

**Comments on the ESCOSA Discussion Paper**  
***Electricity Distribution Price Review: Return on Assets***

Prepared for:

**National Consumers Electricity Advocacy Panel**

Prepared by:

**The South Australian Centre for Economic Studies**

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## Introduction

In August 2003 the Essential Services Commission of South Australia (ESCOSA) issued a Discussion Paper entitled *Electricity Distribution Price Review: Return on Assets*.

ESCOSA is in the process of developing the framework under which it will determine prices when the existing regulated distribution tariffs expire in 2005. One of the issues that it needs to address is the allowable return on assets.

At present the regulated return on assets comprise about 70 per cent of regulated distribution network revenues, and distribution charges account for a bit under half of the charges made to customers for delivered electricity. The regulatory regime for return on distribution network assets thus has significant implications for electricity consumers.

The National Consumers Electricity Advocacy Panel has retained the South Australian Centre for Economic Studies to consider the issues raised by ESCOSA in the Discussion Paper, and to provide it with a discussion of those issues so that consumers may respond to ESCOSA from a better informed viewpoint. The Conservation Council of South Australia, which works with ESCOSA as an interested consumer party, has taken a role in coordinating the flow of views between the Centre and consumers.

This document discusses what we see as the key issues raised in the Discussion Paper. Our purpose is twofold: to assist consumers to understand the complex framework within which the return on assets issue will be considered by ESCOSA, and to identify arguments that we think consumers might legitimately make to ESCOSA within this framework. Our discussion is necessarily brief in some respects, and there are matters raised by the regulator which warrant more attention than we have been able to give in our analysis.

The key points that we want to make are that:

- consumers have a strong interest in having a regulatory regime which ensures that sufficiently reliable distribution services are provided, and must expect to meet the necessary costs of this;
- at the same time, consumers are entitled to expect that the regulator will constrain the utility to revenue levels which are equivalent to those at which a hypothetical efficient operator could enter the market;
- the move towards a 'financial capability maintenance' concept has some attractions, but consumers need to be reassured that adequate disciplines are in place to manage any consequent diminution of efficiency pressures on the utility;
- in our view the move to financial capacity maintenance is likely to diminish the level of systemic risk faced by the utility owner and this should be recognised in setting the rate of return;
- in escalating the regulatory asset base there is a case for some discounting of the CPI to allow for effects of the new Tax System; and
- the rate of return presently allowed to the utility is in our view excessive, arising from a combination of factors, the most important of which is an excessively high market risk premium.



## General comments

ESCOSA has adopted the working conclusion that it will determine the cost that an efficient distributor would incur in providing the specified distribution services in South Australia. It proposes to use a 'building block' approach to determining the revenue stream, and one of the key 'blocks' to be included is the return on assets employed.

An important element of the costs incurred by a distributor is the costs of assets that are provided. These costs include the consumption of assets as they suffer physical deterioration, technological obsolescence and/or economic obsolescence. They also include the requirement for a return on assets, to compensate for the forgone opportunity to deploy capital in other income earning uses and to compensate the asset owner for carrying risk.

The Discussion Paper is concerned with how the cost of assets may be built into the regulatory revenue stream. There are two main issues to address: the return of capital to the investor as it is consumed or otherwise dissolved, and the return on capital which includes elements of compensation for delaying consumption and for bearing risk.

Decisions about investments in assets are made in the context of an uncertain future. This means that while an investor may have a clear idea about the return it expects from an investment (both in the form of return of and on capital), there is a possibility that the eventual outcome may differ from this. This potential for deviation from expected returns is what we know as risk.

Typically investors are risk averse, in the sense that given a choice between two income streams with identical expected values but different levels of risk they will prefer the income stream with lower risk. As a consequence, an investor will typically be willing to pay less for the more risky of two revenue streams with equal expected values, ie the investor requires a higher rate of return on the risky revenue stream.

Many risks are asset-specific, and unrelated to risks on other assets, and risks of this type can be managed by a strategy of diversification. So long as capital markets allow the subdivision and transfer of risks at relatively low cost, then it is a reasonable working assumption that diversification is close to costless, and in this case investors are unlikely to earn a higher rate of return for diversifiable risk. An investor seeking a higher rate of return could always be under-bid by an investor able to use the asset in a diversification strategy and therefore not requiring a risk premium.

However, some risks are of a systemic nature and therefore unable to be diversified. The classic example is exposure to the business cycle. Systemic risks can be shifted from one party to another but ultimately someone is left holding them. Under the assumption that investors are risk averse, then risk premia will be payable for systemic risks, as they cannot be diversified away.

All of this matters because the regulatory asset base is an asset which offers an uncertain stream of revenues to the utility. For the regulatory regime to meet the utility's *ex ante*

required rate of return – which is the cost of capital – it needs to allow for an appropriate remuneration of the risks to the revenues associated with the asset.

It is useful to consider briefly the case of a hypothetical riskless regulatory arrangement. In this arrangement the owner of the regulated asset knows that it will receive revenues of known amount according to a predetermined schedule. Under the assumption of risklessness, no prospect of default is present, and all that the investor receives is a risk free rate of return. This instrument has all of the characteristics of a bond issued by a riskless entity such as a sovereign issuer. If a regulatory regime achieved this result, there would be no need to offer more than a risk-free rate of return on the investment.

At the other extreme one can consider the quasi-‘regulatory arrangement’ imposed by a competitive market. In this case, the investor in an asset faces a variety of risks to the anticipated revenue streams:

- the impact of technology and price trends on the costs at which a competitor may enter the market could be different from the investor’s ex ante expectation; and
- the volume of demand for the asset services may be different from the investor’s ex ante expectation.

To the extent that these risks are systemic in nature, the investor does require a risk premium.

**Key Observation 1:** In the Discussion Paper ESCOSA distinguishes between financial capital maintenance and operating (physical) capability maintenance. Our contention is that the financial capital maintenance model entails less systemic risk for the utility than does operating capability maintenance. Under operating capability maintenance, the investor faces risk on both the size of the asset base and its rate of return on that asset base. Under financial capital maintenance it faces uncertainty only in respect of the rate of return on the regulatory asset base. We would therefore expect to see a move toward financial capability maintenance being accompanied by a reduction in the risk premium and hence the required rate of return for the asset.

In our view the risk premia allowed to utilities in some recent Australian regulatory decisions are not warranted when one examines the underlying risks. There has been an excessive reliance on the application of questionable, and at times mutually inconsistent, parameters in a CAPM framework, and simultaneously a failure to consider the true nature of the risks faced by regulated utilities. This criticism has most force in respect of those ‘regulatory’ decisions implemented by Governments with a view to maximising privatisation proceeds. Those decisions should not perpetuate themselves by default.

In the case of ETSA Utilities, the EPO was structured to deliver a real pre-tax WACC of 8.26 per cent. The pre-tax WACC on an indexed bond is approximated by its yield, and in November 1999 when the sale price was settled, the yield on an indexed bond was around 3.75 per cent. The investor in ETSA Utilities was thus offered a premium of about 4½ per cent on top of the prevailing indexed bond yield over the first regulatory period. We are not satisfied that a robust set of evidence has ever been produced to show that such a premium is required by an investor in an asset like the South Australian electricity distribution assets.

The WACC which was set in the EPO was based on parameters derived from various analyses of capital markets, but there are questions about the validity of these calculations which we turn to in detail subsequently. Certainly there is a high degree of uncertainty about which parameter assumptions should be used. In our view, it is difficult to see why the risks associated with the distribution network are such as to warrant a risk premium of 4½ per cent on top of the risk free rate.

Our scepticism is reinforced on consideration of the terms of the sale of ETSA Utilities. The Auditor-General has reported that ETSA Utilities was sold for a consideration of \$3,500 million in January 2000.<sup>1</sup> The regulatory asset base some six months earlier was \$2,080 million. The sale price thus represented a 68 per cent premium on the underlying asset base. While a belief that it could achieve operating efficiencies and synergies with its other business activities may have influenced the purchaser's bid, we find it difficult to believe that the anticipated gains were of this scale – especially when one takes into account the intention of the regulatory regime to flow a substantial part of efficiency gains to consumers. The only way in which we can understand the premium is to conclude that the purchaser was willing to accept a rate of return significantly below the WACC which was implied in the EPO – 8.26 per cent real until 2005 and as modified by the regulator pursuant to the EPO thereafter.

We suspect that similar patterns would be observed if a detailed examination were made of the terms of other sales of regulated asset bases subject to real rates of return at 8 per cent and above.

In our view the key issue for ESCOSA in its consideration of rate of return issues is to determine an appropriate rate of return on the distribution network assets. The requirements of the Reset Schedule, such as the requirement to pay attention to historic nominal bond yields, must of course be met (unless of course ETSA Utilities agrees otherwise). But the guiding principle for the selection of other parameters in the CAPM framework should be to achieve that ultimate end: a rate of return that is commensurate to the risks associated with the assets.

**Key Observation 2:** There is prima facie evidence for the view that the required rate of return for the South Australian distribution assets is significantly below 8.26 per cent real. We accept that the CAPM framework is imposed by the EPO, but we are concerned that in the past the unavoidable assumptions about parameters have erred on the side of an excessively high rate of return. In reaching a decision ESCOSA needs to apply rigorous scrutiny to the various parameter estimates that have been made in the Australian context, including ensuring that the benchmarks that are chosen genuinely match the risks that are faced by a regulated entity under the financial capital maintenance framework.

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<sup>1</sup> Auditor-General of South Australia (2001), *Electricity Businesses Disposal Process in South Australia: Report by the Auditor-General Pursuant to Section 22(2) of the Electricity Corporations (Restructuring and Disposal) Act 1999 on Relevant Long Term Leases*.

## Response to specific questions

1. ESCOSA invites comment on the proposal that all financial forecasts be expressed in March 2004 prices (i.e. constant prices), and that all revenue and expenditures be assumed to occur in the middle of the year for inflation purposes. [p. 8]

a) The choice of base period seems uncontroversial.

If it were possible, it would probably be preferable to use the price level at the commencement of the new regulatory period. However, because this financial forecasting exercise needs to be carried out in advance, it is not possible to do so.

An alternative is to conduct projections using the price level applying at the beginning of the “old” regulatory period.

However, the choice really depends only on analytical ease and transparency. A key point is that the regulatory revenues allowed in the new period should be the same whichever period is used for the presentation of financial modelling.

b) While revenues and expenditures within the regulatory period may be assumed to occur in the middle of the year for the purpose of inflation adjustment, it should also be recognised that:

- the opening fixed asset base comes in at the beginning of the 1999-2000 financial year; and
- the end of the regulatory period is the end of the 2004-05 financial year.

This timing pattern should be recognised, whatever the CPI period that is used as the proxy for actual inflation.

**Materiality:** Probably low.

2. ESCOSA invites comment of the use of the All Groups – Average of the Eight State Capitals Index as the measure of inflation, and the use of the CPI from 9 months previous as a proxy for the price level at any point in time.

8-Capitals CPI is the most widely used inflation index in Australia. It is used in inflation indexed bonds, and probably has some synergies with the utility’s debt management strategies. It is not subject to revisions to historical data. These are attractive features in a regulatory context.

It might be argued that a price index more directly relevant to the activities of an electricity distributor could be found. In reality we think it would be difficult to find one. And even if one were found, it would almost certainly be less robust than the CPI.

That being so, we support use of the 8-Capitals CPI, but subject to a need to make some discount to the index in connection with the introduction of A New Tax System. This point is developed under (3) which follows.

While a different CPI component, like the Adelaide index, might produce slightly different outcomes, there is no strong ground to argue that it is a better measure of the trend in general prices. Given the wide acceptance of the CPI in debt markets, there is probably some advantage in using this measure.

b) Use of "9 months previous" as proxy is unlikely to introduce any significant bias into results.

**Materiality:** Treatment of GST-related spike is important. Use of 9-months previous to have little impact.

3. *ESCOSA invites comment from interested parties on the appropriate treatment of the GST-related spike in inflation for the purpose of adjusting the regulatory asset base.*

Our view is that that the appropriate treatment depends on whether one seeks to apply 'physical capability maintenance' or 'financial capital maintenance' over the initial regulatory period. We also think that it is difficult to give meaning to the concept of financial capital maintenance without making some assumption about the nature of the investor.

Our conclusion is that at the very least the spike in the CPI arising from the ANTS reforms should be removed if the regulator sticks with its declared intention of allowing the utility a 10 per cent add-on for GST after working out the regulated revenue from building blocks. And it is even arguable that if the 10 per cent GST add-on is to be allowed, then all of the GST implicit in the CPI should be stripped out prior to indexing the regulatory asset base.

For the sake of exposition, consider the case of an economy which has no GST in Year 0 or Year 1. There is a general price index with a level of 94 in Year 0 and Year 1 (ie. no underlying inflation, for simplicity).

From the beginning of Year 2 a GST of 10 per cent is introduced, in tandem with the abolition of some indirect taxes and personal income tax cuts. As a result, there are price changes in the economy. We can consider the price index in GST-free or GST-inclusive terms. Suppose that in GST-free terms, the general price index falls to 90, whereas in GST-inclusive terms it rises to 99.

Now consider the case of a regulated GST-registered entity with capacity to claim GST credits. Suppose that in Year 0 the entity buys a piece of equipment at a cost of \$94, which it then uses up as a business input in Year 1, and for which it is allowed by its regulator to charge \$94 as return of capital and \$4.70 as return on capital (5 per cent rate of return assumed), or \$98.70 in total.

In Year 1 the entity buys the same piece of equipment again at the cost of \$94. But at the beginning of Year 2 a GST of 10 per cent is introduced. Two approaches that are consistent with maintenance of the entity's physical capability are:

- i) The regulator uses the GST-free index to adjust the value of the regulatory asset base in Year 2 from \$94 to \$90, and accordingly modifies the pre-GST regulated revenue to \$90, but then allows the addition of a 10 per cent GST amount to give a GST-inclusive revenue of \$99. The entity collects \$99, \$9 of which is GST. It now costs it \$99 to replace the item, but \$9 of this is a GST credit, meaning that the entity need not remit the \$9 GST component of its revenues to the ATO. It is able to replace the asset from internal cash flows, and the principle of physical capability maintenance is observed.
- ii) The regulator uses the GST-inclusive index to adjust the value of the regulatory asset base in Year 2 from \$94 to \$99, and accordingly modifies the post-GST regulated revenue to \$99, but does not allow the addition of an extra 10 per cent GST amount, as it has already been factored in by the GST-inclusive price index. The entity collects \$99, \$9 of which is GST. It now costs it \$99 to replace the item, but \$9 of this is a GST credit, meaning that the entity need not remit the \$9 GST component of its revenues to the ATO. It is able to replace the asset from internal cash flows, and the principle of physical capability maintenance is observed.

In fact (i) and (ii) differ only in terms of the path taken to allow for GST in the regulatory calculation. In (i), a pre-GST cost is calculated and then GST is added, whereas in (ii) a post-GST cost is calculated. In both cases physical capability maintenance is achieved.

Transferring this discussion into the Australian context, the main point to be made is that the CPI is neither a GST-free nor a GST-inclusive price index. Table 1 below shows the contribution of the key GST-free items to the 8-capitals CPI for the June quarter 2000. The data suggests that 81 per cent of the items in the CPI is GST-liable. In addition, the GST-free items would incorporate an element of GST as an indirect tax, by virtue of producers of these items being unable to use GST credits. Overall then, the CPI would appear to be mostly GST-inclusive, but not entirely so.<sup>2</sup>

That being so, the use of the GST-inclusive CPI for asset base indexation and then the allowance of an additional 10 per cent GST impost on top of the charges which are already in effect inclusive of GST costs seems to us to be a case of double counting, at least if the objective is to achieve physical capability maintenance.

**Table 1**  
**Contributions to 8-capitals CPI, June quarter 2000**

Group	Contribution to total CPI (Index points)
Food	24.56
<i>less: Meals out and take away foods</i>	6.74
Food excl meals out and take away foods	17.82
Hospital and medical services	3.28
Education and child care	3.09

<sup>2</sup> If the CPI is seen as entirely GST-inclusive, then to convert it to a GST-free measure would require that the index level be discounted by 1/11<sup>th</sup> in the post-GST period.

GST-free components of CPI	24.19
All Groups CPI	126.2
GST-liable components of CPI	102.01

What are the implications of these arrangements for financial capacity maintenance? To address this question, we consider the case where the entity ceases trading at the end of Year 2. Prior to purchasing new equipment, the entity would have \$99, but \$9 of this would be due to the ATO as GST. Only \$90 is available for return to the owner of the entity, e.g. via a refund of capital, and the other \$9 is paid to ATO. Before the introduction of GST, the owner had \$94 of capital.

For financial capital maintenance to occur, the \$90 refunded would need to leave the ultimate owner with same purchasing power as before the introduction of the GST, when it had \$94. Whether or not this is so is likely to depend on the circumstances of the owner.

Consider first the case of an owner who is not resident in Australia. This person is not liable to GST. If the GST revenues are devoted to a combination of personal income tax cuts and reduction in other indirect taxes, the offshore resident would also seem unlikely to be directly affected by these changes. However, the impact on the exchange rate must also be considered. The comparative static effect of the reduction in the Australian pre-GST price level could be expected to be (approximately) an offsetting appreciation of the Australian currency. Why? The price level of Australian produced exports has fallen from 94 to 90 in Australian currency terms, meaning that the exchange rate must rise by a factor of 94/90 to restore the real exchange rate. This exchange rate appreciation exactly offsets the decline in the nominal \$A value of the investor's capital from \$94 to \$90. For this investor, using the CPI to index the regulatory asset base and then allowing a 10 per cent GST impost on top of this gives more than is needed for financial capital maintenance. Effectively there is a gift to the investor. This can only be avoided by discounting the CPI by an amount equal to its GST component. A conservative estimate of the required discount can be derived by assuming that just 81 per cent of the index contains GST at 10 per cent and the rest does not; in this case a discount of 7.4 per cent is required.

Now consider the case of an owner who is resident in Australia. This person is GST-liable, and if we take financial capital maintenance to mean preserving the purchasing power of that person over consumption items, then it would be necessary to compensate for the impact of the GST. However, it would also be necessary to take into account the accompanying tax reforms – abolition of indirect taxes and cuts to personal income taxes. The impact of indirect tax cuts will be captured in the CPI – they are the reason that the GST-free price level falls from 94 to 90. But with a revenue neutral package, the extra increase in the CPI from 94 to 99 will be offset by higher post-income tax incomes. In effect, households (at least in aggregate) pay \$5 less in income tax, \$4 less in indirect taxes, and \$9 more in GST. The 'spike' from the new tax package is the increase in the price index from 94 to 99 is, therefore, compensated by changes in the personal income tax arrangements.

The conclusion that we draw from this is that the maintenance of financial capacity for the average Australian resident investor requires that the GST-related spike be removed. If it is not removed, the investor receives compensation from network customers for higher GST when the price implications of the GST have already been compensated through changes to the personal tax system.

This then leads to the question of what the GST-related spike actually is.

The ABS published an article 'Measuring the impact of the new Tax System on the September Quarter 2000 Consumer Price Index' in the December 2000 issue of *Australian Economic Indicators*. However, the ABS work was rather inconclusive. ABS made a calculation of its own, but then rejected it, saying that "TNTS is likely to have contributed 2½ – 3 percentage points to the CPI increase in the September quarter" [p. 5].

In the Commonwealth Budget of 2001-02, the Treasurer estimated that the New Tax System had contributed 2.5 percentage points to the increase in the CPI.<sup>3</sup> This survey was still relatively soon after the introduction of GST and there may now be better information.

The Australian Competition and Consumer Commission carried out surveys of prices over periods before and after introduction of the GST. It found that "the Commission's upper estimate of the short-term effects of the New Tax System on prices was an increase of 3.0 per cent" [p. 14].<sup>4</sup>

Our overall conclusion is that it is appropriate at the very least to discount the CPI for the effects of the ANTS package. We would also like the regulator to consider the case for a steeper discount as would be appropriate for a non-resident investor. We do not base this request on the fact that the investor actually is non-resident, but rather on the grounds that we have not seen a case demonstrated for a presumption that an investor is a resident.

**Materiality:** Moderate. Return on assets accounts for something like 70 per cent of regulated revenues, and the conclusion of this argument is that the CPI should be discounted by at least 3 per cent and potentially 7 or 8 per cent. Effect on the level of distribution tariffs is probably of the order of 2 per cent or more (very rough estimate).

4. *Due to the requirements of the EPO, supported by the existence of an efficiency incentive scheme, it is proposed that ETSA Utilities' actual capital expenditure for the first regulatory period is accepted as being prudent.*

We are not aware of any basis on which to contest the view that ETSA Utilities' capex was prudent.

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<sup>3</sup> Costello, Peter and John Fahey (2001), *Budget Strategy and Outlook 2001-02*. 2001-02 Budget Paper No 1. [see p. 93–24]

<sup>4</sup> *Report to the Minister under Section 75AZ of the Trade Practices Act 1974: - 1 April to 30 June 2001 - 1 July 2002 to 30 September 2001*, p.14.

However, we are not convinced that efficiency incentive scheme is an effective deterrent to over-investment. This is especially the case given that we think the regulated rate of return is excessive, creating an incentive to gold plate.

Given the move toward a financial capital maintenance model, under which the utility has a greater degree of surety about return of capital, the need for the regulator to effectively vet the capex decisions would seem to be accentuated.

5. *ESCOSA invites comments on its proposal to adjust the regulatory asset base for regulatory depreciation over the first period by deducting the depreciation factored into first-period revenue benchmarks underpinning the EPO.*

This seems like a sensible treatment. The purpose of depreciation is to allow the utility to recover capital invested as it is consumed. It follows that it should not remain in the asset base to earn a return.

Leaving aside asset disposals and asset stranding for the moment, this approach would appear to have the desirable attribute that it allows full recovery (not more, not less) of the initial investment over the depreciation period.

6. *ESCOSA invites comments on its proposal to adjust the regulatory asset base for disposals over the first period by deducting the proceeds associated with asset disposals.*

The proposed method has a disadvantage in that it offers the utility little incentive to maximise disposal proceeds.

Furthermore, it is quite possible, and indeed likely, that the proceeds associated with disposal of an asset will not match the written down cost of the asset. When this happens, the difference between the two (positive or negative) would seem to be left in the regulatory asset base forever. Such an effect might be small over a short period, but could become more substantial if these residual amounts were allowed to accumulate ad infinitum.

Indeed, if the return on assets is better than the returns the utility could gain by deploying capital elsewhere, the incentive would be to minimise the sale proceeds and thus to minimise any contraction in the regulatory asset base.

Is it proposed that these residual amounts would be returned to the utility, or left on the books forever?

In contrast, the regulatory book value is, as we understand it, equivalent to written down cost. While not consistent with the financial capital maintenance concept, a treatment which removed the written down value would at least leave the utility with incentives to maximise disposal proceeds.

**Materiality:** Not possible to quantify.

7. *ESCOSA invites comments on its proposal to update the values of non-fixed assets (with the exception of working capital) using the same methodology as required for fixed assets.*

Seems reasonable in the context of the financial capital maintenance concept.

8. *ESCOSA invites comment on the appropriateness of basing regulatory depreciation on keeping pace with technological change and reflecting economic efficiency, but approximated by a simple method; and*

9. *ESCOSA invites comment on its preferred approach of using straight line depreciation to calculate the depreciation allowance.*

The approach proposed by ESCOSA is consistent in concept with the desire to have a depreciation arrangement which maintains a parity between written down costs and economic values.

This approach is often favoured by regulators, typically on the basis that it mimics the pricing outcomes which would occur in a hypothetical competitive market for the utility service. In competitive markets, owners of assets have incentives to price asset services on the basis of the costs which a new entrant would face in providing the same service. So if technological change means that there is a lower cost way of producing the asset service, then the asset value is written down. An adjustment in the opposite direction is in principle possible although much less likely, because new technological innovations tend to displace current technologies when they are less costly, not when they are more costly.

Maintaining a consistency between regulatory asset values and economic values is seen as desirable because there is a scope for some substitution of alternative services to the service provided by the regulated utility – a phenomenon referred to as “bypass”. Bypass could take several forms. A literal example would be where an electricity customer builds its own distribution system to avoid the network altogether, although in practice there are constraints that prevent this sort of behaviour. A more realistic example might be one where an electricity consumer faces a choice between on-site generation and purchase from a remote generator with delivery over the distribution network; to the extent that distribution network charges are not cost reflective, then the consumer’s decision may be inefficient.

There is therefore a good case for using the depreciation schedule to match regulatory asset values to “economic values” – by which we mean the costs of providing the same service with latest available technologies.

But it is important to keep in mind that the regulatory approach – and particularly the concept of financial capital maintenance – has an important difference from the competitive market situation. In the competitive market situation there is no guarantee of financial capital maintenance. The existing regulatory arrangements, and the

proposals for the new regulatory period, generally work towards financial capital maintenance, which transfers the risks around economic value from the utility owner to consumers. The degree of uncertainty faced by the utility is therefore less than would be faced in the (hypothetical) competitive market, and the implication of this needs to be considered in the setting of an allowable rate of return.

There is a good case for straight line depreciation within a regulatory period, because there is unlikely to be new information within a regulatory period (typically they last about 5 years) which is of such overwhelming consequence that it could not wait to the end of the regulatory period. However, it will be appropriate at the end of the regulatory period to consider whether the prospective depreciation schedule needs to be modified to bring about parity between regulated asset values and economic values.

**Materiality:** Somewhat unpredictable as it depends on the alternatives to these depreciation arrangements.

10. *Comments are invited on the approach that 'asset stranding', of the nature that has been described in this section, will not be undertaken by ESCOSA.*

Asset stranding is not consistent with the concept of financial capital maintenance, and this treatment is clearly consistent with ESCOSA's objective of establishing a regime which provides that.

Even where asset stranding provisions are allowed, they commonly apply only to assets that are not used at all. If there are poor investment decisions by the utility, they are just as likely to involve assets which are under-utilised as assets which are not used at all. It is not clear that asset stranding arrangements can deal effectively with problems of this sort.

Moreover, we appreciate that asset stranding decisions will usually involve a degree of judgement and be controversial.

If asset stranding is not to be undertaken, the question arises as to the nature of the mechanisms that are intended to provide for disciplined investment decisions by the utility. Asset stranding is a kind of ex post disallowance of certain investment decisions. Absent asset stranding, we need to have in place a regulatory arrangement that ex ante disallows poor investment decisions.

The Discussion Paper suggests that the CPI-X price path and the efficiency carry-over proposals serve such a function. However, this is not demonstrated. If the regulatory regime is to move towards a financial capital maintenance concept – and there are attractions to this – then there is an increased level of responsibility taken up by the regulator to make judgements about which new investments should or should not proceed. ESCOSA needs to be explicit about how its mechanisms will identify and disallow proposals for new investments which are not justified in terms of benefits to consumers.

**Materiality:** Moderate to high.

11. *ESCOSA invites comment on its proposal to use CPI-indexed bonds to derive its assumption about inflation over the regulatory period.*

The differential between nominal bond yields and CPI-indexed bond yields of like duration is a widely used indicator of inflation expectations in the financial markets. It differs from inflation forecasts in that it has behind it the weight of market participants' transactions, whereas the same cannot be said of inflation forecasts.

It has sometimes been suggested that the nominal/indexed yield differential is imperfect as a measure of inflation because of differing interactions with the taxation system. It may be that this is no longer the case. It would be worthwhile for ESCOSA to confirm this.

The use of the nominal/indexed yield differential also relies on the assumption that the market is sufficiently deep, in terms of numbers of transactions and participants, as to be not unduly affected by a small number of transactions. We do not dispute that the market has sufficient depth, but it would be useful for ESCOSA to confirm that this is the case.

Subject to ESCOSA confirming that neither of these factors is problematic, CPI-indexed bonds seem to be the most robust measure of inflation expectations in the financial markets. Accordingly, they are a good way of deriving an inflation assumption over the regulatory period.

12. *If CPI-indexed bonds are used for this purpose, ESCOSA also seeks comment on the period of averaging that would be appropriate.*

If one compares the (time-weighted) average nominal bond yield with the indexed bond yield over the past 5 years, then one has an estimate of time-weighted inflation expectations over the past 5 years.

However, there is a question as to why ESCOSA would incorporate past inflation expectations in preference to current expectations. Current expectations are formed with the benefit of knowledge that was not available when past expectations were formed, and are in that sense superior as a measure of prospective inflation.

The only real justification for using the 5-year average is consistency with the requirement to pay attention to a 5-year average nominal bond yield. Whether or not consistency of this type is important depends on how the past nominal bond yield enters into the determination of regulatory revenue.

13. *ESCOSA invites comment on the appropriateness of the proposed approach to adjusting for capital structure (i.e. the leveraging/de-levering method and debt beta).*

This method is capable of producing a reasonable estimate of the required rate of return, but only if the underlying parameter assumptions are adequate.

14. ESCOSA invites comment on which companies may be considered in deriving a proxy beta for ETSA Utilities, the source for beta estimates, and the relevance of other regulators' decisions for the derivation of a proxy beta estimate for ETSA Utilities' regulated activities.

15. ESCOSA invites comment on its preference to use 6 per cent as the market risk premium.

We believe that there is good evidence for the view that a 6 per cent market risk premium is excessive. Accordingly, ESCOSA should depart from the 6 per cent convention which has, perhaps by default, been adopted by Australian regulators (other than IPART).

We note that ESCOSA has declared a preference for working with Australian data. But evidence from overseas should not be dismissed, especially when it throws some light on the known deficiencies with CAPM-based estimates.

The findings from Fama and French's recent study are important.<sup>5</sup> They find that over the period 1872 to 2000, the real average stock return is 5.57 per cent per annum, whereas real average dividend growth is 3.54 per cent per annum. Over a shorter period, they are able to construct, in addition, a measure of real average earnings growth. For the period 1950 to 2000, the real average stock return was 7.43 per cent per annum, compared to just 2.55 per cent per annum for real dividend growth and 4.32 per cent for real earnings growth.

Although derived for the United States, these findings are relevant in the Australian context.

Firstly, the very least that could be said of the Fama-French analysis is that they show that historical average stock returns can diverge from historical average dividend growth and historical average earnings growth. Yet each is from time to time called upon as an indicator of ex ante return expectations.

Secondly, they put forward a reasoned case for preferring average earnings growth, and to a lesser extent dividend growth, as a measure of ex ante expectations over a shorter period, saying that:

Three types of evidence suggest that the lower equity premium estimates for 1951 to 2000 from fundamentals are closer to the expected premium ... [addressing the third of these] The estimates of the expected stock return for 1951 to 2000 from the dividend and earnings growth models line up with other fundamentals in the way valuation theory predicts. But the book-to market ratio and the return on investment suggest that the expected return estimate from the average stock return is too high. [p. 639]

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<sup>5</sup> Fama, Eugene F. and Kenneth R. French (2002), 'The Equity Premium', *Journal of Finance*, vol. LVII, no. 2, April.

They argue that much of the differential between ex post average stock returns and ex post dividend growth and ex post earnings growth over the period 1951 to 2000 is due to capital gains, and that these capital gains are due to declines in required rates of return which must have been unanticipated. Because we wish to use ex post returns as a proxy for ex ante returns, we should avoid a measure which is affected by a large unanticipated component. Therefore a measure based on dividend growth or earnings growth is preferable to a measure based on average stock returns.

Thirdly, we should not rule out the possibility that the empirical content of Fama-French's work is relevant to the Australian situation. The ex ante Australian market risk premium cannot be assumed to be equivalent to the market risk premium in the United States because the stocks that make up the Australian market may have different risk characteristics to the United States. But if there has been a decline in expected rates of return in the United States it is likely that this phenomenon has occurred globally by virtue of integrated global capital markets. Australia is part of a global capital market, and therefore such a phenomenon would be present in Australia. If one calculated ex post results for the same period for Australian stock returns, dividend growth and earnings growth, the US work gives us a basis to expect that Australian average earnings growth would show higher returns. The Fama-French critique would then apply.

There is, in addition, some Australian evidence for the view that the 6 per cent premium is too high. One of the problems with estimating contemporary rate of return expectations from historic ex post return data is that even if the ex post data is a good indicator of historic ex ante expectations, those ex ante expectations may now be different. We note the results of the Jardine Fleming Capital Markets Survey (reported at p. 35 in the Discussion Paper), which show an average expected equity premium, across 61 respondents, of 4.73 per cent. We accept that stated expectations may not be a good measure of actual expectations. While one should not place too much weight on them, they are yet another piece of evidence for the view that the true market risk premium is less than 6 per cent.

16. *ESCOSA invites comment on its proposal to adopt a 60 per cent debt-to-assets ratio for the benchmark capital structure for ETSA Utilities' regulated activities.*

The validity of this approach really depends on the entities that are being used for benchmarking. It is reasonable if their debt equity ratios are around 60 per cent.

It would be preferable to calculate asset returns for each member of the set of benchmark investments before any averaging occurs. This would then allow explicit attention to be given to those members of the benchmark set and the asset returns estimated for them.