



AUCKLAND ENERGY CONSUMER TRUST

CROSS SUBMISSION TO COMMERCE COMMISSION

ON

COST OF CAPITAL WORKSHOP

2 December 2009

AECT CROSS-SUBMISSION ON THE COMMERCE COMMISSION'S COST OF CAPITAL WORKSHOP

Executive Summary

➤ *Introduction*

The Cost of Capital is a critical element of the regulatory regime that the Commission is required to develop an Input Methodology for. The purpose of Input Methodologies is to promote regulatory certainty, and in the case of the Cost of Capital, the Input Methodology is intended to provide certainty over the rate of return the Commission considers to be acceptable for particular regulated businesses.

On 19 June 2009, the Commerce Commission published a *Discussion Paper* setting out its preliminary views on how Input Methodologies should be determined. Chapter 8 of the *Discussion Paper* and two supplementary papers dealt specifically with the regulatory Cost of Capital. The Commission has consulted with interested parties, including receiving submissions and cross submissions in response to the *Discussion Paper*, and a Conference on Input Methodologies. The Auckland Energy Consumer Trust has fully participated in the Commission's consultation process.

The Cost of Capital was not discussed at the Conference on Input Methodologies – the Commission instead deciding to hold a Workshop dedicated to this topic. The AECT appeared before the Commission at the Workshop. The Commission has requested that interested parties make cross submissions in relation to matters arising from the Workshop.

This cross submission sets out the AECT's comments and concerns arising from the Workshop – in relation to:

- The regulatory framework for returns on capital
- Specifying the WACC
- Allowing for asymmetric and unsystematic risks

AECT trustees recognise the dual interests of income beneficiaries as consumers and as investors, and have sought to achieve a balance between these interests by seeking to keep prices as low as possible while ensuring that the return on beneficiaries' funds is sufficient to justify further investment in quality and security of supply. This balance, sometimes framed as an *asymmetry of social costs*, is an important consideration for the regulated Cost of Capital.

AECT's cross submission has been prepared to provide both an investor's and consumer's perspective. This is important given the statutory requirement to act in the long term interests of consumers, and to promote

outcomes consistent with workable competition. The AECT regards dynamic efficiency to be a key outcome of workable competition, and therefore a key outcome of the regulatory process. As it is mainly through investment that dynamic efficiency will be achieved, the rate of return, and hence the regulated Cost of Capital, is an important driver of investment.

➤ *Key Issues and Recommendations*

In respect of these issues, AECT's concerns and recommendations are as follows:

- i. **The Regulatory Framework for Returns on Capital** – for regulated investments by Electricity Distribution Businesses, the appropriate return on an investor's capital should be based on the weighted average cost of capital but adjusted for the asymmetric and unsystematic risks that will affect investment in long life assets. In short this amounts to a *WACC-plus* rate of return.

It is important for the regulatory Cost of Capital to tie in with the broader regulatory regime (e.g. information disclosure, and default / customised control). Both incentive based regulation (including incentives for efficiency, investment and innovation) and financial capital maintenance are aspects of the regulatory regime that interrelate with the regulatory Cost of Capital. With respect to incentive based regulation, AECT considers that:

- efficiency incentives will tend to contradict the Commission's view that 'normal returns' will be earned over time; and
- competitive sector investment must satisfy hurdle rates.

Above normal returns and hurdle rates suggest $NPV > 0$ outcomes are to be expected – whereas FCM is based on a $NPV = 0$ standard. However, inasmuch that hurdle rates represent real options (asymmetric risks) or margins for business/project specific factors (unsystematic risks), these can be included in the regulatory Cost of Capital – i.e. as a *WACC-plus* rate of return. On the basis that $NPV = 0$ simply means that firms achieve the 'set' cost of capital, there is no violation of the FCM standard. On the other hand, the AECT believes that 'above normal' returns to reflect performance above expectations (and the sharing of efficiency gains) is an issue for the broader regulatory regime. It is not an issue specific to the 'setting' of the regulatory Cost of Capital.

As has been previously stated in various submissions, the AECT does not favour the FCM standard, and instead favours a rate of return that is balanced between investors and consumers (bearing in mind the

asymmetric social consequences of the rate of return being too low or too high). In particular, the FCM standard has significant cash-flow implications for the AECT. As it is not necessary for the Commission to adopt a FCM standard under Part 4 of the Commerce Act, the AECT believes that it should be compensated for these cash-flow consequences by way of a higher regulated Cost of Capital. In particular, if FCM is to apply, then the AECT believes the Commission should ensure adequate compensation along the following lines:

- higher returns to owners of existing investment as compensation for limiting management flexibility;
- introducing exit fees, or higher returns for the additional downside risk that customers can exit the regulatory compact; and
- higher returns for other regulatory risks (e.g. regulatory opportunism).

AECT recommends that the Commission provide a *WACC-plus* rate of return to take into account systematic, asymmetric and diversifiable risks that affect EDB investment, and in addition provide compensation for the risks arising from its proposed FCM based regulatory compact.

- ii. **Specifying the WACC** – the WACC constitutes a major component of the regulated Cost of Capital. It is essential that the regulated Cost of Capital reflects the market determined cost of capital as accurately as possible. AECT is concerned that the Commission is focussing on getting as accurate an estimate as possible from a particular model, without taking into account how good a predictor that model is. AECT has in the past expressed concern with the Commission’s use of the Simplified Brennan-Lally model for estimating the cost of equity. These concerns appear to have been widely recognised – including by Associate Professor Lally and the Commission. AECT is happy for the Simplified Brennan-Lally model to be used – providing the consequential WACC estimate is adjusted upwards to account for model error (in addition to the Commission’s existing proposal to adjust for parameter error). The Commission, in its *Revised Draft Guidelines*, only proposes to undertake sanity checks – including cross checking the regulated Cost of Capital and reference to other models. It is, however, important that the Commission expressly accounts for model error.

AECT appreciates that considerable progress was made at the Workshop on the nature and derivation of the underlying WACC parameters. In addition, there was widespread recognition that important parameters have been affected by the global financial crisis. AECT supports the following positions expressed by Workshop participants, that:

- the term of the risk free rate should be 10 years, and where

appropriate the Commission should allow hedging costs in determining the cost of debt;

- the asset Beta should be 0.5 for EDBs and 0.6 for GPBs to reflect regulatory risks and the higher systematic risks associated with gas;
- the debt premium should reflect a ‘portfolio’ of debt instruments and not just those that are traded (and/or more liquid); and that
- the (tax adjusted) market risk premium has a base level of 7.5%, but must be higher for the next regulatory period as the impact of the global financial crisis on investor risk aversion should not be underestimated.

The derivation of the WACC parameters involves estimation, and therefore error. The AECT agree with the use of a statistical range to make allowance for parameter error. In particular the AECT notes the comments by Professor Lally that “*the 75th percentile is probably the lower bound on what you might choose*”. The asymmetry of social consequences is a fundamental reason for setting the WACC estimate in the upper quartile of the WACC range.

AECT recommends that the Commission derive the WACC using a 10 year risk free rate, more representative debt premiums, and a higher market risk premium. The estimate for WACC itself should be in the upper quartile of a statistical range that accounts for both parameter and model errors.

- iii. **Allowing for asymmetric and unsystematic risks** – in addition to the WACC, the regulated Cost of Capital must include an allowance for asymmetric and unsystematic risks. Asymmetric risks occur where the distribution of returns is truncated (e.g. not all expenditure is recoverable and so losses may occur). In such circumstances, potential downside losses (in absolute terms) are greater than potential upside gains. Unsystematic risks are unique to particular firms – but may also be asymmetric. Compensation for asymmetric and unsystematic risks is consistent with competitive sector practice. For instance, through *ex ante* pricing, competitive sector firms expect to earn enough on ‘successes’ to pay for ‘failures’. In other words, the rate of return needs to be sufficiently high to compensate firms for asymmetric risks that occur from time to time. In addition, market frictions cause unsystematic risks to count against firms in the financing of future investment. In the competitive sector, firms will seek higher returns from investments if those investments increase a firm’s total risk.

At the Workshop there was considerable discussion of real options, and the cost to firms when real options are extinguished. Whilst the discussion may have been more theoretical than practical, its relevance to the regulatory Cost of Capital cannot be ignored. For instance, the

unsystematic risk illustrated in the above example triggers a decline in the value of future investment opportunities – which is the same as saying a firm’s real (growth) options decline in value. The AECT also commented that its undiversified investment in Vector increased its unsystematic risks. Without compensation for these risks, future investment may be adversely affected.

In the *Discussion Paper*, the Commission has indicated that asymmetric risks involving infrequent catastrophic events that cause large losses might, to the extent that insurance is not available, be compensated by an *ex ante* allowance for self insurance. The AECT supports further investigation of a self insurance initiative. More generally, however, the Commission proposes *ex post* adjustments for asymmetric risks – e.g. accelerated depreciation for stranded assets. Whilst AECT also considers this to be a valid approach to the compensation of asymmetric risks, it notes that this treatment is case specific (e.g. for asset stranding where the reason for the stranding is outside an EDB’s control, or for one-off compensation following storm losses). AECT’s concern with *ex post* compensation is that the more general asymmetric risks (particularly those arising from regulation) remain uncompensated. For instance, for regulated firms, the aforementioned ‘failures’ may be asset stranding or the disallowance of capital or operating expenditure from the rate base.

The Commission seems to recognise this by proposing that the impact of uncompensated asymmetric and unsystematic risks could be reduced by selecting a regulatory Cost of Capital that is above the mid-point of the WACC range. AECT disagrees with this approach in principle, as the Commission is mixing model error and parameter error with asymmetric and unsystematic risks. It is important to differentiate these latter risks from the asymmetry of social consequences – which the AECT believes is the primary rationale for compensating against parameter error by selecting a regulatory Cost of Capital that is in the upper quartile of the WACC range.

In practice, however, AECT believes that both asymmetric and unsystematic risks should be compensated through specific allowances above WACC (which in the case of unsystematic risk may be firm specific). The particular unsystematic risks of concern to the AECT include regulatory risk and undiversified investment risk. It is likely that there will be consequences for investment if these are not compensated.

AECT recommends that the Commission undertake, in conjunction with the industry, a study to investigate *ex ante* and *ex post* options for mitigating asymmetric and unsystematic risks (including accounting for

self insurance in the cash-flows and adding a margin to the WACC).

The regulatory Cost of Capital work-stream is an important part of a broader regulatory framework. The AECT's interests are served by ensuring the framework is consistent with the statutory purpose, and that the asymmetric interests of investors and consumers are appropriately balanced.

AECT's recommendations seek to balance the interests of investors and consumers in a dynamically efficient framework. Without addressing the above key issues, there is a danger the regulatory mechanisms under Part 4 of the Commerce Act will be less effective in achieving the statutory objectives, will create considerable uncertainty and risk, and may force EDBs to seek redress through Merits Review.

1 Introduction

- Input Methodologies are intended to define the rules, requirements, and processes applying to the regulation of particular (regulated) goods and services. Their purpose is to promote regulatory certainty.
- The requirement for Input Methodologies was introduced by the Commerce Amendment Act 2008 (the Act). The Commerce Commission (Commission) is required to determine the Input Methodologies – including:
 - Asset Valuation
 - Cost of Capital
 - Cost Allocation
 - Regulatory Taxation
 - Pricing Methodologies
 - Pass-through Costs
 - The requirements of a Customised Price-quality Path (CPP) – including assessing expenditure.
- The Commission is required to set Input Methodologies for the regulation of gas pipeline services and electricity distribution services by 30 June 2010 (although this deadline may be extended six months by the Minister), and is required to consult with interested parties.
- On 19 June 2009, the Commerce Commission published a *Discussion Paper*¹ setting out its preliminary views on how Input Methodologies should be determined. The Commission has consulted with interested parties, including receiving submissions and cross submissions in response to the *Discussion Paper*, and a Conference on Input Methodologies.
- The Cost of Capital is a critical element of the regulatory regime that the Commission is required to develop an Input Methodology for. The purpose of Input Methodologies is to promote regulatory certainty, and in the case of the Cost of Capital, the Input Methodology is intended to provide certainty over the rate of return the Commission considers to be acceptable for particular regulated businesses.
- Chapter 8 of the *Discussion Paper* dealt specifically with the regulatory Cost of Capital. In addition, the Commission published two supplementary papers related to the Cost of Capital. These were:

¹ Commerce Commission; “Input Methodologies Discussion Paper”; 19 June 2009

- Franks J., Lally M., Myers S.; “Recommendations to the New Zealand Commerce Commission on an Appropriate Cost of Capital Methodology”; 18 December 2008 (the *Expert Panel Report*)
 - Commerce Commission; “Revised Draft Guidelines – The Commerce Commission’s Approach to Estimating the Cost of Capital”; 19 June 2009 (the *Revised Draft Guidelines*)
- The Cost of Capital was not discussed at the Conference on Input Methodologies – the Commission instead deciding to hold a Workshop (in Wellington on the 12th and 13th November 2009) dedicated to this topic. The Auckland Energy Consumer Trust (AECT) appeared before the Commission at this Cost of Capital Workshop.
- Following the Cost of Capital Workshop, the Commission requested that interested parties make cross submissions in relation to matters arising from the Workshop.
- The AECT, as an owner of electricity and gas distribution assets, and gas transmission assets is affected by the Commission’s regulatory Cost of Capital proposals. This cross submission sets out the AECT’s comments and concerns arising from the Workshop – in relation to:
 - a. The regulatory framework for returns on capital (*Section 2*)
 - b. Specifying the WACC (*Section 3*)
 - c. Allowing for asymmetric and unsystematic risks (*Section 4*)
- AECT trustees recognise the dual interests of income beneficiaries as consumers and as investors, and have sought to achieve a balance between these interests by seeking to keep prices as low as possible while ensuring that the return on beneficiaries’ funds is sufficient to justify further investment in quality and security of supply. This balance, sometimes framed as an *asymmetry of social costs*, is an important consideration for the regulated Cost of Capital.
- AECT’s cross submission therefore provides both an investor’s and consumer’s perspective. This is important given the statutory requirement to act in the long term interests of consumers, and to promote outcomes consistent with workable competition. The AECT regards dynamic efficiency to be a key outcome of workable competition, and therefore a key outcome of the regulatory process. It is mainly through investment that dynamic efficiency will be achieved. The rate of return, and hence the regulated Cost of Capital, is an important driver of investment.
- As the development of Input Methodologies progresses, AECT requests that the Commission take into account the AECT’s concerns and recommendations relating to the regulatory Cost of Capital. Without

addressing the above concerns, there is a danger the new regulatory regime will not be effectively implemented (i.e. to ensure the intent of the Act is served). This will create considerable uncertainty and risk, and may force EDBs to seek redress through Merits Review.

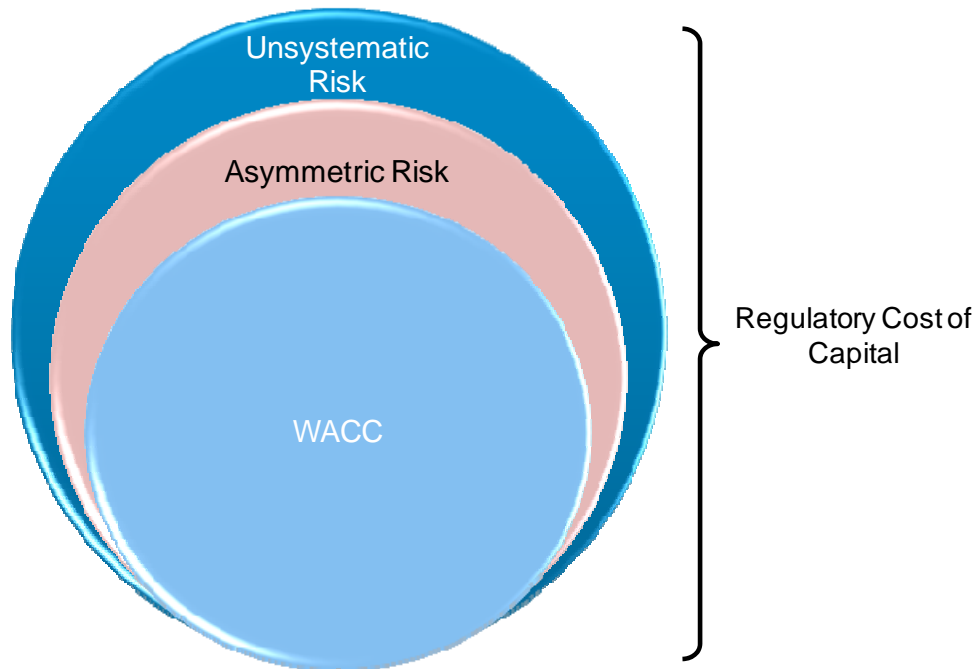
2 The Regulatory Framework for Returns on Capital

- AECT appreciates the extent to which framework issues affecting the regulatory Cost of Capital were addressed at the Workshop.
- Whilst the regulatory Cost of Capital may be based on a Weighted Average Cost of Capital (WACC) concept, it is clear that the Commission must also take into account broader considerations that are important for investment in the competitive sector (i.e. under workable competition²). The most important determinant for attracting (new) investment is the expected rate of return on the investment – in the future.
- AECT believes that it is important for the Commission to consider the impact of the regulatory Cost of Capital on investment and dynamic efficiency. In this section, the AECT intends to provide its perspective in relation to the following matters that arose at the Workshop:
 - required rate of return
 - ‘workable competition’ and the ‘long term interests of consumers’;
 - the NPV=0 standard; and
 - addressing risks specific to Financial Capital Maintenance.

a) *Required Rate of Return*

- For regulated investments by Electricity Distribution Businesses (EDBs), the appropriate return on an investor’s capital should be based on the WACC but adjusted for the asymmetric and unsystematic risks that will otherwise affect/deter investment in long life assets. This is illustrated in the following diagram:

² Regulation is intended to replicate outcomes consistent with workable competition (as per s52A(1) of the Commerce Act 1986). Note: Competition is defined as ‘workable competition’ in s3(1) of the Act.



- In short this requires a *WACC-plus* rate of return.

b) Workable Competition and the Long-term Interests of Consumers

- Section 52A(1) of the Commerce Act 1986 provides:

*The purpose of this Part is to promote the long-term benefit of consumers in markets referred to in section 52 by **promoting outcomes that are consistent with outcomes produced in competitive markets** such that suppliers of regulated goods or services—*

(a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and

(b) ...

- Under this provision, investment is seen as an outcome / evidence of workable competition, rather than a driver of, or means to achieving, it.
- The reason for trying to approximate workable competition with the regulatory process is to capture efficiency benefits that are in the long-term interests of consumers – particularly dynamic efficiency. Dynamic efficiency refers to the condition where the investment of capital occurs so as to provide particular goods or services at the lowest price. Because of the capital intensity of the industry and the fact that it is mainly through investment that future requirements for services will be effected, dynamic efficiency takes on particular importance among the other components of

economic efficiency (e.g. allocative and productive efficiency).

- The long-term interests of consumers are best served by prices that balance the interests of consumers and investors. The Commission has noted that these interests tend to be asymmetric – and favour emphasis on dynamic efficiency (including more emphasis on investment)³.
- Associate Professor Lally (an independent expert for the Commission at the Workshop) stressed this asymmetry in his comments on the WACC:

“One of the great difficulties that any regulator faces in this area is that whatever number you come up with is almost certainly going to be wrong, either too high or too low; and of course we don’t know which of these two possible situations prevails.

... the Commission has sought to address that question through ... choosing a value from the upper range in recognition of the fact that underestimating WACC is the more serious of the two errors.”⁴

- In short, the AECT does not believe that there is any inherent conflict between the outcomes it is seeking in this cross submission (which are based on workably competitive outcomes) and the long-term interests of consumers.

c) *The NPV=0 Standard*

- It is important for the regulatory Cost of Capital to tie in with the broader regulatory regime (e.g. information disclosure, and default / customised control). The principal aspects of the regulatory regime that interrelate with the regulatory Cost of Capital are:
 - incentives for efficiency;
 - incentives for investment and innovation; and
 - Financial Capital Maintenance (FCM).
- With respect to incentive based regulation, AECT considers that:
 - efficiency incentives will tend to contradict the Commission’s view that ‘normal returns’ will be earned over time; and
 - competitive sector investment must satisfy hurdle rates.

³ Commerce Commission; “Revised Draft Guidelines: The Commerce Commission’s Approach to Estimating the Cost of Capital”; 19 June 2009; paras 58-59

⁴ Commerce Commission; “Cost of Capital Workshop”; Conference Transcripts 12-13 November 2009; p 25 (12 November 2009)

- Above normal returns and hurdle rates suggest NPV>0 outcomes are to be expected – whereas FCM is based on a NPV=0 standard.
- However, inasmuch that hurdle rates represent real options (asymmetric risks) or margins for business/project specific factors (unsystematic risks), these can be included in the regulatory Cost of Capital – i.e. as a *WACC-plus* rate of return. On the basis that NPV=0 simply means that firms achieve the ‘set’ cost of capital, there is no violation of the FCM standard.
- On the other hand, the AECT believes that ‘above normal’ returns – that are a reflection of superior performance and/or the sharing of efficiency gains – is an issue for the broader regulatory regime (and for ‘efficiency carryover mechanisms’ in particular). This is not an issue specific to the ‘setting’ of the regulatory Cost of Capital.

d) Addressing Risks Specific to Financial Capital Maintenance

- AECT does not favour the FCM standard, and instead favours a rate of return that is balanced between investors and consumers (bearing in mind the social consequences of the rate of return being too low or too high).
- At the Workshop the Commission participated in a discussion as to whether compensation should be given to real options that are destroyed in the course of a firm’s investment decisions.
- In a helpful suggestion, Professor Guthrie noted that, instead of increasing the regulatory Cost of Capital, the value of real options could be added to the regulatory asset base – so that real options earn their (normal) cost of capital.

*“I’d be quite happy for the Commission to use its estimate of the WACC as the allowed rate of return, but to incorporate some sort of option adjustment in the rate base.”*⁵

- In its *Discussion Paper*, the Commission suggested it is open to submissions and substantive evidence that real options / asymmetric risks should be recognised⁶. AECT believes that the weight of opinion at the Workshop was in favour of their inclusion, with Professor Lally, the Commission’s independent expert, commenting:

⁵ Supra Note 4, p 66 (12 November 2009)

⁶ Supra Note 1 – see paras 8.75-8.76. However, citing “*little regulatory precedent*” the Commission was reluctant to allow compensation for asymmetric risks determined using a real options approach.

“I don’t find myself disagreeing with very much of what’s been said by other people on the subject of real options.”⁷

- AECT supports the broad consensus that firms should be compensated for their investment in real options. Including an allowance in the asset base for real options is a pragmatic outcome that the AECT would support. However, the AECT notes that all advocates of this position are in effect challenging the FCM concept – which essentially allows nominal returns on cash investments only (but not on non-cash investments such as revaluations)⁸. In most cases, real options would constitute non-cash investments.

- In this regard, in a Telecom submission that the User Cost of Capital⁹ be used by the Commission in determining the cost incurred for the supply of declared Telecommunications Service Obligations, Professor Boyle has noted:

“Put very briefly, we now know that, in many cases, the costs of investment consist not only of direct “cash costs”, but also of indirect costs that arise out of departures from the static and frictionless world of textbooks. Although these indirect costs may involve no direct cash outlay, they are nevertheless real economic costs that add to the total quantum of capital employed by the investment, and therefore on which it must earn its cost of capital. But if the investment is to earn WACC on its total investment cost, then clearly it must earn more than WACC on its direct (cash) investment cost.”¹⁰

- The AECT has noted in the past that FCM is an artificial construct, and its application causes distortions that are potentially inconsistent with competitive sector outcomes. Real options are widely accepted in theory and practice, yet their treatment, whilst entirely appropriate, may pose further potential problems for FCM.
- FCM also has significant cash-flow implications for the AECT. In the AECT’s earlier submission on Input Methodologies, it regards FCM as a contract that hedges asset value volatility. Whilst the AECT has reservations about the ‘fairness’ of FCM, and has noted that FCM

⁷ Supra Note 4, p 86 (12 November 2009). However, Dr Lally stressed that for any compensation to be considered, the real options should not be a manifestation of market power.

⁸ Acknowledging the Commission’s ‘Real FCM’ concept applies real returns to a real asset base.

⁹ The User Cost of Capital reflects a firm’s required rate of return, and will generally exceed the WACC as, *inter alia*, it provides compensation for the destruction of real options.

¹⁰ Boyle G.; “Corporate Investment Policy: What is the Cost of Capital?”; 10 June 2002. (Paper included as part of a Commerce Commission submissions from Telecom New Zealand on its TSO Implementation, Discussion Paper and Practice Note, 19 April 2002).

potentially creates problems for businesses that seek to adopt / follow competitive sector disciplines, the AECT has not rejected FCM as being fundamentally wrong *per se*.

- However, given these concerns with FCM, and given it is not necessary for the Commission to adopt a FCM standard under Part 4 of the Commerce Act, the AECT believes that it should be compensated for these cash-flow consequences by way of a higher regulated Cost of Capital, in the event that the Commission adopts FCM. Below, the AECT sets out three grounds for such compensation.
- First, adopting the FCM standard for the new regulatory regime will constitute a new regulatory compact. At the earlier Conference on Input Methodologies, the Commission appeared to proffer the view that any ‘previous’ or ‘existing’ regulatory bargain is poorly defined¹¹. In light of how the regulatory environment has evolved recently, this view may be valid. However, at the time that the majority of investment was made, the regulatory bargain was clear (and is now being changed).
- Any new regulatory compact (based on FCM) will have implications for both existing and new investment. It may be considered ‘fair’ when applied to new investment, as all parties are aware of its implications in advance. However, it is not necessarily fair to apply the FCM standard to existing investment, as it changes the dynamics for investors – including how management will now manage those assets over their economic life. Compensation to incumbent investors should be considered.

“... Any research into the effects of an adverse regulatory change must ask a fundamental question. Are investors realising an unlucky event, but one for which they had long taken account? Or are investors being surprised by a change in the ‘regulatory contract’ under which the securities were sold? The answer to this is crucial. It is the difference in Tye and Kolbe’s analysis between a leftward shift of the bell-shaped curve, and merely landing on an unlucky portion of the curve. It is the difference between ‘taking property’ and not, since investors would have accounted for the probability of the adverse policy change and would have demanded higher compensation accordingly.”¹²

- Second, under a FCM standard, the upside benefit is that the AECT does not bear the risk of lower revenue when assets decline in value. The downside

¹¹ Commerce Commission; “Input Methodologies Conference”; Conference Transcripts 15-17 September 2009; pp 221 (16 September 2009 – Gas Pipeline Services)

¹² Kolbe A. L., Tye W., Myers S.; “Regulatory Risk – Economic Principles and Application to Natural Gas Pipelines and Other Industries”; p 103

risk is that the AECT does not benefit from higher revenue when assets appreciate. A further downside risk is that the AECT cannot walk away from its long term investment but consumers can walk away by choosing alternatives (e.g. bottled gas rather than reticulated gas). Consumers are more likely to ‘walk away’ when prices are high relative to the replacement value of the assets¹³. AECT notes that this exact situation can arise with FCM.

- To ensure a regulatory compact is no less favourable than AECT’s otherwise preferred position of current ODV and no FCM, the AECT believes that the Commission must consider:
 - imposing consumer exit fees; or
 - higher rates of return under the regulatory compact¹⁴.
- Third, the case for a higher rate of return under a regulatory compact is strengthened by legitimate concerns with regulatory risk. Investors will naturally harbour reservations that the regulatory compact might not be enforced over the full period of asset recovery. Even with exit fees, there is still the risk that a future regulator will change the compact to provide ‘better’ outcomes to consumers at that time. The underlying risk here is that of regulatory opportunism – currently it serves the Commission to adopt FCM as asset values are increasing. This may be seen as the easy option and may be indicative that the Commission will again take the easy option if asset values should fall in the future, and present a new regulatory opportunity. Again, the AECT argues that additional compensation is required for this regulatory risk.
- In summary, if FCM is to apply, then the AECT believes the Commission should ensure adequate compensation along the following lines:
 - higher returns to owners of existing investment as compensation for limiting management flexibility¹⁵;
 - introducing exit fees, or higher returns for the additional downside risk that customers can exit the regulatory compact; and
 - higher returns for other regulatory risks (e.g. regulatory opportunism).

¹³ Particularly as low replacement costs may be an indication of technological obsolescence giving rise to newer/cheaper alternatives.

¹⁴ This is in relation to the greater downside risk, and should be in addition to the compensation mentioned earlier for the imposition of a ‘changed’ regulatory bargain on existing investment.

¹⁵ Management are best placed to assume the risks and rewards of asset ownership – including extending the life of assets beyond their depreciation life (which has no value to firms under FCM).

AECT Recommendations:

- **AECT recommends that the Commission provide a WACC-plus rate of return to take into account systematic, asymmetric and diversifiable risks that affect EDB investment, and in addition provide compensation for the risks arising from its proposed FCM based regulatory compact.**

3 Specifying the WACC

- The WACC constitutes a major component of the regulated Cost of Capital. AECT considers that the Workshop was helpful in crystallising important issues in relation to:
 - choice of model;
 - WACC parameters; and
 - selecting a WACC estimate from the WACC range.

a) Choice of Model

- It is essential that the regulated Cost of Capital estimates the market determined cost of capital as accurately as possible. AECT is concerned that the Commission is focussing on getting as accurate an estimate as possible from a particular model, without taking into account how good a predictor that model is.
- AECT has in the past expressed concern with the Commission's use of the Simplified Brennan-Lally model for estimating the cost of equity. These concerns appear to have been widely recognised – including by Professor Lally and the Commission.
- At the Workshop other models were considered, including the Officer model, the Classical Capital Asset Pricing Model (CAPM), and the International CAPM. The assumptions mostly differ in relation to the treatment of tax on debt and equity returns. The International CAPM also faced further complexities in terms of identifying betas relative to the world market, and the choice of currency.
- Two issues of model error were raised at the Workshop. The first issue concerned the general bias in the CAPM against low-Beta stocks. Empirical testing suggests that the CAPM understates the returns of low-Beta stocks. The second issue concerned leverage in the Simplified Brennan-Lally

CAPM. Professor Lally states:

*“When using the simplified Brennan-Lally CAPM in conjunction with the simplified beta gearing model, WACC as usually defined rises with leverage and therefore implies that leverage is undesirable. However, the use of debt by companies is typical. This implies that companies are acting irrationally or that there is some deficiency in the models used to estimate WACC. This paper shows that there are some deficiencies in the WACC model currently employed by the Commerce Commission, but these are not readily correctable, leaving the choice between the status quo (which overstates WACC) and a simple alternative in the form of setting WACC equal to the unlevered cost of capital (which would understate WACC). Choosing between these two options is a judgement matter for the Commission.”*¹⁶

- Professor Lally notes that *“a properly defined WACC would still rise with leverage due to the relative illiquidity of corporate bonds and the presence of bankruptcy costs”*¹⁷. Nonetheless, Dr Lally suggests that the impact of leverage is overstated in the Simplified Brennan-Lally model.
- In part this potential overstatement is due to the cost of debt being defined improperly as the promised yield – rather than as the expected yield plus an allowance for bankruptcy costs. Given that, for most EDBs, the promised yield and the expected yield (together with bankruptcy costs) are likely to be close, then the overstatement in the Simplified Brennan-Lally model is likely to be small¹⁸. In any case the understated returns of low-Beta stocks may offset the overstated returns due to leverage in the Simplified Brennan-Lally model.
- AECT fully supports including leverage in the CAPM (i.e. the status quo). Further comments on this and other parameters are included in the next section.
- It is the view of the AECT that the Simplified Brennan-Lally model contains the most appropriate overall set of assumptions for determining the cost of equity for EDBs and Gas Pipeline Businesses (GPBs) in New Zealand.
- For this reason, the AECT is happy for the Simplified Brennan-Lally model to be used by the Commission – providing the consequential WACC estimate is adjusted upwards to account for model error (in addition to the

¹⁶ Lally M.; “WACC and Leverage”; Commerce Commission Paper; 17 November 2009; p7

¹⁷ Ibid p5

¹⁸ Subject to the debt beta also being included in the model.

Commission's existing proposal to adjust for parameter error). The Commission, in its *Revised Draft Guidelines*, only proposes to undertake sanity checks – including cross checking the regulated Cost of Capital and reference to other models. It is, however, important that the Commission expressly accounts for model error.

- Professor Lally suggests a pragmatic test for determining model error – as follows:

“... there is another source of error which has been referred to by a number of participants here ... and that's model error. We don't know what the right model is.

... But given that there is a possibility ... of model error, it is desirable to try and address that question; and one way of trying to address that question would be to look at the results from fundamentally different models such as the Dividend Growth model and Fama-French to get some sense about the extent of model error that might be arising.

And if that extent is small – then great, but if that extent is large it might incline a regulator to choose an even higher WACC value than they otherwise would to again recognise the fact that under-estimation is the more serious of two possibilities.

... we can't do that with some sort of statistical techniques that we can when it comes to parameter estimation error, but at least make some effort in that direction by looking at results from fundamentally different models. And I say that notwithstanding the fact that I think there are serious difficulties in these alternative models. I'm not proposing that they be used to come up with a point estimate or even contribute in some sort of weighted average fashion to the point estimate, but I am suggesting that it might be useful to look at their results to get a sense about the question of model error”¹⁹

- The AECT supports these sentiments. First, model error exists, and second, it is necessary to make an allowance for model error after understanding the likely extent that competing model estimates diverge.

¹⁹ Supra Note 4, p 26 (12 November 2009)

b) *WACC Parameters*

- The important parameters in the derivation of the WACC include:
 - Risk-free rate
 - Debt Premium
 - Beta
 - Leverage
 - Market Risk Premium
 - Investor Tax
- AECT appreciates that considerable progress was made at the Workshop on the nature and derivation of the underlying WACC parameters. In addition, there was widespread recognition that important parameters have been affected by the global financial crisis.

i) *Risk Free Rate and Debt Premium*

- In the case of the risk free rate and the debt premium, the Workshop provided a strong undercurrent of support for having the risk free rate set on the basis of 10 year (rather than 5 year) Government Stock. The AECT supports this on the basis that 10 year maturities provide a closer nexus with how investment in long-life assets are funded in practice.
- Previously, the Commission has preferred to match the term of the risk free rate with the length of the regulatory period. This is consistent with providing NPV=0 outcomes – but essentially requires firms to have a debt duration equal to the regulatory period.
- Businesses have strong commercial reasons for selecting and structuring their debt maturities as they do. The Commission’s selection of the risk free rate is potentially an imposition on normal business operations. AECT does not believe that it is in keeping with the s52A(1) Purpose Statement to undermine investment for the sake of upholding the somewhat dubious NPV=0 standard. Put another way, EDBs need to focus on investment and funding issues that extend well beyond the end of the regulatory period. Any significant mismatch in interest rates (i.e. between the regulatory cost of capital and actual funding costs) are another source of regulatory risk.
- AECT supports the inclusion of refinancing risk in the debt premium – as was discussed at the Workshop. For instance Professor Lally suggests:

“On the ... question of refinancing risk I think the proposition that in the presence of refinancing risk firms might want to borrow for ten years, that’s fine, and therefore the swap costs to bring it back to five years need to be taken account of by the Regulator.” ²⁰

²⁰ Supra Note 4, p 136 (13 November 2009)

- AECT supports greater emphasis on the actual drivers of a firm's cost of debt. This includes accounting for debt premiums across a wide range of debt instruments (not just publicly traded retail bonds), and including hedging/swap costs. These reflect the reality that EDBs face.
- A forward looking benchmark based on these realities is appropriate. The AECT will defer to Vector to expand on these issues. However, the AECT does not support an intrusive approach where the Commission seeks to understand the actual borrowing costs and hedging strategies of firms. Such an approach could lead to the Commission compensating for actual debt costs through the cash flows, with the regulated rate of return being reduced to the cost of equity²¹.

ii) Beta

- In the case of the Beta, the AECT is concerned with the low-Beta anomaly, and is also concerned with the Commission's derivation of Beta in the 'strawperson' example²².
- As mentioned previously, the anomalous treatment of low-Beta stocks by the CAPM was discussed at the Workshop. Whilst this is a generic CAPM issue (and not specific to the Simplified Brennan-Lally model), Professors Guthrie, van Zijl and Lally note:

“Just one comment about the CAPM and low beta stocks. The empirical relationship between average [equity] rates of return and beta is relatively flat. So if you had a graph with beta on the horizontal axis and the expected return on the vertical the graph is not a horizontal line but it's relatively flat. When you go to the standard CAPM that line gets a bit steeper. When you go to the Brennan-Lally CAPM it gets a bit steeper again. So what's happening is that when you start at a beta equals 1 and reduce beta empirically the rate of return falls a little bit. The CAPM would say it falls a moderate amount, and the Brennan-Lally CAPM would say that it falls even more. And that's what we're talking about here, that the standard CAPM gives a relationship that's too steep, and when you make these tax adjustments it actually makes it more steep, so that we're moving further away from the empirical relationship not closer towards it ...”²³

²¹ Whilst this approach is used in the USA, it tends to undermine management incentives to lower their WACC (and debt costs) through optimal funding strategies.

²² Commerce Commission; “Cost of Capital Straw Person Example – Electricity distribution industry”; November 2009

²³ Supra Note 4, p 34 (12 November 2009)

“In terms of the low beta issue, if we're talking about the observation that the CAPM doesn't work well for low or high beta, well one of the problems there again is that you actually have to measure beta and we can measure beta against various proxies for the market portfolio, but until we learn how to identify the market portfolio it's a bit silly I think to talk about observed betas based on a particular index indicating that the CAPM is either right or wrong.”²⁴

“... I would like to make a comment on the question of the empirically flat relationship between the cost of equity and beta. Tony [van Zijl] has already commented that that's all premised on the choice of market index, and that's true. But it's also premised on something else, which may be even more significant. And the premise is that your estimates of equity betas and all the econometric work is all done on the basis of estimates of equity betas, we know how imperfect those estimates are. And econometrically, if you have estimation error in the explanatory variable and beta is the explanatory variable in these kind of diagrams, then of course the relationship will look flatter than it actually is. That is a standard econometric result.

So the fact that the relationship looks flatter than the model would indicate is not a surprise to me, and it raises questions about whether the model is the problem, or whether the difficulties in accurately estimating betas are the problem. And I have seen some work which has sought to estimate betas somewhat more rigorously than most of the empirical work that is referenced in this area, and unsurprisingly it shows the relationship being steeper than is shown in most of the empirical work.”²⁵

- Professor Guthrie makes the point that low-Beta stocks (such as EDBs) will have their equity returns (and hence WACC) underestimated by the CAPM (and the Simplified Brennan-Lally CAPM in particular). Professors van Zijl and Lally suggest the specification/estimation of Betas may be at fault, and a more rigorous estimation of Beta may (in part) address this issue. The AECT believes that the Commission should increase both the estimate and standard error for the Betas of EDBs and GPBs in New Zealand.
- It is therefore of considerable concern to the AECT that the Commission appears to have done the opposite in its approach to the derivation of Beta in the ‘strawperson’ example.
- In the strawperson example the Commission has ignored differences in regulatory regimes when identifying EDB beta estimates in other

²⁴ Supra Note 4, p 36 (12 November 2009)

²⁵ Supra Note 4, p 37 (12 November 2009)

jurisdictions. However, in setting the WACC for the purposes of the Gas Authorisation, the Commission adjusted asset Betas by +0.1 to reflect greater systematic risk associated with the regulatory control regime in New Zealand. For instance:

“Taking account of all this, I favour an estimate of .30 for the asset beta of US electric utilities and gas distribution firms. The estimate just developed reflects rate of return regulation. However, the New Zealand electricity lines and gas pipeline businesses are not subject to rate of return regulation. Consequently, their output prices could be expected to conform less closely to their costs than the US firms, and the effect of this would be to raise their asset betas. Thus, the US estimate of .30 should be seen as a lower bound on that of the New Zealand firms.”²⁶

“In comparing the New Zealand lines businesses with counterparts subject instead to a five year price cap (“price cap” firms) ... my judgement is that the New Zealand lines businesses would have lower asset betas than firms subject to a five-year price cap. In particular, I consider that they would lie about midway between the US rate of return regulated firms and the price-capped firms. This implies adding .10 to the asset beta of the US firms to reflect the effect of regulatory differences.”²⁷

- AECT contends that the 2008 amendments to the Commerce Act have now introduced five-year price-cap regulation (in place of targeted control / thresholds). As a consequence, the adjustment to the asset Beta should now, as a minimum, be +0.2 for New Zealand EDBs.

“I add a margin of .10 to reflect the difference in regulatory regimes between New Zealand and the US (in the electricity lines sector). This represents an estimated margin (Δ^) of .20 for five year price-cap regulation, subject to an estimated adjustment factor (Q^*) of .50 to reflect the fact that the New Zealand lines businesses are more risky than the US firms but less risky than a five-year price-cap situation.”²⁸*

- AECT also notes that the Commission allowed a further adjustment for the asset Beta of GPBs (again by +0.1) – as they were held to have higher systematic risk than EDBs. For instance:

²⁶ Lally M.; “The Weighted Average Cost of Capital for Gas Pipeline Businesses”; 28 October 2008; p60

²⁷ ibid pp 61-62

²⁸ ibid p64

“Finally I add a further estimated margin ... of .10 to reflect the greater risk of gas pipeline businesses relative to electricity lines businesses in New Zealand.”²⁹

- In summary, AECT considers that there are compelling grounds for the Beta estimate to be higher than the estimate used in the Commission’s strawperson example. In future, the process for determining Beta should account for differences in regulatory regimes, and should be biased upwards to account for the low-Beta anomaly inherent in the CAPM. As a minimum, the asset Beta should be 0.5 for EDBs and 0.6 for GPBs to reflect regulatory risks and the higher systematic risks associated with gas.

iii) Leverage

- In the case of leverage, the AECT believes that the Commission should adopt a benchmark approach for the industry. An assumption of 60% leverage is not unreasonable for EDBs and GPBs.
- As noted previously, the Commission has expressed concern that the positive association between WACC and leverage (when the cost of equity is determined using the Simplified Brennan-Lally model) may lead to regulated businesses pursuing ‘risky’ high debt strategies.
- AECT refutes this. As noted at the Workshop, there are ‘external’ commercial pressures from banks and owners that provide ‘checks and balances’ against such risky strategies. In addition, such a strategy would be a zero sum game (at best) or self defeating (at worst). For instance, it can be assumed that all businesses actually want to lower their WACC – and not increase it (as suggested by the Commission). However, it may be the case that regulated businesses try to convince the regulator that their WACC is high (without it actually being high).
- As noted previously, *“a properly defined WACC would still rise with leverage due to the relative illiquidity of corporate bonds and the presence of bankruptcy costs”³⁰*. The AECT considers it unlikely that firms will pursue excessive leverage (hence increasing their actual WACC), just to achieve a higher regulated Cost of Capital.
- MEUG suggested that the Commission should assume an unleveraged WACC. AECT rejects this. First, EDBs and GPBs should not be disadvantaged by the regulator when it is clear that their capital structure

²⁹ *ibid*

³⁰ *Supra* Note 14, p5

does carry debt. Second, it is Professor Lally's opinion that the WACC would be understated by such an approach – for instance:

“The second option is to set WACC at the unlevered cost of equity (ku), which would lead to WACC being understated because it would ignore the relative illiquidity of corporate bonds and the presence of bankruptcy costs.”³¹

- AECT considers that it is unnecessary, and impractical to try to correct for any WACC misspecification due to leverage, a position supported by Professor Lally:

“The third [last] option would be to attempt to more properly estimate WACC, which would involve estimation of debt betas and defining the cost of debt as the expected yield plus an allowance for bankruptcy costs. However, measurement difficulties would seem to rule out the last option ...”³²

“... leaving the choice between the status quo (which overstates WACC) and a simple alternative in the form of setting WACC equal to the unlevered cost of capital (which would understate WACC). Choosing between these two options is a judgement matter for the Commission.”³³

- Based on several comments at the Workshop by Professor Lally on the topic of asymmetric social costs³⁴, the AECT has little doubt that the Commission should chose the status quo option (i.e. to include a leverage benchmark). As stated previously, the AECT considers this benchmark should be 60%.

iv) Market Risk Premium

- In the case of the tax adjusted market risk premium (TAMRP), it is necessary to account for (forward looking) market risk. The majority of experts at the Conference favoured a base TAMRP of 7.5% – with this being a long-term forward looking position.
- The global financial crisis has impacted on this risk – increasing the TAMRP in the short term, and possibly for the long term. For instance, at the Workshop it was noted that:
 - the market risk premium has gone up, and according to Professor Lally “quite possibly by a substantial amount because market

³¹ *ibid*

³² *ibid* p6

³³ *ibid* p7

³⁴ *Supra* Note 4, p 25 (12 November 2009). Also, for example, see footnote 16.

*volatility in the last 12 months has been appreciably greater than the average over the last 100 years*³⁵;

- the *Expert Panel Report* which cited a TAMRP of 7% was a reflection of the panel's thinking "*prior to the implosion of Lehman in late 2008; and if we were sitting here today the three of us and giving you a view it might very well be different*"³⁶; and
 - the Australian regulators have increased their estimate of the market risk premium, and that could translate to a TAMRP as high as 7.8% if the totality of the regulators assumptions are taken into account (e.g. utilisation rates for imputation)³⁷.
- AECT does not believe that there is any reason for the market risk premium in New Zealand to be less than that of Australia. Given uncertainty with the cross-over of assumptions between the jurisdictions, this suggests the minimum TAMRP should be 7.5%. However, as a direct consequence of the financial crisis, the AECT believes that the appropriate TAMRP for the next regulatory period is now between 7.5% and 8%. This is within the range discussed by Workshop participants.

v) Investor Tax Rate

- In the case of the investor tax rate, the AECT notes the widely held view of Workshop participants that the investor tax rate should be 30%. AECT accepts this view.

Summary

- In summary, AECT wishes to reinforce the following positions expressed by participants at the Cost of Capital Workshop:
- the term of the risk free rate should be 10 years, and where appropriate the Commission should allow for refinancing costs and hedging costs in determining the cost of debt;
 - the asset Beta should be 0.5 for EDBs and 0.6 for GPBs to reflect regulatory risks and the higher systematic risks associated with gas;
 - the debt premium should reflect a 'portfolio' of debt instruments and not just those that are traded (and/or more liquid); and that
 - the (tax adjusted) market risk premium has a base level of 7.5%, but must be higher for the next regulatory period as the impact of the global financial crisis on investor risk aversion should not be underestimated.

³⁵ Supra Note 4, p 174 (13 November 2009)

³⁶ Supra Note 4, p 95 (12 November 2009)

³⁷ Supra Note 4, pp 181-182 (13 November 2009)

c) *Selecting a WACC estimate from the WACC range*

- The derivation of the WACC parameters involves estimation, and therefore error. The two sources of error affecting the estimate of the WACC are:
 - parameter error; and
 - model error.
- To compensate for parameter error, a statistical range can be derived for the WACC. The Commission has adopted this approach in the past. The AECT supports this approach, although it notes that a number of simplifying assumptions have been made (e.g. it has been assumed that individual parameters are not correlated). More sophisticated analysis could be undertaken to test the impact of such assumptions on the WACC range. For instance a Monte Carlo simulation could be undertaken. AECT would support such simulations being undertaken as a cross check on the statistical WACC range.
- The asymmetry of social consequences is a fundamental reason for setting the WACC estimate above the mid-point. In particular, the importance of the regulatory Cost of Capital in promoting dynamic efficiency is recognised. However, it is important that this is clear, and that the WACC range is not seen as a ‘general add-on’ for a plethora of adjustments and corrections. For instance, at the Workshop it was noted:

“... I think in the past the Commission and some people have sort of used this add on, the 75% as a bit of a carpet you could lift up and sweep stuff under and say that will be captured by the 75%. The purpose of the 75% or whatever it is should be very clear. ... the issue here in the way it's specified has to do primarily with shortcomings of investments, okay, it's an investment orientated issue. What is the social cost of not having investment? So if, for example, you're in an industry where nobody wants investment then this isn't relevant. But if you're in another industry where investment is key and has got a high social cost to under-investment, then this percentile that you choose should be quite high. Tony [van Zijl] expressed it as kind of a ratio, a loss function sort of a thing, and I sort of agree with Graeme [Guthrie] this is not science, but you have to have some structure on how you're going about this, and it's not going to be the same for all industries.”³⁸

- For both EDBs and GPBs investment is a fundamental issue. Indeed, the Government has made this clear through:

³⁸ Supra Note 4, pp 223-224 (13 November 2009)

- Government Policy Statements on investment; and
- the passage of the Commerce Amendment Act 2008, which sought to provide incentives for investment and innovation, and remove potential disincentives to investment.

Arguably, the Government has taken a strong bias in favour of investment. This must be reflected by the Commission in accounting for the asymmetry of social consequences.

e.g. Government Policy Statement (GPS)

“The Government’s economic policy objective is that regulated businesses have incentives to invest in replacement, upgraded and new infrastructure and in related businesses for the long term benefit of consumers. The Government considers that this objective will be achieved by: ... regulated rates of return being commercially realistic and taking full account of the long-term risks to consumers of underinvestment in basic infrastructure ...”³⁹

e.g. The GPS has now been included in Part 4 of the Commerce Act

“The overarching objective of this bill [Commerce Amendment Bill] is to provide for efficient and cost-effective regulation of the price and quality of key goods and services that are not subject to competition, and to do so in a way that promotes greater certainty, and incentives to invest and innovate for regulated businesses ...”⁴⁰

- The AECT agree with the use of a statistical range to make allowance for parameter error. In particular the AECT notes the comments by Professor Lally that “the 75th percentile is probably the lower bound on what you might choose”.

“I’ve never before expressed a view on this question to the Commission. ... the loss function provides a framework for thinking about where you might choose in that distribution ... That kind of analysis, that loss function analysis, while it doesn’t tell you what the answer is it does suggest to me that the 75th percentile is probably the lower bound on what you might choose. And you could easily choose something well above that.”⁴¹

³⁹ Government Policy Statement: “Statement to the Commerce Commission of Economic Policy of the Government: Incentives of regulated businesses to invest in infrastructure”; 7 August 2006

⁴⁰ Hon. Lianne Dalziel (Minister of Commerce); Parliamentary Debates (Hansard) – Commerce Amendment Bill (Second Reading); 2 September 2008; p 18,313

⁴¹ Supra Note 4, pp 223-224 (13 November 2009)

- To compensate for model error, the AECT accepts that a non-statistical adjustment may be appropriate, and that this compensation be effected by taking an even higher percentile of the WACC range (than compensation for parameter error alone would require). AECT notes that this is consistent with the views previously expressed by Professor Lally:

“... But given that there is a possibility ... of model error ... it might incline a regulator to choose an even higher WACC value than they otherwise would ... we can't do that with some sort of statistical techniques that we can when it comes to parameter estimation error, but at least make some effort in that direction by looking at results from fundamentally different models. And I say that notwithstanding the fact that I think there are serious difficulties in these alternative models. I'm not proposing that they be used to come up with a point estimate or even contribute in some sort of weighted average fashion to the point estimate, but I am suggesting that it might be useful to look at their results to get a sense about the question of model error”⁴²

- AECT supports the selection of a WACC that is in the upper quartile of the WACC range – e.g. between the 80th and 90th percentiles.

AECT Recommendations:

- **AECT recommends that the Commission derive the WACC using a 10 year risk free rate, more representative debt premiums, and a higher market risk premium. The estimate for WACC itself should be in the upper quartile of a statistical range so as to account for both parameter and model errors.**

4 Allowing for Asymmetric and Unsystematic risks

- In addition to the WACC, the regulated Cost of Capital must include an allowance for asymmetric and unsystematic risks. In principle, the Commission appears to support this:

“... The Commission considers that it may in practice reduce the impact of any uncompensated asymmetric or unsystematic risks by estimating a cost of capital that is above the mid-point of the WACC range.”⁴³

⁴² Supra Note 4, p 26 (12 November 2009)

⁴³ Supra Note 1, para 8.78

- Asymmetric risks occur where the distribution of returns is truncated (e.g. not all expenditure is recoverable and so losses may occur). In such circumstances, potential downside losses (in absolute terms) are greater than potential upside gains. Unsystematic risks are unique to particular firms – but may also be asymmetric.
- For EDBs, asymmetric risks would include:
 - asset stranding; and
 - expenditure disallowance (including optimisation).
- These risks have been recognised in other jurisdictions. For instance in the USA it has been noted:

“... there is a need for a fundamental reform in the way regulators think about compensating investors for the risks they bear. ... The analysis demonstrates a vital distinction between the allowed rate of return and the cost of capital, which are frequently treated as synonymous. The allowed rate of return may have to differ from the cost of capital because of asymmetry in the distribution of returns investors face. ... over the last decade, there has been a growing tendency in regulatory decisions to force utility shareholders to bear the burden of bad outcomes for decisions made under uncertainty.”

“Regulators must make some accommodation to these risks, if capital is to be attracted to the industry in the long run. For example, the allowed rate of return can be set above the cost of capital. Alternatively, the allowed rate of return could be left equal to the cost of capital and an explicit cost of service item, a form of ‘insurance premium’, could be added as compensation ...”

“The basic character of the risks that affect the necessary allowed rate of return but not necessarily the cost of capital is negative asymmetry. Regulators will not see the full effects of these risks when the cost of capital is measured and so may set allowed rates of return that do not compensate investors for the risks they bear.”⁴⁴

- Regulatory risks and undiversified investment risks are of particular concern to the AECT. For instance, it is of concern to AECT that there may be value implications to beneficiaries if their monies are invested in a non-diversified fund for the same return a well diversified fund (of lower risk) may yield.

⁴⁴ Supra Note 11, pp 134-135

- Compensation for asymmetric and unsystematic risks is consistent with competitive sector practice. For instance, through ex ante pricing, competitive sector firms expect to earn enough on ‘successes’ to pay for ‘failures’. In other words, the rate of return (sometimes expressed as the User Cost of Capital) needs to be sufficiently high to compensate firms for asymmetric risks that occur from time to time. In addition, market frictions cause unsystematic risks to count against firms in the financing of future investment.
- In the competitive sector, firms will seek higher returns from investments if those investments increase a firm’s total risk. For instance, Professor Boyle, in Telecom’s 2002 submission to the Commission on the supply of declared Telecommunications Service Obligations, notes:

*“... investment in a project that materially raises the total risk of the firm changes firm value not only by the NPV, but also by the fall of future investment opportunities. As a result, investment in the project is justified if and only if the NPV exceeds the fall in value of the future investment opportunities. Equivalently, the UCC exceeds the WACC.”*⁴⁵

- At the Workshop there was considerable discussion of real options, and the cost to firms when real options are extinguished. Whilst the discussion may have been more theoretical than practical, its relevance to the regulatory Cost of Capital cannot be ignored.
- For instance, Professor Boyle provides an example of unsystematic risks affecting both the value of the firm and future investment:

“... the WACC reflects systematic risk, but not unsystematic risk. As the systematic risk of a project is, by definition, independent of the firm taking the project, so is the WACC and, therefore, the present value of the expected cashflows. The unsystematic, or firm-specific risk of the project could obviously vary from firm to firm, but this has no effect on the project’s value. This conclusion is critically dependent on the assumption of frictionless markets. When frictions are present, significant changes in total risk (systematic plus unsystematic) can have an adverse effect on the firm’s ability to finance future investment. There are several reasons for this:

... First, ... when a firm’s total risk becomes significant, employees, suppliers, and customers become less certain that their contracts with the firm will ultimately be honoured. ... This reduces the future funding available to the firm from internal sources.

⁴⁵ Supra Note 9, pp 11-12.

... Second, firms with a significant probability of financial distress have ... an incentive to 'bet the house'. ... Because of this moral hazard ... suppliers of capital become reluctant to lend to firms with high total risk. This reduces the future funding available to the firm from external sources.

... Third, when a leveraged firm has significant total risk, the ... effect of issuing new equity is to make the debt safer. Thus, if the new shareholders require a fair return on their investment, then the cost of this must be borne by the old shareholders. Consequently, the old shareholders are reluctant to issue new equity. This further reduces the future funding available to the firm from external sources.

By reducing the future funding available to the firm, a significant increase in total risk makes it unable to take advantage of valuable investment opportunities that it could have exploited if its financial position were stronger. The greater probability of this occurring in the future reduces the value of those opportunities now, i.e. the value of its growth options fall.”⁴⁶ [emphasis added]

- The unsystematic risk illustrated in the above example triggers a decline in the value of future investment opportunities – which is the same as saying a firm’s real (growth) options decline in value.
- Unmitigated diversifiable risk may potentially give rise to investment and financeability concerns with EDBs. As in earlier submissions, the AECT reminds the Commission that its undiversified investment in Vector increases its unsystematic risks.

“The CAPM assumes that in addition to the risk-free asset an investor can hold the market portfolio, which has a large number of securities, from which it follows that in terms of being rewarded for the risk of holding an equity investment the investor is concerned only with the systematic or non diversifiable risks. The Beta term ... measures this risk.”⁴⁷

The Commission, by adopting the CAPM, seems to assume that EDBs are part of diversified investment portfolios and that their total risk is reflected by Beta.

- The prevalence of undiversified Trust and Council ownership of EDBs is an industry characteristic that the Commission should take into account when setting the regulatory Cost of Capital.

⁴⁶ Ibid p 10-11.

⁴⁷ Supra Note 1, para 8.43

- AECT notes that industry characteristics are in fact a consideration that the Commission may take into account, for example:

*“... the Commission does not propose to adopt a mechanistic approach to setting a specific point within the range (e.g. the 75th percentile) ... the exact movement along the range should be a matter of judgement that should reflect: the degree of uncertainty reflected in the range; the extent to which the final rate seems reasonable **given the characteristics of the industry**; and the prevailing economic conditions”*⁴⁸ [emphasis added]

Without compensation for these unsystematic risks, future investment may be adversely affected.

- Currently, the WACC does not take into account business specific risks unique to AECT’s investment in Vector. Such an approach has been consistent with traditional corporate finance theory. However, this traditional position is now being challenged:

*“Whether or not the risks are diversifiable is irrelevant to the need for a regulatory risk premium ... If the regulatory risk were fully diversifiable and the CAPM were exactly right, the cost of capital would be unaffected by the introduction of new regulatory risk. But that would not imply that no premium over the cost of capital is required in the allowed rate of return, any more than a bond’s default risk being fully diversifiable would mean bondholders would demand no default premium in the promised yield to maturity.”*⁴⁹

- Leaving asymmetric and diversifiable risks uncompensated may result in regulatory objectives (e.g. investment and efficiency improvement) being undermined. Again, the AECT believes that comments from Professor Boyle are relevant:

*“To reiterate, increases in total risk make it more likely that a firm will be unable to undertake future valuable investment opportunities and hence such increases are part of the cost of the project that gives rise to them. Therefore, for investment in the risk increasing project to proceed, the firm’s current shareholders require that the project cover this additional cost.”*⁵⁰

- AECT increases its total risk by continuing to fund Vector’s new investments. In AECT’s view, it is not helpful to ignore this risk on the

⁴⁸ Supra Note 1, para 8.170

⁴⁹ Supra Note 11, p 100.

⁵⁰ Supra Note 9, p12.

basis that Trusts and/or Councils that own EDBs should diversify. These ownership structures were put in place in the early 1990s to provide particular benefits to the community. Even if diversification were to occur, the overall ownership arrangements are unlikely to change. This means that funds for diversification are likely to be sourced internally from the EDBs – and this may reduce funds otherwise available for investment.

- Put differently, if the AECT were to reduce its investment in Vector in order to diversify, then it will potentially reduce its total risk and potentially create value (or valuable investment opportunities). However, AECT is not currently looking to reduce its investment in Vector – either by reducing its shareholding or by withdrawing funds Vector would otherwise be able to invest. Therefore, in the absence of compensation for unsystematic risk, the problem of undiversified investment continues to exist – as no other readily available solution appears to exist.
- In the *Discussion Paper*, the Commission has indicated that asymmetric risks involving infrequent catastrophic events that cause large losses might, to the extent that insurance is not available, be compensated by an *ex ante* allowance for self insurance. The AECT supports further investigation of a self insurance initiative.
- More generally, however, the Commission proposes *ex post* adjustments for asymmetric risks – e.g. accelerated depreciation for stranded assets. Whilst AECT also considers this to be a valid approach to the compensation of asymmetric risks, it notes that this treatment is case specific (e.g. for asset stranding where the reason for the stranding is outside an EDB’s control, or for one-off compensation following storm losses).
- However, with *ex post* compensation, AECT is concerned that the more general asymmetric risks (particularly those arising from regulation) remain uncompensated. Whilst the competitive sector generally allows firms to earn enough on ‘successes’ to pay for ‘failures’, the absence of *ex ante* compensation for regulated firms may expose them to ‘failures’. For regulated firms, the aforementioned ‘failures’ may be asset stranding or the disallowance of capital or operating expenditure from the rate base. The Commission has not proposed that these risks be compensated on an *ex post* basis.
- As an example, EDBs currently face the opportunity (need) to invest in smart grid technologies. However, those technologies are rapidly evolving and hence the risk of investing in the wrong technology is real (i.e. a potential ‘failure’). However, from an economy-wide perspective, the cost of doing nothing is arguably greater than the cost of getting the investment wrong. The regulated Cost of Capital, in tandem with the broader

regulatory regime, should enable, rather than stifle, such innovation.

- As noted above, the Commission seems to recognise this by proposing that the impact of uncompensated asymmetric and unsystematic risks could be reduced by selecting a regulatory Cost of Capital that is above the mid-point of the WACC range.
- AECT disagrees with this approach in principle⁵¹, as the Commission is mixing model error and parameter error with asymmetric and unsystematic risks. Professor Bowman takes a similar stance:

“Now I think we need to avoid complicating or co-mingling some important issues. I think that procedurally what needs to be done is we need to have what we regard as our best estimate of WACC as a midpoint type of an estimate, a mean type of estimate, all things considered. And then we talk about a range or some mechanism, and I think a range is an appropriate one, but some mechanism for deciding how we're going to add a margin where the purpose of that margin is to deal with this asymmetry of the social costs and benefits. It's not some catch all, that's specifically what it's for. And the key point I'd make then is our starting point needs to be our best estimate of what we think the appropriate cost of capital is. So we make a bad mistake, I think, if we start talking about asymmetric risks and unsystematic risks and so forth with respect to this range idea. It's a totally different issue. The asymmetric risk, what we have and I think we all would agree, Capital Asset Pricing Model that we're using, whatever variant of it you use, is an under-specified model.”⁵²

- As noted in the previous section, it is important to differentiate asymmetric and unsystematic risks from the asymmetry of social consequences. Unlike asymmetric and/or unsystematic risks, the asymmetry of social consequences is not a risk that regulated businesses face *per se*. It is, however, the essence of a balanced return – which balances investors’ requirements with the long term interests of consumers. AECT believes that accounting for this asymmetry of social consequences is the primary rationale for compensating against parameter/model error by selecting a regulatory Cost of Capital that is in the upper quartile of the WACC range⁵³.
- AECT believes that both asymmetric and unsystematic risks should be compensated through specific allowances above WACC (which in the case

⁵¹ However, the AECT recognises that in practice, adapting and adopting this approach may be the most pragmatic solution.

⁵² Supra Note 4, pp 222-223 (13 November 2009)

⁵³ However, it should be noted that investment may also be deterred and social costs may be high if these asymmetric and unsystematic risks/costs remain uncompensated.

of unsystematic risk may be firm specific). The particular unsystematic risks of concern to the AECT include regulatory risk and undiversified investment risk. It is likely that there will be consequences for investment if these are not compensated.

AECT Recommendations:

- **AECT recommends that the Commission undertake, in conjunction with the industry, a study to investigate ex ante and ex post options for mitigating asymmetric and unsystematic risks (including accounting for self insurance in the cash-flows and adding a margin to the WACC).**