%.

This long-term perspective utilised by investors and Experts is consistent with the time horizon over which they consider their investment returns. KPMG blended the current yield on 10-year Government

bonds with the longer term expected yield to normalise the risk-free rate for the Spark Infrastructure discount rate, resulting an implied equity market return of 8.8%[31].

Whilst we note the conclusion on market risk premium of 6% by the Experts and 6.1% by the AER are materially consistent with each other, the AER does not address the inverse relationship between the risk-free rate and the market risk premium, contrary to the approach commonly taken by Experts. In setting the risk-free rate and market risk premium, the AER considers two separate time-periods as the basis for estimation. The risk-free rate is set as the simple average of the daily 10-year yield to maturities of Government securities over an average period of 20 to 60 business days. Whereas the market risk premium is calculated using the average historic difference between the realised market returns and annualised risk-free rate[32]. By taking this approach, the AER is in effect considering these assumptions in isolation, assuming they are unrelated.

Equity beta

Beta represents the systematic asset risk of an asset compared to the market. Given the uncertainty in forecasting Beta, the AER and Experts adopt a benchmark rate based on historical comparator betas. In benchmarking Beta, the AER use a comparator set of nine companies, all of which are Australian listed energy network providers. In contrast, experts typically take a broader approach in also considering internationally listed energy network providers and domestic regulated entities not providing electricity networks.

In recent expert reports, Grant Samuel and KPMG adopted an equity beta range of 0.60 – 0.70 and 0.57 – 0.76 respectively[33]. While the equity beta of 0.60 used by the AER is within these ranges, it is at the lower end. Additionally, the AER's equity beta of 0.60 has been based on a gearing (debt to enterprise value) of 60%, compared to Grant Samuel and KPMG's gearing of 50%. Re-gearing Grant Samuel and KPMG's equity beta at 60% would result in ranges of 0.63 – 0.74 and 0.60 – 0.80 respectively, higher than that adopted by the AER[34].

The conclusions of Experts in recent IERs suggest that, whilst the AER is using a comparable approach, albeit with a smaller comparator set, they are adopting a beta lower than that of Experts.

Cost of debt

The cost of debt is an estimate of the market interest rate required by lenders on the assumed levels of debt funding. This is usually determined with reference to the debt markets in the relevant location and the debt rating of the business.

Investors and Experts estimate the cost of debt based on the credit spread of government and/or corporate bonds to the long-term risk-free rate. When estimating this, a long-term view is typically taken to reflect the assumed long-term investment horizon, with 5-to-10-year yield to maturity bonds the most frequently used as a reference. For regulated utilities, particular focus is given to BBB-rated and A-rated corporate bonds. Given the volatility of the spreads over the last 2 years, the point in time in which the cost of debt is calculated has been a key determinate in the adopted rate.

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[31] Spark Infrastructure Independent Expert Report, KPMG, 2021, assuming an equity beta of 1, risk free rate of 2.8% and market risk premium of 6%.
[32] Using various sampling periods between 1883-2018
[33] Based on a comparator set of 8 for both Grant Samuel's IER of AusNet and KPMG's IER of Spark
[34] These regeared betas have been calculated using the approach traditionally taken by Experts, allowing for the impact of tax on debt. Using the AER's relevering approach, these betas increase to 0.71 – 0.83 and 0.68 – 0.90 respectively.

The AER, by contrast, calculates the return on debt using a trailing average approach. This estimate is updated annually using debt with a 10-year maturity[35]. The intention of this method is to replicate the staggered maturity basis which reflects efficient debt financing practices of regulated businesses[36]. The AER's assumption is intended to replicate the interest cost on debt for a benchmark entity with an established funding structure, whereas the Expert's assumption reflects the hypothetical cost of funding the business with new debt going forward.

Each annual return on debt for the previous 10 years is given an equal weighting in calculating the final figure. The exception being the first year where the transition to trailing average commenced, which receives a higher weighting. We note, as new periods are added, the weighting on the first year in the transition period will reduce until it is outside of the 10-year trailing average period.

E.g. if 2016 is the first regulatory year of the transition period:

$$k^{d}_{2021} = 0.1R_{2021} + 0.1R_{2020} + 0.1R_{2019} + 0.1R_{2018} + 0.1R_{2017} + 0.5R_{2016}$$

Where:

$R_j = the\ on-the-day\ rate\ of\ return\ on\ debt\ for\ regulatory\ year\ j\ expressed\ as\ an\ annual\ rate$

The on-the-day rate of return on debt is the average of the daily 10-year yield to maturity effective annual rate estimates within the return on debt averaging period for a given regulatory year.

As lending rates have declined over the last 10 years, the rate used by the AER has been higher than that used by Experts. In the case of AusNet, the AER used a cost of debt of 4.64% compared to Grant Samuel's 4.30%[37]. Additionally, it is worth noting that if the weighted average were evenly distributed over the last 10 years, rather than considering only post-transition years[38], the AER's return on debt would be higher still.

Due to the nature of trailing averages, it can be expected that the return on debt used by the AER will understate that used by experts in the future. Given that lending rates are currently at all-time lows, going forward it is expected the observed trend will reverse and the AER cost of debt will fall below that used by valuers.

Further given the approach taken by the AER is to adopt a vanilla WACC (i.e. does not consider the interest tax shield on the cost of debt), investors consider a post-tax WACC, whereby the cost of debt is adjusted to reflect the tax shield available on interest. Both the AER and Experts do not consider the imputation credits (gamma)[39] in the assessment of the WACC but rather include it as an input to the tax allowance calculations or cash flows as appropriate.

Gearing ratio

The gearing ratio represents the gearing level of the business in market value terms over the forecast period. In selecting a gearing ratio, the AER and Experts take a similar approach, basing future expected gearing on the historical gearing of competitors. We note, Experts also consider the company's current and forecast gearing in their selection. Historically the AER has adopted a gearing

[35] Rate of return instrument, AER, 2018
[36] Final Rate of Return Guideline Explanatory Statement, AER, 2013
[37] AusNet Services Distribution Determination Final Decision, AER, 2021
[38] Discussed further in Appendix C
[39] Dividends paid by Australian companies are taxed under an imputation system. Since these companies have already paid tax on the dividends distributed, they can allocate a tax credit, known as a franking credit, to their shareholders. Therefore the return on debt could be lowered to reflect the tax credits of any interest payments shareholders would receive.

ratio of 60%, whereas Experts have applied a range of between 50% – 70%. Given the comparable approaches and selections, we do not consider there to be a material difference between how the AER and Experts approach gearing.

2.1.4 Overall impact

Given the comparability of the tasks undertaken by independent experts and the AER, and the independence requirements ASIC place on Experts, the approach to calculating the required rate of return for regulated energy assets should be consistent between both parties. As discussed above however, this is not the case, with notable differences in the approaches to risk-free rate and MRP. Below we have displayed the AER Final Determination for AusNet and regulated entities owned by Spark. In all other instances, we have observed that the Expert has derived a higher discount rate than the corresponding cost of capital set by the AER, implying that current regulatory returns provide an insufficient return to investors.

Input	AER	Grant Samuel (high)	Grant Samuel (low)
Risk Free Rate	1.46%	1.80%	1.80%
Market Risk Premium	6.10%	6.00%	6.00%
Equity Beta	0.60	0.60	0.70
Return on Equity	**5.12%**	**5.40%**	**6.00%**
Return on Debt	**4.64%**	**4.30%**	**4.30%**
Gearing	60.00%	50.00%	50.00%
Nominal Vanilla WACC	**4.83%**	**4.85%**	**5.15%**
Corporate Tax Rate	30.00%	30.00%	30.00%
Calculated Post-Tax WACC	**4.00%**	**4.21%**	**4.51%**
Post-Tax WACC adopted		**5.00%**	**5.00%**

Source: AER, Grant Samuel and GT analysis

	SAPN		Citipower		Powercor		Transgrid	
	AER	KPMG	AER	KPMG	AER	KPMG	AER	KPMG
Risk Free Rate	1.46%	2.80%	1.38%	2.80%	1.38%	2.80%	2.85%	2.80%
Market Risk	6.10%	6.00%	6.10%	6.00%	6.10%	6.00%	6.50%	6.00%
Equity Beta	0.6	0.7	0.6	0.7	0.6	0.7	0.7	0.6
Return on Equity	**5.12%**	**7.10%**	**5.04%**	**7.10%**	**5.04%**	**7.10%**	**7.40%**	**6.47%**

Source: AER, KPMG, and GT analysis

Notes: the discount rate calculated by KPMG also considers the unregulated aspects of the business and hence has limited comparability to the AER's regulatory WACC.

3 RAB multiples

The consistent observed shortfall between the AER regulatory return and those that Experts have derived as being the required return of investors, suggests that by ignoring the longer-term timeframe that investors require, the regulatory returns as currently determined by the AER are insufficient to attract investment in regulated utilities. The AER has countered this view on the basis that recent transactions of regulated utilities consistently implied RAB multiples substantially above 1.0 times as evidence of the adequacy of the required returns. In particular the AER has stated that "*RAB multiples are an objective, market-based, measure of the present value of the expected future cash-flows of the firm relative to the amount required to fully compensate investors in the firm*"[40].

We discuss below the way in which RAB multiples are considered by Experts and investors and the factors that can impact observed RAB multiples.

3.1 RAB Multiple Overview

RAB multiples are market-based measures of a regulated entities' Enterprise Value to the current RAB calculated in accordance with the following formula:

$$RAB\ Multiple = \frac{Enterprise\ Value\ of\ the\ regulated\ entity}{Regulated\ Asset\ Base}$$

Historically, RAB multiples have been used by Experts, investors and the AER in considering the reasonableness of a value ascribed to the regulated assets, or businesses which operate regulated assets, albeit for differing purposes. Experts and investors predominately use RAB multiples as a valuation cross-check alongside other measures to ascertain the reasonableness of an implied value or purchase price in comparison to other observed transactions in the market. In contrast the AER, to varying extents, appear to use RAB multiples as a cross-check for the overall adequacy of allowed regulatory returns.

Whilst not explicitly used in the 2018 Rate of Return Instrument review[41] , it was noted that "*trends in RAB multiples may provide useful contextual information about the allowed rate of return*". Subsequently in their recent rate of return omnibus paper[42], the AER noted that the size of recent RAB multiples, in conjunction with other factors, indicated that realised returns have been at least sufficient.

The AER's use of RAB multiples in this context is underpinned by the principle that any dollar invested in a regulated entities' network results in a net present value of nil, proven as follows:

- Return on RAB and regulatory depreciation (collectively "capital costs") provide, in present value terms, a return exactly equal to an asset's cost, where the regulatory WACC equals an investors' required return on capital invested.
- All operating expenditure is offset on a dollar-for-dollar basis by the operating expenditure allowance.
- All tax paid will be offset on a dollar-for-dollar basis by the tax allowance.
- No other returns in excess of the capital costs are received.

[40] RAB Multiples Explanatory Note, AER, 2020
[41] Rate of Return Instrument, AER, December 2018
[42] Rate of Return Final Working Paper, AER, 2021

The NPV neutrality principle implies that without the presence of other factors, the enterprise value of a regulated utility should be exactly equal to its current RAB, resulting in a RAB multiple of 1.0x.

It is in this context that it is the AER's position that where observed RAB multiples are consistently above 1.0x, the regulated returns determined by the AER are sufficient to provide at least the required return on investors capital, and vice versa (i.e. where RAB multiples are consistently below 1.0x, the returns offered by the AER are insufficient to meet an investors required cost of capital)[43].

As of late, there has been significant commentary around the usefulness of RAB multiples in this setting. Predominately this has been focused on the range of other additional factors which may impact a RAB multiple, in addition to the adequacy of regulatory returns, which we have considered further below.

3.2 Factors impacting Experts' implied RAB multiples

As noted previously, the role of an Expert is to determine a market valuation for the operating business which holds regulated assets, typically for the purposes of determining whether a potential transaction is fair and reasonable and/or in the best interests of shareholders. The valuation derived is based on typical parameters (forecast cash flows) and assumptions of an investor in these assets and businesses, including the required return on invested capital. Certain assumptions may differ from that of an investor (for example, buyer specific synergies) which may lead to differences in the concluded value and the implied RAB multiple observed in transactions.

Whilst in theory the AER position that a regulated utility should have a RAB multiple equal to 1.0x based on the theory of NPV neutrality is valid, commercial reality has demonstrated that the theory does not necessarily hold due to a number of factors as detailed below.

3.2.1 Long term regulated returns and terminal value assumptions

As discussed in section 2 above, Experts consider that regulated utilities are perpetual in nature, that is, with ongoing reinvestment in the asset base (with returns no less than their cost of capital), the asset will continue to operate into perpetuity. As such, in deriving a value for regulated utilities, Experts will consider cash flows beyond the current regulatory pricing period, including future regulatory periods, and make assumptions in relation to cash flows into perpetuity.

Forecast cash flows

In forecasting future cash flows, the current price control period is reasonably certain, however, future regulatory periods require a valuer to apply professional judgement based on long term economic assessments of the required returns of investors. In the current low interest rate environment and low regulatory returns, an independent expert will typically make assumptions regarding increases in future regulatory returns such that the overall long term returns available are consistent with the required return on invested capital. As detailed in the table below, the current AER regulatory cost of equity implicit in the WACC is lower than the current required cost of equity determined by the independent experts, with the exception of Transgrid. Therefore in determining a value, the independent expert must make assumptions regarding the long-term regulatory returns.

[43] Rate of Return Final Working Paper, AER, 2021

Regulated utility provider	2021-22 Regulatory Cost of Equity	Expert post-tax nominal cost of equity
AusNet	5.12%	5.70%
SA Power Networks	4.56%	7.10%
Citipower	5.04%	7.10%
Powercor	5.04%	7.10%
Transgrid[1]	7.40%	6.45%

Source: AER, Grant Samuel, and KPMG

Notes: 1) Transgrid price determination was set based on the 2014 Rate of Return Instrument and does not reflect the short-term risk-free rate movement as it was set in 2018.

Grant Samuel in the AusNet IER make assumptions that the long-term regulatory returns will revert to c. 6% (just above their determined WACC) in the longer term (FY40 onwards), which is necessary to compensate investors for the lower short term regulatory returns. In doing so there is an inherent consistency between the expected future regulatory returns and the long term WACC of AusNet. KPMG in their IER of Spark were not specific regarding the future regulatory periods, however noted that the inputs are based on the AER inputs and a trailing government bond rate[44].

As the Experts conclude on a long-term WACC which is representative of the returns an investor would require over the life of the asset into perpetuity, intuitively for the enterprise value to equal the current RAB, future cash flows must be forecast assuming a consistent regulatory WACC, in line with the investor's cost of capital. This is because any changes in future regulatory returns will create a deviation between returns in that period and the long-term cost of capital, resulting in an enterprise value that is not equal to the current RAB.

We note, theoretically a RAB multiple of 1.0x could also be achieved by assuming future returns offset any short-term surplus or shortfall between an investor's WACC and the regulatory WACC (as demonstrated in the Grant Samuel report). However, this would imply that the AER are, in the short term, providing a return which is inconsistent with that required by investors, under the assumption they would rectify this in later periods. Given that the AER has expressly stated they do not make determinations which will bind future decisions[45], we do not expect this to be observed in the market. In the event longer term regulatory returns are insufficient to compensate investors for the short-term returns, then the attractiveness of these assets for investment is likely to diminish.

As such, where a valuer adopts the approach of estimating where the AER will land, it is likely to cause the RAB multiple to deviate from 1.0x. Whilst we have not been able to isolate the potential impact of this in recent IERs, we have presented an example below to highlight the relationship. This example assumes a 2-period example where the investors required rate of return is equal to the regulatory WACC in the first period, before diverging in the second[46].

	Enterprise Value	Current RAB	RAB Multiple
Increasing regulatory WACC	1,069	1,000	1.07x
Constant regulatory WACC	1,000	1,000	1.00x
Decreasing regulatory WACC	930	1,000	0.93x

Source: GT Analysis

Notes: This example is a two-period example assuming the first period the discount rate is in line with the regulatory WACC and for

[44] We note that due to the uncertainty around future returns, we consider both appropriate methods.
[45] Through purposely providing higher than or lower than market returns in any one period
[46] At the end of the second period a 1.0x RAB exit multiple has been assumed.

the second period, the regulatory WACC either increases, stays constant or decreases. The example assumes an opening RAB of $1,000, no subsequent investment and a RAB exit multiple of 1.0x at the end of the second period.

Terminal value

As discussed above, Experts consider regulated utilities to be perpetual assets, subject to continued and appropriate reinvestment in the asset base. As such they are required to determine a value beyond the explicit forecast period (terminal value). In calculating a terminal value for a regulated entity, there are two standard approaches which we have detailed below:

- Gordon Growth Model – the GGM method and its recent applications have been discussed in section 2.1, and assumes that normalised cash flows at the end of the explicit forecast period continue into perpetuity, growing at a stable rate.
- RAB exit multiple – the RAB exit multiple assumes that at a future point in time, the RAB can be sold at a multiple of its nominal value. We note, we have not observed the RAB exit multiple method used in recent IERs published, but merely referenced as a cross check for the GGM method.

In order for the enterprise value to equal the current RAB, the terminal value must not assume that returns into perpetuity exceed an investor's cost of capital. This may be achieved through:

- A GGM terminal value assuming the perpetual growth rate is equal to the regulatory CPI in the base year[47] ; or
- A 1.0x RAB exit multiple.

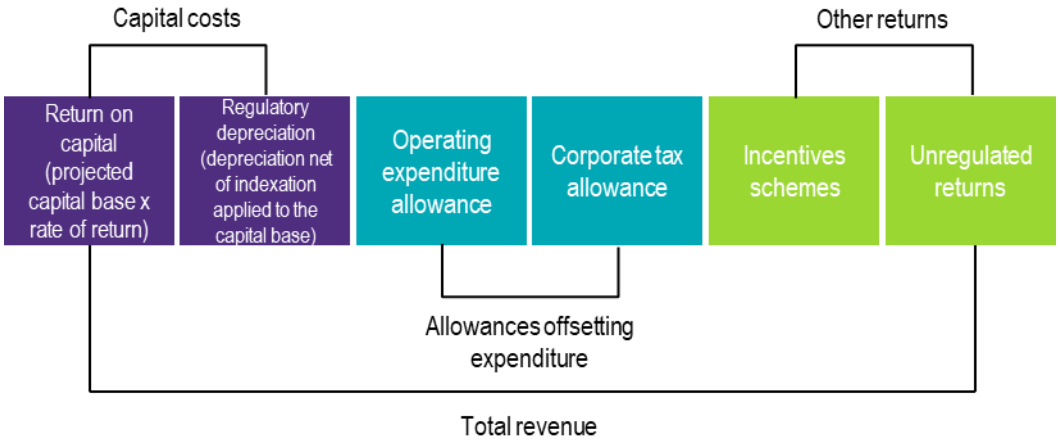
In turn, where a valuer either applies a GGM assuming perpetual growth different to the regulatory CPI at that point, or applies a RAB exit multiple not equal to one, the implied RAB multiple will deviate from 1.0x. We note an investor or Expert may adopt these assumptions for a number of reasons, including:

- Long term, maintainable inflation and therefore growth rates are assumed to be in excess of the inflation assumed in the regulatory pricing prior to the terminal value period. This can be a consequence of the AER's shorter term assumptions regarding the regulatory WACC, which would include assumptions regarding inflation.
- The short-term nature of the regulatory pricing assumes that the regulated utility is finite in nature and does not allow for perpetual reinvestment.
- Future potential investors are expected to pay a premium on RAB for the reasons discussed in this report.

3.2.2 Variations in cash flows from regulatory returns

Total revenue for a regulated utility provider is comprised of the following components:

[47] The year in which the GGM is applied to.



Source: AER and GT analysis

For the enterprise value to equal the current RAB, the regulated entity must not retain any net cash flows in excess of the capital costs. As such, allowances under the regulatory scheme must be exactly equal to actual expenditure[48], and the business must receive no "other returns", including incentive schemes and unregulated returns.

Variations between allowances and actuals

Whilst regulatory allowances are set as a best estimate of costs, in an environment of low returns and efficient spending incentive schemes, regulated entities are incentivised to outperform their allowances to maximise returns[49]. Any expected outperformance or alterations to these costs assumed by an Expert may result in forecast cash flows exceeding regulated returns and therefore a RAB multiple that is in excess of 1.0x (assuming a cost of capital consistent with the regulatory WACC).

The areas in which regulated utilities may seek to outperform allowances, and in turn may cause a RAB multiple to deviate from 1.0x include:

- *Operating expenditure allowance ("Opex allowance")* - Under the building block approach, regulated entities are provided with an allowance to compensate them for efficient operating expenditure.

  The allowance for operating expenditure is set at the start of the regulatory period, and not adjusted during the period should operating expenditure be less than or greater than the allowance. As such, businesses have an embedded incentive to spend less than what they are allowed. Whilst the benefit is only retained by the business for one regulatory period (due to opex allowance being reset each control period based on actual expenditure) this still presents a marginal benefit to the business in excess of the allowance in the short- to medium-term.

- *Capital expenditure allowance ("Capex allowance")* - The capex allowance represents the additions and investments in the RAB which are allowed for a regulatory control period. In contrast to the opex allowance, the capex allowance is recovered over time through the return of assets and regulatory depreciation.

[48] Including both allowances to offset costs and the capital expenditure allowance underpinning the return of assets and regulatory depreciation.
[49] A review of International Approaches to Regulated Rates of Return, The Brattle Group, 2020

Similarly with the opex allowance, it is set at the start of the regulatory period, and is not adjusted during the period should capital expenditure be less than or greater than the allowance. Whilst the benefit is only retained by the business for one regulatory period (due to a RAB true-up for actual expenditure at the end of the period), and the benefit is typically minimal due to recovering the costs over the life of the asset, this still presents a marginal benefit to the business in excess of the allowance in the short- to medium-term.

- *Tax allowance* - The tax allowance is a core building block in the regulated revenue allowed by the AER, intended to provide an allowance for the estimated amount of corporate tax payable. Per the NPV neutrality principle, the intention of the tax allowance is to, on a dollar-for-dollar basis, offset the corporate tax payable, and hence should not cause the RAB multiple to deviate from 1.0x.

  We note however, this is not the case in practice due to the following factors:

  – *Gamma (imputation credits)* – in the estimation of the tax allowance, the AER includes an adjustment for gamma. Gamma is intended to represent the benefit that domestic beneficial owners receive from the Australian dividend imputation system (franking credits). Whilst the AER has undertaken a rigorous task to estimate gamma, the appropriate gamma factor is still widely debated. As noted by Grant Samuel[50], the concept of a gamma factor is flawed as it attempts to apply a market weighting, where the value of franking credits is binary[51].

    Whilst franking credits have not been taken into account within the IERs examined for the purposes of this paper, based on our experience, investors (e.g. superannuation funds) typically place value on the franking credits available to them. As such, where the value to the investor differs from the value assumed by the AER, it is likely to create a difference between actual tax paid and the tax allowance.

  – *Group tax structure* – whilst the tax allowance is reflective of the specific asset, the independent experts are considering the valuation in the context of being part of a more diversified business and therefore may take into account the tax structure specific to the entities being valued. When setting the tax allowance, the AER does not consider the business' individual tax circumstances and therefore efficient tax structures such as stapled structures may create value above regulated returns.

  – *Step up in tax cost base* – in the Grant Samuel AusNet IER, Grant Samuel performed a valuation encompassing a number of different potential scenarios, some of which included assumptions surrounding the potential step up to the tax cost base and associated depreciation as a consequence of the transaction. The tax-step up is only available in the context of a transaction, however can be a significant value driver which is not otherwise captured in the allowed return.

  As a result of the above, it is likely that there will be a deviation between the tax allowance and actual tax paid, and in the absence of a true-up mechanism, the enterprise value as determined by an Expert will not equal the current RAB, resulting in a RAB multiple that deviates from 1.0x. Due to the range of factors impacting each transaction, we have not been able to quantify the impact on recent transactions.

- *Related party margins* - Regulated entities in Australia often form part of a larger group, in which related party services are rendered. The group structure allows for the regulated entity to outsource specific services such as asset maintenance, personnel employment and IT management to a

[50] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021
[51] Investors either receive 100% of the value or 0% depending on their individual circumstances

related party entity, in exchange for a fee inclusive of a contractor margin or arm's length transfer price. This in effect results in the regulated entity incurring a higher cost than is recognised at the consolidated group level. This creates a divergence between allowances and actual costs, resulting in an increase in enterprise value and in turn causing the RAB multiple to deviate from 1.0x. We note, the AER determines an efficient opex allowance on a benchmark basis and does not approve amounts which are above this value. In turn, related party margins may only create a divergence up to an efficient benchmark level.

Incentive schemes

As discussed in sections 1 and 2, the primary objective of the AER is to provide investors with returns that allow debt to be serviced and an adequate return to be provided to shareholders. The AER must also consider broader objectives including providing an efficient and reliable network at the lowest cost to customers[52]. To achieve these broader objectives, the AER offers regulated entities incentive schemes as detailed below:

- Efficiency Benefit Sharing Scheme ("EBSS") – EBSS is an opex-based incentive scheme that provides a financial benefit / penalty for regulated entities that outperform / underperform their allowance in any one period[53].
- Capital Expenditure Sharing Scheme ("CESS") – CESS is a capex-based incentive scheme that provides a financial benefit / penalty for regulated entities that outperform / underperform their capital expenditure in any one period[54].
- Service Target Performance Incentive Scheme ("STPIS") – STPIS is a service performance-based incentive that provides a financial benefit / penalty to regulated entities for exceeding / falling short of reliability and service targets.
- Demand management incentive scheme (and demand management innovation allowance) ("DMIS") – DMIS is an innovation-based incentive scheme that provides financial benefits for efficient expenditure on non-network-based solutions.

We note, there are other schemes not detailed above, however, for the purpose of our analysis we consider these to be immaterial.

As noted by Biggar in his study on the role of RAB multiples[55], incentive schemes break the link between actual expenditure and allowances, in effect creating the opportunity for regulated entities to earn a return in excess of (or less than) capital and actual costs. In turn, incentive schemes provide the opportunity to generate an enterprise value above the current RAB. It is important to note however, that incentive schemes are structured in a way that any improvements are only temporary and require consistent incremental improvements to continue to benefit from them. As such, investors and Experts often take a prudent approach to forecasting minimal incentive income, limiting the overall impact on enterprise value.

[52] Rate of Return Final Working Paper, AER, 2021
[53] The benefit is received in the following period and as approximate a rule of thumb is c. 30% of the under or overspend.
[54] The benefit is received in the following period and as a rule of thumb is c. 30% of the under or overspend.
[55] Understanding the role of RAB multiples in regulatory processes, Biggar, 2018

Unregulated returns

In addition to the regulated returns allowed by the AER, regulated entities may also have access to unregulated cash flow streams. Over recent years the energy supply chain has been disrupted by technological advancements, which has led to an increasing number of non-network and contestable projects. In turn, there has been a greater opportunity for energy networks to invest in unregulated businesses to undertake this work. Notable examples from recent transactions include:

- AusNet – Development and Future Growth business
- Powercor and Citipower (Spark Infrastructure) – Beon Energy Solutions
- Transgrid – Lumea

When considering an implied RAB multiple, the impact of an unregulated businesses is two-fold. Unregulated returns are considered in the numerator (enterprise value), with the assets used to generate the cash flows not being considered in the denominator (current RAB). To mitigate the significant impact this can have, independent experts and market participants will often present an adjusted RAB multiple to reflect the unregulated contracted asset base, referred to as the Regulated and Contracted Asset Base multiple ("RCAB multiple"). We consider the RCAB multiple to be a separate measure and in turn excluded from the scope of our report. Alternatively, as is the case with the Grant Samuel AusNet IER, the Expert has sort to ringfence the regulated businesses and value those separately.

Based on the information disclosed in the Grant Samuel IER in relation to AusNet, we can observe the impact on the RAB multiple of the unregulated businesses, as detailed in the table below. Please note, this has been done on the basis that AusNet's only unregulated activities are those included in the valuation of the "Development & Future Networks" business.

	RAB multiple incl. unregulated activities	RAB multiple excl. unregulated activities	Unregulated activities impact
AusNet	1.72x	1.42x	0.30x

Source: AusNet IER and GT analysis

It is important to note with the above that Grant Samuel has assumed the same WACC across both regulated and unregulated businesses of AusNet, and conducted scenario analysis on the unregulated business cash flows to reflect the higher risk profile of those cash flows.

The impact of unregulated cash flows on RAB multiples has been further discussed in the IERs of AusNet, Spark and DUET, extracts of which have been included below.

2021 AusNet IER – Grant Samuel in relation to the implied multiple of CK Group's unsuccessful offer for APA Group being at the upper end of the range for recent transactions

"The relative high multiples reflect APA Group's… predominately unregulated asset base (regulated assets represented less than 10% of revenue)"

2021 Spark IER – KPMG in relation to APA Group and Vector Limited having a higher RAB multiple than that implied in their valuation of SAPN

"APA Group and Vector Limited have significantly greater proportion of revenues generated from unregulated activities relative to SAPN, which is considered likely to result in APA Group and Vector Limited having:

- *Higher RAB multiples given the unregulated business does not have a RAB attached"*

2017 DUET IER – KPMG in relation to the high multiple paid by State Grid International Development for their purchase of 60% of SPI (Australia)

"The high RAB multiple is likely due to the large proportion of unregulated assets, with unregulated EBITDA accounting for approximately 20% of total EBITDA in the year end 31 March 2013"

Synergies

Synergies represent the potential financial benefit that an acquirer may expect to achieve from a transaction. For the purpose of preparing an IER, an Expert is limited to only considering synergies that are generally available to a pool of purchasers. However, bidders may be able to realise additional strategic, operational or other synergies due to their specific circumstances, which may be reflected in their offer. The limited scope of synergies which may be considered by Experts typically results in an unbiased view on value. It is important to acknowledge however, that due to the ringfencing requirements of regulated entities and the allowance true-up structures, there is often limited scope for significant synergies to be realised and retained by the regulated businesses in isolation of the broad, more diversified group.

Common synergies which can be realised and are often reflected in independent expert's valuations include:

- Corporate overheads savings through removing duplication of activities such as payroll, head office and IT expenditure.
- Potential to realise additional tax savings through "stepping up" the cost base of tax base of assets as discussed above.

Additional synergies which may be reflected in an investor's purchase price, however not considered in an expert's valuation include:

- Financing cost savings from a credit re-rating when the regulated entity joins a diversified group .
- Operational cost savings achieved through leveraging off of existing investments in the same or adjacent industries.

Due to synergies being reflected as a cash flow above what is expected to be received from the regulated assets, it is likely that their inclusion by investors will cause the enterprise value to be greater than the current RAB.

We note, sufficient information is not available to quantify the impact of this on recent transactions.

3.2.3 Discounting convention

In preparing a DCF, Experts adopt the discounting method which most closely aligns with the timing of cash flows. In the case of regulated entities, this is typically the mid-point discounting method as it assumes net cash flows are received evenly throughout the year (consistent with the tariff structure for electricity and gas distribution and transmission) or based on more frequent cash flow forecast intervals (e.g. quarterly). In contrast, the NPV neutrality principle only holds where end-point discounting is used. Whilst we understand this is done to be consistent with the application of the regulatory WACC (to the closing RAB), this is not reflective of the actual timing of cash receipts, and method adopted by Experts. As such, this results in Experts applying a slightly lower discount factor to each period, even where the discount rate is equal to the regulatory WACC.

Whilst we have not been able to quantify the impact on recent transaction multiples, we have provided an example below to highlight the potential impact.

	Enterprise Value	Current RAB	RAB Multiple
Start-point discounting	1,074	1,000	1.07x
Mid-point discounting	1,036	1,000	1.04x
End-point discounting	1,000	1,000	1.00x

Source: GT analysis

Notes: The table above assumes capital costs are received for a single asset for 2 regulatory periods (10 years) before a 1.0x RAB exit multiple.

3.2.4 RAB multiple calculation

When considering the RAB multiple formula, there is a clear difference in the time period between the numerator, which considers future cash flows into perpetuity (and in turn all future increases in RAB), and the denominator which reflects the RAB at a point in time. Whilst we acknowledge that under the NPV neutrality principle, future investments in the RAB will have a net nil impact on the enterprise value, this requires the investor's discount rate to match the regulatory WACC, which in practice has not been the case. As such, the underlying calculation methodology has the potential to exacerbate the impact of any difference between the discount rate and regulatory WACC on the RAB multiple, where future investments are made. This is additionally important where a regulated entity is undertaking a significant asset replacement or investment program in the short term.

We note, sufficient information is not available to quantify the impact of this on recent transactions. However, the table below details the impact of a discount rate higher than, equal to, and less than the regulatory WACC, where additional investments are made.

Scenario	Discount Rate	Regulatory WACC	Enterprise value	Current RAB	RAB multiple
Discount rate > Regulatory WACC	10.0%	7.5%	93.2	100.0	0.93x
Discount rate = Regulatory WACC	7.5%	7.5%	100.0	100.0	1.00x
Discount rate < Regulatory WACC	5.0%	7.5%	107.6	100.0	1.08x

Source: GT analysis

Notes: The table above assumes a current (opening) RAB of $100, with an additional $10 of capex spend at t = 1. A 1.0x RAB exit multiple has been assumed at t = 5.

3.3 Transaction implied RAB multiples

In the preparation of an independent expert report, the Expert must consider an acquisition from a standard market participant's value and in turn may not consider special value which can be realised by any one investor. As a result, investors typically consider other factors in deriving their purchase price, which could potentially lead to it being higher than the value derived by an Expert. In IERs, these factors are often discussed collectively and referred to as the premium that a bidder is willing to pay relative to the value implied from the underlying share price. Whilst premiums vary on a transaction-by-transaction basis, they have historically ranged from between 20%-40%, with often smaller premiums being observed for infrastructure assets. These factors have been considered in the following discussion. For the purpose of our report, we have not considered control premium separately as we consider it to be an outcome not a determinate of value, and only relevant with reference to listed share prices.

3.3.1 Synergies

As discussed in section 3.2.2, a specific investor may be able to benefit from synergies not generally available to a pool of potential purchasers. In these cases, the additional synergies are typically factored into an investor's purchase price, in turn resulting in a higher RAB multiple.

3.3.2 Diversification

The diversification of an individual asset, or the diversification that an individual asset may provide to a broader group, is considered to provide value to an acquirer through reducing risk, and may command a higher premium. Under CAPM applied by the AER, there is assumed to be no cost to diversification, and in turn, no investor is assumed to pay any more for regulatory or geographic diversification than an energy network may provide. In contrast, investors do not follow CAPM strictly, instead treating diversification as a qualitative factor that is considered in determining a purchase price. In turn, the additional amount an investor may assign to diversification may increase the purchase price and in turn the RAB multiple. Diversification has been noted as a contributing factor in implied transaction RAB multiples in the following instances.

2021 AusNet IER - Grant Samuel in considering factors which may be included in the premium implied by the AusNet offer price:

"Attractive demographics and consumption patterns in its target footprint. Victoria has:

- *The highest population growth rate of any state over the past decade;*
- *The highest population density (i.e. its target footprint limits geographic sprawl and arguably capital intensity of the network); and*
- *Household gas consumption rates that are the highest across the country;"*

2021 AusNet IER - Grant Samuel in considering what factors have influenced higher RAB multiples *observed in the market*

"Scale and greater geographical diversification. Most of the acquisitions involved large electricity transmission or distribution businesses with broad geographical footprints across different states which mitigate exposure to regional risk (e.g. demand and weather). In contrast, the acquisitions of Mortlake Terminal Station, DirectLink and MurrayLink involved much smaller, single infrastructure assets. These smaller transactions occurred at lower EBITDA and RAB multiples compares to acquisitions of larger businesses."

3.3.3 Real Option value

It is possible that certain investors may consider the value attributable to the embedded real options available to the owner of a regulated network. Where there are assets of significant size such as energy networks, academic theory suggests that there is option value in the ability to change or delay significant capital investments based on optimal economic, technological or market conditions. To the extent that the options for investment are discretionary in nature, value attributed to real options may also influence a RAB multiple greater than 1.0x.

However, given the essential nature of the energy networks, the ability of an investor to exercise these real options is somewhat limited and therefore investors may require a higher rate of return for the risks associated with the inflexibility around investment decisions.

3.4 Decomposing the RAB multiple

In order for the RAB multiples observed in IERs or transactions to provide a meaningful basis against which to assess the reasonableness of current regulated returns, the observed RAB multiple would need to be decomposed into its constituent parts, with all elements other than the regulatory allowance on the current RAB being removed.

In practice this is a challenging task for the AER, particularly where information is limited to publicly available data only. Due to confidentiality, forecast data upon which transactions and IERs are based are not made available to the public as they may contain commercially sensitive information. Further, a number of the factors influencing value are based on qualitative assessments which are not observable or measurable in terms of their impact on the RAB multiple. As such, it is unlikely that the RAB multiple could be reliably broken down sufficiently to provide a reasonable benchmark for determining the adequacy of regulated returns. However, the IERs produced in relation to transactions provide direct estimates of the market cost of equity capital, against which the AER's regulatory allowance can be compared.

Appendix A – Governance of Independent Experts

Governance of Independent Experts

The Australian Securities and Investments Commission ("ASIC") have published regulatory guides that provide expected guidance in relation to the independence requirements of an expert[56] as well as the content that should (or should not) be included in an IER[57], including the analysis required, the different valuation methodologies that can be used, and the general requirements of all IERs. Key guidelines include:

- An expert's opinion is required to be based on reasonable and specific assumptions, with all assumptions being disclosed. We note, disclosed assumptions should be specific and definite and overall allow users to assess the reasonableness[58].
- An expert's opinion must be genuine and based on professional judgement. Where an expert's opinion is tailored to support views of the commissioning party or other interested party, it is not a genuine opinion[59].
- An expert is expected to be an authority on the relevant field and critically review all information they have been provided to ensure the report is not misleading[60].
- An expert must be, and must appear to be, independent in instances where expert reports are required[61].
- An expert's opinion must not be misleading or deceptive[62]
- An expert, as an AFS licensee, is required to disclose any conflict of interest that may affect their independence[63] and undertake an assessment as to identify relationships and determine independence[64].
- An expert may not receive fees for their report which are dependent on the conclusion or future use of the report[65]
- An expert once commissioned is required to deliver its findings, regardless of whether the commissioning party agrees with results[66].
- An expert should share draft copies for the purpose of confirming factual accuracy, and these draft copies should not contain the expert's conclusion[67].

[56] RG 112 Independence of Experts
[57] RG 111 Content of expert reports
[58] RG111.91, RG111.92, and RG111.93
[59] RG112.16
[60] RG111.109, and RG111.34
[61] RG112.8
[62] RG112.18
[63] RG112.30
[64] RG112.24
[65] RG112.45
[66] RG112.60
[67] RG112.54 and RG112.55

Appendix B – Capital Asset Pricing Model and Expert CAPM inputs

The Capital Asset Pricing Model

The CAPM assumes that an investor holds a large portfolio comprising risk-free and risky investments. The total risk of an investment comprises systematic risk and unsystematic risk. Systematic risk is the variability in an investment's expected return that relates to general movements in capital markets (such as the share market) while unsystematic risk is the variability that relates to matters that are unsystematic to the investment being valued.

The CAPM assumes that unsystematic risk can be avoided by holding investments as part of a large and well-diversified portfolio and that the investor will only require a rate of return sufficient to compensate for the additional, non-diversifiable systematic risk that the investment brings to the portfolio. Diversification cannot eliminate the systematic risk due to economy-wide factors that are assumed to affect all securities in a similar fashion.

Accordingly, whilst investors can eliminate unsystematic risk by diversifying their portfolio, they will seek to be compensated for the non-diversifiable systematic risk by way of a risk premium on the expected return. The extent of this compensation depends on the extent to which the company's returns are correlated with the market as a whole. The greater the systematic risk faced by investors, the larger the required return on capital demanded by investors.

The systematic risk is measured by the investment's beta. The beta is a measure of the co-variance of the expected returns of the investment with the expected returns on a hypothetical portfolio comprising all investments in the market - it is a measure of the investment's relative risk.

A risk-free investment has a beta of zero and the market portfolio has a beta of one. The greater the systematic risk of an investment the higher the beta of the investment.

The CAPM assumes that the return required by an investor in respect of an investment will be a combination of the risk-free rate of return and a premium for systematic risk, which is measured by multiplying the beta of the investment by the return earned on the market portfolio in excess of the risk-free rate.

Under the CAPM, the required nominal rate of return on equity (R_e) is estimated as follows:

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

Where:

$R_f = Risk\ free\ rate$

$\beta_e = Expected\ equity\ beta\ of\ the\ investment$

$(R_m - R_f) = Market\ risk\ premium$

The CAPM has received criticism for many years, with several studies highlighting the discrepancies between actual share price movements and those expected using the model. Additionally, CAPM is a single period model used for valuing long term cash flows. Theoretically, a rate should be calculated for each individual period rather than a long-term average. CAPM also assumes investors are diversified, which in practice may not always be the case. Investor taxes are also not taken into account[68].

[68] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021

Despite these critiques, the capital asset pricing model is still widely used and accepted to calculate an investor's required return on equity capital. Below we discuss each of the inputs of the CAPM and how they are calculated, as well as any potential inaccuracies.

Risk-free rate

- In the absence of an official risk-free rate, the yield on the Government Bonds (in an appropriate jurisdiction) is commonly used as a proxy.
- The 10-year bond rate is a widely accepted benchmark for risk-free rate. For regulated assets, the forecast period is often over 10 years. While longer term bonds do exist in the market, they are relatively limited and hence their price may not be reflective of a fair market price. The 10-year maturity is the deepest market in Australia, and hence the 10-year rate is the standard benchmark.
- Recently, the Australian Government released 30-year bonds in volume. While the 30-year rate would be a more accurate benchmark for long term cash flows, it would heighten the yield curve discrepancies in early years. Given these discrepancies and the depth of the 10-year bond market, the 10-year bond rate is still the standard benchmark used for estimating the risk-free rate for regulated assets[69].
- We note, the yield to maturity on a long-term bond is an average rate, where in reality yield will often change over time. Therefore, the bond rate is only an approximation.
- Market evidence suggests that the market risk premium and bond yields are inversely correlated. Hence, many valuation experts believe the risk-free rate assessment should be made with reference to the market risk premium position adopted. As a long-term view is taken when evaluating the market risk premium, a long-term view should also be taken when evaluating the risk-free rate to accurately represent the return given the current financial environment. Bond yields are currently trading well below long-term averages due to the market volatility and uncertainty following the pandemic. As a result, many experts are adopting a 'normalised' risk free rate that is higher than the 10-year Government bond rate[70], or making overall adjustments to the adopted discount rate.

Market risk premium

- The market risk premium represents the additional return an investor expects to receive to compensate for additional risk associated with investing in equities as opposed to assets on which a risk-free rate of return is earned. It is the additional return above the risk-free rate that an investor expects to receive over the life of the investment.
- There is no generally accepted method for forecasting this, so the historical premium is used as the best available proxy. Short term rates of return are highly volatile, so historical data over many years is used to estimate the MRP. In Australia, many estimates are derived from an Officer study based on data from 1883 to 1987. This study suggested a premium between 6.0% and 8.0%, with more recent updates indicating the long-term average dropping to roughly 6.5%.
- As discussed above, data suggests that this premium is inversely correlated with the risk-free rate. Hence the market risk premium and risk-free rate should be calculated in conjunction with each other to consider the overall market return on equity investments. There are two approaches to doing this: adopting a long term historical MRP and applying an adjusted risk-free rate, or adopting a

[69] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021
[70] AusNet Services Ltd Independent Expert Report, Grant Samuel, 2021

spot yield as the risk free rate and adjusting the MRP to reflect the additional risks in equity investments implicit from low bond yields. For regulated utilities, the former is the more widely used approach[71].

Equity beta

- The beta measures the expected relative risk of the equity in a company. It's a measure of the expected covariance between the return on an investment and the return from the market. The choice of the beta requires professional judgement as it is subject to measurement issues and a high degree of variation.
- An equity beta includes the effect of gearing on equity returns and reflects the riskiness of returns to equity holders. Whereas an asset beta excludes the impact of gearing and reflects the riskiness of returns on the asset, rather than returns to equity holders. Asset betas can be compared across asset classes independent of the impact of the financial structure adopted by the owners of the business.
- Equity betas are typically calculated from historical data. These are then used as a proxy for the future, assuming the relative risk of the past will continue into the future.
- It is common practise to analyse the betas of comparable companies to determine an appropriate beta. However, these businesses are rarely exactly comparable to the subject entity, making the precision of this determination questionable.
- Recent IERs seem to suggest that an equity beta of 0.6-0.8 is an appropriate range for regulated utilities.

Specific risk premium

- It is common practice to add an additional premium to allow for certain specific risks associated with the subject entity. These adjustments are often determined by the expert without substantial evidence.
- We note, experts have not added a specific risk premium for regulated utilities in recent IERs.

[71] Spark Infrastructure Independent Expert Report, KPMG, 2021

Appendix C – AER CAPM Inputs

As noted in section 2.2, the AER calculate a nominal vanilla WACC using a traditional method (excluding a debt tax shield). Below we have considered the underlying assumptions adopted by the AER in arriving at each input.

Cost of equity

The AER adopt a standard CAPM formula as discussed in Appendix B and detailed below:

$$k^e = k^f + \beta \times MRP$$

Where:

$k^f = the\ allowed\ risk\ free\ rate\ of\ return\ expressed\ as\ an\ effective\ annual\ percentage$
$\beta = the\ allowed\ equity\ beta;\ set\ equal\ to\ 0.6$
$MRP = the\ allowed\ market\ risk\ premium;\ set\ equal\ to\ 6.1\%\ per\ annum$

In calculating the inputs, the AER takes the following approach.

Risk-free rate of return

- The figure used by the AER for the risk-free rate of return is the simple average of the daily 10-year yield to maturities for a Commonwealth Government security converted to an annual rate for each business day over the risk free rate averaging period[72].
- The risk free rate averaging period must be over a period of 20 or more consecutive business days up to a maximum of 60 days, start no earlier than 7 months prior to the commencement of the regulatory period, and finish no later than 3 months prior.

Equity beta

- The equity beta is a measure of the riskiness of the returns of a business compared to the returns of the market. In this context, it is a measure of the riskiness of the returns of a business providing regulated energy network services. This is an estimate for the broader industry rather than the circumstances of one specific provider.
- In determining the equity beta, the AER gave primary consideration to empirical data on a set of Australian utility firms they considered reasonably comparable to the "benchmark efficient entity", placing particular weight on estimates from the longest period available. This set consisted of nine firms that have provided regulated network services, using data from 1990 to 2021[73].
- The equity beta estimates of the comparator entities reflect varying gearing ratios. Therefore, the AER de-levered the estimates to obtain the asset beta of the businesses. The asset beta is an estimate of the risk if it were financed completely by equity. The asset betas were then re-levered at the gearing ratio that the AER considered appropriate for a benchmark efficient entity. From these re-levered asset betas, the AER selected what they deemed to be an appropriate equity beta for a business providing regulated energy network services.
- The AER determined that the business risk for a company operating in this sector would be low due to various reasons including the demand for the service being provided and the regulated nature of the industry. By extension, they concluded that a high gearing ratio does not necessarily lead to a

[72] Rate of return instrument, AER, 2018
[73] Equity Beta Discussion Paper, AER, 2018

high exposure to financial risk. The AER also decided that the systematic risks between the gas and electricity services were similar enough in nature to warrant the same equity beta.

Market risk premium

- The market risk premium is the additional return on top of the risk-free rate that investors require to invest in the market portfolio. It is the difference between the return on the risk-free asset and the expected return of a market portfolio. The rate reflects the compensation an investor requires for the systematic risk of a market portfolio.
- The AER has estimated the MRP over a 10-year period. The primary method they have used has been the Historical Excess Returns ("HER") method. This method averages the difference between the realised market returns and annualised risk-free rate over a certain period to estimate a forward looking MRP[74].
- Both the geometric and arithmetic averages have been considered by the AER in determining a point estimate of the MRP. However they consider the geometric average a more accurate estimate due to its compounding nature and the low volatility in returns. The AER have acknowledged that the geometric average has a downward bias, so have used the highest result from the geometric averages as the floor of the MRP.

[74] Market Risk Premium Discussion Paper, AER, 2018