ETSA Utilities, CitiPower and Powercor Australia

JOINT RESPONSE TO THE PRODUCTIVITY COMMISSION'S ELECTRICITY NETWORK REGULATION ISSUES PAPER

16 April 2012

CONTENTS

1 OVERVIEW

The Businesses welcome the opportunity to make this submission to the Productivity Commission on its "Electricity Network Regulation - Issues Paper".

Chapter 6 of the National Electricity Rules (**Chapter 6 Rules**) only started to take effect progressively from 2008 when the Australian Energy Regulator (**AER**) became responsible for the economic regulation of electricity distribution services and hasn't yet applied for a full regulatory cycle. For example, at the time of preparing this submission, the AER's distribution determinations for Victoria and South Australia have only applied for a little over one year and 18 months respectively of the approved five year regulatory control periods.

The Businesses consider that, with several exceptions detailed in section 3.8 of this submission where they propose that specific changes should be made, the Chapter 6 Rules and the National Electricity Law (**NEL**) provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context and achieve outcomes consistent with the National Electricity Objective (**NEO**).

The Businesses encourage the Productivity Commission to exercise caution in recommending changes to either the Chapter 6 Rules or the NEL and only do so if there is clear evidence that such changes will enhance the promotion of the NEO. In particular, the Businesses strongly support preserving the current "fit for purpose", propose-respond model – which incorporates an intended level of guided discretion for the AER – as it is consistent with good public policy and economic regulatory practice. This model:

- Recognises that Distribution Network Service Providers (**DNSPs**) have the best knowledge and understanding of their own businesses and that the AER should make its distribution determinations by reference to these regulatory proposals. This is not to suggest that DNSPs' regulatory proposals should be blindly accepted – rather, they should be tested and assessed against a clear set of criteria following a transparent process;

- Requires DNSPs to be given a reasonable opportunity to recover at least the efficient costs of providing their distribution services, having regard for the circumstances in which they operate; and

- Seeks to limit the risk of regulatory error by providing guidance about the basis on which distribution determinations should be made and providing an opportunity, through merits review, to test regulatory decisions.

The Businesses do not agree with the view that there has been a decline in DNSPs' efficiency or productivity and that this has been caused by systematic failings in the Chapter 6 Rules that now necessitates fundamental Rule changes. The AER has failed to substantiate in its Rule Change Proposal the problem that it claims exists with the Chapter 6 Rules.

The Businesses are concerned about the prospect of the Productivity Commission prematurely accepting, or giving unwarranted credence to, the AER's recent Rule Change Proposal that is currently being considered by the AEMC by focusing (as is stated on page 20 of the Issues Paper) on areas "where the regulator and energy users have identified the biggest problems". The Businesses consider that it is not appropriate for the Productivity Commission to accept the AER's Rule Change Proposal as a starting point for considering any changes to the regulatory regime to promote further use of benchmarking.

The Businesses support the continued application of the existing building block approach for the economic regulation of standard control services. A key reason for this is that it provides a clear basis for the AER assessing the efficient costs of a DNSP providing its distribution services, having regard for the circumstances in which it operates. The application of the building block approach has resulted in sustained real price reductions in Victoria over the past 15 years – this has been accompanied by increasing levels of reliability performance. In South Australia, DNSP costs have been separable from other electricity cost components since 1998-99. From 1998-99 until 2011-12, DNSP prices have not increased in real terms and DNSP reliability performance in South Australia continues to track at levels better than the average of National Electricity Market jurisdictions.

The Businesses also support the Rules' requirement for the AER to use benchmarking as part of the building block approach to test the efficiency of DNSPs' expenditure – and to choose which types of benchmarking techniques it will use – although this should recognise the inherent limitations of different benchmarking techniques and of the comparability of data. Clauses 6.5.6 and 6.5.7 of the Chapter 6 Rules already require the AER to have regard for benchmarking when determining the operating and capital expenditure building blocks in its distribution determinations. Attachment B of this submission identifies the variety of benchmarking approaches that the AER has applied in its distribution determinations for the three Businesses.

Although it has not yet done so, the Chapter 6 Rules currently allow the AER to apply a range of sophisticated benchmarking approaches, in making its distribution determinations under the existing building blocks approach. The AER could therefore apply benchmarking even more widely under the current Chapter 6 Rules than it has to date – the Rules do not need to be changed to allow for new or additional benchmarking provisions.

The Businesses therefore consider that the Chapter 6 Rules have not constrained the AER in effectively discharging its responsibilities as the economic regulator. This is because:

- The Chapter 6 Rules do not prescribe which types of benchmarking the AER can use – the AER has used a number of different kinds of benchmarking in making its distribution determinations;

- The AER is not limited to using a line by line approach in assessing DNSPs' expenditure proposals – the AER has used a combination of top-down, bottom-up and line-by-line analysis in making its distribution determinations;

- The AER has sought extensive information from DNSPs, and has made use of a range of other information sources, to aid its assessment of DNSPs' regulatory proposals, including benchmarking, comparisons of the relative prices of capital and operating inputs, submissions from third parties and the AER's own analysis;

- The AER can reject DNSPs' expenditure proposals on the basis of the DNSP's methodology and can depart from that methodology in making its distribution determinations; and

- The Businesses are not aware that the AER cited any problem of a lack of discretion in any of its distribution determinations prior to lodging its Rule change proposal with the AEMC.

The Businesses consider that the building block approach (incorporating benchmarking) provides a flexible form of control, and provides strong incentive and efficiency benefits.

2 GENERAL CONCERNS WITH THE ISSUES PAPER

The Businesses have concerns with a number of matters that the Productivity Commission has raised in its Issues Paper and request that it re-examine and clarify them in its Draft Report.

2.1 Clarify objectives of the Inquiry

There is ambiguity in the Issues Paper about the objectives of the Inquiry. The Treasurer's terms of reference (reproduced on pages iii and iv of the Issues Paper) state that:

> *This inquiry will inform the Australian Government about whether there are any practical or empirical constraints on the use of benchmarking of network businesses and then provide advice on how benchmarking could deliver efficient outcomes, consistent with the National Electricity Objective (NEO).*

The terms of reference go on to state that:

> *The Commission is requested to assess the use of benchmarking as a means of achieving the efficient delivery of network services and electricity infrastructure to meet the long-term interests of consumers, consistent with the NEO.*

However, page 6 of the Issues Paper states that:

> *…the Commission's overarching objective in recommending any policy changes is to maximise the long-run benefits to the community as a whole, and that basic principle will guide the analysis undertaken in this inquiry.*

The Productivity Commission's stated "overarching objective" is different to the NEO which, as the Issues Paper notes on page 9, "is to promote efficient investment in, and use of, electricity services for the long term interests of consumers of electricity consumers of electricity with respect to price, quality, reliability, safety and security".

The Productivity Commission should clarify in its Draft Report that if it is to make a recommendation that will either directly, or indirectly, result in a change to the Chapter 6 Rules then it should be justified, in accordance with section 88 of the NEL and regulation 8(1)(d) of the National Electricity Regulations, on the basis that it "will or is likely to contribute to the achievement of the national electricity objective".

The Businesses do not consider that the Productivity Commission's stated "overarching objective" is relevant to any recommendations to change the Chapter 6 Rules.

The Businesses also note that the Terms of Reference for the Inquiry do not in any way suggest a review of the NEO itself, nor do any of the other reviews that are currently underway that are listed on page 5 of the Issues Paper.

2.2 Coordinate outcomes of current reviews

The Businesses are concerned that the Issues Paper creates potential confusion about whether the Inquiry will accept the outcomes of the other reviews that are currently underway or will test – and potentially recommend changes to – the proposals in these other reviews. This concern arises because:

- The Inquiry's terms of reference require the Productivity Commission to "examine the use of benchmarking under the regulatory framework, incorporating any amendments introduced in the review period"; yet

- Page 3 of the Issues Paper states that "the AER and others have sought new regulatory approaches that they consider would better align investment and pricing with that which an efficient market would deliver. This inquiry is intended to test some of the approaches to that issue".

It is unclear how the outcomes of this Inquiry will fit with those of the other reviews noted on page 5 of the Issues Paper. The other reviews may result in amendments being made to the Chapter 6 Rules or the NEL during the course of this inquiry. The Productivity Commission's Draft Report should clarify whether it will accept these amendments, as the terms of reference suggest, or "test" and potentially re-open them.

Either way, the Businesses encourage the Productivity Commission to ensure that its recommendations are well coordinated with the outcomes of the other current reviews in order to promote regulatory certainty and stability and investor's confidence in the provision of electricity distribution services.

2.3 Recognise current Chapter 6 Rules only recently developed and implemented

The Chapter 6 Rules were developed by the Ministerial Council on Energy (**MCE**) and the Standing Committee of Officials (**SCO**) between 2006 and 2008 through an extensive public consultation process. These Rules only started to take effect progressively from 2008 when the Australian Energy Regulator (**AER**) became responsible for the economic regulation of electricity distribution services.

The current Chapter 6 Rules haven't yet applied for a full regulatory cycle. The AER has not yet made its first final distribution determinations for all of the DNSPs and it will be a number of years before each DNSP has completed its first regulatory control period under the current Chapter 6 Rules. For example, at the time of preparing this submission, the AER's distribution determinations for Victoria and South Australia had only applied for a little over one year and 18 months respectively of the approved five year regulatory control periods.

It is therefore premature to assess the full effects of the Chapter 6 Rules and whether any alternative arrangements would better reflect the NEO.

In his advice to the Australian Energy Market Commission (**AEMC**) on its assessment of the AER's Rule Change Proposal, Professor Yarrow cautioned against unnecessary and frequent changes to the Rules as they can create uncertainty and instability in financial returns that can undermine the incentives they are intended to promote. In particular, he observed that "a constantly changing rule is no rule at all; it is just another name for arbitrariness."[1] The Businesses strongly endorse the comments of Professor Yarrow. Uncertainty and instability in returns increase investment risks, which result in higher costs of funds.

[1] George Yarrow, Preliminary views for the AEMC, p.19

The Businesses encourage the Productivity Commission to exercise caution in recommending changes to either the Chapter 6 Rules or the NEL and only do so if there is clear evidence that such changes will enhance the promotion of the NEO.

2.4 Recognise incentives and controls in current regulatory regime

The Businesses are concerned that the Productivity Commission has underestimated in its Issues Paper the significant incentive properties and controls that exist in the current Chapter 6 Rules and the NEL. The MCE and SCO deliberately built these features into the regulatory regime based on the advice of the Expert Panel on Energy Access Pricing. These features particularly relate to:

- Selecting the form of regulation;
- The process of regulatory decision making;
- Applying the price control mechanism; and
- The AER acquiring information from DNSPs.

Section 3 explains why the Businesses consider that, with several exceptions where they propose that specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context and achieve outcomes consistent with the NEO.

2.5 Recognise the AER has applied benchmarking extensively

Clauses 6.5.6 and 6.5.7 of the Chapter 6 Rules already require the AER to have regard for benchmarking when determining the operating and capital expenditure building blocks in its distribution determinations.

Attachment B of this submission identifies the variety of benchmarking approaches that the AER has applied in its distribution determinations for the three Businesses. The AER has also applied benchmarking extensively in making its distribution determinations for other DNSPs. This was noted by Professor Yarrow in his advice to the AEMC on the AER's Rule Change Proposal, when he stated:

> *The evidence indicates that the AER has and does adopt benchmarking approaches, so the argument must be that the regulator would like to make greater use of the approach but is precluded from doing so by the sections of the rules that indicate that assessments need to be made which reflect the actual circumstances of the regulated firm.*[2]

However, he went on to conclude that:

> *It is therefore not clear to me that, even on a relative(ly) narrow interpretation, the rules do anything other than preclude uninformative benchmarking.*[3]

Although it has not yet done so, the Chapter 6 Rules currently allow the AER to apply a range of sophisticated benchmarking approaches in making its distribution determinations. This was

[2] Ibid, p.17
[3] Ibid, p.17

recognised by the AEMC in its June 2011 "Final Report – Review into the use of total factor productivity for the determination of prices and revenues" when it noted that "TFP indices can be used to assist the Australian Energy Regulator (AER) in applying efficiency benchmarking to service providers' costs under the existing building blocks approach".

It is therefore clear that:

- Benchmarking is already a central feature of the current Chapter 6 Rules;
- Benchmarking is already being applied extensively by the AER; and
- The AER could apply benchmarking even more widely under the current Chapter 6 Rules than it has to date should it choose to do so.

In the Businesses' view, the current Chapter 6 Rules therefore do not need to be changed to allow for new or additional benchmarking provisions.

2.6 Understand reasons for expenditure and price increases

The Businesses do not agree with the view that there has been a decline in efficiency or productivity and that this has been caused by systematic failings in the Chapter 6 Rules.

The reasons for increases in the Businesses' network expenditure from the previous to the current regulatory control periods are complex and vary between the different networks and categories of expenditure – they are set out in Businesses' regulatory proposals to the AER for the current regulatory control periods. Although the AER did not accept all of the Businesses' expenditure proposals in its distribution determinations, it did accept that there were many legitimate reasons for these increases, including the need to fund:

- Increases in capacity to meet future growth in demand;
- The replacement of ageing assets;
- The costs of increasing materials, labour and financing costs; and
- New legislative and regulatory requirements, for example in the case of the Victorian DNSPs, the Victorian Governments' Advanced Metering Infrastructure (**AMI**) obligations and bushfire safety standards and in the case of ETSA Utilities in South Australia, obligations flowing from changes by the Essential Services Commission of South Australia (**ESCOSA**) to CBD supply requirements under the Electricity Transmission Code.

Attachment C of this submission provides extracts from the AER's news releases that it issued with the Businesses' distribution determinations that detail its acceptance of a variety of legitimate reasons for expenditure increases.

The Businesses encourage the Productivity Commission to understand the drivers of expenditure increases and to exercise caution before concluding that they are either caused by a decline in DNSPs' productivity or inadequacies in the current Chapter 6 Rules.

2.7 Do not prematurely accept, or give credence to, the AER's Rule Change Proposal

The Businesses are concerned about the prospect of the Productivity Commission prematurely accepting, or giving unwarranted credence to, the AER's recent Rule Change Proposal that is currently being considered by the AEMC by focusing (as is stated on page 20 of the Issues Paper) on areas "where the regulator and energy users have identified the biggest problems". The Productivity Commission identified these "biggest problems" as:

- The AER not being able to give priority to its own benchmarks;
- The AER's ability only to vary values "on the basis of the current regulatory proposal" and "to the extent necessary" under clause 6.12.3(f), rather than to use its discretion and judgement;
- The inefficiency of "overspends" above the approved capital expenditure building blocks being automatically rolled into the RAB; and
- Determining the value of the cost of capital.

The Productivity Commission will be aware that the AEMC raised many reservations about the AER's Rule Change Proposal in its March 2012 Directions Paper, as did the AEMC's expert advisers Professor Yarrow and Professor Littlechild. Public submissions are due on the Directions Paper on the same day as submissions are due on the Productivity Commission's Issues Paper.

The Businesses consider that it is not appropriate for the Productivity Commission to accept the AER's Rule Change Proposal as a starting point for considering any changes to the regulatory regime to promote further use of benchmarking.

2.8 Evaluate alternatives to benchmarking

The Businesses are concerned that the way the Inquiry has been framed could result in:

- Benchmarking being accepted as the preferred policy "solution" and the Productivity Commission being tasked with identifying the "problem" that it needs to fix; and
- Benchmarking being used as the "solution" no matter what the identified "problem".

Although the Productivity Commission notes (on page 16 of the Issues Paper) that it "must weigh up whether there are alternative policies that could more efficiently meet the National Electricity Objective", it does not suggest what these alternatives might be, invite submissions on them nor explain how they will consider them in making its recommendations.

It is important that the Productivity Commission justifies how any new benchmarking provisions would satisfy the NEO better than alternative regulatory responses, including the status quo, before recommending any changes to the current regulatory regime.

2.9 Consider when different benchmarking approaches are appropriate

Benchmarking approaches need to be tailored to meet their specific regulatory applications – this is because not all approaches are appropriate for all applications. The Issues Paper does not consider this matter in detail.

Attachment A of this submission sets out examples of various different benchmarking approaches that are relevant for a range of alternative regulatory applications. Many of these approaches are currently applied, to varying degrees, by the AER under the Chapter 6 Rules.

The Productivity Commission should consider both the regulatory applications and the benchmarking approaches in contemplating whether to recommend any changes to the regulatory regime. In considering the relative merits of benchmarking approaches, the Productivity Commission should have particular regard for the regulatory applications for which each approach is being contemplated.

2.10 Distinguish between levels of reliability standards and recovery of associated costs

The Businesses are concerned that the Productivity Commission's discussion of reliability standards on pages 26 to 28 of the Issues Paper does not appropriately distinguish between two separate but related issues:

- Whether the levels of a DNSP's planning and reliability standards are appropriate; and
- Whether the regulatory regime enables DNSPs to recover the efficient cost of meeting the relevant planning and reliability standards.

The regulatory regime should continue to give DNSPs a reasonable opportunity to recover at least the efficient costs of meeting its relevant regulatory obligations, including its reliability standards, as is currently provided for in the Revenue and Pricing Principles (**RPP**) in the NEL. This is discussed further in the Businesses' responses to the Issues Paper's questions in section 4.

2.11 Clarify several fundamental regulatory concepts

The Businesses wish to clarify several key regulatory concepts that are raised in the Issues Paper for the purposes of the Productivity Commission's Draft Report:

- Page 4 suggests that a bottom-up approach is applied to a "fictitious' efficient firm" however this is not the case as it is applied in the Chapter 6 Rules and the NEL, except for the calculation of the weighted average cost of capital (**WACC**). Indeed, section 7A(2) of the NEL requires a DNSP to be given a "reasonable opportunity to recover at least the efficient costs the operator incurs";
- Page 4 also suggests that bottom-up approach is an "alternative" to benchmarking, however this need not be the case. Indeed, the Chapter 6 Rules currently require benchmarking to be a core part of the application of a bottom-up, building block approach;
- Page 21 discusses "the AER's concerns about the dominance of the building block approach", but it does not state that this is currently the only approach that can be used under the Rules to

regulate standard control services, albeit that the AER must consider benchmarking as part of the application of this approach;

- Throughout the Issues Paper (see, for example, pages 9, 16, 20, 24, 28 and 30) reference is made to the "revenue cap" when it appears that the Productivity Commission means the DNSP's "annual revenue requirement". The "allowed revenue" does not cap a DNSP's revenues, as the Issues Paper suggests on p.24 – only a revenue cap control mechanism does this;

- Page 9 suggests that the AER's role is to set "investment controls" – the AER's expenditure building blocks do not do this, nor do they set DNSPs' expenditure budgets; and

- Page 8 suggests that reset periods must have a five year duration – this is not the case under the Chapter 6 Rules, which provide that "A regulatory control period must be not less than 5 regulatory years"[4].

[4] See clause 6.3.2(b)

3 THE CURRENT REGULATORY REGIME

This section explains why the Businesses consider that, with several exceptions where they propose specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context and achieve outcomes consistent with the NEO.

3.1 Importance of National Electricity Objective and Revenue and Pricing Principles

The NEO and the RPP in the NEL are central to the economic regulatory regime. They are critical to promoting investment certainty and the long term interests of electricity consumers with respect to price, quality, reliability, safety and security.

Any changes to the regulatory regime should promote, and be consistent with, the NEO and, in turn, the RPP.

3.2 Support existing institutional arrangements

The Businesses support the key institutional arrangements governing the economic regulation of the electricity distribution services, in particular the roles of:

- The Standing Council on Energy and Resources (**SCER**) – formerly the MCE – and the SCO as the policy maker;
- The AEMC as the rule maker;
- The AER as the rule implementer; and
- The Australian Competition Tribunal (**ACT**) in conducting merits reviews.

The separation of these responsibilities is a unique feature of the Australian regulatory framework. It was established following an extensive consultation process and having regard for experience both overseas and in individual Australian jurisdictions. The Businesses consider that preserving the integrity of these institutional arrangements is fundamental to protecting and promoting regulatory certainty and stability and investor and stakeholder confidence in the provision of electricity distribution services.

In particular, the Businesses encourage the Productivity Commission to take particular care in making its recommendations to:

- Avoid giving the AER unguided discretion and flexibility in exercising its role as the implementer of the Chapter 6 Rules. There were significant problems with the way that the former jurisdictional regulators exercised their roles that the current regulatory framework is designed, and has operated, to correct; and
- Make the AER fully accountable by exposing its regulatory decisions to merits review. This is a critical safety valve in the regulatory regime – it promotes procedural fairness and reduces the risk of regulatory errors.

While the AEMC's Directions Paper on the AER's Rule Change Proposal does not specifically examine the institutional arrangements, Professor Yarrow, in his advice that informed the AEMC's Directions Paper, made the following comments in support of the existing institutional arrangements and, in particular, the separation of the rule making and rule implementation roles:

> *Variety in institutional responses to a common problem cannot, and should not, be taken as a sign of policy failures…*
>
> *The fact that Australian arrangements are different from those in the UK and US, for example because they afford a lesser degree of discretion to the regulator, is not, by and of itself, indicative of a potential problem. The Australian arrangements may simply be a better adaptation to Australian conditions, or they may be superior in the sense of representing the discovery of a better way forward – unbundled rule-making, and greater reliance on ex ante (rather than ex post) checks and balances on regulatory discretion – in what is always an uncertain policy making process.*[5]

Professor Yarrow went on to note in relation to his recent study of regulation on the island of Guernsey that:

> *…our recommendation, in the event of rejection of the option of further privatisation, was for greater separation and unbundling of powers within government, which, if implemented, might be seen as a move in the direction of Australian arrangements (where the AEMC's functions as guardian of the rules are unbundled from those regulatory functions that sit with the AER*).[6]

3.3 Support propose-respond model

The regulatory regime is based on a "fit for purpose", propose-respond model that incorporates an intended level of guided discretion for the AER. The Businesses strongly support preserving this model because it is consistent with good public policy and economic regulatory practice.

In particular, the current propose-respond model:

- Recognises that DNSPs have the best knowledge and understanding of their own businesses and that the AER should make its distribution determinations by reference to these regulatory proposals. This is not to suggest that DNSPs' regulatory proposals should be blindly accepted – rather, they should be tested and assessed against a clear set of criteria following a transparent process;

- Requires DNSPs to be given a reasonable opportunity to recover at least the efficient costs of providing their distribution services, having regard for the circumstances in which they operate; and

- Seeks to limit the risk of regulatory error by providing guidance about the basis on which distribution determinations should be made and providing an opportunity, through merits review, to test regulatory decisions.

In his advice to the AEMC on the AER's Rule Change Proposal Professor Yarrow supported retaining the propose-respond model and stated that:

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[5] Ibid, pages 3-4
[6] Ibid, p.5

> *…regulatory discretion comes with biases of its own. Suppose for the moment that allowing companies powers of proposal (the 'first move') does introduce a bias or tilt into the price determination process. Removing such a bias will not necessarily lead to improved outcomes in the presence of other biases, most obviously when the bias to be removed was specifically constructed to counteract and offset another, major potential bias (as my reading of the history suggests may have been the case in 2006).*[7]

Professor Yarrow further noted the recent move by the Office of the Gas and Electricity Markets (**OFGEM**) towards a propose-respond approach similar to that applied in Australia:

> *Finally in relation to the propose/respond aspects of current arrangements, I note that recent Ofgem decisions indicate a shift in Britain toward giving companies more influence at the first stage of the cost evaluations, which can be interpreted as a small step toward the philosophy embodied in the NEM rules. This is most obvious in the 'proportionality' aspect of the RIIO reforms (see the RIIO Final Decisions Document, October 2010), which calls for less intensive regulatory supervision of business plans that are judged to be well formulated and that meet certain criteria in relation to matters such as customer engagement.*[8]

3.4 Support building block approach

The Businesses support the continued application of the building block approach for the economic regulation of standard control services. A key reason for this is that it provides a clear basis for the AER assessing the efficient costs of a DNSP providing its distribution services, having regard for the circumstances in which it operates.

A recent study by Ernst and Young entitled "Victorian domestic electricity prices 1996-2010: The contribution of network costs" found that the typical Victorian domestic customer's retail electricity prices and bills have increased by seven per cent in real terms from 1996 to 2010. However, it found that:

- *Network costs have not been the driver of the increase in retail electricity prices for domestic customers between 1996 and 2010:*
  - *Distribution network costs have decreased by 20 per cent in real terms between 1996 and 2010, including AMI costs;*
  - *Transmission network costs have increased slightly by 2 per cent in real terms during this period, but are driven higher by other factors, such as the easement tax paid by the transmission business in Victoria;*
- *In contrast, non-network costs (i.e. wholesale energy costs and retailers' costs) have increased by 31 per cent between 1996 and 2010.*[9]

The application of the building block approach has therefore resulted in sustained real price reductions in Victoria over the past 15 years – this has been accompanied by increasing levels of reliability performance.

Similarly, a recent study by Ernst & Young entitled "South Australia domestic electricity prices 1998-2010: The contribution of network costs" found that the typical South Australian domestic

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[7] Ibid, p.10
[8] Ibid, p.12
[9] Ernst and Young, "Victorian domestic electricity prices 1996-2010: The contribution of network costs", 9 September 2011, p.14

customer's retail electricity prices and bills increased by 23 per cent in real terms from 1998-99 to 2010-11, but that:

- *The increases in domestic electricity prices in South Australia cannot be explained by increases in network costs (i.e. the sum of distribution and transmission use of system charges);*
- *Network costs per megawatt-hour (MWh) in South Australia decreased by 17 per cent in real terms between 1998-99 and 2010-11. On a per customer basis, network costs decreased by 12 per cent in real terms. The difference reflects the increase in average consumption during this period;*
- *Between 1998-99 and 2010-11, distribution use of system costs decreased by 22 per cent in real terms; and*
- *In contrast, non-network costs increased by 86 per cent in real terms between 1998-99 and 2010-11.* [10]

Noting the significant increases in electricity prices for domestic customers in South Australia from July 2011, ETSA Utilities requested Ernst & Young to extend their analysis to the 2011-12 current year period. On this basis, Ernst & Young concluded that South Australian distribution use of system charges have not increased in real terms over the period 1998-2011[11].

3.5 Support the use of benchmarking within the building block approach

As noted in section 2.5, clauses 6.5.6 and 6.5.7 of the Chapter 6 Rules currently require the AER to have regard for benchmarking when determining the operating and capital expenditure building blocks in its distribution determinations. These Rules give the AER discretion to choose which types of benchmarking it thinks are most appropriate for this purpose.

The Businesses support the Rules' requirement for the AER to use benchmarking as part of the building block approach to test the efficiency of DNSPs' expenditure – and to choose which types of benchmarking techniques it will use – although this should recognise the inherent limitations of different benchmarking techniques and of the comparability of data.

The Businesses agree with the advice Professor Littlechild gave to the AEMC as part of its assessment of the AER's Rule Change Proposal:

> *….benchmarking has its place but cannot take account of the all circumstances that differentiate one network from another.*
>
> *I am asked whether there would be any benefit in a rule that requires the regulator to undertake benchmarking. I would say that it would be good regulatory practice for a regulator to consider what if any insights benchmarking could provide in the particular price control under consideration, and to take this into account where appropriate. But as just noted, the circumstances of individual networks can vary greatly, and in my experience there is always an element of unexplained variation where judgement is required. To require the regulator to undertake benchmarking therefore runs the risk of*

[10] Ernst & Young Report (SA), "South Australia domestic electricity prices 1998-2010: The contribution of network costs", p10

[11] Ernst & Young Report (SA), "South Australia domestic electricity prices 1998-2010: The contribution of network costs", p28

forcing the regulator to attach more weight to benchmarking than the circumstances allow.[12]

Professor Yarrow's advice to the AEMC on benchmarking was in a similar vein:

> *The evidence indicates that the AER has and does adopt benchmarking approaches, so the argument must be that the regulator would like to make greater use of the approach but is precluded from doing so by sections of the rules that indicate that assessments need to be made which reflect the actual circumstances of the regulated firm.*
>
> *I cannot, however, see how any regulator could not be focused, in a particular decision, on the particular, specific context of that decision (the particular circumstances). Academics may be free to solve abstract problems; regulators are not.*
>
> *This does not mean that information from benchmarking cannot be used. In fact, benchmarking information has value only insofar as it contains information relevant to an assessment of performance in particular circumstances: the greater its implications for assessment of the particular circumstances, the greater its value for the specific purpose at hand. Benchmarks that are uninformative for the assessment of the performance of a particular utility, in its own particular context, are, in fact, valueless, and should not be used, even when the regulator has discretion to use them. It is therefore not clear to me that, even on a relative(ly) narrow interpretation, the rules do anything other than preclude uninformative benchmarking.*
>
> *If, however, it is concluded that the existing rules do overly-constrain the AER's use of benchmarking, the appropriate remedy is to remove the relevant restrictions. I do not think a case has been established to go further than this, for example by mandating certain types of benchmarking.*[13]

In addition to the limitations on the application of benchmarking outlined by Professor Littlechild and Professor Yarrow, it is important to recognise that the incentives within the efficiency benefit sharing schemes could be compromised by sole or unduly heavy reliance on benchmarks to determine efficient expenditure for a DNSP.

3.6 AER is not currently constrained

The Businesses consider that the Chapter 6 Rules have not constrained the AER in effectively discharging its responsibilities as the economic regulator. This is because:

- The Chapter 6 Rules do not prescribe which types of benchmarking the AER can use – the AER has used a number of different kinds of benchmarking in making its distribution determinations;
- The AER is not limited to using a line by line approach in assessing DNSPs' expenditure proposals – the AER has used a combination of top-down, bottom-up and line-by-line analysis in making its distribution determinations;
- The AER has sought extensive information from DNSPs, and has made use of a range of other information sources, to aid its assessment of DNSPs' regulatory proposals, including benchmarking, comparisons of the relative prices of capital and operating inputs, submissions from third parties and the AER's own analysis;

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[12] Stephen Littlechild, Advice to the AEMC on Rule Changes, p.12

[13] George Yarrow, Preliminary views for the AEMC, p.17

- The AER can reject DNSPs' expenditure proposals on the basis of the DNSP's methodology and can depart from that that methodology in making its distribution determinations; and

- The Businesses are not aware that the AER cited any problem of a lack of discretion in any of its distribution determinations prior to lodging its Rule change proposal with the AEMC.

Attachment B of this submission, which summarises the approach that the AER applied for assessing the Businesses' expenditure forecasts in its current Distribution Determinations, shows that the AER is not constrained in assessing DNSPs expenditure forecasts. In particular, it shows that the AER has applied both benchmarking and bottom up analysis to assess forecast expenditure and has rejected and substituted its own forecasts, that have been developed on a different basis to those of the Businesses, where it considered the Businesses' forecasts were inefficient.

Professor Yarrow's advice to the AEMC on the AER's Rule Change Proposal supports this view:

> *I note from the submission that the AER's arguments concerning the limits on its powers - …my general impression is that the AER's arguments are relatively thin, and that the objections to them are substantive.*
>
> *By way of example, consider the issues of benchmarking. The evidence indicates that the AER has and does adopt benchmarking approaches….It is therefore clear to me that, even on a narrow interpretation, the rules do anything other than preclude uninformative benchmarking.*[14]

And:

> *If utilities, and particularly publicly owned utilities, have made ambit forecasts – for example, on the kind of scale that might (rightly or wrongly) be inferred from a prima facie inspection of Mountain's numbers, why did the AER not simply reject such forecasts? Prima facie, the lack of action in the face of allegedly ambit forecasts would, if the allegation of over-forecasting is correct, point more toward a failure to enforce existing rules, than to a failure of those rules themselves.*[15]

3.7 No systematic failings in the regulatory regime

There is no evidence of systematic failings in the Chapter 6 Rules and the NEL that are causing inefficient increases in expenditure that necessitates fundamental Rule changes. The AER has failed to substantiate in its Rule Change Proposal the problem that it claims exists with the Chapter 6 Rules.

The AEMC stated in its March 2012 Directions Paper on the AER's Rule Change Proposal that:

> *A key issue for this Chapter, and indeed for the directions paper in general, is whether, and if so to what extent, the NER contribute to network charges that are higher than necessary to meet the relevant objectives.*[16]

The AEMC gave its view on this issue as follows:

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[14] AEMC, "Directions Paper – National Electricity Amendment (Economic Regulation of Network Service Providers) Rule Change", 2 March 2012, p. 17

[15] George Yarrow, Preliminary views for the AEMC, p.12

[16] AEMC, Directions Paper, p. 21

While there may be a problem, the AER's regulatory determinations do not indicate what that problem is, or that it would have done anything differently under the rules it has proposed.[17]

In support of this, Professor Yarrow's advice to the AEMC on the AER's Rule Change Proposal stated:

This reduces to the question of whether a convincing case has or has not been made out that there is a causal link between the rule changes proposed and expected increases in economic performance, as judged using the relevant criteria that the AEMC must apply.

He added:

My initial response to this question is: not on the basis of any evidence produced to date, though the negative judgment here is heavily governed by the words 'clearly' and 'major'.

That there is a general problem of increasing electricity prices, and that increases in transmission and distribution costs are major contributors to price hikes, appears to be beyond contention. That, however, takes us very little along the way to answering the question of whether a material contribution to price increases is reasonably attributable to those aspects of the rules identified by the AER as warranting change. The AER's submission asserts a relationship between the relevant subset of rules, but nowhere actually provides evidence or convincing reasoning in support of the assertion.

Thus, it is stated that "While it is difficult to quantify the extent to which price rises have exceeded efficient levels, inflated forecasts have been a factor in the price rises faced by consumers." Without disagreeing about the difficulties of quantification or the necessity of approximation, this is exactly the sort of technical task for which specialist regulatory agencies were developed; and it is difficult to see how the conclusion in the second part of the sentence can be reached without some good faith attempt to establish whether, relative to the proposed alternatives, the rules can be expected to have had a material, upward effect on prices. On this basis, I would have expected to have found, at least in the supporting documentation, just such a technical cost/price attribution analysis (and not simply a legal opinion).[18]

He went on to say that:

….. much more specificity in the identification of causal links is required, even to begin to start to pin down the elements of the wider system of relationships that might usefully be considered to be candidates for reform.

I think that there is a general sense of vagueness in many of the arguments, of a type that is more typically associated with political discourse than best practice regulation (which tends to be more technical and precise).[19]

In relation to the AER's concerns about DNSPs over forecasting capital expenditure Professor Yarrow said:

More fundamentally, what does the AER believe the main aspects of over-forecasting to be, and why? Is it that utilities simply take on too many projects, or that they over-engineer projects? Or is it that utilities undertake the wrong projects? Or then again, is it

[17] Ibid, p. 22
[18] George Yarrow, Preliminary views for the AEMC, p.9
[19] Ibid, p.10

> *just that whatever they do, they do it at a higher cost than necessary? None of this is very clear.*[20]

The AEMC concluded that, rather than being a reflection of the Chapter 6 Rules themselves, any inefficiency outcomes are likely to be the product of:

- The application of the regulatory framework by the AER; and
- The corporate governance of DNSPs.[21]

This is supported by Professor Yarrow's view that:

> *Prima facie, the lack of action in the face of allegedly ambit forecasts would, if the allegation of over-forecasting is correct, point more towards a failure to enforce existing rules, than to a failure of those rules themselves.*[22]

He reiterated this by adding:

> *Most obviously in terms of things not done, if there have been cost forecasting problems on the scale claimed in some of the submissions, the AER could manifestly have done more, under the existing arrangements, to challenge company forecasts.*[23]

Increased network expenditure between regulatory control periods is therefore not, of itself, evidence of any failure of the Chapter 6 Rules. Indeed, the AER's distribution determinations have made reductions to the DNSPs' expenditure proposals where they considered them to be inefficient and have recognised legitimate reasons for certain increases in DNSPs' expenditure. For example, the AER's news release that accompanied the Victorian DNSPs' distribution determination stated that "On the whole, the Victorian distributors are efficient operators of a mature and comparatively reliable network". Further extracts of the news releases that have accompanied the AER's distribution determinations are provided at Attachment C.

The Businesses also note that a significant cause of their expenditure increases has been State Governments directives and decisions by regulators that have required the Businesses to undertake certain network investment. This has included, in the case of the Victorian DNSPs, the Victorian Government's AMI and bushfire management initiatives whilst in South Australia the ESCOSA required a higher service standard for the central business district. These decisions have been made by Governments and regulators to deliver benefits to customers and the community at large but have significant cost implications that are ultimately borne by customers through network charges.

[20] Ibid, p.11
[21] AEMC, Directions Paper, p. ii
[22] George Yarrow, Preliminary views for the AEMC, p.12
[23] Ibid, p.18

3.8 Opportunities to improve the regulatory regime

Despite the Businesses' view that the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context, there are a number of opportunities to improve the regulatory regime. The Businesses' have identified opportunities to improve the regulatory regime in their response to the AEMC's Directions Paper on the AER's Rule Change Proposal:

- *AER's assessment approach* – the AER should provide greater up-front certainty in its framework and approach papers about how it will apply the Chapter 6 Rules to assess the key elements of the DNSPs' regulatory proposals, such as their operating and capital expenditure, service classification, control mechanism and the various incentive and other schemes. This would allow DNSPs to present their regulatory proposals to the AER in a way that is most consistent with the AER's assessment approach;

- *Pass through events* – the Businesses support changing the Chapter 6 Rules to:

    - Apply a materiality threshold of $1 million for pass through events;

    - Provide the AER, if necessary, more time to consider pass through applications; and

    - Require the AER to issue a draft decision on a cost pass through application, and to invite public submissions on it, rather than it moving straight to issuing its final decision.

- *Capital incentive framework* – the Businesses support the application of a high powered, symmetric capital incentive framework of the kind that was formerly applied by the Essential Services Commission of Victoria (**ESCV**) and the ESCOSA prior to the AER becoming responsible for the economic regulation of electricity distribution services.

    The Businesses do not support the AER's proposed 60/40 sharing mechanism on expenditure above the regulatory allowance because it would:

    - Be asymmetric by only providing penalties for overspends and not rewarding underspends – it would not provide continuous incentives to make efficiency gains over the regulatory control period;

    - Introduce penalties for DNSPs making efficient investment in the network to deliver the required level of customer service where the actual level of efficient expenditure is higher than the AER's building block forecast;

    - Fail to take into account potential trade-offs between opex and service standards and any capex incentive regime; and

    - Lock a particular capex incentive regime into the Chapter 6 Rules, rather than (as is the case with the other schemes), allow it to develop over time and to vary as the other incentives facing the DNSPs evolve.

The Businesses do not support any *ex post* optimisation of the RAB because it would be inconsistent with an *ex ante* incentive-based regulatory approach and create significant uncertainty for investors.

The Businesses support Professor Yarrow's advice to the AEMC on the AER's Rule Change Proposal on this matter, where he stated that:

> *The AER proposal to introduce a rule that would disallow 40% of any capex in excess of forecast is crude, arbitrary and is the sort of precise 'parameterization' of an incentive scheme that should have no place in the rules (there may be a case for bounding parameter values in rules, but specifying a particular value, here 40%, goes way too far). As has been pointed out in submissions, such a rule would exacerbate the information-revelation problem in relation to forecasting (there would be higher incremental payoffs from upward bias in forecasts), and it is easy to construct credible scenarios where it would discourage efficient investment. In some circumstances the rule would amount to expropriation of capital, and I would expect the courts to be busy.*[24]

- *WACC improvements* – the Businesses consider that the regulatory framework should:
    - Provide for the AER to be held accountable for its WACC decisions – all WACC decisions should be merits appealable;
    - Provide flexibility to deal with changing market conditions where WACC parameters are observably variable and promote investor certainty where WACC parameters are stable or not readily observable;
    - Recognise inter-relationships between parameters; and
    - Provide a reasonable opportunity for regulated entities to recover efficient costs, particularly in relation to cost of debt.
- *Demand management incentives* – the Businesses support the regulatory regime incorporating more high powered demand management incentive arrangements that encourage investment in the uptake of demand management options where they provide the most efficient solution to meeting DNSPs' service obligations to customers;
- *Innovation* – the Businesses support the regulatory regime incorporating greater incentives for DNSPs to invest in innovative solutions to the provision of distribution services. Promoting and funding innovation is likely to be the most effective long term means of putting sustained downward pressure on network prices;
- *Improved information collection* – the Businesses support better coordination and targeting of information collection from DNSPs. Any information that is collected from DNSPs should be targeted to meet a specific regulatory purpose. In this regard, the Businesses note that OFWAT in the United Kingdom has recently ceased its former annual information collection process in favour of a more targeted data collection scheme. Better coordinated and targeted information collection will reduce the regulatory burden on all stakeholders and will ultimately reduce the costs of distribution services to end customers. However, this need not

[24] Ibid, p.18

be at the expense of the AER obtaining the information it requires to enable it to discharge its regulatory responsibilities;

- *Customer willingness to pay* – the Businesses support the consideration of customers' willingness to pay for any proposed changes to DNSPs' performance standards because customers ultimately fund the cost of their delivery. Performance standards should only be changed if:
    - Cost benefit analysis supports the need for change;
    - There is a clear public consensus that supports the change and customers are willing to pay for the changes; and
    - DNSPs can fully recover the costs incurred before the changes and of implementing the changes themselves.
- *Service performance measurement* – the Businesses support diversifying the service performance measures in the STPIS to other factors that are important to customers; and
- *More cost reflective tariffs* – the Businesses support the introduction of more cost reflective tariffs that leverage new technologies, as this would place greater power in customers' hands to manage their energy bills.

4 RESPONSES TO PRODUCTIVITY COMMISSION'S QUESTIONS

This section provides the Businesses' responses to questions raised in the Productivity Commission's Issues Paper. The Businesses have not addressed all of the questions, as some are not directly relevant to them.

Chapter 1: Scope of the inquiry

1.	***Given the various ongoing reviews and the consultations associated with them, how can the Commission best add value? Do these reviews have the same broad objective as the Commission or are they more narrowly focused?***

The Businesses consider that the Productivity Commission's Inquiry can play an important role in helping to ensure that the recommendations are coordinated between the various reviews identified on page 5 of the Issues Paper. This is important given that these reviews each have a different timing and scope but share a common purpose of promoting the efficient delivery of electricity distribution services.

As noted in section 2.1 of this submission, the Businesses consider that if the Productivity Commission makes recommendations that either directly, or indirectly, result in changes to the Chapter 6 Rules then they should be justified, in accordance with section 88 of the NEL and regulation 8(1)(d) of the National Electricity Regulations, by reference to contributing to the achievement of the NEO.

Chapter 2: The National Electricity Market

2.	***Are there any other major regulations or policies that affect the electricity market that need to be considered when undertaking benchmarking or in understanding any of the possible obstacles to investment in interconnectors?***

The RPP in section 7A(2) of the NEL include a requirement that:

> *A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in—*
>
> *(a) providing direct control network services; and*
>
> *(b) complying with a regulatory obligation or requirement or making a regulatory payment.*

The economic regulatory regime must have regard for the entire non-economic regulatory framework because it is the means by which DNSPs recover their costs of meeting their regulatory obligations.

Key legislation and regulation relevant to applying benchmarking to the economic regulation of electricity distribution services includes:

- The NEL and the associated National Electricity Regulations. The Businesses particularly highlight the importance of:

- Section 2F of the NEL that details the form of regulation factors – these are used to classify DNSPs' distribution services;
- Section 7 of the NEL that details the NEO; and
- Section 7A of the NEL that details the RPP.

- The Chapter 6 Rules;
- The Australian Energy Market Agreement, in particular Annexure 2 that details the functional allocation of regulatory responsibility between the Commonwealth and State Governments;
- National Energy Customer Framework being introduced through the National Energy Retail Law (**NERL**) and National Energy Retail Rules (**NERR**);
- Jurisdictional legislation and regulations, orders-in-council, codes, licences and other jurisdictional instruments; and
- Other Australian Government legislation and schemes, such as the Energy Efficiency Opportunities Act.

Chapter 3: What is benchmarking

3.	***What are the best (and worst) aggregate measures of performance, and why is this so? In which contexts (Australia and elsewhere) have these been most credibly used?***
4.	***What partial indicators are meaningful? Are there particular parts of network businesses that are easier to benchmark? What are these, why is it easier, and what have benchmarking studies revealed?***

Any assessment of the "best" or "worst" measures must have regard for the purpose or application of benchmarking. As discussed in section 2.9 of this submission, it is important that any benchmarking approach is tailored to meet the needs of a specific regulatory application, given that not all approaches are appropriate for all applications.

Attachment A of this submission gives examples of various different benchmarking approaches that are relevant for alternative regulatory applications.

Attachment B details the benchmarking approaches that the AER has applied in its Distribution Determinations for the Businesses. The Businesses also note that they submitted benchmarking studies of their own to the AER with their Regulatory Proposals:

- CitiPower and Powercor Australia supported its opex proposal by comparing the level of their normalised total opex to the expected level associated with a DNSP of average efficiency, as predicted by a regression model; and
- ETSA Utilities benchmarked its expenditure based on a composite size variable that combines common network variables for comparative purposes.

5. Are there criteria beyond those identified in box 1 that are useful for discriminating between good and bad benchmarking tools and approaches?

The key criterion for assessing the use of any benchmarking tool is whether it promotes the NEO and, in turn, the RPP – as noted in section 3.1, these should be the drivers of the whole economic regulatory regime.

The Businesses support the application of the criteria that the AEMC developed and applied in its 12 December 2008 "Review in the use of Total Factor Productivity for the determination of prices and revenues – Framework and Issues Paper". The AEMC stated on page 8 of this paper that:

> *The Commission has identified a number of important criteria that are relevant in testing whether a TFP based methodology would contribute to the achievement of the NEO and the NGO and be consistent with the Principles.*
>
> *These are:*
>
> 1. *Strength of the incentives on the service provider to pursue cost efficiencies and the extent to which such cost efficiencies are shared with end-users;*
> 2. *The ability of the framework to ensure efficient investment to promote long term innovation and technical progress for the benefit of the service provider and end-users;*
> 3. *Clarity, certainty and transparency of the regulatory framework and processes to reduce avoidable risks for service providers and users;*
> 4. *Minimisation of the costs and risks of regulation to service providers and electricity and gas users; and*
> 5. *Appropriate resolution of transition and implementation issues and costs.*

The Businesses also consider that the nine principles of best practice regulation that are detailed in the Utility Regulators Forum's 1999 discussion paper entitled "Best Practice Utility Regulation"[25] provide a useful general point of reference. These nine principles are communication, consultation, consistency, predictability, flexibility, independence, effectiveness and efficiency, accountability and transparency.

6. What are the weaknesses and advantages of full versus partial measures for benchmarking?

7. What methods should be used for benchmarking (indexes, corrected ordinary least squares, data envelopment analysis, simple ratios), and what are their strengths and weaknesses?

Any assessment of the "weaknesses and advantages" of different benchmarking approaches must have regard for the purpose or application of benchmarking – it is not possible to assess the relative merits of benchmarking in isolation of how it is being used.

Any assessment of the "weaknesses and advantages" of different benchmarking approaches should therefore consider:

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[25] Available at – http://www.accc.gov.au/content/item.phtml?itemId=374599&nodeId=3a61a9d1033d6d3a7fdfd5d59c2c30af&fn=Best%20practice%20utility.pdf

- The purpose or application of benchmarking;
- The extent to which the approach meets or promotes the criteria detailed above; and
- Whether the available data is of sufficient quality to enable benchmarking to be applied as it is intended – any data that is used should be normalised in order to account for the differences between DNSPs.

The Businesses:

- Support the use of relevant partial benchmarking measures to complement the use of the building block approach, as discussed in section 3.5; and
- Are not aware of "full" benchmarking measures having been used in the Australian electricity industry, with the exception of the use of a form of TFP in the Northern Territory.

8. Could benchmarking be used to assess the effectiveness and efficiency of different regulatory settings (such as reliability standards)?

The Businesses consider that it is not necessarily always appropriate for regulators or policy makers to define specific regulatory settings for DNSPs, such as planning or reliability standards.

For example, in Victoria, there is a distribution licence requirement for DNSPs to comply with "good electricity industry practice" but the DNSPs have full discretion in deciding the nature of the planning criteria that they will apply to meet this requirement. There are also no specific reliability standards in Victoria of the kind that apply in some other jurisdictions.

Unlike in Victoria, ESCOSA has set specific reliability measures for ETSA Utilities in the South Australia "Electricity Distribution Code", in terms of minimum SAIDI and SAIFI average reliability standards based on planned and unplanned interruptions of more than 30 seconds on the low and high voltage distribution networks.

Like Victoria, there are no mandated planning standards for distribution services in South Australia. However, ESCOSA has set a transmission security standard for the Adelaide central business district which has required ETSA Utilities to undertake significant capital expenditure.

When regulators or policy makers determine specific regulatory settings they need to consider the relative costs of DNSPs complying with these settings. The Businesses' response to question 47 details criteria that should be considered in making any such assessment.

Regardless of the nature, form or level of the regulatory settings, the economic regulatory regime should always enable the DNSP to recover at least the efficient cost of complying with its obligations.

9. Are there examples where regulatory benchmarking has been used in electricity networks in Australia or overseas?

10. Are there any other broad benchmarking approaches not discussed above, and where and how have these been used?

Benchmarking has been used extensively by DNSPs and the AER in making their respective regulatory proposals and distribution determinations. In particular, there has been extensive use of:

- Ratio or indicator analysis;
- Trend analysis;
- Multiple regression analysis
- Process benchmarking;
- "Efficient" expenditure modelling; and
- Industry-wide indices / cost escalators to determine unit rates and WACC parameters.

Attachment B identifies the variety of benchmarking approaches that the AER has applied in its distribution determinations for the three Businesses. The AER has also applied benchmarking extensively in making its distribution determinations for other DNSPs.

The Businesses do not support the use of international data to calculate benchmarks because it is not possible to normalise the differences between overseas and Australian DNSPs, including on account of differences in accounting policies, tax laws and corporate structures. Accordingly, only Australian DNSPs should be included in any benchmarking applied by the AER.

Chapter 4: But is benchmarking practical?

Is imperfect benchmarking still useful?

11. Is there a big enough problem to justify new approaches to benchmarking and to incorporate it into regulatory incentive arrangements? To what degree could perceptions of inefficiency reflect the newness of the current regulatory regime or a failure to sufficiently adjust for the differing starting points of different distribution businesses?

As discussed in section 2.3, the Chapter 6 Rules were developed between 2006 and 2008 on the basis of extensive public consultation and only took effect in 2008. The Rules haven't yet applied for a full regulatory cycle and it is premature to assess the full effects of the Chapter 6 Rules and whether any alternative arrangements would better reflect the NEO.

The Businesses agree with the AEMC's views in its Directions Paper on the AER's Rule Change Proposal that the AER has not provided evidence of any link between deficiencies in the Chapter 6 Rules and increases in network costs. The AER has failed to substantiate the problem in its Rule Change Proposal. Any inadequacies relate to the way in which the Chapter 6 Rules have been applied rather than to the Rules themselves. The Chapter 6 Rules already permit the AER to apply more sophisticated benchmarking approaches than it has to date.

The Businesses consider that, with several exceptions discussed in section 3 where they consider that specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context and achieve outcomes consistent with the NEO. The Rules and the NEL incorporate significant incentive properties and controls, which were deliberately built in by the MCE and SCO when they designed

the regulatory regime. The Rules are based on a "fit for purpose" propose-respond model that incorporates an intended level of guided discretion for the AER. The Rules therefore strike a balance between providing the AER with a level of:

- Discretion and flexibility; and
- Accountability, guidance and prescription.

There is a need to preserve this balance as it is central to the MCE and SCO's intent in developing the Rules. The Businesses oppose the AER having unguided discretion as it would increase the risk of regulatory error. The AEMC's Directions Paper noted Professor Yarrow's view that "Regulatory discretion comes with biases of its own". He went on to say that:

> *The balance between prescription and discretion is more toward the former in Australia than in the UK and the US, but there is nothing very solid to suggest that the current balance is inappropriate.*
>
> *At first reading of submissions, there appears to be evidence that, at a minimum, if the identification of problems by the AER were correct, the regulator could have done significantly more, under the current rules, to mitigate them.*[26]

Attachments B and C provide details of the AER's acceptance of legitimate grounds for increasing the DNSPs' expenditure as well as instances when the AER rejected the DNSPs' expenditure proposals. Taken together, this supports the Businesses' views that:

- There is no evidence of systematic failings in the Chapter 6 Rules;
- The Chapter 6 Rules provide appropriate guided discretion to the AER;
- The Rules allow the AER to fulfil its role as the economic regulator, albeit that the Businesses consider that specific improvements could be made in the Rules;
- The Rules haven't constrained the AER in cutting DNSPs' expenditure forecasts; and
- The AER has recognised the legitimate reasons for the DNSPs increasing their expenditure.

12. How do existing network suppliers assess the efficiency and performance of their own businesses and how do they use these results? Could these results have relevance to regulatory benchmarking, and if not, why not?

As discussed in response to questions 3 and 4, the Businesses submitted benchmarking studies to the AER with their Regulatory Proposals to support the efficiency of their expenditure and the performance of their operations.

In addition, the Businesses, like other DNSPs, provide information to the AER annually by completing Regulatory Information Notices and otherwise as requested by the AER under its information gathering powers under the Chapter 6 Rules and the NEL.

[26] George Yarrow, Preliminary views for the AEMC, p.22

13. How should benchmarking be used by the regulator? For example, to what degree could and should it be used as 'high-powered' incentive regulation; as a basis for determining the weighted average cost of capital and efficient spending; or as public information to provide moral suasion for efficiency?

Attachment A details a variety of different benchmarking approaches that can and have been applied by the AER for different regulatory purposes or applications.

Clauses 6.5.6 and 6.5.7 of the Chapter 6 Rules require the AER to have regard for benchmarking when determining DNSPs' operating and capital expenditure building blocks in its distribution determinations. Attachment B identifies the variety of benchmarking approaches that the AER has applied in its distribution determinations for the three Businesses.

As noted in section 3.5, the Businesses support the continued use of benchmarking to test the efficiency of DNSPs' expenditure as part of the application of the building block approach.

The Businesses do not consider that there is any need to change the Chapter 6 Rules in relation to benchmarking expenditure under the building blocks approach.

The Chapter 6 Rules do not allow benchmarking to be used independently of the building block approach to regulated DNSPs' revenues and prices. The Businesses have made several submissions to the AEMC on the possible introduction of TFP as an alternative form of control for the regulation of electricity distribution services independent of the building block approach.

The Businesses support the calculation of the WACC being based on a benchmark for efficient firms and to this being applied to determine DNSPs' return on capital building block. The Businesses' further views on the calculation of the WACC values are provided in response to question 41 to 43.

14. What is the magnitude of the benefits from using benchmarking in regulatory decision-making in terms of lower unit costs or other performance measures?

The Businesses do not agree with the premise of the question because it suggests that there are inefficiencies now. The Businesses do not agree either that:

- There has been a decline in their efficiency or productivity; or
- There are any systematic failings in the Chapter 6 Rules causing inefficient increases in expenditure that necessitate fundamental rule changes.

Furthermore, the Businesses also reject the inference in this question that benchmarking is not currently provided for in the Chapter 6 Rules and is not being used extensively now by the AER to regulate DNSPs. Attachment B identifies the variety of benchmarking approaches that the AER has applied in its distribution determinations for the three Businesses.

15. What are the lessons from overseas about their benchmarking approaches, and what aspects should Australia copy or avoid?

The key lessons that the Businesses take for Australia from overseas regulatory experiences are that:

- Every country's needs are different. It is not possible to transfer a regulatory framework from one country to another. Each country needs to develop its own unique regulatory regime. As Professor Yarrow noted in his advice to the AEMC on the AER's Rule Change Proposal:

> *Variety in institutional responses to a common problem cannot, and should not, be taken as a sign of policy failures…*
>
> *The fact that Australian arrangements are different from those in the UK and US, for example because they afford a lesser degree of discretion to the regulator, is not, by and of itself, indicative of a potential problem. The Australian arrangements may simply be a better adaptation to Australian conditions, or they may be superior in the sense of representing the discovery of a better way forward – unbundled rule-making, and greater reliance on ex ante (rather than ex post) checks and balances on regulatory discretion – in what is always an uncertain policy making process.*[27]

  He also noted that:

> *The balance between prescription and discretion is more toward the former in Australia than in the UK and the US, but there is nothing very solid to suggest that the current balance is inappropriate.*[28]

- There is no accepted single way of approaching regulation or benchmarking – many different approaches to benchmarking are applied in conjunction with other regulatory measures;

- Benchmarking can play an important role in the economic regulatory framework but it has limitations. The Businesses are not aware of any country that uses benchmarking exclusively to regulate DNSPs' revenues and prices. Professor Littlechild noted in his advice to the AEMC that:

> *I am asked whether there would be any benefit in a rule that requires the regulator to undertake benchmarking. I would say that it would be good regulatory practice for a regulator to consider what if any insights benchmarking could provide in the particular price control under consideration, and to take this into account where appropriate. But as just noted, the circumstances of individual networks can vary greatly, and in my experience there is always an element of unexplained variation where judgement is required. To require the regulator to undertake benchmarking therefore runs the risk of forcing the regulator to attach more weight to benchmarking than the circumstances allow.*[29]

- Incentivising and funding innovation is critical to the delivering efficient distribution services in the long term – short term unsustainable cost cutting will not deliver innovative solutions with consequent efficiencies that are in the long term interests of electricity customers.

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[27] Ibid, pages 3-4
[28] Ibid, p.22
[29] Stephen Littlechild, Advice to the AEMC on Rule Changes, p.12

16. To what degree could the AER use international benchmarking?

As noted in response to questions 9 and 10, the Businesses do not support the use of international data to calculate benchmarks because it is not possible to normalise the differences between overseas and Australian DNSPs, including on account of differences in accounting policies, tax laws and corporate structures.

Accordingly, only Australian DNSPs should be included in any benchmarking analysis, regardless of the regulatory purpose to which it is being applied.

17. How can a good benchmarking model be identified since data and methods always have some imperfections?

The Businesses agree that benchmarking data and methods will always have some imperfections. For this reason, they do not support relying on benchmarking exclusively to regulate DNSPs' revenues or prices. Rather, benchmarking should be used judiciously with other robust, well tested regulatory approaches.

The Businesses support using benchmarking as part of the building block approach to test the efficiency of DNSP's expenditure. As discussed in section 3.5, the Businesses believe that the AER could apply benchmarking even more widely under the current Chapter 6 Rules than it has to date.

18. Is there value in 'rough and ready' benchmarking models and how would these be used?

The Businesses would strongly oppose using any "rough and ready" benchmarking models because they would be inconsistent with the Businesses' preferred criteria (detailed in response to question 5) for the regulatory regime to promote "clarity, certainty and transparency of the regulatory framework".

This is especially the case if benchmarking is to be used in any way to set DNSPs' revenues and prices. Professor Yarrow supported this view in this recent advice to the AEMC on the AER's Rule Change Proposal:

> *…benchmarking information has value only insofar as it contains information relevant to an assessment of performance in particular circumstances: the greater its implications for assessment of the particular circumstances, the greater its value for the specific purpose at hand. Benchmarks that are uninformative for the assessment of the performance of a particular utility, in its own particular context, are, in fact, valueless, and should not be used, even when the regulator has discretion to use them. It is therefore not clear to me that, even on a relative narrow interpretation, the rules do anything other than preclude uninformative benchmarking.*[30]

19. What are the most important control factors for benchmarking network businesses (for example, lot frontage, asset vintage, topography, weather variations, customer types, reliability standards, ratio of peak to average demand, and any strategic behaviour by generators and retailers)? What matters less?

[30] Ibid, p.17

All benchmarking data needs to be normalised for differences between DNSPs. This is especially the case if benchmarking is to be used in any way – either in conjunction with the building block approach or as the basis for an independent form of control – to set DNSPs' revenues and prices.

Each of the matters that the Productivity Commission has identified in this question are potentially relevant control factors, as are differences in DNSPs':

- Classification of distribution services;
- Cost allocation methodologies;
- Capitalisation policies;
- Contestability of works;
- Jurisdiction-specific (as opposed to national) regulatory obligations; and
- Network types, such as the mix of CBD, urban, short-rural or long rural assets.

These matters, as well as those identified in the question, can fundamentally affect the costs of different DNSPs' providing their services.

20. What are the main differences in the potential for, and methods of, benchmarking transmission versus distribution businesses?

The Businesses do not operate transmission assets and so are not in a position to comment on this question.

21. Should benchmarking results and methodology be publicly available, and if not, why not?

In limited situations, information may be commercially sensitive and should be treated confidentially.

Otherwise, benchmarking results and methodologies should be publicly available, consistent with the criteria detailed in response to question 5, in order to promote "clarity, certainty and transparency of the regulatory framework".

22. What are the consequences of errors in benchmarking? To what extent do these costs vary for positive versus negative errors? How could the costs of any errors be reduced?

The key risk of making errors in benchmarking is that they could undermine the NEO and so prevent "efficient investment in, and use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability, safety and security".

The regulatory regime, to be sustainable, needs to incentivise DNSPs to invest in the provision of electricity services – this includes investment in innovations in the provision of distribution services. Without these incentives, DNSPs and others won't invest efficiently.

The AEMC's Directions Paper on the AER's Rule Change Proposal noted that the risks of the regulatory regime causing under and over-investment are asymmetric. It stated that:

> *In the case of gas and electricity services, regulation needs to recognise that the risks with respect to investment levels are asymmetric: over-investment may lead to redundant capacity and slightly higher prices to pay for it; under-investment might lead to outages, high cost losses of production and safety concerns.*
>
> *The NER, NGR and broader regulatory framework need to take account of this asymmetric risk, while maintaining value for consumers.*[31]

The AEMC added:

> *Finally, while there has been much discussion in the rule change request and submissions about high prices, it is also important to note that if prices are lower than what is required to meet the relevant objectives, and in particular the reliability standards, this can itself have adverse long term consequences for consumers.*[32]

As discussed in response to question 17, the risk of making errors in benchmarking can be reduced by not relying on benchmarking exclusively to regulate DNSPs' revenues or prices. Rather, benchmarking should be used judiciously with other robust, well tested regulatory approaches, such as the building block approach.

23. To what extent would it be helpful to give the AER some discretion in deciding how much weight should be given to benchmarking and other tools when making regulatory determinations?

As noted in response to question 11, the Chapter 6 Rules are based on a "fit for purpose" propose-respond model that incorporates an intended level of guided discretion for the AER. The Rules therefore strike a balance between providing the AER with a level of:

- Discretion and flexibility; and
- Accountability, guidance and prescription.

The provisions in the Chapter 6 Rules about the AER's use of benchmarking to assess DNSP's expenditure proposals provide a good example of this balance between discretion and guidance. The AER:

- Has full discretion under clauses 6.5.6(e) and 6.5.7(e) about what benchmarking approaches it will use; but
- Must follow specific guidance provided in the Rules, including:
    - The requirement in section 7A(2) of the NEL that the DNSP to be given a "reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control network services…" – this is important to enabling DNSPs to recover their efficient costs;
    - The implied prohibition in the Chapter 6 Rules on using benchmarking exclusively to set revenues and prices for standard control services or as an alternative to the building block approach; and

[31] AEMC, Directions Paper, p.8
[32] Ibid, p.21

- The limitation in clause 6.12.3(f) of the Rules on the way in which this benchmarking can be applied within the building block approach. In particular, this clause does not allow the AER to give priority to its own benchmarking and limits its ability to vary values only "on the basis of the current regulatory proposal" and "to the extent necessary".

There is a need to preserve the balance in this guided discretion as it is central to the MCE and SCO's intent in developing the Chapter 6 Rules and to reducing the risk of regulatory error (which could in turn lead to insufficient investment in the network, against the long term interest of consumers). It is supported by the legislated roles in the NEL of the AEMC, as rule maker, and the AER, as rule enforcer for economic regulation.

24. What if any, alternative policies may be superior to benchmarking? What, if any, policies could complement the use of benchmarking?

As discussed in section 3, the Businesses consider that, with several exceptions where they consider that specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services. Specifically, the Businesses:

- Support the continued application of the building block approach for the economic regulation of electricity distribution services. The Businesses consider that arguments against the building block approach typically lack evidence and only promote theoretical alternatives that have not been appropriately tested, including TFP analysis;

- Support the use of benchmarking as part of the building block approach to test the efficiency of expenditure, while recognising the inherent limitations of benchmarking and of the comparability of data between DNSPs; and

- Consider that there are well-developed incentive properties and controls in the existing regulatory regime, which, as discussed in section 2.4, were incorporated based on the advice of the Expert Panel on Energy Access Pricing.

The importance of testing rival explanations

25. What are the principal reasons for the apparent decline in the productivity of the electricity networks and for the associated increases in electricity prices? In particular, what have been the effects of rising input prices, past underinvestment, building ahead of use, rising peak demand, underground cabling and requirements for reliability requirements? To what extent have investment responses to the above factors been economically efficient?

26. To what extent have rising network costs reflected failures to correctly define project scope, to adequately control project costs and 'gold plating'?

27. If there has been gold plating by network businesses, how has this been realised (premature investment, over-specification of network elements, excessive reduction in service interruption risks)?

28. What is the evidence about the comparative roles of the above factors?

29. To what extent have Garnaut, Mountain and Littlechild identified genuine inefficiency in electricity networks?

The Businesses do not agree with the premise of these questions that there has been a decline in productivity in the provision of their distribution services.

In support of this view, the AER's news release for the Victorian DNSPs noted that "On the whole, the Victorian distributors are efficient operators of a mature and comparatively reliable network". As discussed in section 3.4, the application of the building block approach has resulted in sustained real price reductions over the past 15 years with increasing levels of reliability performance.

In South Australia, DNSP costs have been separable from other electricity cost components since 1998-99. From 1998-99 until 2011-12, DNSP prices have not increased in real terms, and DNSP reliability performance in South Australia continues to track at levels better than the average of National Electricity Market jurisdictions.

The AER has rejected and every set of expenditure proposals submitted by DNSPs, and substituted its own expenditure forecasts, since it became responsible for the economic regulation of distribution services. The extracts from the AER's news releases that were issued with its final distribution determinations for DNSPs at Attachment C show that:

- There is no evidence of systematic failings in the Rules;
- The Chapter 6 Rules allow the AER to perform its function as the economic regulator of electricity distribution services effectively;
- The Chapter 6 Rules strike a balance in providing guided discretion to the AER;
- The Chapter 6 Rules haven't constrained the AER in reducing DNSPs' expenditure forecasts; and
- The AER has recognised the legitimate reasons for the DNSPs increasing their expenditure.

Chapter 5: The interaction of benchmarking with the regulatory framework

The process for approving future investment and operating expenses

30. Do the current Rules limit the use of benchmarking? If so, how do they do so, to what extent, and what would be the appropriate remedy?

31. In particular, do the Rules restrict the weight that the AER can apply to benchmarking analysis compared with the information that distribution business make available in the building blocks proposals? For example, could the AER reject the evidence from the building blocks analysis if it found compelling alternative evidence of lower required spending from benchmarking?

The Chapter 6 Rules do not specify which types of benchmarking the AER should apply in regulating DNSPs – the AER therefore has complete discretion about which approach it will use.

However, as discussed in response to question 23, the current Rules provide guidance to the AER about the use of benchmarking in making its distribution determinations:

- Section 7A(2) of the NEL requires the DNSP to be given a "reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control network services…";

- The Chapter 6 Rules prevent benchmarking being used exclusively to set revenues and prices for standard control services, although it requires benchmarking to be considered as part of the building block approach; and

- Clause 6.12.3(f) prevents the AER giving priority to its own benchmarking and limits its ability to vary values only "on the basis of the current regulatory proposal" and "to the extent necessary".

As discussed in section 3, these requirements on the AER are appropriate and are consistent with:

- The MCE and SCO's original intent to give the AER appropriate guided discretion in regulating DNSPs;

- Giving primacy to the NEO;

- The AER considering the individual circumstances of the specific DNSP in question;

- Recognising the role of benchmarking as part of the building block approach (rather than as a standalone form of control);

- The AER being required to start with, and to base its distribution determination on, the DNSP's Regulatory Proposal as each DNSP;

- The AER being able to consider other matters than a DNSP's Regulatory Proposal in making its Distribution Determination, including its own benchmarking;

- Giving the AER ample opportunity to interrogate the prudency and efficiency of a DNSP's Regulatory Proposal; and

- The extensive other incentive properties built into the current regulatory regime.

32. Must the AER forensically examine each aspect of the building blocks approach even if it believes that a more simple and robust benchmarking approach were available?

The Chapter 6 Rules require the AER to regulate DNSPs' standard control services using a building block approach, which must have regard for benchmarking.

Attachment B details the approach that the AER has taken in its distribution determinations, based on the requirements of the Chapter 6 Rules, to assess the Businesses' expenditure forecasts in their regulatory proposals, including its use of benchmarking. As discussed in section 3.6:

- The AER has not been limited to using a line by line approach in assessing DNSPs' expenditure proposals. The AER has used a combination of top-down (including benchmarking), bottom-up and line-by-line analysis;

- The Businesses do not accept the suggestion that the AER undertaking line-by-line analysis is somehow problematic – rather, it is fundamental to it understanding the individual circumstances of DNSPs; and

- The AER can reject expenditure proposals on the basis of the DNSP's methodology and can depart from that that methodology in making its Distribution Determination. The regulatory framework places the onus on the DNSP to provide sufficient information to enable the AER to make its decision.

33. Are there any other limitations faced by the Australian Energy Regulator in using benchmarking, such as the merit review process?

The Businesses' responses to questions 23 and 31 detail their views on the guidance provided to the AER in the Chapter 6 Rules and the NEL about the use of benchmarking in making its distribution determinations.

The merits review provisions in the NEL are not a limitation on the appropriate use of benchmarking. Rather, they are critical for ensuring procedural fairness, placing a level of accountability on the AER in terms of the quality of its analysis and avoiding regulatory errors. They provide an essential safety valve for the resolution of disagreements between parties about the application of the economic regulatory regime.

34. What restrictions, if any, should apply to the AER's use of benchmarking or other analytical tools?

As discussed in the responses to questions 23 and 31, the Businesses support guidance being provided, and requirements being imposed, on the AER's use of benchmarking, albeit that they support the AER having discretion to determine what is the most appropriate benchmarking approach it should use within the context of the building block approach.

35. Should the AER select the best performer as the benchmark, or choose a benchmark close to, but not at the frontier? What criteria could be used to determine the threshold between unreasonable and reasonable costs?

The Businesses believe that if benchmarking is used to set a DNSP's revenues and prices – whether as part of the application of the building block approach or as a separate form of control – then the regulatory regime should ensure that:

- The DNSP is given a "reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control network services…" in accordance with section 7A(2) of the NEL;

- The AER only varies the DNSP's expenditure forecasts "on the basis of the current regulatory proposal" and "to the extent necessary" in accordance with clause 6.12.3(f) of the Rules; and

- The AER gives effect to the operating and capital expenditure objectives, factors and criteria in clause 6.5.6 and 6.5.7 of the Rules.

36. In cases where the AER's benchmarking findings cast doubt on building block proposals but do not provide an exact alternative, should there be scope for the AER to negotiate a settlement with network businesses? How would that be achieved?

The Businesses do not support this proposal – negotiated outcomes are not appropriate for standard control services as they are not consistent with the criteria detailed in the Businesses' response to question 5 for developing a regulatory regime that would contribute to achieving the NEO, in particular the need to promote "clarity, certainty and transparency of the regulatory framework".

The concept of individually negotiated outcomes would also raise equity and national consistency problems and would undermine the existing merits review arrangements. Indeed, it would undermine the very nature of nationally consistent regulatory outcomes.

Furthermore, the Chapter 6 Rules already provide for negotiated distribution services, however these are fundamentally different in nature to standard control services. They are classified differently because they satisfy the form of regulation factors in the NEL differently to standard control services.

37. Could benchmarking reduce prescriptive regulation in the Rules? How? Which ones?

As discussed in section 3, the Businesses consider that, with several exceptions where they consider that specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services. The Businesses do not accept the view that there are systematic failings in the Chapter 6 Rules – including in relation to its prescriptive nature – that are causing inefficient increases in expenditure that necessitate fundamental Rule changes.

The Chapter 6 Rules are fundamental to promoting "clarity, certainty and transparency of the regulatory framework" and strike a balance between giving discretion and guidance to the AER as the economic regulator.

The quotations from Professor Yarrow in response to question 15 support the Businesses' view that the current regulatory framework generally represents an appropriate basis for regulating electricity distribution services in Australia's circumstances.

Importantly, the Chapter 6 Rules already provide for the AER to use benchmarking as part of the building block approach in making their distribution determinations.

38. How would a regulator use benchmarking analysis that produced cost estimates significantly different from those from the building blocks approach? What approaches have other countries used in such instances?

The Businesses don't accept the premise of this question that benchmarking and the building block approach are necessarily separate concepts. Indeed, clauses 6.5.6(e)(4) and 6.5.7(e)(4) of the Chapter 6 Rules already require the AER to have regard for benchmarking under the building block approach, albeit that it is only one of the matters that the AER needs to consider.

However, if for example, there were to be significant differences between the results determined using benchmarking analysis and the building block approach then it could not be assumed that

benchmarking analysis is necessarily producing the correct outcome. Rather, it would suggest that it needs to be closely scrutinised and reviewed.

39. Has the AER used benchmarking effectively? Should it adopt different practices? Are there any major process or resource obstacles to the AER's use of benchmarking?

As discussed in Attachment B, the AER has made considerable use of benchmarking in its distribution determinations, however it could use it more broadly in association with the building block approach. Data limitations are a key constraint on benchmarking being more extensively used. The AER recognised this in its distribution determination for the Victorian DNSPs:

> *The AER considers that at the current time it cannot establish revenue allowances based primarily on the outcome of comparative benchmarking against other firms. When more standardised and appropriate data becomes available as a result of the application of the AER's new framework, noted above, and benchmarking models give more consistent results, the weighting given to top down benchmarking as a part of the AER's comparative analysis will likely increase.*[33]

The AEMC also noted the effects of data limitations in its Final Report on the proposed introduction of TFP:

> *However, a number of conditions need to be satisfied for a TFP methodology to work properly and promote efficient regulatory decisions. We find that such conditions are not likely to be met at the present time. Crucially, the current lack of a sufficiently robust and consistent data-set means that it could be too problematic to reconstruct existing data for the purpose of a TFP methodology. Also the lack of data prevents proper testing of the other conditions needed for a TFP methodology. We advise that the initial focus should therefore be on establishing a better, more consistent data-set.*
>
> *The use of TFP indices in setting efficient cost benchmarks for the building block approach is already allowed for under the Rules. However to date, the AER has made limited use of benchmarking in its determinations. A key reason behind this is the lack of consistent data needed to apply benchmarking techniques. Therefore our recommendation on establishing a better, more consistent data-set will facilitate greater use of benchmarking in future determinations.*[34]

40. Is there scope to introduce competition in parts of the electricity network? If so, where and when? Would that reduce any need for benchmarking in those parts? To what extent could performance in competitive segments be used as benchmarks for non-competitive segments?

Competition does exist now for certain distribution services. This is already recognised through the NEL and the Chapter 6 Rules where distribution services are categorised in different ways and different regulatory approaches are applied to each service category.

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[33] AER, "Final decision – appendices Victorian electricity distribution network service providers Distribution determination 2011–2015", October 2010, p.99 – refer to http://www.aer.gov.au/content/item.phtml?itemId=740831&nodeId=69250b81110ffb154d5e4ec4c02e14f1&fn=Victorian%20distribution%20final%20decision%202011-2015%20-%20appendices.pdf

[34] AEMC, Final Report - Review into the use of total factor productivity for the determination of prices and revenues, 30 June 2011, p.ii – refer to http://www.aemc.gov.au/market-reviews/completed/review-into-the-use-of-total-factor-productivity-for-the-determination-of-prices-and-revenues.html

The categorisation of services is based on the form of regulation factors in section 2F of the NEL. The categorisation is reflected in both the AER's framework and approach papers and in its distribution determinations.

The Chapter 6 Rules do not affect in any way the nature or extent of competition for individual service – this is determined by market conditions and regulatory requirements outside of the economic regulatory framework. However, the AER is required to take the extent of this competition into account in applying the form of regulation factors and in categorising the distribution services.

Competitive and non-competitive services are by their nature different – and are accordingly regulated differently under the Chapter 6 Rules. It would therefore not be appropriate to seek to consider the performance in competitive services as benchmarks for non-competitive services.

A potentially excess cost of capital for regulated cost recovery

41. To what extent, if any, are there flaws in the AER's current benchmarking of the WACC, and if so, how could it be improved?

The AER appears to have placed too much weight on bottom-up benchmarking of individual WACC parameters, and too little weight on the inter-relationships between WACC parameters and on overall checks of cost of equity and cost of debt. For instance, there are inter-relationships between the following WACC parameters:

- MRP and gamma;
- MRP and the risk-free rate;
- MRP and the equity beta; and
- The overall cost of equity and the cost of debt – the the overall cost of equity should always exceed the cost of debt by a reasonable margin.

In its most recent Draft Distribution Determination for Aurora Energy in Tasmania, the AER considered the MRP in isolation from other components of the cost of equity, in particular, the risk-free rate. The AER appears to be unwilling or unable to set an MRP that is consistent with market conditions and falling interest rates. The Businesses therefore consider that the Chapter 6 Rules should explicitly require the AER to have regard to the inter-relationships between parameters when conducting a review of the rate of return. Further, evidence to move a parameter should only be considered persuasive if an overall check on the return on debt / equity is also satisfied.

In relation to sector specific WACC parameters (equity beta, gearing and credit rating) the AER has used historic data from a small sample of comparable companies to derive a benchmark. It appears that the AER has placed too much weight on a point estimate and insufficient weight on the high level of uncertainty in a point estimate arising from using a small sample of imperfect comparables when considering whether there is persuasive evidence to change a WACC parameter.

42. What, if any, are the effects of the various WACC determinations on:

- ***the incentives of private versus government-owned network businesses?***

- ***choices about spending on capital expenditure versus operating expenditures?***

The WACC is one of many factors that a DNSP may consider when making decisions about capex versus opex investment. Network assets generally have a life of 40 to 60 years. A pre-requisite for efficient network capex investment is that the allowed rate of return is a benchmark and that investors have certainty that they can earn a reasonable return over the life of regulated network assets. This certainty is aided by having a framework for setting WACC where:

- The regulator is held accountable for its decisions;
- Persuasive evidence is required before changing a WACC parameter; and
- There is a reasonable opportunity to for business to recover the efficient cost of debt.

The current Rule requirement for the WACC to be forward looking is incompatible with this these principles. Efficient businesses spread debt maturities over years and therefore a significant portion of efficient debt costs during a regulatory period arise from debt which was issued prior to the start of the regulatory period. Efficient hedging practices allow businesses to hedge the swap rate (similar to risk free rate) portion of debt costs, but the debt margin to swap rate cannot be hedged i.e. its cost is based on market conditions at the time debt was issued which can often be over five years prior to the start of the regulatory period. If debt margins are a low-point at the time of a regulatory decision, then the forward looking incremental cost of debt will be insufficient to cover the efficient total cost of debt.

43. How can the different patterns between forecast and realised spending between private and government-owned network businesses be explained?

44. How does the efficiency of private distribution businesses compare with government-owned ones, and if different why and how would this be remedied?

The Businesses believe that privately-owned businesses have stronger drivers to operate efficiently and to respond to the incentive arrangements provided in the current Rules than publicly-owned businesses given the nature of private shareholder requirements. This has been borne out by the experiences of privatisation in Victoria and South Australia.

Nuttall Consulting undertook a benchmarking study for the AER as part of the AER's assessment of the Victorian DNSPs' regulatory proposals for the regulatory control period, 2011 to 2015. Amongst other things, Nuttall Consulting found that:

> *The Victorian DNSPs compare well when overall capex is compared with that of Queensland and NSW.*[35]
>
> *In aggregate, these charts would suggest that the revealed capex of the Victorian DNSPs for the last 5 years is relatively efficient and that individual DNSPs appear to benchmark consistently well in comparison to other NEM businesses.*[36]

[35] Nuttall Consulting, "Report – Capital Expenditure Victorian Electricity Distribution Revenue Review Revised Proposals', 26 October 2010, p.17
[36] *Ibid*, p.19

The Businesses support the privatisation of the publicly-owned DNSPs in NSW, Queensland and Tasmania and believe that it presents significant opportunities to achieve efficiency savings, which will be beneficial to end customers through lower distribution prices.

45. If any biases towards excessive investment posed by the WACC and the rollover arrangements of the regulated asset base were removed, would that eliminate the need for further development of benchmarking?

For previous regulatory control periods, the Businesses have had WACCs set on a similar basis and approach as that undertaken under the current Rules. Over these periods, the Businesses have underspent their capital expenditure allowances through a continued focus on efficiency of providing network and non-network solutions. This demonstrates that there has been no bias towards over (let alone excessive) investment posed by the WACC and rollover arrangements.

The AER has not shown in its Rule Change Proposal that the DNSPs' true WACC is lower than their regulated WACC, such that the circumstances in respect of which the AER raised its specific concern apply in practice. Also, while the AER indicated the possibility of DNSPs being influenced by incentives other than financial incentives, it is not clear on the basis of the AER Rule change proposal how the AER considers its Rule change addresses this.

The inclusion of the roll-in provisions were a deliberate policy decision by MCE and SCO when the Chapter 6 Rules were developed. They recognise that there are legitimate – but potentially unforeseeable – reasons why DNSPs need to invest in order to ensure sufficient capacity and to maintain service levels given changes in demand. Rather than being "excessive", such expenditure can be both necessary and efficient. Indeed, it would be:

- Unrealistic to expect that a DNSP or the AER could accurately forecast five years in advance what expenditure a DNSP will actually need to incur over a regulatory control period; and

- Unreasonable to expect that a DNSP should constrain its expenditure to an expenditure forecast that was developed for revenue and price setting purposes only.

The need for the roll-in provisions, and the absence of inappropriate incentives in the current Chapter 6 Rules, was recognised by the AEMC in its Directions Paper on the AER's Rule Change Proposal:

> *…. the current mechanism provides that a NSP will have to bear the costs of any overspend during a regulatory control period until the start of the next regulatory control period…. There appears to be no other incentive in the NER on a NSP to overspend. The Commission is of the view that the capex incentives in the NER do not create an incentive for a NSP to spend more than its allowance in its regulatory determination.*[37]

In any event, it is too early in the current regulatory control period to assess whether the Chapter 6 Rules will in fact promote overspends of the kind suggested by the AER in its Rule Change Proposal. The Businesses note that the AER's concerns about overspends, particularly in NSW and Queensland, related to a previous version of the Chapter 6 Rules and to transitional provisions in Chapter 11 of the Rules.

[37] AEMC, Directions Paper, p.40

The Businesses oppose the AER's "60/40" Rule Change Proposal to limit DNSPs' ability to roll increased capital expenditure above the AER's building block into their RAB because it:

- Is asymmetric, providing only penalties where there is overspend with no rewards for underspend, and does not provide continuous incentives to make efficiency gains throughout the regulatory control period;
- Introduces penalties for DNSPs for making efficient investment in the network where the actual level of efficient expenditure is higher than forecast;
- Fails to take into account potential trade-offs between opex and service standards and any capex incentive regime; and
- Locks a particular capex incentive regime into the Rules, rather than (as is the case with the other incentive schemes), allowing it to develop over time and vary as the other incentives facing the DNSPs evolve.

In support of this view, as noted in section 3.8, Professor Yarrow strongly advised the AEMC against accepting the AER's proposal as he considered that it:

> *…. is crude, arbitrary and is the sort of precise 'parameterization' of an incentive scheme that should have no place in the rules (there may be a case for bounding parameter values in rules, but specifying a particular value, here 40%, goes way too far). As has been pointed out in submissions, such a rule would exacerbate the information-revelation problem in relation to forecasting (there would be higher incremental payoffs from upward bias in forecasts), and it is easy to construct credible scenarios where it would discourage efficient investment. In some circumstances the rule would amount to expropriation of capital, and I would expect the courts to be busy.*[38]

The Businesses note that the Chapter 6 Rules already provide for the AER introducing a capital expenditure incentive scheme, however it has chosen not to implement one to date.

Reliability standards and planning

46. To what degree do different jurisdictions' reliability standards affect costs, if at all? Do different standards affect the potential and/or incentives for a single network business to extend its network across borders?

The nature, form and level of jurisdictions' planning criteria and reliability standards (i.e. performance standards) are currently being examined by the AEMC in its national and NSW reviews of distribution reliability outcomes and standards.

There is a direct relationship between DNSPs':

- Expenditure levels and, therefore, network prices; and
- Performance standards.

[38] George Yarrow, Preliminary views for the AEMC, p.18

Higher performance standards require higher investment, which in turn must be recovered from customers through higher network prices.

From the Businesses' perspective, there is no relationship between different performance standards in geographic areas and where they invest and operate.

47. Why have reliability standards been increased over time, and what impacts have these increases had on costs?

Increases in some DNSPs' performance standards in some jurisdiction are being examined in the AEMC's national and NSW reviews of distribution reliability outcomes and standards.

The Businesses support the AEMC's current review of distribution reliability outcomes and standards. Any fundamental changes to performance standards, including the imposition of new mandatory regulated planning criteria, should only be made on the basis of the following criteria:

- A rigorous cost benefit analysis that supports a need for change;
- A clear public consensus that change is required and that customers want, and are willing to pay for, the new performance standards;
- DNSPs being fully compensated for the investments that they have made before the change takes place; and
- DNSPs being able to recover the costs of delivering against any new performance standards through their network charges.

48. To what extent would adoption of a probabilistic versus deterministic framework change costs? What risks and benefits would this entail?

The relative merits of probabilistic and deterministic planning criteria are also being examined in the AEMC's national and NSW reviews of distribution reliability outcomes and standards.

The main influence on the costs incurred by DNSPs is the level of residual risk in meeting customer service levels and license obligations. Both probabilistic and deterministic approaches to network planning incorporate assessments of achieving the targeted level of residual risk.

It need not necessarily be the case that changing from probabilistic to deterministic approaches will result in increased costs, although this may be the case.

This depends on whether any change (regardless of the framework) will result in the DNSP needing to meet higher or lower standards and whether, as a consequence, it will need to incur relatively more or less expenditure. For similar levels of risks and required service standards there would not be significant differences in costs between these approaches.

49. What evidence is there of customer involvement (such as willingness to pay) in setting reliability standards?

The scope for customer involvement is being examined in the AEMC's national and NSW reviews of distribution reliability outcomes and standards.

The Businesses note that there is public consultation on both the:

- Victorian Distribution System Planning Reports; and
- South Australian Electricity System Development Plan.

A customers' willingness to pay survey was conducted in South Australia as part of the determination of reliability standards to apply from 2005. It is understood that ESCOSA is currently reviewing the need to undertake a further study.

50. How are existing reliability incentive schemes functioning and how could benchmarking contribute to their design?

The AER's service target incentive scheme (**STPIS**) only started to apply in the current regulatory control period in both Victoria and South Australia.

The role and objectives of the STPIS are set out in sections 1.4 and 1.5 respectively of the AER's amended scheme. In particular, it provides that:

> *The role of this scheme is to provide incentives for DNSPs to maintain and improve service performance as set out in clause 6.6.2(a) of the NER.*

The STPIS sets reliability performance targets for:

- CitiPower and Powercor Australia based on five years of historical data for the 2005 to 2009 calendar years; and
- ETSA Utilities based on four years of its historic data from 2005-06 to 2008-09.

It is too early to say conclusively how the scheme is functioning however the Businesses note that their reliability performance has been generally improving in recent years but it should be noted that year on year performance is heavily influenced by weather.

The Businesses also note that there is an anomaly in STPIS design, which has strong potential to produce perverse outcomes from the scheme. The anomaly relates to use of divergent bases for setting STPIS targets and Major Event Day (**MED**) exclusion criteria (i.e. the targets are fixed for the regulatory period while MED thresholds are recalculated each year).

51. What is an appropriate governance structure for setting and monitoring reliability standards, and what is the rationale or evidence base for different standards across jurisdictions?

The governance structure for setting and monitoring reliability standards is being examined in the AEMC's national and NSW reviews of distribution reliability outcomes and standards.

In accordance with Annexure 2 of the Australian Energy Market Agreement, setting reliability standards is currently a jurisdictional responsibility.

The Businesses do not think that national consistency in the nature, form and level of these standards should be pursued for its own sake. However, the Businesses are generally of the view that there

must be consistency between the AER applied incentive schemes and jurisdictional service standard requirements.

52. To what degree should a jurisdiction that specifies a higher reliability standard than others justify such a requirement to its constituents based on a transparent cost-benefit analysis?

Any fundamental changes to performance standards, including any new standards mandated by Governments or regulators, should only be made on the basis of the criteria set out in the Businesses' response to question 47.

Demand-side management

53. What role could demand management play in reducing peak demand, how would it work, how much would it cost, and what network savings would be experienced? In which parts of the network are cost savings most likely and why?

As noted by the AEMC in its "Directions Paper – Power of Choice – Giving Consumer Options in the way they use Electricity", demand management options can be grouped into the following five categories: peak load management; energy conservation and efficiency; fuel substitution; distributed generation; and distributed storage.

There are a number of existing provisions in the regulatory regime that provide for demand management and for the DNSPs and the AER to consider non-network solutions as an alternative to traditional network solutions.

First, clause 6.5.6(e)(10) and clause 6.5.7(e)(10) of the Rules require the AER to have regard for "the extent the *Distribution Network Service Provider* has considered, and made provision for, efficient non-network alternatives" in assessing the prudency and efficiency of a DNSPs' operating and capital expenditure. The AER had regard for these clauses in assessing the DNSPs' expenditure proposals in their regulatory proposals for the purposes of its distribution determinations.

Secondly, clause 6.6.3 of the Rules provides that "The AER may, in accordance with the distribution consultation procedures, develop and publish an incentive scheme or schemes (demand management incentive scheme) to provide incentives for Distribution Network Service Providers to implement efficient non-network alternatives or to manage the expected demand for standard control services in some other way". The AER incorporated demand management incentive schemes into its distribution determinations for the Businesses in accordance with clause 6.12.1(9) of the Rules.

Thirdly, clause 5.6.2(g) of the Rules requires that a DNSP "must carry out an economic cost effectiveness analysis of possible options to identify options that satisfy the Regulatory Test". The nature of the "possible options" that a DNSP must examine are detailed in clause 5.6.2(f) of the Rules and include "demand side options, generation options and market network service options to address the projected limitations of the relevant distribution system". The current regulatory test was issued by the AER in November 2007.

In Victoria, clause 3.5 of the "Victorian Electricity Distribution Code" requires CitiPower and Powercor Australia to:

- Notify the interested parties of emerging network constraints; and

- Include non-network alternatives, such as embedded generation or demand management in their planning considerations.

CitiPower and Powercor Australia use two planning reports to achieve these requirements, which are available on their websites:

- The Transmission Connection Planning Report; and
- The Distribution System Planning Report.

These documents provide an opportunity for interested parties to express interest to CitiPower and Powercor Australia about non-network alternatives. In particular, the Distribution System Planning Report:

- Provides a description of feasible options for meeting forecast demand and network constraints including opportunities for embedded generation and demand management where possible;
- Identifies and describes the preferred options for meeting forecast demand including the estimated project cost; and
- Invites proponents of non-network solutions to respond to the Distribution System Planning Report.

In South Australia, section 23(1)(n)(x) of the *Electricity Act 1996* requires ETSA Utilities to:

> *Investigate, before it makes any significant expansion of the distribution network or the capacity of the distribution network, whether it would be cost effective to avoid or postpone such expansion by implementing measures for the reduction of demand for electricity from the network; and*
>
> *To prepare and publish reports relating to such demand management investigations and measures.*

This requirement is largely replicated in clause 14 of ETSA Utilities' distribution licence. Clause 14.4 of the licence also requires that:

> *The Licensee must comply with any applicable guideline issued by the Commission from time to time concerning the means by which it will implement the obligations imposed on it by this clause 14, and also concerning public consultation about demand management opportunities and measures.*

The ESCOSA's Guideline 12 entitled "Demand Management for Electricity Distribution Networks" imposes a range of obligations on ETSA Utilities, including in relation to:

- Disclosing information on possible network constraints through its Electricity System Development Plan;
- The process through which alternative system support options should be invited and proposed;
- Evaluating non-network alternatives; and
- Preparing an annual demand management compliance report.

The Businesses:

- Support the implementation of demand management and/or non-network initiatives where they provide more economically efficient solutions than network augmentation;
- Have developed network planning processes to identify and implement demand management alternatives where they are economically efficient; and
- Have implemented various demand management and/or non-network initiatives where they have been assessed as feasible and deliver net benefits to customers.

However, the Businesses' experience has been that these demand management initiatives have typically been effective in deferring, but not in avoiding, network solutions. This is because the size and "firmness" of the non-network solution is typically inadequate to meet the Businesses on-going power quality and reliability obligations, particularly in an environment of increase peak demand.

54. What are the regulatory and other obstacles to demand management or other approaches that give consumers choice? How are these changing?

There are three national regulatory reviews that are currently examining issues relevant to this matter:

- The AEMC's "Directions Paper – Power of Choice – Giving Consumer Options in the way they use Electricity" is seeking to identify opportunities for consumers to make more informed choices about the way they use electricity. The review is examining possible changes to market and regulatory arrangements to promote demand management in planning and operating the NEM;
- The AEMC is reviewing the "Distribution Network Planning and Expansion Framework Rule Request" that has been made by the MCE. The rule change request has three main elements:
    - DNSP annual planning and reporting requirements;
    - DNSP demand management engagement strategy; and
    - Regulatory investment test for distribution (RIT-D) and dispute resolution process.

    Each of these elements is designed to promote investment in non-network solutions to address network constraints. The AEMC has indicated that it will make a determination on this rule change request by August 2012.
- The AER is in the process of finalising its national Connection Charge Guidelines, which, amongst other things, will include requirements for embedded generators to contribute to the costs of augmenting distribution networks.

The Businesses are actively participating in these three national regulatory reviews.

55. How do network providers model and make financial decisions about the impact of peak demand growth on network adequacy, including identification of the most cost-effective network investment solution (for a given reliability standard)?

The Businesses approaches to modelling and making financial decisions about the impact of peak demand growth are described in detail in their Regulatory Proposals for their current regulatory control periods:

- CitiPower's Regulatory Proposal for 2011 to 2015 describes its approach to forecasting its maximum demand in section 4.2 and its approach to forecasting its reinforcement capital expenditure in section 5.4. Its Regulatory Proposal is available at http://www.aer.gov.au/content/item.phtml?itemId=732548&nodeId=0904fda510a9ce5da3a97363d8cb4d8f&fn=CitiPower%20-%20Regulatory%20proposal.pdf;

- Powercor Australia's Regulatory Proposal for 2011 to 2015 describes its approach to forecasting its maximum demand in section 4.2 and its approach to forecasting its reinforcement capital expenditure in section 5.4. Its Regulatory Proposal is available at http://www.aer.gov.au/content/item.phtml?itemId=732550&nodeId=2c272856ea96abddc60fd07ec85e9b9e&fn=Powercor%20regulatory%20proposal.pdf; and

- ETSA Utilities' Regulatory Proposal for 2010-11 to 2014-15 describes its approach to forecasting its maximum demand in chapter 5 and its approach to forecasting its demand driven capital expenditure in section 6.6. Its Regulatory Proposal is available at http://www.aer.gov.au/content/item.phtml?itemId=729527&nodeId=2693bca8e666807bbb40afa43652bd27&fn=ETSA%20Utilities'%20Regulatory%20Proposal%202010-15.pdf.

56. How could benchmarking or other tools identify the degree to which network businesses have efficiently used demand-side management as substitutes for building redundancy in their networks?

As noted in the Businesses' response to question 54, the AEMC is in the process of reviewing the "Distribution Network Planning and Expansion Framework Rule Request", which aims to promote investment in non-network solutions to address network constraints.

However, as also noted in the Businesses' response to question 53, there are a variety of existing regulatory obligations that require the Businesses to evaluate the merits of demand management solutions relative to traditional network solutions.

In particular, clause 5.6.2(g) of the Rules requires that a DNSP "must carry out an economic cost effectiveness analysis of possible options to identify options that satisfy the Regulatory Test". The nature of the "possible options" that a DNSP must examine are detailed in clause 5.6.2(f) of the Rules and include "demand side options, generation options and market network service options to address the projected limitations of the relevant distribution system".

In Victoria, clause 3.5.2 of the Electricity Distribution Code requires that the DNSPs' Distribution System Planning Reports must include:

(d) a description of feasible options for meeting forecast demand including opportunities for embedded generation and demand management;

(e) where a preferred option for meeting forecast demand has been identified, a reasonably detailed description of that option, including estimated costs; and

(f) the availability of contributions from the distributor to embedded generators or customers to reduce forecast demand and defer or avoid augmentation of the distributor's distribution system.

In South Australia, ESCOSA's Guideline 12 entitled "Demand Management for Electricity Distribution Networks" requires ETSA Utilities to prepare an Annual Demand Management Compliance Report to explain how it has complied with its demand management obligations, including the results of evaluations of the demand management proposals and options.

In addition, the AER's Regulatory Information Notices issued under the NEL require the Businesses to report to the AER on their demand management projects or programs for the purposes of the Demand Management Incentive Allowance that was approved for each business in the AER's distribution determinations.

57. What is the evidence about the effectiveness and customer acceptance of demand management provided by the various trials and experiments in Australia and internationally? What factors have inhibited the use of already installed smart meters?

The effectiveness of customer acceptance of demand management, and their engagement and participation in demand management solutions, is considered at length in section 4 of the AEMC's "Directions Paper – Power of Choice – Giving Consumer Options in the way they use Electricity". The Directions Paper includes references to a range of studies and submissions from consumer groups on this matter.

In relation to constraints on the use of installed AMI, there is a moratorium in Victoria on the implementation of time of use tariffs until the end of 2013. CitiPower and Powercor Australia understand that the Victorian Government will then undertake an annual review of the merits of retaining or lifting this moratorium after that date.

In addition, the South Australia experience in relation to demand management has been insightful. In 2005, ESCOSA approved funding of $20.4 million for ETSA to conduct a range of demand management trials over the period 2005 to 2010. These trials allowed ETSA to better understand the technologies, engagement strategies, supporting systems, cost structures and cost benefit analysis approaches that will support development of a roadmap towards a viable demand management and 'smart grid' future.

One of the most promising demand management techniques trialled by ETSA to date involves residential sector direct load control (**DLC**) of air conditioners. This has become the key focus of ETSA Utilities investigations and trials of peak demand strategies, noting that in South Australia peak electricity demand is primarily driven by domestic air conditioning.

DLC technology allows electricity distributors to remotely control electric devises in a home and therefore "cycle" electrical appliances at peak times (i.e. turn on and off appliances such as air conditioners and pool pumps for short intervals).

In the DLC trials conducted by ETSA, air conditioners' refrigerative compressors were switched off for short intervals, while operation of in-house air circulation was maintained. Therefore, a key customer acceptance parameter related to 'comfort' levels within the home, for those periods when switching occurred.

Customers were provided with a small incentive, for example a gift voucher, to "opt in" to the trial - participation in the trials was purely voluntary.

Major trials were conducted in Glenelg from 2006, followed by trials in Mawson Lakes and Northgate from 2007 to 2010. Comprehensive steps were undertaken within the trials to understand customer perceptions during the trials, including via use of control groups. The results of the trials to date can be found in the following reports[39]:

- DM Program – Interim Report 1 (June 2007)
- DM – Interim Report 2 (September 2008)
- DM – Interim Report 3 (June 2010)

After three summers of trials (2006/07, 2007/08 and 2008/09), the results confirmed that when external DLC of air conditioners had taken place, customers felt no perceptible reduction in comfort levels. Although there were instances of customer complaint during the trials, they were generally related to air conditioner faults, rather than DLC issues. In essence, if a home had a correctly sized and maintained air conditioner, DLC worked without issue.

For commercial customers, other demand management techniques were trialled, including thermal energy storage (**TES**) and load limitation. The TES trials proved beneficial both from the customer's and the network's perspective. However, all trials were limited in terms of their population size to willing participants and cannot therefore be taken to represent a true gauge of customer acceptance, rather they proved the technology.

Regarding smart metering in South Australia, all customers consuming more than 750MWh per annum have smart metering in place (approximately 1,200), and approximately 2,800 additional smaller customers, consuming more than 160MWh per annum, also have smart metering in place.

In the South Australian residential sector, the largest single group of customers with smart metering in place is ETSA's North Adelaide defined area trial, with 3,500 meters in place. For the purposes of the defined area trial, communications will be fitted to these meters over the next few months. These smart meters will add to those previously installed for the earlier demand management trials in Glenelg, Mawson Lakes and Northgate. The Federal Government-funded 'Solar Cities' project, operated by Origin Energy, also has approximately 1500 smart meters in place. Finally, several hundred other customers also have smart meters in place for market and DM load profile monitoring purposes.

Essentially, this limited number of residential customer smart meter installations in South Australia exist for various technical trial or data collection purposes, and are not part of a formal smart meter roll-out program.

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[39] Available at http://www.etsautilities.com.au/centric/our_network/demand_management.jsp

To date, the State Government in South Australia has not been supportive of a residential smart metering roll-out, such as that in Victoria. The outcomes of cost benefit analyses relating to smart metering infrastructure for South Australia, conducted by the Council of Australian Governments (**COAG**), has been a key factor in this policy stance in recent years.

Chapter 7: The role of generators

58.	***To what degree does the type, location and conduct of generators affect the efficiency of the electricity network? What are the implications of any such impacts?***
59.	***How would benchmarking of network businesses, or its application in regulations, take into account any such complexities?***

The Businesses support the connection of distributed generation to their networks provided that these connections promote the NEO. The Businesses recognises that, amongst other things, these connections may provide benefits in reducing line losses and in assisting to defer network augmentations.

The Businesses have experienced a greatly increased number of connection enquiries and applications in relation to distributed generation in recent years, as a result of State and Commonwealth Government climate change policies, programs and incentive schemes which seek to encourage greater investment in renewable and lower carbon intensive generation.

Because the typical size of distributed generation is relatively small, it is more cost effective for proponents to seek connection to the distribution system rather than the transmission system.

While the Businesses support the connection of distributed generation to their distribution systems, they are constrained in approving many of these applications because of increased:

- Risks of the Businesses reaching technical limitations on their distribution systems known as fault level limitations; and
- Limitations on existing rural distribution system infrastructure resulting in potential high cost connections, limited connections or the connections not proceeding at all.

In order to safely and securely facilitate the future connection of distributed generation the Businesses can:

- Require the proponents to ensure that their generation unit will not adversely impact on the technical requirements. This requirement would impose significant additional costs on the proponents, which could result in the project not being financially viable and therefore prevent it from proceeding; or
- Augment or replace its existing distribution system equipment to safely and securely allow increased connection of distributed generation in areas of the distribution systems that are being pushed towards their design limits. The DNSPs should be able to recover these costs through its Regulatory Proposal.

Alternatively, the proponents may operate independently of the distribution system. However, this could affect and limit the benefit such a project may have.

These issues are currently being addressed as part of the AEMC's national Power of Choice review.

Chapter 8: Accounting for the future

60. What are trends in electricity supply and how will these affect regulation, and the need for, and use of, benchmarking and other regulations?

A key trend in electricity supply is the move towards "smart grids", which affects all sectors of the supply chain. "Smart grids" combine:

- Physical components – this includes large scale renewable energy sources; advanced telecommunications and information technology applications such as meters, sensors, digital controls to automate, monitor and control the two-way flow of electricity; small scale distributed / embedded renewable energy sources; and "smart" appliances in the home; and
- Behavioural components – this involves consumers being informed, and being able to make choices, about their energy sources and consumption needs. This may include customers making investments in distributed generation (including solar PV cells) and "smart" household appliances.

The aims of "smart grids" are to:

- Improve the cost effectiveness of network operations and investments, including reducing network capital expenditure by providing incentives over time;
- Create a platform for customer choice in their energy usage;
- Improve the reliability, quality and security of electricity supplies; and
- Facilitate a reduction in carbon emissions.

Key initiatives that DNSPs are undertaking to achieve "smart grids" include:

- AMI rollout;
- AMI leverage projects;
- Demand management implementation;
- Deployment of mobile solutions;
- Data analytics project; and
- Protection and control projects.

The regulatory barriers to the full uptake and implementation of "smart grids" are currently being addressed as part of the AEMC's national "Power of Choice" review.

A key area of focus for this review should be better promoting and funding innovation by DNSPs because this is likely to be the most effective means of putting sustainable downward pressure on network prices. The Businesses consider that the existing regulatory regime, including the AER's

DMIS, does not do this effectively. There is a need for regulatory regime to require the AER to take a long-term view of investment in order to encourage effective innovation by DNSPs.

Another important trend in electricity supply relates to directives that have been made by State Governments. In Victoria, these include the AMI and bushfire management initiatives. These directives are designed to deliver specific benefits to customers and the community at large but have significant cost implications that are ultimately borne by customers through network charges.

61. To what extent, if at all, will renewable generation and household feed-in tariffs require network upgrades. How costly and efficient would it be?

As discussed in response to question 59, the Businesses support the connection of distributed generation to their distribution systems however they can be constrained in approving these applications because of increased:

- Risks of the Businesses reaching technical limitations on their distribution systems, such as those due to fault level limitations or voltage control issues; and
- Limitations on existing rural distribution system infrastructure resulting in potential high cost connections, limited connections or the connections not proceeding at all.

Generally, the larger the distributed/embedded generation system, the more likely that network limitations will be encountered. For large embedded generators (e.g. more than 30kVA), network technical limitations are not uncommon, and the proponent would be expected to pay for any remedial actions that are required. Partly as a result of these costs, some proposed embedded generation connections may not proceed. On the other hand, smaller residential embedded generators (e.g. usually less than 5kVA) are generally approved for connection.

In the case of recent significant escalations in the numbers of residential PV generators (over the last 12 months in South Australia, PV generator connections have grown from approximately 35,000 systems to more than 100,000 systems), the Businesses note that it is still too early to determine the extent to which the installation of such generation will impact on the operation of the network and any resulting network upgrades. Such impacts will be most likely in cases where there are high concentrations of PV systems on a single feeder, and in periods where there are low in-house loads with consequent high proportionate levels of PV generator export to the network (eg Autumn and Spring).

62. Is local small-scale power generation likely to develop cost-effectively to such a degree that it (a) erodes the distribution network natural monopoly (b) significantly reduces network investment requirements? If so, how long before this happens, with what technologies and costs, and with what implications for regulation? Are there obstacles to efficient distributed generation?

The Businesses expect that any erosion of the distribution network will happen slowly and over a relatively long period of time. This may present a long-term risk for DNSPs to the extent that it results in by-pass and stranding of network capacity.

Customers that are serviced from the distribution network may still be better off in aggregate even if network costs increase over time to the extent that reductions in energy costs more than offset the increase in network costs.

63. How fast will Australia move towards 'smart grids'? How much will these cost, and what impacts will they have on reliability and overall network investment? Will they provide better evidence about the comparative performance of different network providers?

The nature, aims and potential key initiatives involved in moving towards "smart grids" are detailed in the Businesses' response to question 60. The timing of the up-take of "smart grids" will depend on the incentives in the regulatory regime for doing so.

As discussed above, this is currently being addressed as part of the AEMC's national "Power of Choice" review.

Nevertheless, trends in areas including environmental policy, customer expectations, energy prices, distributed energy resources, electrification of transportation, and network technological developments, among others, are accelerating the rate of change in our operating environment and signal significant changes to the design and operation of networks in the future.

Consequently, the Businesses are actively engaged in initiatives aimed at understanding potential future scenarios that will influence greater automation of networks to allow real time responses made possible by smart grid development in Australia, as well as the flow-on implications for business strategies and investments.

For example, ETSA Utilities has developed a 'Future Operating Model 2026' (**FOM**) that represents a 'reference design' for the organisation at a 15 year time horizon. The FOM is intended to provide scenario guidance for a range of medium-long term initiatives, including those related to process design, smart network transformation, customer service strategy, T and systems plans, and even workforce job designs.

As events in the operating environment transpire, the FOM will facilitate identification of flexible and contingent smart grid strategies and solutions for the future.

64. To what degree could the likely future development of better benchmarking tools be incorporated into current incentive regulations to reduce any bias towards excessive investment? How should any such incentive regulations be designed? What are the major advantages and disadvantages of such incentive arrangements, and in particular the magnitude of any risks that such an approach could chill efficient investment? Are there any similar arrangements in utilities or other regulations that provide lessons on such incentive arrangements?

The Businesses do not agree with the premise of the question because it suggests that there is excessive investment currently being made by DNSP. The Businesses do not agree either that:

- There has been a decline in their efficiency or productivity; or
- There are any systematic failings in the Chapter 6 Rules causing inefficient, or unproductive, increases in expenditure that necessitate fundamental rule changes.

Furthermore, the Businesses also reject the inference in this question that benchmarking is not currently provided for in the Chapter 6 Rules and is not being used extensively now by the AER to regulate DNSPs. Attachment B identifies the variety of benchmarking approaches that the AER has applied in its distribution determinations for the three Businesses.

Section 3 explains why the Businesses consider that, with several exceptions where they propose specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context and achieve outcomes consistent with the NEO.

Chapter 9: Implementation Issues

65. How should policy change be implemented, what are the priorities and how long will it take? Is there a critical sequence of changes that should take place?

As the Productivity Commission has pointed out on page 5 of the Issues Paper, there are a large number of related processes currently underway that have the potential to result in changes to the current regulatory regime.

As noted in their response to question 1, the Businesses believe that the Productivity Commission can play an important role in ensuring that recommendations are coordinated between the various reviews.

However, any rule changes should be made consistent with the current provisions in the NEL and, in particular, the requirement under section 88 of the NEL and regulation 8(1)(d) of the National Electricity Regulations that any rule change "will or is likely to contribute to the achievement of the national electricity objective". This is important to promoting regulatory certainty and stability and investor's confidence in the provision of electricity distribution services.

66. Are there significant costs in implementing change?

As discussed in section 3, the Businesses consider that, with several exceptions where they propose specific changes should be made, the Chapter 6 Rules and the NEL provide an appropriate basis for the economic regulation of electricity distribution services in the Australian context and achieve outcomes consistent with the NEO.

Further, as discussed in section 2.5, it is clear that:

- Benchmarking is already a central feature of the current Chapter 6 Rules;
- Benchmarking is already being applied extensively by the AER; and
- The AER could apply benchmarking even more widely under the current Chapter 6 Rules than it has to date.

On this basis, the Businesses consider that the current Chapter 6 Rules do not need to be changed to allow for new or additional benchmarking provisions.

The Businesses therefore do not envisage that significant costs need to result from this Inquiry.

67. Which agencies/parties should do what when implementing change?

As discussed in section 3, the Businesses support the current institutional arrangements governing the economic regulation of the electricity distribution services, including the separation of the roles of:

- The SCER and the SCO as the policy maker;
- The AEMC as the rule maker;
- The AER as the rule implementer; and
- The ACT in conducting merits reviews.

The separation of these roles is important to promoting investment stability and certainty, due process and procedural fairness.

As discussed in section 3, the Businesses encourage the Productivity Commission to take particular care in making its recommendations to:

- Avoid giving the AER unguided discretion and flexibility in exercising its role as the implementer of the Chapter 6 Rules. There were significant problems with the way that the former jurisdictional regulators exercised their roles that the currently regulatory framework is designed, and has operated, to correct; and
- Make the AER fully accountable by exposing its regulatory decisions to merits review. This is a critical safety valve in the regulatory regime – it promotes procedural fairness and reduces the risk of regulatory errors.

68. Is there any interaction with other policies/regulations that would affect the effectiveness of implementation?

The RPP in section 7A(2) of the NEL require that:

> *A regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in—*
>
> *(a) providing direct control network services; and*
>
> *(b) complying with a regulatory obligation or requirement or making a regulatory payment.*

The economic regulatory regime must have regard for the entire non-economic regulatory framework because it is the avenue through which DNSPs recover their costs of meeting their regulatory obligations.

69. Given the experience of the last five to 10 years, over the longer term, how should the NEM be modified to meet the best interests of consumers?

The Businesses have identified two key lessons of the regulatory experience of the last five to ten years.

First, policy makers should avoid giving the economic regulator unguided discretion and flexibility. As discussed in section 3.2, there were significant problems with the way that the former jurisdictional regulators exercised their roles. The Chapter 6 Rules that were introduced in 2008 are a direct response to the inadequacies of the previous regulatory regime. They are purposely based on a "fit for purpose", propose-respond model and incorporate an intended level of guided discretion for the AER.

Secondly, as discussed in the Businesses' response to question 60, to be sustainable, the regulatory regime needs to incentivise DNSPs to invest in innovative solutions to the provision of electricity distribution services. The Businesses consider that the existing regulatory regime, including the AER's DMIS, does not do this effectively. The regulatory regime should require the AER to take a long-term view of investment. Promoting and funding innovation is likely to be the most effective long term means of putting sustained downward pressure on network prices.

ATTACHMENT A – DIFFERENT FORMS OF BENCHMARKING FOR DIFFERENT REGULATORY PURPOSES

Benchmarking approaches need to be tailored to meet their specific regulatory purposes. This Attachment details examples of benchmarking approaches that are relevant for various purposes or applications. The Productivity Commission's Issues Paper does not draw out these distinctions.

Regulatory Purpose	Examples of Relevant Benchmarking Approach
1. Understand trends over time in a single DNSP's: a. Expenditure efficiency b. Service performance	Ratio / indicator analysis and trend analysis
2. Compare at a point in time or over time multiple DNSPs': a. Expenditure efficiency b. Service performance	Ratio / indicator analysis and trend analysis
3. Test / corroborate (all or part of) a DNSP's building block assessment, e.g. for: a. An expenditure category (e.g. opex or asset replacement expenditure) b. Base year expenditure c. Allowed annual revenue	Ratio / indicator analysis, trend analysis, multiple regression analysis, process benchmarking, "efficient" expenditure modelling
4. Determine a specific component of a building block assessment for:	
a. Labour and material unit rates	Industry-wide indices / cost escalators
b. The rate of change or growth factor applied to a base year assessment	Partial factor productivity analysis, industry-wide indices
c. A specific expenditure category	Ratio / indicator analysis, trend analysis, multiple regression analysis, process benchmarking, "efficient" expenditure modelling
d. WACC parameters	Industry-wide measures
5. Determine annual allowed price changes between years (i.e. independent of a building block assessment)	Total factor productivity analysis Data envelopment analysis Stochastic frontier analysis

ATTACHMENT B – AER'S EXPENDITURE ASSESSMENT INCLUDES BENCHMARKING

This Attachment summarises the approach that the AER applied for assessing the Businesses' expenditure forecasts in its current Distribution Determinations. It shows that the AER:

- Has not been constrained in its assessment of the Businesses' expenditure forecasts ;
- Is not limited to using a line by line approach in assessing DNSPs' expenditure proposals – the AER currently uses a combination of top-down, bottom-up and line-by-line analysis;
- Has made extensive use of benchmarking;
- Has rejected certain expenditure proposals and has substituted its own values applying its own methodologies.

Victoria – Powercor Australia and CitiPower – Capex

Total Capex

The AER undertook extensive benchmarking analysis at an aggregate capex level to inform its capex assessment – this was undertaken:

- By individual DNSP; and
- All Victorian DNSPs – i.e. total state level capex.

This included the following ratio and trend analysis:

- Capex ratio analysis at a state level comparing Victoria to New South Wales and Queensland included:
    - Capex / RAB;
    - Capex / line length;
    - Capex / customer numbers;
    - Capex / electricity distributed; and
    - Capex / demand.

    The AER concluded that "Victorian DNSPs compare well when overall capex is compared with that of Queensland and NSW DNSPs"[40]

[40] Victorian electricity distribution network service providers Distribution determination 2011–2015 - Final decision – appendices, page 100. Found at: http://www.aer.gov.au/content/item.phtml?itemId=740831&nodeId=69250b81110ffb154d5e4ec4c02e14f1&fn=Victorian%20distribution%20final%20decision%202011-2015%20-%20appendices.pdf

- Capex ratio analysis by individual DNSP:
    - Capex / RAB versus customers / line length;
    - Capex / RAB versus load profile;
    - Capex / line length versus customers / line length;
    - Capex / line length versus load profile;
    - Capex / customer versus customers / line length;
    - Capex / customer versus load profile;
    - Capex / GWh versus customers / line length;
    - Capex / GWh versus distributed / load profile;
    - Capex / peak demand versus customers / line length; and
    - Capex / peak demand versus load profile.

    The AER concluded that this analysis indicates "the overall level of capex for the Victorian DNSPs is broadly below the level of comparable DNSPs"[41]

- Capex trend analysis at an aggregate level, and by individual DNSP, between 1996 and 2015 by reference to:
    - The DNSPs' actual capex;
    - The DNSPs' forecast capex; and
    - The ESCV's allowances in previous regulatory control periods.

Reinforcement Capex

The AER:

- Benchmarked proposed and actual capex in the current and previous regulatory control periods;
- Benchmarked proposed capex against approved capex for interstate (NSW and Qld) DNSPs – although these were based on different planning standards;
- Investigated policies, procedures and forecasting methodologies where proposed capex was higher than historic capex;
- Considered the extent to which the DNSP considered non-network alternatives;

[41] Ibid, page 104

- Reviewed load duration curve assumptions – it decided that a lower weighting should be given to this compared with other factors in the assessment of the prudency and efficiency of investment;

- Assessed whether internal planning criteria demonstrates how the economic benefits of a reduction in energy at risk outweigh the cost of the projected forecasts;

- Assessed whether maximum demand forecasts were driving key augmentation projects; and

- Relied on advice from expert consultant, Nuttall Consulting (**Nuttall**). Nuttall applied a "methodological and project specific review" including assessment of timing and options analysis of projects (weighted average probability assessment).

The AER concluded that:

- It could not rely on Nuttall's weighted average probability assessment to determine a reasonable expenditure forecast under the rules; and

- "A reasonable estimate would be more in line with historical trend".

Based its assessment the AER rejected the Businesses' proposed forecast expenditure and replaced it with an alternative forecast. In determining the alternative forecast, the AER stated (for both Businesses):

> *the AER retains the view that historical expenditure needs to be taken into account when preparing the forecast…However the AER also acknowledges that based on its assessment of the load on Powercor's / CitiPower's network that an increase in reinforcement capex is required in the forthcoming regulatory control period.*[42]

New Customer Connections & Customer Contributions Capex

The AER:

- Compared actual capex over 2006-10 against proposed capex;

- Reviewed costs and volumes for connections by customer type to determine a unit cost for 2006-10 and 2010-15; and

- Assessed explanations for step changes in expenditure in connections by customer type.

Based on this assessment, the AER determined that for both Businesses their proposed forecasts should be adjusted consistent with an average of historic costs for 2005 to 2009.

[42] Victorian Electricity Distribution Network Service Providers Distribution Determination 2011–2015 October 2010, pages 529, 535. Found at: http://www.aer.gov.au/content/item.phtml?itemId=740831&nodeId=69250b81110ffb154d5e4ec4c02e14f1&fn=Victorian%20distribution%20final%20decision%202011-2015%20-%20appendices.pdf

Reliability and Quality Maintained Capex

The AER:

- Applied a "business as usual level of recurrent expenditure as guide to view about future expenditure"[43];
- Assessed "the need or driver for expenditure, the timing of expenditure…"[44];
- "Benchmarked each DNSPs' performance against itself and other DNSPs including using its repex model to benchmark the DNSPs replacement volumes"[45];
- Reviewed the Businesses' CBRM and RCM models;
- Reviewed forecasts against asset plans and policies;
- Issued the Businesses with several information requests that sought Price x Quantity information;
- Applied revealed cost approach to determine forecast expenditure supported by its "repex" model calibrated with 2006-08 data.

  Repex" model allowed the AER to undertake its own benchmarking analysis between the Victorian DNSPs. The repex model was calibrated to reflect historical levels and costs. The AER described the repex model as "an 'age based' survivor model which is populated with the historical population data for an asset category and produced, based on age an estimate of the expected number of assets which will require replacement.[46]

- Reviewed the Businesses' ability to manage existing programs and risks within current levels of expenditure

Based on this assessment, the AER rejected the Businesses forecast expenditure and determined a substitute allowance that it considers reflects the minimum adjustment necessary to reasonably reflect the capex criteria.

Environmental Safety and Legal Capex

The AER:

- Assessed actual expenditure from 2004-09 to determine the historic underlying expenditure trend and compared this with 2011-15 forecast expenditure;
- Compared actual historic expenditure against interstate DNSPs;
- Reviewed forecasts that were higher than historic spend – in particular, it assessed:
  - Project cost drivers including changes in functions or legislative obligations;

[43] Ibid, page 561
[44] Ibid page 564
[45] Ibid, page 562
[46] Ibid, page 589

- Scale and timing of proposed works (discretion to postpone expenditure);
- Links with documented strategies and procedures;
- Cost benefit (including options analysis) and economic project assessment where provided.

- Sought clarification from ESV on changes to the Electricity Safety Act 1998 and associated safety regulations; and
- Reclassified certain safety related reliability and quality maintained capex as environment safety and legal.

Based on this assessment, the AER rejected the Businesses' expenditure forecasts and determined substitute allowances that reflect the minimum adjustment necessary to reasonably satisfy the capex criteria.

SCADA and Network Control Capex

The AER:

- Assessed actual expenditure from 2004-09 to determine the historic trend in capex and compared this with 2011-15 expenditure forecasts;
- Reviewed forecasts that were higher than historic spend – in particular, the AER assessed:
  - Whether there was any overlap with other capex categories including IT;
  - Reasons for increase in expenditure required including whether driven by legislative changes;
  - Timing of the proposed projects (i.e. discretion to postpone expenditure);
  - Variations in project costs and scope from original estimates where projects had already commenced; and
  - Issued the Businesses with several information requests.

Based on this assessment, the AER rejected the Businesses' expenditure forecasts and determined substitute allowances based on a continuation of historical expenditure trends.

Victoria – Powercor Australia and CitiPower – Opex

Total Opex

The AER undertook extensive benchmarking analysis at the at an aggregate opex level to inform its opex assessment – this was undertaken:

- By individual DNSP; and
- All Victorian DNSPs - i.e. at a state level.

The AER's ratio and trend analysis included:

- Opex ratio analysis at a state level that compared Victoria to New South Wales and Queensland:
    - Opex / RAB;
    - Opex / line length;
    - Opex customer numbers;
    - Opex / electricity distributed;
    - Opex / demand.

    The AER concluded that "Victorian DNSPs compare well when overall opex is compared with that of Queensland and NSW DNSPs"[47].
- Opex ratio analysis by individual DNSP included:
    - Opex / RAB versus customers / line length;
    - Opex / line length versus customers / line length;
    - Opex / customer numbers versus customers / line length;
    - Opex / GWh distributed versus customers / line length; and
    - Opex / demand versus customers / line length.

    The AER concluded that this analysis indicates "the overall level of opex for the Victorian DNSPs is broadly below the level of comparable DNSPs"[48].
- Opex trend analysis at an aggregate level, and by individual DNSP, between 1996 and 2015 by reference to:
    - The DNSPs' actual opex;
    - The DNSPs' forecast opex; and
    - The ESCV's allowances in previous regulatory control periods.

Base year opex

The AER:

- Relied on the incentives in the regulatory regime to ensure that the revealed costs (actual costs) are efficient for the scope of work undertaken;
- Compared actual with proposed opex - trend analysis; and

[47] AER Final Decision – appendices, page 110
[48] Ibid, page 112

- Undertook comparative benchmarking of Victorian DNSPs with DNSPs in other jurisdictions.

The AER concluded that "The results indicated that the Victorian DNSPs compare favourably to those in other states, which suggests that the revealed cost (that is, actual opex) of the Victorian DNSPs provided a sound basis for determining the starting point for evaluating their regulatory proposals"[49].

The AER made "minimum adjustments" necessary to base year opex proposals.

Scale escalation

The AER:

- Derived growth rates from historical data; and
- Applied:
    - Customer number growth driver to all opex categories; and
    - Composite network growth driver to all maintenance expenditure categories.

Real cost escalation

The AER:

- Assessment of labour and non-labour inputs was informed by:
    - An external consultant review (Access Economics);
    - A review of actual and expected opex during the preceding regulatory control period; and
    - The relative price of operating and capital inputs.
- The AER substituted its own real input cost escalation rates which were calculated based on:
    - Labour price index (LPI) rather than average weekly ordinary time earnings (AWOTE) used by the Victorian DNSPs; and
    - Inputs sourced from more recent data than used by the DNSPs.

[49] Ibid, page 324

Step changes

The AER:

- Engaged an external consultant to review step changes and the AER's approach to scale escalation;
- Sought advice from ESV on nature and extend of environmental safety obligations;
- Compared the DNSPs proposed unit costs to undertake the proposed volume of work and reduced unit rates where insufficient evidence on unit rates was provided by the DNSPs;
- Considered the compliance costs to meet various government obligations; and
- Considered additional expenditure in relation to leveraging AMI data, information technology costs, introducing innovative tariffs and other specific step changes.

Debt raising costs

The AER:

- Compared the benchmark costs proposed by each Victorian DNSP; and
- Engaged external consultant Allen consulting Group (ACG) to develop benchmarking debt raising cost method and used this tool to assess forecast direct debt raising cost allowance for each DNSP (informed by the number of standard sized debt issue required).

Self insurance

The AER reviewed whether the opex allowance was included in base year actual expenditure.

South Australia – ETSA Utilities – Capex

Total Capex

The AER used benchmarking analysis at an aggregate capex level to inform its capex assessment. This included capex ratio analysis comparing ETSA Utilities to individual DNSPs:

- Capex / RAB;
- Non–system capex/customers;
- Non–system capex/line length;
- Non–system capex/maximum demand;
- Non–system capex/energy consumption.

The AER concluded that "ETSA Utilities appeared relatively efficient compared to other DNSPs."[50] This analysis was supported by a comparison of unit costs benchmarked against other DNSPs.

Capacity Upgrade Capex

Parsons Brinckerhoff Strategic Consulting (PB) compared:

- Non-network solutions and demand management with industry practice;
- The capacity planning approach, criteria and risk assessments with other Australian DNSPs.

Noting PB's comparison, The AER:

- Compared capex to historical expenditure and other DNSPs;
- Considered additional needs to address network constraints arising from extreme heat events;
- Assessed the risk of avalanche failures associated with extended heatwave events;
- Compared the transformer rating planning criteria against other Australian DNSPs.

Asset Replacement Capex

PB considered:

- The relationship between age, condition, probability of failure and risk that exists for various network components;
- Expected pole costs by applying historical replacement and refurbishment ratios to pole volume forecasts;
- The appropriateness of the pole replacement forecast for the medium corrosion zone as a substitute for pole replacement in high corrosion zone;
- Historical data for unplanned line replacement expenditure to review the base year and assumption of continued expenditure growth;
- The alignment of conductor replacement capex with historical capex and recent defect history through an increase to 'useful asset life';
- The appropriateness of a general proportionate adjustment to remaining replacement capex, including metering and telecommunications assets.

Noting PB's views, the AER compared a condition-based asset replacement approach against the strategy of using age-based and condition-based forecasts.

Safety Capex

PB:

- Compared proposed substation fences against the Australian Standard and other DNSPs;

[50] AER SA Final Decision – appendices, Appendix I, page 360

- Considered the applicability of upgrades at shared sites;
- Considered safety related CBD aged asset replacement capex against historical risk levels.

Noting PB's views, the AER considered the appropriateness of a condition based approach to fencing.

Security of Supply Capex

PB performed a NPV scenario analysis to consider proposed KI duplication and augmentation projects.

The AER assessed proposed backup NOC against the practices of other DNSPs.

Reliability Capex

PB compared proposed reliability capex against historical capex.

Environmental Capex

PB compared proposed environmental capex against historical capex.

The AER assessed proposed oil containment capex against other DNSPs.

Customer Connection Capex

The AER verified BIS Shrapnel's economic approach of correlating historical growth rates with connections and forecasting of connections based on future projected growth rates.

Cost Escalators

Access Economics forecasted general and sector LPI growth across NEM states.

The AER:

- Calculated the weighted average cost escalation rates using current and forecasted economic conditions;
- Used market indices as a benchmark for materials cost escalations (London Metal Exchange).

Equity Raising Capex

The AER:

- Compared equity raising costs against a benchmark firm;
- Considered if external funding is the least-cost option using a benchmark cash flow analysis;
- Considered how capital contributions impact on tax payable in a benchmark cash flow analysis;
- Compared AER data set against Synergies benchmark;

- Used the post-tax revenue model (PTRM) to estimate the benchmark dividend reinvestment plan direct equity raising cost allowance;
- Used a weighted average of total asset classes by value to calculate a standard life for amortising equity raising costs in the PTRM;

Non-System Capex

The AER:

- Benchmarked the number of depots based on geographical spread and customer numbers against other DNSPs;
- Reviewed fleet replacement and refurbishment policy against other DNSPs;
- Compared suitability of suite of IT applications against DNSP standard;
- Benchmarked IT costs per employee and by business size against other DNSPs.

South Australia – ETSA Utilities – Opex

Total Opex

The AER used benchmarking analysis at an aggregate opex level to inform its opex assessment. The AER's analysis included:

- Opex ratio analysis comparing ETSA Utilities to individual DNSPs:
    - Opex / line length;
    - Opex / customers;
    - Opex / RAB;
    - Opex / electricity consumption;
    - Opex / maximum demand.
- Opex regression analysis comparing ETSA Utilities to individual DNSPs taking "into account factors like the relative size of the DNSPs' networks" and using "data gathered on a like for like basis"[51].
    - "The AER's regression modelling shows ETSA Utilities slightly below the regression line, indicating it has relatively low opex, in comparison to other DNSPs in the sample."[52]

[51] AER SA Draft Decision, page 200

[52] Ibid, page 200

Overall, the AER concluded that "ETSA Utilities appeared relatively efficient compared to other DNSPs."[53]

Capex/Opex Trade Off

PB calculated an annual ratio of compounding asset replacement expenditure to current replacement cost of asset base.

Base Year Opex

PB considered 2008-09 base year opex based on a top-down review of comparative benchmarking.

The AER:

- Compared opex allowance with actual opex in the base year;
- Analysed benchmarks, including ratio and regression analyses of 2007-08 actual and forecast opex against other Australian DNSPs;
- Relied on the incentives in the regulatory regime to ensure that the revealed costs (actual costs) were efficient for the scope of work undertaken.

Step Changes

PB reviewed drivers of step changes against regulatory changes, industry practice and compared with other DNSPs.

The AER:

- Compared residential photovoltaics uptake and in-house consumption forecasts with AEMO forecasts;
- Examined KPMG and SMS Consulting reviews of commercial contracts for the provision of support services.

Scale Escalation

PB reviewed and refined SKM model which estimated scale escalation based on the correlation between operating costs and four key variables (i.e. network length, customer numbers, employee numbers and work volume).

Real Cost Escalation

Access Economics forecasted general and sector LPI growth across NEM states.

The AER:

[53] AER SA Final Decision – appendices, Appendix I, page 360

- Calculated the weighted average cost escalation rates using current and forecasted economic conditions;
- Used market indices as a benchmark for materials cost escalations (London Metal Exchange).

Self Insurance

AON Global calculated an average annual premium based on expected events to assess self insurance costs.

The AER compared proposed exposures against premiums with comparable exposures.

Debt Raising Costs

The AER:

- Compared ACG methodology with proposed completion method;
- Used ACG methodology to produce a benchmark and then refined by:
    - Using Bloomberg data to update bond selection;
    - Amortising upfront costs and indexing fixed costs to account for the time value of money;
    - Using data to update the benchmark Medium Term Note issue size.

ATTACHMENT C – EXTRACTS FROM AER'S NEWS RELEASES ON FINAL DISTRIBUTION DETERMINATIONS

This Attachment details extracts from the AER's news releases that were issued with its final distribution determinations for DNSPs since it assumed responsibility for regulating distribution services in 2008. These extracts show that:

- There is no evidence of systematic failings in the Rules
- The Rules allow the AER to do what it needs to do
- The Rules strike the right balance between (a) discretion / flexibility and (b) accountability / guidance / prescription
- The Rules haven't constrained the AER in cutting DNSPs' expenditure forecasts
- The AER has recognised the legitimate reasons for the DNSPs increasing their expenditure

NSW – Extracts from AER's news release of 30 April 2009 entitled "AER final decision approves increased investment in the NSW electricity distribution network"[54]

- "The AER's analysis confirms the need for, and efficiency of, an increased investment allowance, cognisant that this increased investment will result in higher user charges."
- "The underlying need for the higher investment is different for each business:
    - Country Energy has to augment its network, particularly in high growth corridors such as the NSW north coast. It must also comply with enhanced licence conditions, which will involve extensive network reinforcement to achieve N-1 redundancy in regional areas, which reduces the risk of supply interruptions, as well as remediation of poor performing individual feeders.
    - As well as augmenting the network to meet growing demand in the Sydney CBD, EnergyAustralia needs to replace ageing and obsolete assets including 33kV gas filled and 132 kV oil filled sub–transmission cables and 11kV switchgear. It also has to comply with enhanced licence conditions, which will require reinforcement of the Sydney CBD to achieve N-2 redundancy standards by 2014. This additional redundancy reduces the risk of supply interruptions.
    - Integral Energy has to build new substations to meet local growth, particularly around the Liverpool, Parramatta and Blacktown areas of Western Sydney. It will also need to undertake a major program to replace aging transmission and zone substation equipment. Integral Energy also needs to invest to achieve compliance with enhanced

[54] Found at: http://www.aer.gov.au/content/index.phtml/itemId/728143/fromItemId/746345

licence conditions, which will require construction or replacement of numerous zone substations and feeders."

- "In part, the need for increased investment is being driven by a greater use of air conditioning," Mr Edwell said. "Expanding the network to keep air conditioners running on a few hot days makes the network more costly to build and operate as this capacity is then under utilised for much of the year."

- "Despite the revised economic outlook, there remains a need to build new network capacity to meet future customer demand in NSW. As a result, distribution charges in NSW are still forecast to rise during the next five year period, albeit more moderately than previously expected."

ACT – Extracts from AER's news release of 30 April 2009 entitled "AER final decision approves increased investment in the ACT electricity distribution network[55]

- "While consumers within the ACT will face higher charges as a result of the increased investment, they will also benefit from a more reliable and secure network."

- "Given the proposed projects, including the construction of new zone substations at Eastlake and the Molonglo Valley, as well as augmentation of the Civic zone substation in the Canberra CBD, ActewAGL will be well placed to meet growing demand whilst maintaining network reliability and security."

- "In addition, ActewAGL has already undertaken significant capital works to reinforce and replace a large number of unsafe poles and these costs will now flow through to consumers."

- "In making its final decision, the AER took into account ActewAGL's revised regulatory proposal, submissions from interested parties and advice from independent experts. These documents are available on the AER's website."

Queensland – Extracts from AER's news release of 6 May 2010 entitled "AER's final decision on Queensland distribution determinations for Energex and Ergon Energy"[56]

- "AER chairman Steve Edwell said that in reviewing Energex's regulatory proposals for the next five years the AER had found Energex's approach to network planning and management to be sound."

- "The AER has substantially reduced the expenditure proposed by Ergon Energy to ensure that only prudent and efficient costs would be recovered from customers."

- "The higher approved revenues result from the continuing need to augment Queensland's electricity distribution networks following strong growth earlier in the decade and the continued growth in population and energy use per customer, higher reliability standards and real increases in the cost of labour and materials."

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[55] Found at: http://www.aer.gov.au/content/index.phtml/itemId/728140/fromItemId/746345
[56] Found at: http://www.aer.gov.au/content/index.phtml/itemId/736388/fromItemId/746345

- "These increased revenues are largely driven by the higher expenditure requirements as outlined above and also by the cost of capital of 9.72 per cent, which is 126 basis points higher than the current regulatory period, reflecting current and prospective financial conditions."

- "There has been strong growth in the number of connections over the past few years and this is forecast to continue. In addition, the load at each connection is growing as customers continue to install air conditioners and other appliances. In addition, customers expect better service through improving standards of reliability. Cost of materials and labour and financing costs are increasing in the strong economic conditions Australia is experiencing. This decision allows increased charges so the companies can meet these higher demands, and the AER will be carefully monitoring their performance to be sure they deliver."

- "In making its final decision, the AER took into account advice from independent experts."

South Australia – Extracts from AER's news release of 6 May 2010 entitled "AER's final decision on the South Australian distribution determination for ETSA Utilities"[57]

- "More than half of this expanded program is required to ensure the capacity of the network meets future demand from both new and existing customers, including meeting the continuing growth in peak demand. The load is growing as customers continue to install air conditioners and other appliances. In addition, there is a need to address risks associated with ageing assets to maintain reliability for customers. The cost of materials and labour and financing costs are also increasing."

- "ETSA Utilities' operating costs largely relate to network maintenance associated with increased inspections and higher emergency response expenditure forecast due to increasing asset age and growth in the network."

- "In making its final decision, the AER took into account ETSA Utilities' revised proposal, submissions from interested parties and advice from independent experts."

Victoria – Extracts from AER's news release of 29 October 2010 entitled "AER rejects significant price rises by Victorian electricity distributors"[58]

- "'The overall result for Victoria is positive, with no major increases. In fact some consumers will see slight reductions and others marginal increases on their quarterly bills' AER chairman Andrew Reeves said today"

- "'When you consider the fundamental characteristics of the Victorian distribution network, we were not satisfied with the case for greater increases put by the distributors,' Mr Reeves said"

- "'In a relatively stable environment, past expenditure is a good guide to future needs. However, as required by the regulatory regime, the AER has accepted the need for additional expenditure to replace ageing infrastructure - built in the 1960's and 70's - meet new bushfire safety standards and maintain reliability in the face of growing costs and demand. This is in

[57] Found at: http://www.aer.gov.au/content/index.phtml/itemId/736389/fromItemId/746345
[58] Found at: http://www.aer.gov.au/content/index.phtml/itemId/740845/fromItemId/746345

part due to the growth in energy intensive appliances, like home air conditioners,' Mr Reeves added".

- "'On the whole, the Victorian distributors are efficient operators of a mature and comparatively reliable network. They have had the benefit of a strong economy and strong sales, but we recognise also that costs of debt are markedly higher than five years ago when prices were last set,' Mr Reeves said."

- "In making this decision, the AER took into account advice from independent experts and submissions from interested parties."